1520 WEST SAN CARLOS STREET MIXED USE PROJECT AIR QUALITY ASSESSMENT

San José, California

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Introduction

This report addresses the potential air quality and community risk impacts associated with the construction of the proposed mixed-use project located at 1520 West San Carlos Street in San José, California. Air quality impacts from this project would be associated with the demolition of the existing land uses, construction of the new building and infrastructure, and operation of the project. Air pollutant emissions were predicted using appropriate computer models. In addition, the potential health risk impacts associated with construction and operation of the project and the impact of existing toxic air contaminant (TAC) sources affecting the nearby and proposed sensitive receptors were evaluated. The analysis was conducted following guidance provided by the Bay Area Air Quality Management District (BAAQMD).[1]

Project Description

The project site is currently developed with existing commercial and residential properties. The project proposes to demolish the existing uses and construct a new seven-story mixed-use building on a 1.62-acre site. The proposed building would include 256 residential units and approximately 15,203 square feet (sf) of first- and second-floor commercial space. It would also include a 261 space, two-level parking garage on the ground floor of the building and one level below ground. Of the 261 parking spaces, 27 spaces would be provided for electric vehicles. Construction is expected to begin in June 2023 and will be completed by October 2024.

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 downwind of existing air pollutant sources. High ozone levels aggravate respiratory and cardiovascular diseases, reduced lung function, and increase coughing and chest discomfort.

Particulate matter is another problematic air pollutant of the Bay Area. Particulate matter is assessed and measured in terms of respirable particulate matter or particles that have a diameter of 10 micrometers or less (PM_{10}) and fine particulate matter where particles have a diameter of 2.5 micrometers or less ($PM_{2.5}$). Elevated concentrations of PM_{10} and $PM_{2.5}$ are the result of both region-wide (or cumulative) emissions and localized emissions. High particulate matter levels

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

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

TACs are a broad class of compounds known to cause morbidity or mortality, often because they cause cancer. TACs are found in ambient air, especially in urban areas, and are caused by industry, agriculture, fuel combustion, and commercial operations (e.g., dry cleaners). TACs are typically found in low concentrations, even near their source (e.g., diesel particulate matter [DPM] near a freeway). Because chronic exposure can result in adverse health effects, TACs are regulated at the regional, State, and federal level.

Diesel exhaust is the predominant TAC in urban air and is estimated to represent about three-quarters of the cancer risk from TACs (based on the Bay Area average). According to the California Air Resources Board (CARB), diesel exhaust is a complex mixture of gases, vapors, and fine particles. This complexity makes the evaluation of health effects of diesel exhaust a complex scientific issue. Some of the chemicals in diesel exhaust, such as benzene and formaldehyde, have been previously identified as TACs by the CARB, and are listed as carcinogens either under the State's Proposition 65 or under the Federal Hazardous Air Pollutants programs. Health risks from TACs are estimated using the Office of Environmental Health Hazard Assessment (OEHHA) risk assessment guidelines, which were published in February of 2015.[2] See *Attachment 1* for a detailed description of the community risk modeling methodology used in this assessment.

Sensitive Receptors

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

Regulatory Setting

Federal Regulations

The United States Environmental Protection Agency (EPA) sets nationwide emission standards for mobile sources, which include on-road (highway) motor vehicles such trucks, buses, and

[2] OEHHA, 2015. *Air Toxics Hot Spots Program Risk Assessment Guidelines, The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*. Office of Environmental Health Hazard Assessment. February.

automobiles, and non-road (off-road) vehicles and equipment used in construction, agricultural, industrial, and mining activities (such as bulldozers and loaders). The EPA also sets nationwide fuel standards. However, California also has the ability to set motor vehicle emission standards and standards for fuel, as long as they are the same or more stringent than the nationwide standards.

In the past decade the EPA has established a number of emission standards for on- and non-road heavy-duty diesel engines used in trucks and other equipment. This was done in part because diesel engines are a significant source of NO_X and particulate matter ($PM_{2.5}$) and because the EPA has identified DPM as a probable carcinogen. Implementation of the heavy-duty diesel on-road vehicle standards and the non-road diesel engine standards are estimated to reduce particulate matter and NO_X emissions from diesel engines up to 95 percent in 2030 when the heavy-duty vehicle fleet is completely replaced with newer heavy-duty vehicles that comply with these emission standards.[3]

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

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

State Regulations

To address the issue of diesel emissions in the state, CARB developed the *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*.[4] In addition to requiring more stringent emission standards for new on-road and off-road mobile sources and stationary diesel-fueled engines to reduce particulate matter emissions by 90 percent, a significant component of the plan involves application of emission control strategies to existing diesel vehicles and equipment. Many of the measures of the Diesel Risk Reduction Plan have been approved and adopted, including the federal on-road and non-road diesel engine emission standards for new engines, as well as adoption of regulations for low sulfur fuel in California.

CARB has adopted and implemented a number of regulations for stationary and mobile sources to reduce emissions of DPM. Several of these regulatory programs affect medium and heavy-duty diesel trucks that represent the bulk of DPM emissions from California highways. CARB regulations require on-road diesel trucks to be retrofitted with particulate matter controls or replaced to meet 2010 or later engine standards that have much lower DPM and $PM_{2.5}$ emissions. This regulation will substantially reduce these emissions between 2013 and 2023. While new

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

trucks and buses will meet strict federal standards, this measure is intended to accelerate the rate at which the fleet either turns over so there are more cleaner vehicles on the road or is retrofitted to meet similar standards. With this regulation, older, more polluting trucks would be removed from the roads sooner.

CARB has also adopted and implemented regulations to reduce DPM and NO_X emissions from in-use (existing) and new off-road heavy-duty diesel vehicles (e.g., loaders, tractors, bulldozers, backhoes, off-highway trucks, etc.). The regulations apply to diesel-powered off-road vehicles with engines 25 horsepower (hp) or greater. The regulations are intended to reduce DPM and NO_X exhaust emissions by requiring owners to turn over their fleet (replace older equipment with newer equipment) or retrofit existing equipment in order to achieve specified fleet-averaged emission rates. Implementation of this regulation, in conjunction with stringent federal off-road equipment engine emission limits for new vehicles, will significantly reduce emissions of DPM and NO_X.

Bay Area Air Quality Management District (BAAQMD)

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

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

BAAQMD's Community Air Risk Evaluation (CARE) program was initiated in 2004 to evaluate and reduce health risks associated with exposures to outdoor TACs in the Bay Area.[5] The program examines TAC emissions from point sources, area sources, and on-road and off-road mobile sources with an emphasis on diesel exhaust, which is a major contributor to airborne health risk in California. The CARE program is an on-going program that encourages community involvement and input. The technical analysis portion of the CARE program is implemented in three phases that includes an assessment of the sources of TAC emissions, modeling and measurement programs to estimate concentrations of TAC, and an assessment of exposures and health risks. Throughout the program, information derived from the technical analyses is used to focus emission reduction measures in areas with high TAC exposures and high density of sensitive populations. Risk reduction activities associated with the CARE program are focused on the most at-risk communities in the Bay Area. The BAAQMD has identified six communities as impacted as part of the CARE program: Concord, Richmond/San Pablo, Western Alameda County, San José, Redwood City/East Palo Alto, and Eastern San Francisco.

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

Additionally, overburdened communities are areas located (i) within a census tract identified by the California Communities Environmental Health Screening Tool (CalEnviroScreen), Version 4.0 implemented by OEHHA, as having an overall score at or above the 70th percentile, or (ii) within 1,000 feet of any such census tract.[6] The project site is located in the San José CARE area but not within an overburdened area as identified by CalEnviroScreen as the Project site is scored at the 53rd percentile.[7]

The BAAQMD California Environmental Quality Act (*CEQA) Air Quality Guidelines*[8] were prepared to assist in the evaluation of air quality impacts of projects and plans proposed within the Bay Area. The guidelines provide recommended procedures for evaluating potential air impacts during the environmental review process consistent with CEQA requirements including thresholds of significance, mitigation measures, and background air quality information. They also include assessment methodologies for TACs, odors, and GHG emissions.

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 BAAQMD CEQA Guidelines and relative to state and federal standards. Identify and implement feasible air emission reduction measures.

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

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

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

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[6] See BAAQMD: https://www.baaqmd.gov/~/media/dotgov/files/rules/reg-2-permits/2021-amendments/documents/20210722_01_appendixd_mapsofoverburdenedcommunities-pdf.pdf?la=en , accessed 10/1/2021.

[7] OEHAA, CalEnviroScreen 4.0 Indicator Maps https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-40

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

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

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

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

Applicable Goals – Toxic Air Contaminants

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

Applicable Policies – Toxic Air Contaminants

MS-11.1 Require completion of air quality modeling for sensitive land uses such as new residential developments that are located near sources of pollution such as freeways and industrial uses. Require new residential development projects and projects categorized as sensitive receptors to incorporate effective mitigation into project designs or be located an adequate distance from sources of toxic air contaminants (TACs) to avoid significant risks to health and safety.

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

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

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

Actions – Toxic Air Contaminants

MS-11.6 Develop and adopt a comprehensive Community Risk Reduction Plan that includes: baseline inventory of TACs and $PM_{2.5}$, emissions from all sources, emissions reduction targets, and enforceable emission reduction strategies and performance measures. The Community Risk Reduction Plan will include enforcement and monitoring tools to ensure regular review of progress toward the

emission reduction targets, progress reporting to the public and responsible agencies, and periodic updates of the plan, as appropriate.

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

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

Applicable Goals – Construction Air Emissions

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

Applicable Policies – Construction Air Emissions

MS-13.1 Include dust, particulate matter, and construction equipment exhaust control measures as conditions of approval for subdivision maps, site development and planned development permits, grading permits, and demolition permits. At minimum, conditions shall conform to construction mitigation measures recommended in the current BAAQMD CEQA Guidelines for the relevant project size and type.

Applicable Actions – Construction Air Emissions

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

Significance Thresholds

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

Table 1. BAAQMD CEQA Significance Thresholds

Criteria Air Pollutant	Construction Thresholds	Operational Thresholds	
	Average Daily Emissions (lbs./day)	Average Daily Emissions (lbs./day)	Annual Average Emissions (tons/year)
ROG	54	54	10
NO_x	54	54	10
PM_{10}	82 (Exhaust)	82	15
$PM_{2.5}$	54 (Exhaust)	54	10
CO	Not Applicable	9.0 ppm (8-hour average) or 20.0 ppm (1-hour average)	
Fugitive Dust	Construction Dust Ordinance or other Best Management Practices	None	
Health Risks and Hazards	**Single Sources Within 1,000-foot Zone of Influence**	**Combined Sources (Cumulative from all sources within 1000-foot zone of influence)**	
Excess Cancer Risk	10 per one million	100 per one million	
Hazard Index	1.0	10.0	
Incremental annual $PM_{2.5}$	0.3 µg/m^3	0.8 µg/m^3	

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

Source: Bay Area Air Quality Management District, 2017

AIR QUALITY IMPACTS AND MITIGATION MEASURES

Impact AIR-1: 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 NAAQS and the CAAQS. The area is also considered non-attainment for PM_{10} under the CAAQS, but not the NAAQS. The area has attained both State and Federal ambient air quality standards for CO. 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. The O_3 precursor pollutant thresholds are for ROG and NOx, while PM_{10}, and $PM_{2.5}$ have specific thresholds. The thresholds apply to both construction period emissions and operational period emissions.

Construction Period Emissions

The California Emissions Estimator Model (CalEEMod) Version 2020.4.0 was used to estimate emissions from on-site construction activity, construction vehicle trips, and evaporative emissions. The project land use types, size, and anticipated construction schedule were input to CalEEMod.

The CARB EMission FACtors 2021 (EMFAC2021) model was used to predict emissions from construction traffic, which includes worker travel, vendor trucks, and haul trucks.[9] The CalEEMod model output along with construction inputs are included in *Attachment 2* and EMFAC2021 vehicle emissions modeling outputs are included in *Attachment 3*.

CalEEMod Inputs

Land Use Inputs

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

Table 2. Summary of Project Land Use Inputs

Project Land Uses	Size	Units	Square Feet (sf)	Acreage
Apartments Mid Rise	256	Dwelling Unit	187,279	1.62
Regional Shopping Center	15.20	1,000 sf	15,203	
Enclosed Parking with Elevator	261	Parking Spaces	96,853	

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 project construction equipment worksheet included the schedule for each phase of construction (included in *Attachment 2*). Within each construction phase, the quantity of equipment to be used along with the average use hours per day and total number of workdays was based on CalEEMod defaults and updated and approved by the applicant. The construction schedule assumed that the earliest possible start date would be June 2023 and the project would be built out over a period of approximately 16 months or 350 construction workdays. The earliest year of operation was assumed to be 2025.

Construction Truck Traffic Emissions

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

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

of concrete and asphalt total round haul trips were estimated for the project and converted to total one-way trips, assuming two trips per delivery.

The latest version of the CalEEMod model is based on the older version of the CARB EMFAC2017 motor vehicle emission factor model. This model has been superseded by the EMFAC2021 model. However, CalEEMod has not been updated to include EMFAC2021. The construction traffic information was combined with EMFAC2021 motor vehicle emissions factors. EMFAC2021 provides aggregate emission rates in grams per mile for each vehicle type. The vehicle mix for this study was based on CalEEMod defaults, where worker trips are assumed to be comprised of light-duty autos (EMFAC category LDA) and light duty trucks (EMFAC category LDT1 and LDT2). Vendor trips are comprised of delivery and large trucks (EMFAC category MHDT and HHDT) and haul trips, including concrete trucks, are comprised of large trucks (EMFAC category HHDT). Travel distances are based on CalEEMod default lengths, which are 10.8 miles for worker travel, 7.3 miles for vendor trips and 20 miles for hauling (demolition material export and soil import/export). Since CalEEMod does not appear to specifically address concrete or asphalt truck trips, 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 year 2023 and 2024 for Santa Clara County were used. Table 3 provides the traffic inputs that were combined with EMFAC2021 emission rates to compute vehicle emissions.

Table 3. Construction Traffic Data Used for EMFAC2021 Model Runs

CalEEMod Run/Land Uses and Construction Phase	Trips by Trip Type			Notes
	Total Worker[1]	Total Vendor[1]	Total Haul[2]	
Vehicle mix[1]	50% LDA 25% LDT1 25% LDT2	50% MHDT 50% HHDT	100% HHDT	
Trip Length (miles)	10.8	7.3	20.0 (Demo/Soil) 7.3 (Cement/Asphalt)	CalEEMod default distance with 5-min truck idle time.
Demolition	390	-	148	Estimated 19,850-sf existing site demo. 26,000-sf pavement demo. Default worker trips.
Site Preparation	270	-	-	CalEEMod default worker trips.
Grading	315	-	4,312	7,000-cy soil import, 27,500-cy soil export. CalEEMod default worker trips.
Trenching	105	-	-	CalEEMod default worker trips.
Building Construction	59,800	11,960	4,320	Estimated 18,000-cy of concrete. CalEEMod default worker and vendor trips.
Architectural Coating	615	-	-	CalEEMod default worker trips.
Paving	2,024	-	4	2 asphalt truck deliveries. CalEEMod default worker trips.

Notes: [1] Based on 2023 and 2024 EMFAC2021 light-duty vehicle fleet mix for Santa Clara County.
[2] Includes demolition and grading trips estimated by CalEEMod based on amount of material to be removed. Concrete and asphalt trips estimated based on data provided by the applicant.

Summary of Computed Construction Emissions

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

Table 4. Construction Period Emissions - Unmitigated

Year	ROG	NOx	PM_{10} Exhaust	$PM_{2.5}$ Exhaust
Construction Emissions Per Year (Tons)				
2023	0.17	1.43	0.07	0.06
2024	1.64	1.88	0.10	0.08
Average Daily Construction Emissions Per Year (pounds/day)				
2023 (153 construction workdays)	2.18	18.68	0.95	0.76
2024 (197 construction workdays)	16.68	19.05	0.97	0.78
BAAQMD Thresholds (pounds per day)	*54* lbs./day	*54* lbs./day	*82* lbs./day	*54* lbs./day
Exceed Threshold?	No	No	No	No

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

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

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

1. All exposed surfaces shall be watered at a frequency adequate to maintain minimum soil moisture of 12 percent. Moisture content can be verified by lab samples or moisture probe.
2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.

3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
4. All vehicle speeds on unpaved roads shall be limited to 15 mph.
5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
6. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.
7. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
8. Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.
9. All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph.
10. Wind breaks (e.g., trees, fences) shall be installed on the windward side(s) of actively disturbed areas of construction. Wind breaks should have at maximum 50 percent air porosity.
11. Vegetative ground cover (e.g., fast-germinating native grass seed) shall be planted in disturbed areas as soon as possible and watered appropriately until vegetation is established.
12. The simultaneous occurrence of excavation, grading, and ground-disturbing construction activities on the same area at any one time shall be limited. Activities shall be phased to reduce the amount of disturbed surfaces at any one time.
13. Avoid tracking of visible soil material on to public roadways by employing the following measures if necessary: (1) Site accesses to a distance of 100 feet from public paved roads shall be treated with a 6 to 12-inch compacted layer of wood chips, mulch, or gravel and (2) washing truck tires and construction equipment of prior to leaving the site.
14. Sandbags or other erosion control measures shall be installed to prevent silt runoff to public roadways from sites with a slope greater than one percent.

Effectiveness of Mitigation Measure AQ-1

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

Operational Period Emissions

Operational air emissions from the project would be generated primarily from autos driven by future residents and employees. Evaporative ROG emissions from architectural coatings and maintenance products (classified as consumer products) are also associated with these types of projects. CalEEMod was used to estimate emissions from operation of the proposed project assuming full build-out.

CalEEMod Inputs

Land Uses

The project land uses were input to 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 year of full operation would be 2025 if construction begins in 2023. Emissions associated with build-out later than 2025 would be lower.

Traffic Information

CalEEMod allows the user to enter specific vehicle trip generation rates. Therefore, the project-specific daily trip generation rate provided by the traffic consultant was entered into the model.[10] The project would produce approximately 1,967 daily trips. When accounting for the *Residential-Retail Internal Reduction, VMT Reduction, and Location Based Reduction* adjustments, the project would produce 1,522 net daily trips. The daily trip generation was calculated using ITE trip generation rates, the size of the project, and the adjusted total automobile trips after reductions. The Saturday and Sunday trip rates were derived by multiplying the ratio of the CalEEMod default rates for Saturday and Sunday trips to the default weekday rate with the project-specific daily weekday trip rate. The default trip lengths and trip types specified by CalEEMod were used.

EMFAC2021 Adjustment

The vehicle emissions factors and fleet mix used in CalEEMod are based on EMFAC2017, which is an older CARB emissions model for on-road mobile sources. Since the release of CalEEMod Version 2020.4.0, a new emission factor model has been made available by CARB. EMFAC2021 became available for use in January 2021and includes the latest data on California's car and truck fleets and travel activity. The CalEEMod default vehicle emission factors and fleet mix based on EMFAC2017 were updated using the emission rates and fleet mix from EMFAC2021. On road

[10] Hexagon Transportation Consultants, Inc., *1520 W. San Carlos Street Mixed-Use Development Transportation Analysis,* August 2, 2022.

emission rates from 2025 Santa Clara County were used (See *Attachment 3*). More details about the updates in emissions calculation methodologies and data are available in the EMFAC2021 Technical Support Document.[11]

Energy

An emission factor of 178 pounds of CO_2 per megawatt of electricity produced was entered into CalEEMod, which is based on San Jose Clean Energy's (SJCE) 2020 emissions rate.[12] It should be noted that per Climate Smart San Jose and San Jose's Greenhouse Gas Reduction Strategy, SJCE's goal is to provide 100-percent carbon-free electricity prior to 2030.[13]

CalEEMod includes the 2019 Title 24 Building Standards. However, the City of San José passed an ordinance in December 2020 that prohibits the use of natural gas infrastructure in new residential, office, and most retail-type buildings.[14] This ordinance applies to any new construction starting August 1, 2021. Natural gas use for the residential land use was set to zero and reassigned to electricity use in CalEEMod.

Other Inputs

Default model assumptions for emissions associated with solid waste generation and water use were applied to the project. Wastewater treatment was estimated to be 100% aerobic conditions to represent City wastewater treatment plant conditions. The project site would not send wastewater to on-site septic tanks or facultative lagoons.

Existing Uses

A CalEEMod run was not developed for the existing use of the site. The site currently consists of commercial and residential uses. No specific trip generation rates for the existing uses were provided.

Summary of Computed Operational Emissions

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

[11] See CARB 2021: https://ww2.arb.ca.gov/our-work/programs/mobile-source-emissions-inventory/road-documentation/msei-modeling-tools-emfac
[12] San Jose Clean Energy Website, Standard GreenSource service. Web: https://sanjosecleanenergy.org/commercial-rates/
[13] City of San José, 2020. "2030 Greenhouse Gas Reduction Strategy", August. Web: https://www.sanjoseca.gov/home/showpublisheddocument/63667/637347412207870000
[14] City of San José, 2020. "Expand Natural Gas Ban", December. Web: https://www.sanjoseca.gov/Home/Components/News/News/2210/4699

Table 5. Operational Period Emissions

Scenario	ROG	NOx	PM_{10}	$PM_{2.5}$
2025 Annual Project Operational Emissions (*tons/year*)	1.84	0.59	1.08	0.28
BAAQMD Thresholds (tons /year)	*10 tons*	*10 tons*	*15 tons*	*10 tons*
Exceed Threshold?	*No*	*No*	*No*	*No*
2025 Daily Project Operational Emissions (*pounds/day*)[1]	10.10	3.23	5.92	1.55
BAAQMD Thresholds (pounds/day)	*54* lbs.	*54* lbs.	*82* lbs.	*54* lbs.
Exceed Threshold?	*No*	*No*	*No*	*No*
Notes: [1]Assumes 365-day operation.				

Impact AIR-2: Expose sensitive receptors to substantial pollutant concentrations?

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

Project construction activity would generate dust and equipment exhaust that would affect nearby sensitive receptors. The project would not include the installation of any stationary TAC emissions sources (i.e., generators) but would generate some traffic consisting of mostly light-duty gasoline-powered vehicles, which would produce TAC and air pollutant emissions.

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

Community Risk Methodology for Construction and Operation

Community risk impacts were addressed by predicting increased cancer risk, the increase in annual $PM_{2.5}$ concentrations, and by computing the Hazard Index (HI) for non-cancer health risks. The risk impacts from the project are the combination of risks from construction and operation sources. These sources include on-site construction activity, construction truck hauling, and increased traffic from the project. To evaluate the increased cancer risks from the project, a 30-year exposure period was used, per BAAQMD guidance,[15] with the sensitive receptors being exposed to both project construction and operation emissions during this timeframe.

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

[15] BAAQMD, 2016. *BAAQMD Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines.* December 2016.

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

Modeled Sensitive Receptors

Receptors for this assessment included locations where sensitive populations closest to the project would be present for extended periods of time (i.e., chronic exposures). This includes the existing residences on all sides of the site, as shown in Figure 1. Residential receptors are assumed to include all receptor groups (i.e., third trimester, infants, children, and adults) with almost continuous exposure to project emissions. While there are additional sensitive receptors within 1,000 feet of the project site, the receptors chosen are adequate to identify maximum impacts from the project.

Community Health Risk from Project Construction

The primary community risk impact issues associated with construction emissions are cancer risk and exposure to $PM_{2.5}$. A health risk assessment of the project construction activities was conducted that evaluated potential health effects to nearby sensitive receptors from construction emissions of DPM and $PM_{2.5}$.[16] This assessment included dispersion modeling to predict the offsite concentrations resulting from project construction, so that lifetime cancer risks and non-cancer health effects could be evaluated.

Construction Emissions

The CalEEMod and EMFAC2021 models provided total annual PM_{10} exhaust emissions (assumed to be DPM) for the off-road construction equipment and for exhaust emissions from on-road vehicles, with total DPM emissions from all construction stages estimated to be 0.13 tons (256 pounds). The on-road emissions are a result of haul truck travel, worker travel, and vendor deliveries during construction. A trip length of half a mile was used to represent vehicle travel while at or near the construction site. It was assumed that these emissions from on-road vehicles traveling at or near the site would occur at the construction site. Fugitive $PM_{2.5}$ dust emissions were calculated by CalEEMod and EMFAC2021 to be 0.12 tons (231 pounds) for the overall construction period.

Dispersion Modeling

The U.S. EPA AERMOD dispersion model was used to predict DPM and $PM_{2.5}$ concentrations at sensitive receptors (i.e., residences) in the vicinity of the project construction area. The AERMOD dispersion model is a BAAQMD-recommended model for use in modeling analysis of these types

[16] DPM is identified by California as a toxic air contaminant due to the potential to cause cancer.

of emission activities for CEQA projects. [17,18] Emission sources for the construction site were grouped into two categories: exhaust emissions of DPM and fugitive $PM_{2.5}$ dust emissions.

Construction Sources

Combustion equipment DPM exhaust emissions were modeled as a series of point sources with a nine-foot release height (construction equipment exhaust stack height) placed at 23 feet (7 meter) intervals throughout the construction site. This resulted in 179 individual point sources being used to represent mobile equipment DPM exhaust emissions in the construction area, with DPM emissions occurring throughout the project construction site. In addition, the following stack parameters were used: a vertical release, a stack diameter of 2.5 inches, an exhaust temperature of 918˚F, and an exit velocity of 309 feet per second. Point source plume rise is calculated by the AERMOD dispersion model. Emissions from vehicle travel on- and off-site were also distributed among the point sources throughout the site. The locations of the point sources used for the modeling are identified in Figure 1.

For modeling fugitive $PM_{2.5}$ emissions, a near-ground level release height of 7 feet (2 meters) was used for the area source. Fugitive dust emissions at construction sites come from a variety of sources, including truck and equipment travel, grading activities, truck loading (with loaders) and unloading (rear or bottom dumping), loaders and excavators moving and transferring soil and other materials, etc. All of these activities result in fugitive dust emissions at various heights at the point(s) of generation. Once generated, the dust plume will tend to rise as it moves downwind across the site and exit the site at a higher elevation than when it was generated. For all these reasons, a 7-foot release height was used as the average release height across the construction site. Emissions from the construction equipment and on-road vehicle travel were distributed throughout the modeled area sources. Figure 1 shows the project construction site and receptors.

AERMOD Inputs and Meteorological Data

The modeling used a five-year meteorological data set (2013-2017) from the San José Airport prepared for use with the AERMOD model by the BAAQMD. Construction emissions were modeled as occurring daily between 7:00 a.m. to 6:00 p.m., when the majority of construction activity would occur. Annual DPM and $PM_{2.5}$ concentrations from construction activities during the 2023-2024 period were calculated using the model. DPM and $PM_{2.5}$ concentrations were calculated at nearby sensitive receptors. Receptor heights of 5 feet (1.5 meters) and 15 feet (4.5 meters) were used to represent the breathing height of nearby residents.[19]

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

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

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

Summary of Construction Community Risk Impacts

The maximum increased cancer risks were calculated using the modeled TAC concentrations combined with the OEHHA guidance for age sensitivity factors and exposure parameters as recommended by BAAQMD, as described in *Attachment 1*. Non-cancer health hazards and maximum $PM_{2.5}$ concentrations were also calculated and identified. Age-sensitivity factors reflect the greater sensitivity of infants and small children to cancer causing TACs. Third trimester, infant, child, and adult exposures were assumed to occur at all residences during the entire construction period.

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

The maximum modeled annual DPM and $PM_{2.5}$ concentrations were identified at nearby sensitive receptors to find the MEIs. Results of this assessment indicated that the cancer risk MEI and the annual $PM_{2.5}$ MEI were located at different residences. The cancer risk MEI was located on the second floor (15 feet above ground) of a multi-family residence to the southeast of the project site. The annual $PM_{2.5}$ concentration MEI was located on the first floor (5 feet above ground) of a single-family residence south of the project site. The location of the MEIs and nearby sensitive receptors are shown in Figure 1. Table 6 summarizes the maximum cancer risks, $PM_{2.5}$ concentrations, and health hazard indexes for project related construction activities. *Attachment 4* to this report includes the emission calculations used for the construction modeling and the cancer risk calculations.

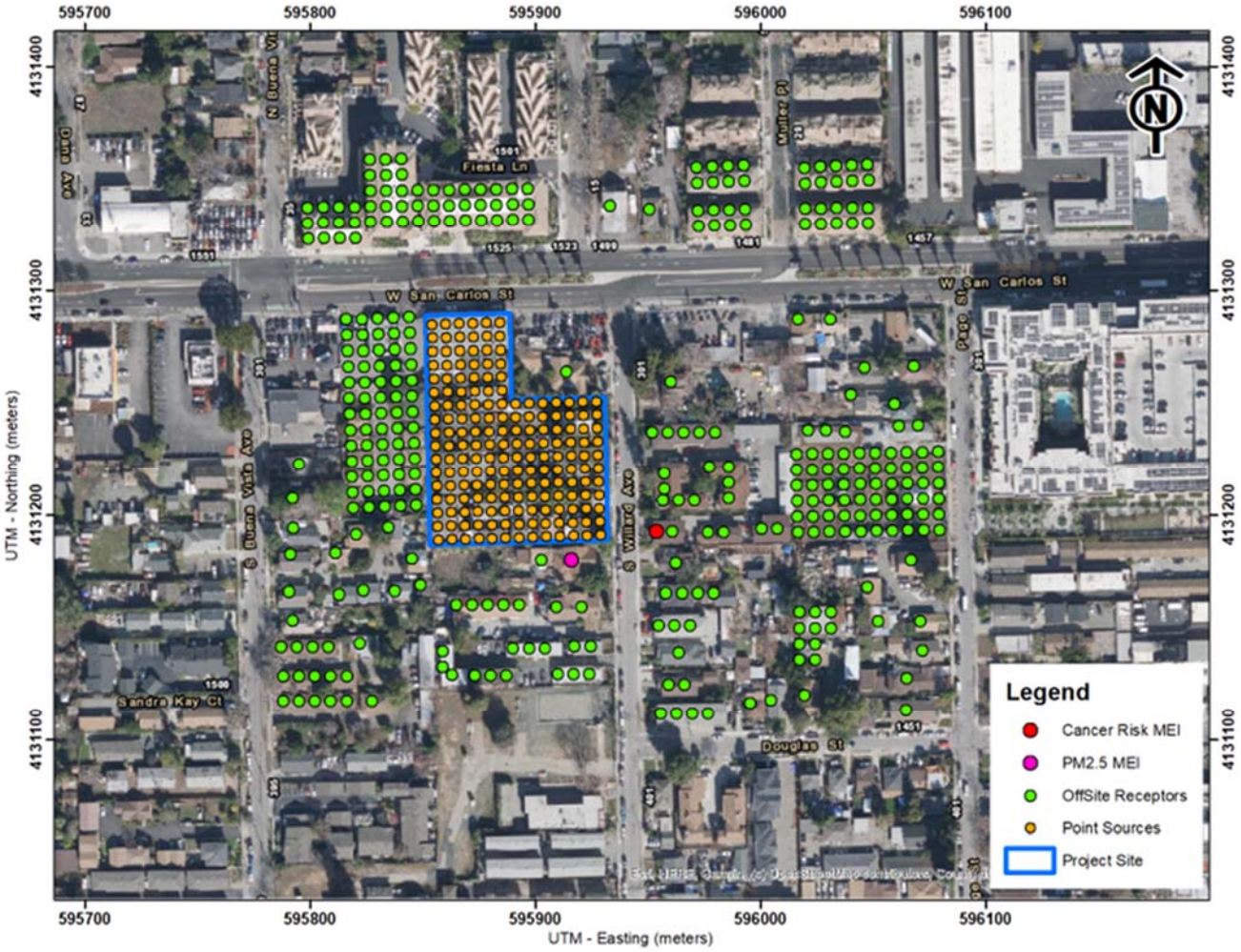
Community Risks from Project Operation

Stationary equipment that could emit substantial TACs (e.g., emergency generators) are not planned for this project. Diesel powered vehicles are the primary concern with local traffic-generated TAC impacts. Per BAAQMD recommended risks and methodology, a road with less than 10,000 total vehicle per day is considered a low-impact source of TACs.[20] This project would generate 1,967 daily trips or 1,522 net daily trips when taking into account the trip reductions.[21] The project traffic would be dispersed on the roadway system with a majority of the trips being from light-duty vehicles (i.e., passenger automobiles), which is a fraction of 10,000 daily vehicles. In addition, projects with the potential to cause or contribute to increased cancer risk from traffic include those that have attract high numbers of diesel-powered on road trucks or use off-road diesel equipment on site. Therefore, this is not a project of concern for mobile sources and emissions from project traffic are considered negligible and not included in the analysis.

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

[21] Hexagon Transportation Consultants, Inc., *1520 W. San Carlos Street Mixed-Use Development Transportation Analysis,* August 2, 2022.

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



Summary of Project-Related Community Risks at the Off-Site Project MEI

For this project, the sensitive receptors identified in Figure 1 as the construction MEIs are also the project MEIs. At this location, the MEIs would be exposed to emissions from 17 months of construction. The annual $PM_{2.5}$ concentration and HI values are based on an annual maximum risk for the entirety of the project. As shown in Table 6, the unmitigated maximum cancer risks and annual $PM_{2.5}$ concentration from construction activities at the MEI locations would exceed the BAAQMD single-source significance thresholds. However, with the incorporation of the *Mitigation Measure AQ-1 and AQ-2*, the mitigated risk and hazard values would reduce emissions such that cancer risk and $PM_{2.5}$ concentration caused by construction would no longer exceed the BAAQMD single-source significance thresholds. The unmitigated annual HI at the MEI does not exceed its respective BAAQMD single-source significance threshold.

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

Source		Cancer Risk (per million)	Annual $PM_{2.5}$ ($\mu g/m^3$)	Hazard Index
Project Construction	Unmitigated	**61.34 (infant)**	**1.08**	0.04
	Mitigated*	7.62 (infant)	0.21	0.01
BAAQMD Single-Source Threshold		***10***	***0.3***	***1.0***
Exceed Threshold?	Unmitigated	***Yes***	***Yes***	*No*
	Mitigated*	*No*	*No*	*No*

* Construction equipment with Tier 4 interim engines and enhanced BMPs as Mitigation Measures.

Cumulative Community Risks of all TAC Sources at the Off-Site 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 the project site (i.e., influence area). These sources include freeways or highways, busy surface streets, and stationary sources identified by BAAQMD.

A review of the project area based on provided traffic information indicated that West San Carlos Street would have average daily traffic (ADT) exceeding 10,000 vehicles. Other nearby streets would have less than 10,000 vehicles per day. A review of BAAQMD's stationary source map website identified one stationary source with the potential to affect the project MEI. Figure 2 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.*

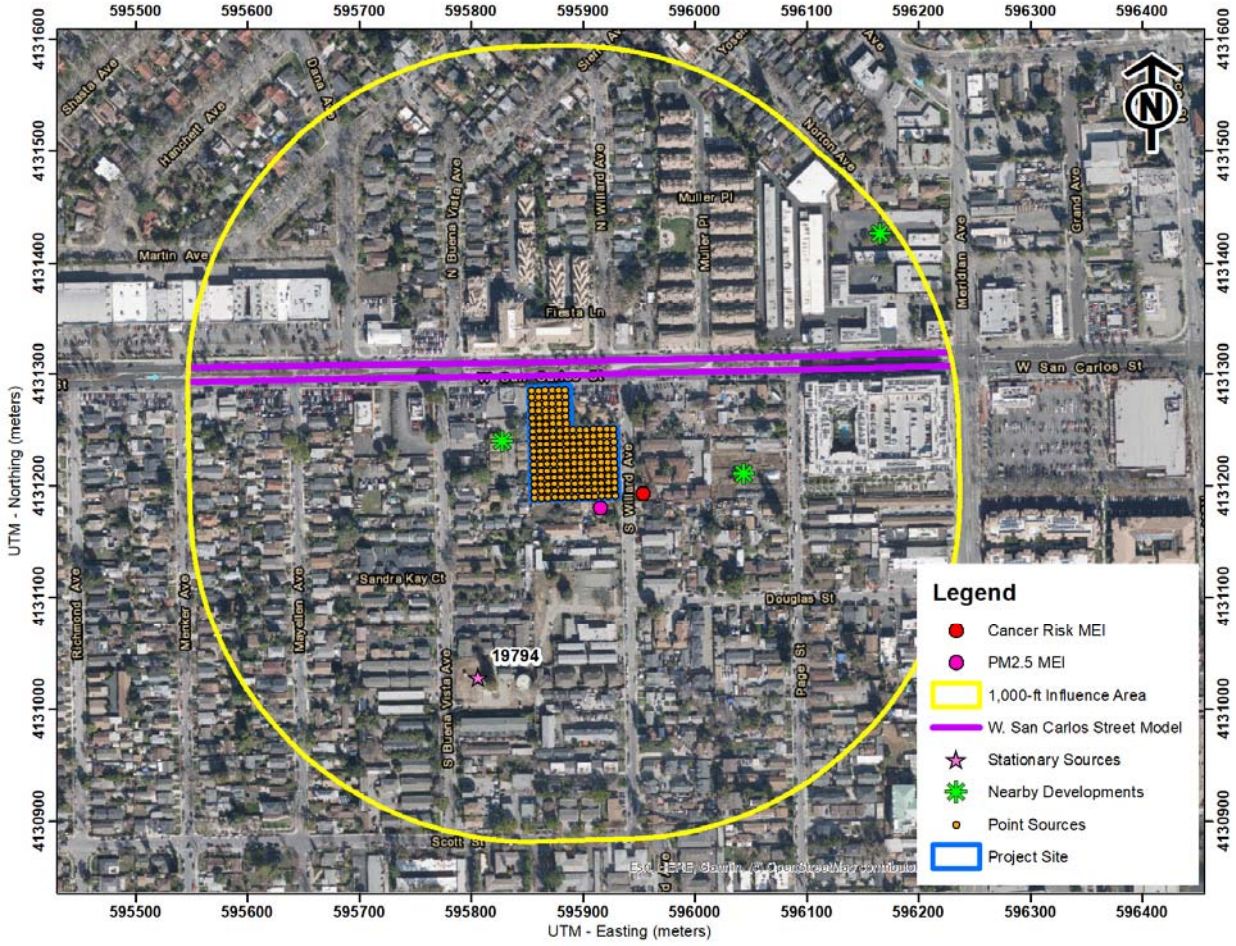
Local Roadways – West San Carlos Street

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

Traffic Emissions Modeling

This analysis involved the development of DPM, organic TACs, and $PM_{2.5}$ emissions for traffic on West San Carlos Street using the Caltrans version of the EMFAC2017 emissions model, known as CT-EMFAC2017. CT-EMFAC2017 provides emission factors for mobile source criteria pollutants and TACs, including DPM. Emission processes modeled include running exhaust for DPM, $PM_{2.5}$ and total organic compounds (e.g., TOG), running evaporative losses for TOG, and tire and brake wear and fugitive road dust for $PM_{2.5}$. All $PM_{2.5}$ emissions from all vehicles were used, rather than just the $PM_{2.5}$ fraction from diesel powered vehicles, because all vehicle types (i.e., gasoline and diesel powered) produce $PM_{2.5}$. DPM emissions are projected to decrease in the future and are reflected in the CT-EMFAC2017 emissions data.

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



Inputs to the model include region (i.e., Santa Clara County), type of road (i.e., major/collector), truck percentage for non-state highways in Santa Clara County (3.51 percent),[22] traffic mix assigned by CT-EMFAC2017 for the county, year of analysis (2023 – construction start year), and season (annual).

In order to estimate TAC and $PM_{2.5}$ emissions over the 30-year exposure period used for calculating the increased cancer risks for sensitive receptors at the project MEI, the CT-EMFAC2017 model was used to develop vehicle emission factors for the year 2023 (project construction year). Emissions associated with vehicle travel depend on the year of analysis because emission control technology requirements are phased-in over time. Therefore, the earlier the year analyzed in the model, the higher the emission rates utilized by CT-EMFAC2017. Year 2023 emissions were conservatively assumed as being representative of future conditions over the time period that cancer risks are evaluated since, as discussed above, overall vehicle emissions, and in particular diesel truck emissions, will decrease in the future.

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

The ADT on West San Carlos Street was based on AM and PM peak-hour background plus project traffic volumes provided by the project's traffic consultant.[23] The calculated ADT on West San Carlos Street was 17,248 vehicles. Average hourly traffic distributions for Santa Clara County roadways were developed using the EMFAC model,[24] which were then applied to the ADT volumes to obtain estimated hourly traffic volumes and emissions for the roadway. For all hours of the day, the average speed of 30 mph on the roadway was assumed for all vehicles, 5 mph below the posted speed limit on West San Carlos Street to account for peak period congestion and the amount of access in the area.

Dispersion Modeling

Dispersion modeling of TAC and $PM_{2.5}$ emissions was conducted using the EPA AERMOD air quality dispersion model, which is recommended by the BAAQMD for this type of analysis.[25] TAC and $PM_{2.5}$ emissions from traffic on West San Carlos Street within about 1,000 feet of the project site were evaluated. Vehicle traffic emissions were modeled in AERMOD using a series of volume sources along a line (line volume sources), with line segments used to represent the opposing travel lanes on the roadway. The same meteorological data used in the construction dispersion modeling were used in the roadway modeling. Other inputs to the model included road geometry, hourly traffic emissions, and receptor locations and heights. Annual TAC and $PM_{2.5}$ concentrations at the project MEI for 2023 from traffic on the roadway were calculated using receptor heights of 5 feet (1.5 meters) and 15 feet (4.5 meters) to represent the breathing heights on the first and second floors of the nearby residences.

Computed Cancer and Non-Cancer Health Impacts

The cancer risk, $PM_{2.5}$ concentration, and HI impacts from West San Carlos Street on the project MEI are shown in Table 7. Figure 2 shows the roadway links used for the modeling. Details of the emission calculations, dispersion modeling, and cancer risk calculations for the receptors with the maximum cancer risk from the roadway's traffic are provided in *Attachment 5.*

Construction Risk Impacts from Nearby Developments

Based on the City's website,[26] the following planned or approved projects are located within 1,000 feet of the proposed project:

- **West San Carlos Mixed Use** – this project is located at 1530 West San Carlos, which is adjacent to the project site on the west side. This project would include construction of a seven-story mixed use apartment building and a five-story affordable housing building, totaling 202 residential units and 15,582 square feet of commercial space. This project is

[23] Hexagon Transportation Consultants, Inc., *1520 W. San Carlos Street Mixed-Use Development Transportation Analysis,* August 2, 2022.
[24] The Burden output from EMFAC2007, a previous version of CARB's 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.
[25] BAAQMD. *Recommended Methods for Screening and Modeling Local Risks and Hazards*. May 2012
[26] City of San Jose, Private / Key Economic Development Projects Map, Web: https://gis.sanjoseca.gov/maps/devprojects/

currently approved and was analyzed by *Illingworth & Rodkin, Inc.*. Therefore, there is potential for this project to be constructed simultaneously or consecutively with the proposed project.

- **329 Page Street** – this project is located approximately 280 feet east of the project site. This project proposes the construction of a six-story building with 82 residential units and is currently under construction. Therefore, some construction could overlap with the proposed project or occur simultaneously.

- **259 Meridian Ave** – this project is located approximately 790 feet northeast of the project site. This project proposes the construction of a seven-story mixed-use building with 241 residential dwelling units and 1,400 square feet of ground-floor commercial space. The project is currently approved and was analyzed by *Illingworth & Rodkin, Inc.*. Therefore, there is potential for this project to be constructed simultaneously or consecutively with the proposed project.

The mitigated construction risks and hazard impact values for certain developments were available from their air quality technical reports either conducted by *Illingworth & Rodin, Inc*. or on the City of San José Environmental Review website for Active EIRs,[27] Completed EIRs,[28] or Negative Declaration / Initial Studies.[29] For the purpose of this analysis, it was conservatively assumed the entire construction period from the proposed project would overlap with the nearby developments' construction schedule. This approach likely provides an overestimate of the community risk and hazard levels because it assumes that maximum impacts from the nearby development occurs concurrently with the proposed project at the proposed project's MEI. The mitigated construction risks reported in that air quality assessment were included in Table 7. For projects where the mitigated construction risks were not available, it was assumed that those projects would have impacts just below the BAAQMD single-source thresholds. This is likely an overestimation of the community risk and hazard levels but provides the most conservative analysis.

BAAQMD Permitted Stationary Sources

Permitted stationary sources of air pollution near the project site were identified using BAAQMD's *Permitted Stationary Sources 2020* geographic information system (GIS) map website.[30] This mapping tool identifies the location of nearby stationary sources and their estimated risk and hazard impacts, including emissions and adjustments to account for new OEHHA guidance. One source was identified using this tool, a diesel generator. The BAAQMD GIS website provided

[27] 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
[28] 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
[29] 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
[30] BAAQMD, Web: https://baaqmd.maps.arcgis.com/apps/webappviewer/index.html?id=845658c19eae4594b9f4b805fb9d89a3

screening risks and hazards for this source. Therefore, a stationary source information request was not required to be submitted to BAAQMD.

The screening risk and hazard levels provided by BAAQMD for the stationary source was adjusted for distance using BAAQMD's *Distance Adjustment Multiplier Tool for Generic Sources*. Community risk impacts from the stationary source upon the MEIs are reported in Table 7.

Summary of Cumulative Risks at the Project MEI

Table 7 reports both the project and cumulative community risk impacts at the sensitive receptors most affected by project construction (i.e., the MEI). The project's unmitigated construction maximum cancer risk and annual $PM_{2.5}$ concentration exceeds the BAAQMD single-source thresholds. With the implementation of *Mitigation Measure AQ-1 and AQ-2*, the project's cancer risk and $PM_{2.5}$ concentration would be lowered to a level below the single-source threshold. The cumulative annual $PM_{2.5}$ concentration would exceed BAAQMD thresholds due to the concentration from the existing TAC sources and simultaneous construction of nearby developments. The cumulative threshold would be exceeded in the case where all construction activity occurs simultaneously. The cumulative cancer risk and HI (unmitigated or mitigated) would not exceed the BAAQMD cumulative-source thresholds .

Table 7. Cumulative Community Risk Impacts at the Project MEIs

Source		Cancer Risk (per million)	Annual $PM_{2.5}$ ($\mu g/m^3$)	Hazard Index
Project Impacts				
Project Construction	Unmitigated	**61.34 (infant)**	**1.08**	0.04
	Mitigated	7.62 (infant)	0.21	0.01
BAAQMD Single-Source Threshold		***10***	***0.3***	***1.0***
Exceed Threshold?	Unmitigated	***Yes***	***Yes***	*No*
	Mitigated	*No*	*No*	*No*
Cumulative Impacts				
West San Carlos Street, ADT 17,248		0.82	0.07	<0.01
San Jose Water Company (Facility ID #19794, Generator), MEI at 535 feet		2.51	<0.01	<0.01
Cumulative Temporary Construction Sources				
West San Carlos Mixed Use Mitigated Construction Emissions – adjacent west		3.6	0.13	0.01
329 Page Street Mitigated Construction Emissions – 280 feet east		<10.0	<0.3	<1.0
259 Meridian Avenue Mitigated Construction Emissions – 790 feet northeast		7.4	0.11	<0.01
Combined Sources	Unmitigated	<85.67	**<1.70**	1.08
	Mitigated	<31.95	**<0.83**	1.05
BAAQMD Cumulative Source Threshold		***100***	***0.8***	***10.0***
Exceed Threshold?	Unmitigated	*No*	***Yes***	*No*
	Mitigated	*No*	***Yes***	*No*

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

Implement a feasible plan to reduce DPM emissions by 85 percent such that increased cancer risk and annual $PM_{2.5}$ concentrations from construction would be reduced below TAC significance levels as follows:

1. All construction equipment larger than 25 horsepower used at the site for more than two continuous days or 20 hours total shall meet U.S. EPA Tier 4 emission standards for PM (PM_{10} and $PM_{2.5}$), if feasible, otherwise,

    a. If use of Tier 4 equipment is not available, alternatively use equipment that meets U.S. EPA emission standards for Tier 3 engines and include particulate matter emissions control equivalent to CARB Level 3 verifiable diesel emission control devices that altogether achieve an 85 percent reduction in particulate matter exhaust in comparison to uncontrolled equipment; alternatively (or in combination).

2. Alternatively, the applicant may develop another construction operations plan demonstrating that the construction equipment used on-site would achieve a reduction in construction diesel particulate matter emissions by 85 percent or greater. Elements of the plan could include a combination of some of the following measures:
    - Implementation of No. 1 above to use Tier 4 engines or alternatively fueled equipment,
    - Installation of electric power lines during early construction phases to avoid use of diesel generators and compressors,
    - Use of electrically-powered equipment,
    - Forklifts and aerial lifts used for exterior and interior building construction shall be electric or propane/natural gas powered,
    - Change in construction build-out plans to lengthen phases, and
    - Implementation of different building techniques that result in less diesel equipment usage.

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

Effectiveness of Mitigation Measure AQ-1 and AQ-2

CalEEMod was used to compute emissions associated with this mitigation measure assuming that all equipment met U.S. EPA Tier 4 Interim engine standards and BAAQMD best management practices for construction were included. With these implemented, the project's construction cancer risk levels (assuming infant exposure) would be reduced by 88 percent to 7.62 per million and the $PM_{2.5}$ concentration would be reduced by 81 percent to 0.21 $\mu g/m^3$. As a result, the project's construction risks and hazards would be reduced below the BAAQMD single-source thresholds.

Non-CEQA: On-site Community Risk Assessment for TAC Sources - New Project Sensitive Residences

The City's General Plan Policy MS-11.1 requires new residential development projects and projects categorized as sensitive receptors to incorporate effective mitigation into their designs to avoid significant risks to health and safety. BAAQMD's recommended thresholds for health risks and hazards, shown in Table 1, are used to evaluate on-site exposure.

A health risk assessment was completed to assess the impact that the existing TAC sources would have on the new proposed sensitive receptors (residents) introduced by the project. The same TAC sources identified above were used in this assessment.[31] Figure 3 shows the on-site sensitive receptors in relation to the nearby TAC sources. Results are listed in Table 8. *Attachment 5* includes the dispersion modeling and risk calculations for TAC source impacts upon the proposed on-site sensitive receptors.

Local Roadways – West San Carlos Street

The roadway impacts on new project residents was conducted in the same manner as described above for the off-site MEI. However, year 2025 (operational year) was conservatively assumed as being representative of future conditions. An analysis based on 2025 resulted in an increased ADT on West San Carlos Street of 17,586 vehicles. On-site receptors were placed throughout the project site with a spacing of 7 meters (23 feet). Roadway impacts were modeled at receptor heights of 5 feet (1.5 meters) and 22 feet (6.7 meters) representing sensitive receptors on the first and second floors of the proposed building. The portion of the roadway included in the modeling is shown in Figure 3 along with the project site and receptor locations where impacts were modeled.

Maximum increased cancer risks were calculated for the residents at the project site using the maximum modeled TAC concentrations. A 30-year exposure period was used in calculating cancer risks assuming the residents would include infants and adults were assumed to be in the new apartments for 24 hours per day for 350 days per year. The highest impacts from West San Carlos Street occurred at a receptor on the second floor of the project site. No dwelling units are located along West San Carlos Street until the 3rd floor of the proposed building. Cancer risks associated with the roadway are greatest closest to the roadway and decrease with distance from the road. The roadway impacts at the project site are shown in Table 8. Details of the emission calculations, dispersion modeling, and cancer risk calculations are contained in *Attachment 5.*

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

Stationary Sources

The stationary source screening analysis for the new project sensitive receptors was conducted in the same manner as described above for the construction MEI. Table 8 includes the health risk assessment results for the stationary sources.

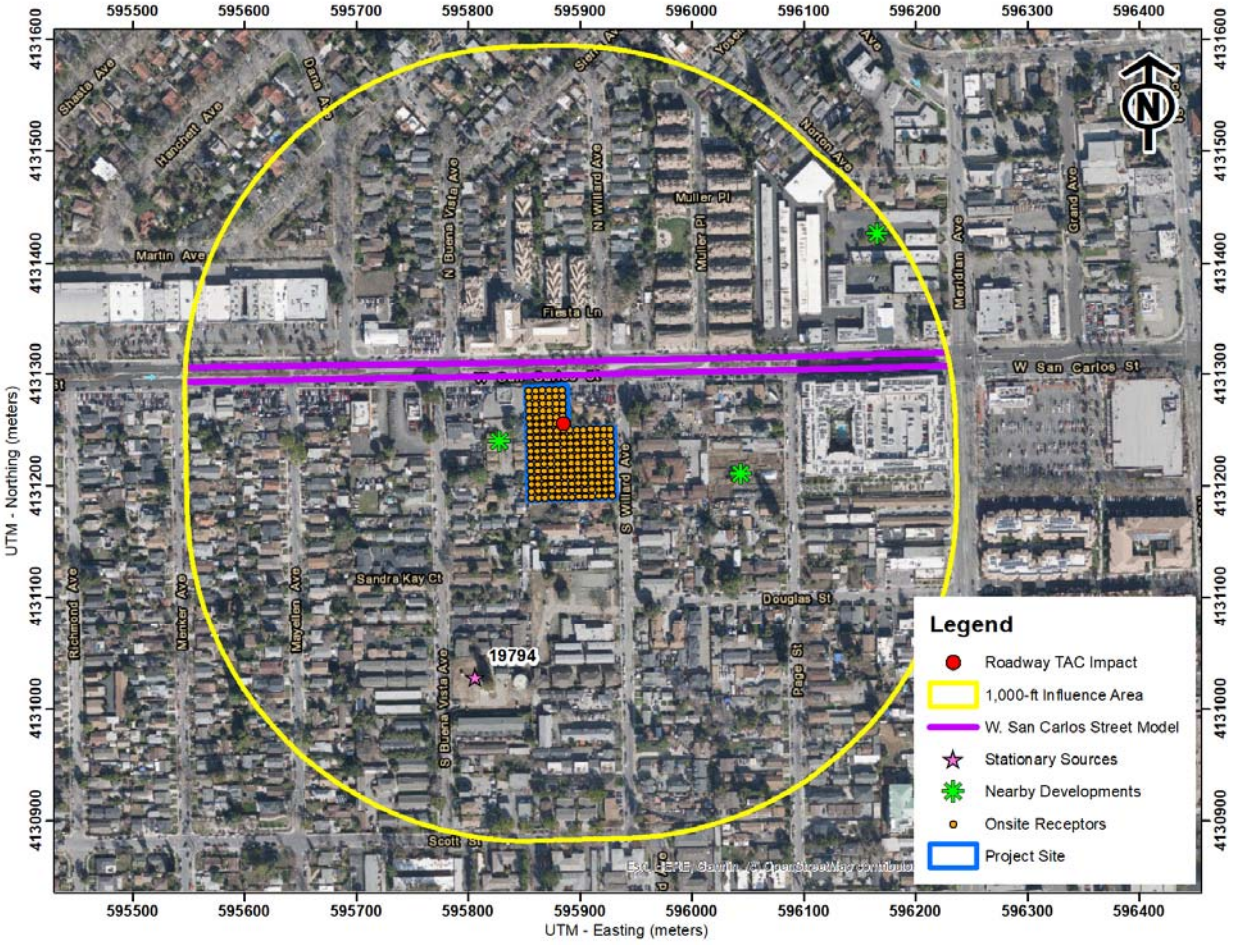
Summary of Cumulative Community Risks at the Project Site

Community risk impacts from the existing and TAC sources upon the project site are reported in Table 8. The risks from the singular TAC sources are compared against the BAAQMD single-source threshold. The risks from all the sources are then combined and compared against the BAAQMD cumulative-source threshold. As shown, none of the sources exceed the single-source or cumulative-source thresholds.

Table 8. Impacts from Combined Sources to Project Site Receptors

Source	Cancer Risk (per million)	Annual $PM_{2.5}$ ($\mu g/m^3$)	Hazard Index
West San Carlos Street, ADT 17,586	1.19	0.11	<0.01
San Jose Water Company (Facility ID #19802, Generator), MEI at 490 feet	3.52	<0.01	<0.01
Cumulative Temporary Construction Sources			
West San Carlos Mixed Use Mitigated Construction Emissions – adjacent west	3.6	0.13	0.01
329 Page Street Mitigated Construction Emissions – 280 feet east	<10.0	<0.3	<1.0
259 Meridian Avenue Mitigated Construction Emissions – 790 feet northeast	7.4	0.11	<0.01
BAAQMD Single-Source Threshold	***10***	***0.3***	***1.0***
Exceed Threshold?	*No*	*No*	*No*
Cumulative Total	25.71	0.66	1.04
BAAQMD Cumulative Source Threshold	***100***	***0.8***	***10.0***
Exceed Threshold?	*No*	*No*	*No*

Figure 3. Locations of Project Site, On-Site Residential Receptors, Roadway Models, Stationary Sources, and Maximum TAC Impacts



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 emissions. Also included are any modeling assumptions.

Attachment 3 includes the EMFAC2021 emissions modeling.

Attachment 4 is the construction health risk assessment. 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 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.[32] 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.[33] 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.[34] 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

[32] 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.
[33] CARB, 2015. *Risk Management Guidance for Stationary Sources of Air Toxics*. July 23.
[34] 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: 1520 W San Carlos

See Equipment Type TAB for type, horsepower and load factor

Complete ALL Portions in Yellow

Project Size
- 256 Dwelling Units
- 1.62 total project acres disturbed
- 181279 s.f. residential
- 5327 s.f. retail
- 9875 s.f. office/commercial
- N/A s.f. other, specify:
- 96853 s.f. parking garage — 261 spaces
- N/A s.f. parking lot — N/A spaces

Construction Hours 7 am to 6 pm

Pile Driving? Y/N? - NO

Project include on-site GENERATOR OR FIRE PUMP during project OPERATION? Y/N? NO

IF YES (if BOTH separate values) -->

Kilowatts/Horsepower: _____

Fuel Type: _____

Location in project (Plans Desired if Available):

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

Quantity	Description	HP	Load Factor	Hours/day	Total Work Days	Avg. Hours per day	HP Annual Hours	Comments
	Demolition	**Start Date:**	**6/1/2023**	**Total phase:**	**28**			**Overall Import/Export Volumes**
		End Date:	**7/6/2023**					
1	Concrete/Industrial Saws	81	0.73	8	28	8	13245	**Demolition Volume**
3	Excavators	158	0.38	8	28	8	40347	Square footage of buildings to be demolished
2	Rubber-Tired Dozers	247	0.4	8	28	8	44262	(*or* total tons to be hauled)
	Tractors/Loaders/Backhoes	97	0.37			0	0	**7,850sf** Commercial / **12,000sf** Residential - DEMO
	Other Equipment?							N/A- Hauling volume (tons)
								Any pavement demolished and hauled? **26,000 sf** of Pavement DEMO
	Site Preparation	**Start Date:**	**7/10/2023**	**Total phase:**	**15**			
		End Date:	**7/28/2023**					
	Graders	187	0.41			0	0	
3	Rubber Tired Dozers	247	0.4	8	15	8	35568	
4	Tractors/Loaders/Backhoes	97	0.37	8	15	8	17227	
	Other Equipment?							
	Grading / Excavation	**Start Date:**	**8/1/2023**	**Total phase:**	**25**			
		End Date:	**8/29/2023**					**Soil Hauling Volume**
1	Excavators	158	0.38	8	25	8	12008	Export volume = 27,500 cubic yards
1	Graders	187	0.41	8	25	8	15334	Import volume = 7,000 cubic yards
1	Rubber Tired Dozers	247	0.4	8	25	8	19760	
	Concrete/Industrial Saws	81	0.73			0	0	
3	Tractors/Loaders/Backhoes	97	0.37	8	25	8	21534	
	Other Equipment?							
	Trenching/Foundation	**Start Date:**	**9/5/2023**	**Total phase:**	**20**			
		End Date:	**10/3/2023**					
1	Tractor/Loader/Backhoe	97	0.37	8	20	8	5742	
1	Excavators	158	0.38	8	20	8	9606	
	Other Equipment?							
	Building - Exterior	**Start Date:**	**10/4/2023**	**Total phase:**	**260**			**Cement Trucks- 1,800 TRIPS = 18,000 c/yds total Concrete**
		End Date:	**10/1/2024**					
1	Cranes	231	0.29	7	260	7	121922	Electric? (Y/N) ___ Otherwise assumed diesel
3	Forklifts	89	0.2	8	260	8	111072	Liquid Propane (LPG)? (Y/N) ___ Otherwise Assumed diesel
1	Generator Sets	84	0.74	8	260	8	129293	Or temporary line power? (Y/N) ___
3	Tractors/Loaders/Backhoes	97	0.37	7	260	7	195959	
1	Welders	46	0.45	8	260	8	43056	
	Other Equipment?							
	Building - Interior/Architectural Coating	**Start Date:**	**6/1/2024**	**Total phase:**	**40**			
		End Date:	**8/1/2024**					
1	Air Compressors	78	0.48	6	40	6	8986	
	Aerial Lift	62	0.31			0	0	
	Other Equipment?							
	Paving	**Start Date:**	**3/23/2024**	**Total phase:**	**40**			
		Start Date:	**5/20/2024**					
	Cement and Mortar Mixers	9	0.56			0	0	
2	Pavers	130	0.42	8	40	8	34944	**Asphalt - 10 cubic yards or 2 round trips**
2	Paving Equipment	132	0.36	8	40	8	30413	
2	Rollers	80	0.38	8	40	8	19456	
	Tractors/Loaders/Backhoes	97	0.37			0	0	
	Other Equipment?							
	Additional Phases	**Start Date:**		**Total phase:**				
		Start Date:						
						#DIV/0!	0	
						#DIV/0!	0	
						#DIV/0!	0	
						#DIV/0!	0	
						#DIV/0!	0	

Equipment types listed in "Equipment Types" worksheet tab.

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

It is assumed that water trucks would be used during grading

Add or subtract phases and equipment, as appropriate

Modify horsepower or load factor, as appropriate

Complete one sheet for each project component

Construction Criteria Air Pollutants						
Unmitigated	ROG	NOX	PM10 Exhaust	PM2.5 Exhaust	**CO2e**	
Year	Tons				MT	
Construction Equipment						
2023	0.12	1.16	0.05	0.05	178.53	
2024	1.59	1.55	0.07	0.07	276.73	
EMFAC						
2023	0.05	0.27	0.02	0.01	246.71	
2024	0.06	0.33	0.02	0.01	311.13	
Total Construction Emissions by Year						
2023	0.17	1.43	0.07	0.06	425.23	
2024	1.64	1.88	0.10	0.08	587.86	
	Total Construction Emissions					
Tons	1.81	3.30	0.17	0.14	1013.10	
Pounds/Workdays	*Average Daily Emissions*				Workdays	
2023	2.18	18.68	0.95	0.76		**153**
2024	16.68	19.05	0.97	0.78		**197**
Threshold - lbs/day	**54.0**	**54.0**	**82.0**	**54.0**		
	Total Construction Emissions					
Pounds	18.86	37.72	1.92	1.54	0.00	
Average	10.34	18.88	0.96	0.77	0.00	350.00
Threshold - lbs/day	**54.0**	**54.0**	**82.0**	**54.0**		

Operational Criteria Air Pollutants						
Unmitigated	ROG	NOX	Total PM10	Total PM2.5		
Year 2023-2024	Tons					
Total	1.84	0.59	1.08	0.28		
	Net Annual Operational Emissions					
Tons/year	1.84	0.59	1.08	0.28		
Threshold - Tons/year	**10.0**	**10.0**	**15.0**	**10.0**		
	Average Daily Emissions					
Pounds Per Day	10.10	3.23	5.92	1.55		
Threshold - lbs/day	**54.0**	**54.0**	**82.0**	**54.0**		

Traffic Consultant Trip Gen						CalEEMod Default			
Land Use		Size	Daily Trips	New Trips	Weekday Trip Gen	Weekday	Sat	Sun
Apartments Mid-Rise	DU	256	1,393	1,098	***4.29***	5.44	4.91	4.09
Residential- Retail Internal Reduction	15%		*-86*			*Rev*	***3.87***	***3.22***
Location Based Reduction	13%		*-170*					
VMT Reduction	3.41%		*-39*					
Shopping Center	KSF	15.203	574	425	***27.96***	37.75	46.12	21.1
Residential- Retail Internal Reduction	15%		*-86*			*Rev*	***34.15***	***15.63***
Location Based Reduction	13%		*-63*					

									Daily		AM Peak Hour						PM Peak Hour					
				VMT[4]							Pk-Hr	Split		Trip			Pk-Hr	Split		Trip		
Land Use	ITE Land Use Code	Location	% of Vehicle Mode Share	Existing	Project	% Reduction	Size		Rate	Trip	Rate	In	Out	In	Out	Total	Rate	In	Out	In	Out	Total
Proposed Land Uses																						
Multifamily Housing (Mid-Rise)[1]	221						256	Dwelling Units	5.44	1,393	0.36	26%	74%	24	68	92	0.44	61%	39%	69	44	113
- Residential - Retail Internal Reduction[2]										*-86*				*-1*	*-1*	*-2*				*-5*	*-4*	*-9*
- Location Based Reduction[3]		*Urban Low-Transit*	*87%*			*13%*				*-170*				*-3*	*-9*	*-12*				*-8*	*-5*	*-13*
- VMT Reduction[4]				*7.34*	*7.09*	*3.41%*				*-39*				*-1*	*-2*	*-3*				*-2*	*-1*	*-3*
Residential Sub-Total										***1,098***				***19***	***56***	***75***				***54***	***34***	***88***
Shopping Center[1]	820						15,203	Square Feet	37.75	574	0.94	62%	38%	9	5	14	3.81	48%	52%	28	30	58
- Residential - Retail Internal Reduction[2]						*15%*				*-86*				*-1*	*-1*	*-2*				*-4*	*-5*	*-9*
- Location Based Reduction[3]		*Urban Low-Transit*	*87%*			*13%*				*-63*				*-1*	*-1*	*-2*				*-3*	*-3*	*-6*
Retail Sub-Total										***424***				***7***	***3***	***10***				***21***	***22***	***43***
Baseline Vehicle Trips (Before Reductions)										1,967				33	73	106				97	74	171
Gross Project Trips After Reductions										***1,522***				***26***	***59***	***85***				***75***	***56***	***131***

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 residential and retail is equal to 15% off the smaller trip generator.

[3] The project site is located within an urban low-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 besides vehicle.

[4] VMT per capita for residential use. Existing and project VMTs were estimated using the City of San Jose VMT Evaluation Tool.
It is assumed that every percent reduction in VMT per-capita is equivalent to one percent reduction in peak-hour vehicle trips.

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

1520 W San Carlos, San Jose

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	261.00	Space	0.00	96,853.00	0
Apartments Mid Rise	256.00	Dwelling Unit	1.62	187,279.00	732
Regional Shopping Center	15.20	1000sqft	0.00	15,203.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2025
Utility Company	San Jose Clean Energy				
CO2 Intensity (lb/MWhr)	178	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

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

Land Use - Provided construction data - total project area.

Construction Phase - Provided schedule - construction worksheet.

Off-road Equipment -

Off-road Equipment - Provided schedule - construction worksheet.

Off-road Equipment - Provided schedule - construction worksheet.

Off-road Equipment - Provided schedule - construction worksheet.

Off-road Equipment - Provided schedule - construction worksheet.

Off-road Equipment - Provided schedule - construction worksheet.

Off-road Equipment - Provided schedule - construction worksheet.

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

Trips and VMT - EMFAC2021 adjustment 0 trips, pavement demo = 26,000-sqft, building const = 18,000-cy concrete, paving = 10-cy asphalt.

Demolition - Existing Building Demo = 7,850 sqft Commercial + 12,000 sqft Residential = 19,850 sqft total demo.

Grading - Grading = 7,000-cy imported, 27,500-cy exported.

Vehicle Trips - Provided trip gen with reduction adjustments.

Vehicle Emission Factors - EMFAC2021 Vehicle Emissions Factors Santa Clara County 2025.

Woodstoves - No hearths.

Energy Use - San Jose Reach Code - no natural gas - convert to electricity.

Water And Wastewater - Wastewater treatment 100% aerobic - no septic tanks or lagoons.

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

Fleet Mix - EMFAC2021 Fleet Mix Santa Clara County 2025.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	11.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
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
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	10.00	44.00
tblConstructionPhase	NumDays	200.00	260.00
tblConstructionPhase	NumDays	20.00	26.00
tblConstructionPhase	NumDays	4.00	21.00
tblConstructionPhase	NumDays	10.00	41.00
tblConstructionPhase	NumDays	2.00	15.00
tblEnergyUse	NT24E	3,054.10	3,978.74
tblEnergyUse	NT24NG	3,155.00	0.00
tblEnergyUse	T24E	70.89	1,602.68
tblEnergyUse	T24E	2.46	3.15
tblEnergyUse	T24NG	5,226.68	0.00
tblEnergyUse	T24NG	2.34	0.00
tblFireplaces	FireplaceDayYear	11.14	0.00
tblFireplaces	FireplaceHourDay	3.50	0.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	38.40	0.00
tblFireplaces	NumberNoFireplace	10.24	0.00

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tblFireplaces	NumberWood	43.52	0.00
tblFleetMix	HHD	6.3770e-003	7.4400e-003
tblFleetMix	HHD	6.3770e-003	7.4400e-003
tblFleetMix	HHD	6.3770e-003	7.4400e-003
tblFleetMix	LDA	0.57	0.53
tblFleetMix	LDA	0.57	0.53
tblFleetMix	LDA	0.57	0.53
tblFleetMix	LDT1	0.06	0.04
tblFleetMix	LDT1	0.06	0.04
tblFleetMix	LDT1	0.06	0.04
tblFleetMix	LDT2	0.19	0.23
tblFleetMix	LDT2	0.19	0.23
tblFleetMix	LDT2	0.19	0.23
tblFleetMix	LHD1	0.02	0.02
tblFleetMix	LHD1	0.02	0.02
tblFleetMix	LHD1	0.02	0.02
tblFleetMix	LHD2	5.1580e-003	5.7400e-003
tblFleetMix	LHD2	5.1580e-003	5.7400e-003
tblFleetMix	LHD2	5.1580e-003	5.7400e-003
tblFleetMix	MCY	0.02	0.02
tblFleetMix	MCY	0.02	0.02
tblFleetMix	MCY	0.02	0.02
tblFleetMix	MDV	0.12	0.13
tblFleetMix	MDV	0.12	0.13
tblFleetMix	MDV	0.12	0.13
tblFleetMix	MH	2.7200e-003	2.5850e-003
tblFleetMix	MH	2.7200e-003	2.5850e-003
tblFleetMix	MH	2.7200e-003	2.5850e-003
tblFleetMix	MHD	8.0300e-003	9.4250e-003

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tblFleetMix	MHD	8.0300e-003	9.4250e-003
tblFleetMix	MHD	8.0300e-003	9.4250e-003
tblFleetMix	OBUS	8.9300e-004	1.0570e-003
tblFleetMix	OBUS	8.9300e-004	1.0570e-003
tblFleetMix	OBUS	8.9300e-004	1.0570e-003
tblFleetMix	SBUS	9.0000e-004	6.8400e-004
tblFleetMix	SBUS	9.0000e-004	6.8400e-004
tblFleetMix	SBUS	9.0000e-004	6.8400e-004
tblFleetMix	UBUS	3.7200e-004	4.1300e-004
tblFleetMix	UBUS	3.7200e-004	4.1300e-004
tblFleetMix	UBUS	3.7200e-004	4.1300e-004
tblGrading	MaterialExported	0.00	27,500.00
tblGrading	MaterialImported	0.00	7,000.00
tblLandUse	LandUseSquareFeet	104,400.00	96,853.00
tblLandUse	LandUseSquareFeet	256,000.00	187,279.00
tblLandUse	LandUseSquareFeet	15,200.00	15,203.00
tblLandUse	LotAcreage	2.35	0.00
tblLandUse	LotAcreage	6.74	1.62
tblLandUse	LotAcreage	0.35	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00

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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	6.00	7.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	6.00	7.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	807.98	178
tblTripsAndVMT	HaulingTripNumber	90.00	0.00
tblTripsAndVMT	HaulingTripNumber	4,313.00	0.00
tblTripsAndVMT	VendorTripNumber	46.00	0.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	18.00	0.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	5.00	0.00
tblTripsAndVMT	WorkerTripNumber	230.00	0.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	46.00	0.00
tblVehicleEF	HHD	0.02	0.23
tblVehicleEF	HHD	0.05	0.12
tblVehicleEF	HHD	6.32	5.18

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tblVehicleEF	HHD	0.41	0.76
tblVehicleEF	HHD	5.9250e-003	6.8500e-004
tblVehicleEF	HHD	1,030.26	813.97
tblVehicleEF	HHD	1,386.58	1,586.83
tblVehicleEF	HHD	0.05	0.02
tblVehicleEF	HHD	0.16	0.13
tblVehicleEF	HHD	0.22	0.25
tblVehicleEF	HHD	6.0000e-006	1.4000e-005
tblVehicleEF	HHD	5.35	3.97
tblVehicleEF	HHD	2.67	1.77
tblVehicleEF	HHD	2.32	2.75
tblVehicleEF	HHD	2.5050e-003	2.0970e-003
tblVehicleEF	HHD	0.06	0.08
tblVehicleEF	HHD	0.04	0.04
tblVehicleEF	HHD	0.02	0.03
tblVehicleEF	HHD	2.3970e-003	2.0000e-003
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	8.8870e-003	8.7820e-003
tblVehicleEF	HHD	0.02	0.02
tblVehicleEF	HHD	1.0000e-006	0.00
tblVehicleEF	HHD	2.0000e-006	1.6100e-004
tblVehicleEF	HHD	8.6000e-005	4.8000e-005
tblVehicleEF	HHD	0.43	0.33
tblVehicleEF	HHD	1.0000e-006	0.00
tblVehicleEF	HHD	0.03	0.02
tblVehicleEF	HHD	3.8000e-005	4.3200e-004
tblVehicleEF	HHD	2.0000e-006	0.00
tblVehicleEF	HHD	9.5860e-003	7.0990e-003
tblVehicleEF	HHD	0.01	0.01

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tblVehicleEF	HHD	2.0000e-006	1.6100e-004
tblVehicleEF	HHD	8.6000e-005	4.8000e-005
tblVehicleEF	HHD	0.49	0.59
tblVehicleEF	HHD	1.0000e-006	0.00
tblVehicleEF	HHD	0.08	0.14
tblVehicleEF	HHD	3.8000e-005	4.3200e-004
tblVehicleEF	HHD	3.0000e-006	0.00
tblVehicleEF	LDA	1.5230e-003	1.8410e-003
tblVehicleEF	LDA	0.04	0.06
tblVehicleEF	LDA	0.49	0.61
tblVehicleEF	LDA	2.00	2.71
tblVehicleEF	LDA	226.89	237.67
tblVehicleEF	LDA	48.21	61.73
tblVehicleEF	LDA	3.7350e-003	3.8850e-003
tblVehicleEF	LDA	0.02	0.03
tblVehicleEF	LDA	0.03	0.03
tblVehicleEF	LDA	0.15	0.22
tblVehicleEF	LDA	0.04	7.1370e-003
tblVehicleEF	LDA	1.2360e-003	1.1200e-003
tblVehicleEF	LDA	1.6250e-003	1.8490e-003
tblVehicleEF	LDA	0.02	2.4980e-003
tblVehicleEF	LDA	1.1380e-003	1.0310e-003
tblVehicleEF	LDA	1.4940e-003	1.7000e-003
tblVehicleEF	LDA	0.03	0.26
tblVehicleEF	LDA	0.08	0.08
tblVehicleEF	LDA	0.03	0.00
tblVehicleEF	LDA	5.5720e-003	6.9420e-003
tblVehicleEF	LDA	0.03	0.20
tblVehicleEF	LDA	0.18	0.27

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tblVehicleEF	LDA	2.2440e-003	2.3490e-003
tblVehicleEF	LDA	4.7700e-004	6.1000e-004
tblVehicleEF	LDA	0.03	0.26
tblVehicleEF	LDA	0.08	0.08
tblVehicleEF	LDA	0.03	0.00
tblVehicleEF	LDA	8.1000e-003	0.01
tblVehicleEF	LDA	0.03	0.20
tblVehicleEF	LDA	0.19	0.30
tblVehicleEF	LDT1	3.1240e-003	5.5770e-003
tblVehicleEF	LDT1	0.05	0.10
tblVehicleEF	LDT1	0.77	1.31
tblVehicleEF	LDT1	2.16	4.86
tblVehicleEF	LDT1	272.37	319.18
tblVehicleEF	LDT1	58.50	84.00
tblVehicleEF	LDT1	5.2980e-003	8.6270e-003
tblVehicleEF	LDT1	0.02	0.04
tblVehicleEF	LDT1	0.06	0.11
tblVehicleEF	LDT1	0.20	0.36
tblVehicleEF	LDT1	0.04	9.2190e-003
tblVehicleEF	LDT1	1.5310e-003	1.8130e-003
tblVehicleEF	LDT1	1.9900e-003	2.7500e-003
tblVehicleEF	LDT1	0.02	3.2270e-003
tblVehicleEF	LDT1	1.4090e-003	1.6690e-003
tblVehicleEF	LDT1	1.8300e-003	2.5290e-003
tblVehicleEF	LDT1	0.07	0.56
tblVehicleEF	LDT1	0.13	0.16
tblVehicleEF	LDT1	0.06	0.00
tblVehicleEF	LDT1	0.01	0.02
tblVehicleEF	LDT1	0.07	0.44

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tblVehicleEF	LDT1	0.25	0.50
tblVehicleEF	LDT1	2.6950e-003	3.1550e-003
tblVehicleEF	LDT1	5.7900e-004	8.3000e-004
tblVehicleEF	LDT1	0.07	0.56
tblVehicleEF	LDT1	0.13	0.16
tblVehicleEF	LDT1	0.06	0.00
tblVehicleEF	LDT1	0.02	0.04
tblVehicleEF	LDT1	0.07	0.44
tblVehicleEF	LDT1	0.27	0.54
tblVehicleEF	LDT2	2.6570e-003	2.5920e-003
tblVehicleEF	LDT2	0.06	0.08
tblVehicleEF	LDT2	0.69	0.78
tblVehicleEF	LDT2	2.60	3.42
tblVehicleEF	LDT2	290.83	327.62
tblVehicleEF	LDT2	63.01	84.01
tblVehicleEF	LDT2	5.2770e-003	5.6470e-003
tblVehicleEF	LDT2	0.03	0.04
tblVehicleEF	LDT2	0.05	0.06
tblVehicleEF	LDT2	0.23	0.31
tblVehicleEF	LDT2	0.04	8.8600e-003
tblVehicleEF	LDT2	1.3020e-003	1.2920e-003
tblVehicleEF	LDT2	1.6610e-003	2.0610e-003
tblVehicleEF	LDT2	0.02	3.1010e-003
tblVehicleEF	LDT2	1.1980e-003	1.1890e-003
tblVehicleEF	LDT2	1.5270e-003	1.8950e-003
tblVehicleEF	LDT2	0.06	0.28
tblVehicleEF	LDT2	0.11	0.08
tblVehicleEF	LDT2	0.06	0.00
tblVehicleEF	LDT2	0.01	0.01

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tblVehicleEF	LDT2	0.06	0.21
tblVehicleEF	LDT2	0.26	0.35
tblVehicleEF	LDT2	2.8770e-003	3.2380e-003
tblVehicleEF	LDT2	6.2400e-004	8.3000e-004
tblVehicleEF	LDT2	0.06	0.28
tblVehicleEF	LDT2	0.11	0.08
tblVehicleEF	LDT2	0.06	0.00
tblVehicleEF	LDT2	0.02	0.01
tblVehicleEF	LDT2	0.06	0.21
tblVehicleEF	LDT2	0.29	0.39
tblVehicleEF	LHD1	4.8220e-003	5.1940e-003
tblVehicleEF	LHD1	7.2910e-003	7.2220e-003
tblVehicleEF	LHD1	0.01	0.02
tblVehicleEF	LHD1	0.18	0.20
tblVehicleEF	LHD1	0.66	0.82
tblVehicleEF	LHD1	1.01	2.16
tblVehicleEF	LHD1	8.77	8.60
tblVehicleEF	LHD1	764.47	764.97
tblVehicleEF	LHD1	11.28	17.60
tblVehicleEF	LHD1	7.4300e-004	6.3700e-004
tblVehicleEF	LHD1	0.04	0.04
tblVehicleEF	LHD1	0.02	0.03
tblVehicleEF	LHD1	0.05	0.05
tblVehicleEF	LHD1	0.57	0.59
tblVehicleEF	LHD1	0.29	0.42
tblVehicleEF	LHD1	8.5700e-004	6.8500e-004
tblVehicleEF	LHD1	0.08	0.08
tblVehicleEF	LHD1	9.8070e-003	9.4200e-003
tblVehicleEF	LHD1	9.0910e-003	0.01

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tblVehicleEF	LHD1	2.3900e-004	2.0600e-004
tblVehicleEF	LHD1	8.2000e-004	6.5600e-004
tblVehicleEF	LHD1	0.03	0.03
tblVehicleEF	LHD1	2.4520e-003	2.3550e-003
tblVehicleEF	LHD1	8.6510e-003	0.01
tblVehicleEF	LHD1	2.2000e-004	1.8900e-004
tblVehicleEF	LHD1	1.8120e-003	0.12
tblVehicleEF	LHD1	0.07	0.03
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	9.4400e-004	0.00
tblVehicleEF	LHD1	0.09	0.08
tblVehicleEF	LHD1	0.19	0.17
tblVehicleEF	LHD1	0.06	0.11
tblVehicleEF	LHD1	8.5000e-005	8.4000e-005
tblVehicleEF	LHD1	7.4620e-003	7.4710e-003
tblVehicleEF	LHD1	1.1200e-004	1.7400e-004
tblVehicleEF	LHD1	1.8120e-003	0.12
tblVehicleEF	LHD1	0.07	0.03
tblVehicleEF	LHD1	0.03	0.03
tblVehicleEF	LHD1	9.4400e-004	0.00
tblVehicleEF	LHD1	0.10	0.10
tblVehicleEF	LHD1	0.19	0.17
tblVehicleEF	LHD1	0.07	0.12
tblVehicleEF	LHD2	2.9270e-003	3.0230e-003
tblVehicleEF	LHD2	6.3420e-003	6.4550e-003
tblVehicleEF	LHD2	7.0910e-003	0.01
tblVehicleEF	LHD2	0.14	0.14
tblVehicleEF	LHD2	0.56	0.53
tblVehicleEF	LHD2	0.57	1.20

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tblVehicleEF	LHD2	13.74	13.69
tblVehicleEF	LHD2	740.94	811.00
tblVehicleEF	LHD2	7.36	9.64
tblVehicleEF	LHD2	1.7280e-003	1.6800e-003
tblVehicleEF	LHD2	0.07	0.08
tblVehicleEF	LHD2	0.01	0.02
tblVehicleEF	LHD2	0.09	0.09
tblVehicleEF	LHD2	0.68	0.81
tblVehicleEF	LHD2	0.16	0.23
tblVehicleEF	LHD2	1.4520e-003	1.3890e-003
tblVehicleEF	LHD2	0.09	0.09
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	0.01	0.02
tblVehicleEF	LHD2	1.2200e-004	9.1000e-005
tblVehicleEF	LHD2	1.3890e-003	1.3290e-003
tblVehicleEF	LHD2	0.04	0.03
tblVehicleEF	LHD2	2.6970e-003	2.6660e-003
tblVehicleEF	LHD2	0.01	0.02
tblVehicleEF	LHD2	1.1200e-004	8.4000e-005
tblVehicleEF	LHD2	9.1300e-004	0.06
tblVehicleEF	LHD2	0.04	0.02
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	4.8500e-004	0.00
tblVehicleEF	LHD2	0.11	0.11
tblVehicleEF	LHD2	0.09	0.09
tblVehicleEF	LHD2	0.04	0.06
tblVehicleEF	LHD2	7.1520e-003	7.8120e-003
tblVehicleEF	LHD2	7.3000e-005	9.5000e-005
tblVehicleEF	LHD2	9.1300e-004	0.06

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tblVehicleEF	LHD2	0.04	0.02
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	4.8500e-004	0.00
tblVehicleEF	LHD2	0.12	0.13
tblVehicleEF	LHD2	0.09	0.09
tblVehicleEF	LHD2	0.04	0.06
tblVehicleEF	MCY	0.32	0.16
tblVehicleEF	MCY	0.25	0.18
tblVehicleEF	MCY	18.37	12.31
tblVehicleEF	MCY	9.09	7.97
tblVehicleEF	MCY	210.00	187.27
tblVehicleEF	MCY	60.43	47.31
tblVehicleEF	MCY	0.07	0.04
tblVehicleEF	MCY	0.02	7.6910e-003
tblVehicleEF	MCY	1.14	0.56
tblVehicleEF	MCY	0.27	0.13
tblVehicleEF	MCY	0.01	0.01
tblVehicleEF	MCY	2.0310e-003	1.9250e-003
tblVehicleEF	MCY	2.9300e-003	3.4640e-003
tblVehicleEF	MCY	5.0400e-003	4.2000e-003
tblVehicleEF	MCY	1.8970e-003	1.7990e-003
tblVehicleEF	MCY	2.7510e-003	3.2530e-003
tblVehicleEF	MCY	0.90	3.86
tblVehicleEF	MCY	0.67	3.56
tblVehicleEF	MCY	0.48	0.00
tblVehicleEF	MCY	2.18	1.02
tblVehicleEF	MCY	0.52	3.76
tblVehicleEF	MCY	1.92	1.31
tblVehicleEF	MCY	2.0780e-003	1.8510e-003

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tblVehicleEF	MCY	5.9800e-004	4.6800e-004
tblVehicleEF	MCY	0.90	0.09
tblVehicleEF	MCY	0.67	3.56
tblVehicleEF	MCY	0.48	0.00
tblVehicleEF	MCY	2.71	1.24
tblVehicleEF	MCY	0.52	3.76
tblVehicleEF	MCY	2.09	1.42
tblVehicleEF	MDV	2.9890e-003	3.3070e-003
tblVehicleEF	MDV	0.06	0.09
tblVehicleEF	MDV	0.72	0.87
tblVehicleEF	MDV	2.79	3.62
tblVehicleEF	MDV	351.34	394.23
tblVehicleEF	MDV	74.92	100.26
tblVehicleEF	MDV	6.9960e-003	7.5830e-003
tblVehicleEF	MDV	0.03	0.04
tblVehicleEF	MDV	0.06	0.09
tblVehicleEF	MDV	0.26	0.38
tblVehicleEF	MDV	0.04	8.9720e-003
tblVehicleEF	MDV	1.3680e-003	1.3100e-003
tblVehicleEF	MDV	1.7330e-003	2.0690e-003
tblVehicleEF	MDV	0.02	3.1400e-003
tblVehicleEF	MDV	1.2620e-003	1.2070e-003
tblVehicleEF	MDV	1.5940e-003	1.9020e-003
tblVehicleEF	MDV	0.07	0.34
tblVehicleEF	MDV	0.12	0.09
tblVehicleEF	MDV	0.06	0.00
tblVehicleEF	MDV	0.01	0.01
tblVehicleEF	MDV	0.06	0.26
tblVehicleEF	MDV	0.31	0.45

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tblVehicleEF	MDV	3.4720e-003	3.8950e-003
tblVehicleEF	MDV	7.4100e-004	9.9100e-004
tblVehicleEF	MDV	0.07	0.34
tblVehicleEF	MDV	0.12	0.09
tblVehicleEF	MDV	0.06	0.00
tblVehicleEF	MDV	0.02	0.02
tblVehicleEF	MDV	0.06	0.26
tblVehicleEF	MDV	0.34	0.49
tblVehicleEF	MH	8.5740e-003	0.01
tblVehicleEF	MH	0.02	0.03
tblVehicleEF	MH	0.80	1.11
tblVehicleEF	MH	1.94	2.37
tblVehicleEF	MH	1,472.19	1,680.13
tblVehicleEF	MH	17.63	22.07
tblVehicleEF	MH	0.06	0.07
tblVehicleEF	MH	0.03	0.03
tblVehicleEF	MH	1.26	1.49
tblVehicleEF	MH	0.24	0.30
tblVehicleEF	MH	0.13	0.04
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	0.02	0.03
tblVehicleEF	MH	2.5000e-004	2.9600e-004
tblVehicleEF	MH	0.06	0.02
tblVehicleEF	MH	3.2830e-003	3.3090e-003
tblVehicleEF	MH	0.02	0.03
tblVehicleEF	MH	2.3000e-004	2.7200e-004
tblVehicleEF	MH	0.58	30.56
tblVehicleEF	MH	0.05	7.99
tblVehicleEF	MH	0.21	0.00

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tblVehicleEF	MH	0.06	0.08
tblVehicleEF	MH	0.01	0.19
tblVehicleEF	MH	0.09	0.11
tblVehicleEF	MH	0.01	0.02
tblVehicleEF	MH	1.7400e-004	2.1800e-004
tblVehicleEF	MH	0.58	30.56
tblVehicleEF	MH	0.05	7.99
tblVehicleEF	MH	0.21	0.00
tblVehicleEF	MH	0.08	0.10
tblVehicleEF	MH	0.01	0.19
tblVehicleEF	MH	0.10	0.12
tblVehicleEF	MHD	3.6170e-003	0.01
tblVehicleEF	MHD	1.5120e-003	9.5360e-003
tblVehicleEF	MHD	8.8700e-003	8.3140e-003
tblVehicleEF	MHD	0.39	0.67
tblVehicleEF	MHD	0.21	0.30
tblVehicleEF	MHD	1.02	1.00
tblVehicleEF	MHD	70.85	158.59
tblVehicleEF	MHD	1,065.91	1,213.65
tblVehicleEF	MHD	8.98	8.21
tblVehicleEF	MHD	0.01	0.02
tblVehicleEF	MHD	0.14	0.16
tblVehicleEF	MHD	7.2880e-003	5.8580e-003
tblVehicleEF	MHD	0.40	0.85
tblVehicleEF	MHD	1.45	1.01
tblVehicleEF	MHD	1.70	1.40
tblVehicleEF	MHD	3.2300e-004	1.7620e-003
tblVehicleEF	MHD	0.13	0.05
tblVehicleEF	MHD	7.0640e-003	0.01

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tblVehicleEF	MHD	1.1300e-004	1.0100e-004
tblVehicleEF	MHD	3.0900e-004	1.6850e-003
tblVehicleEF	MHD	0.06	0.02
tblVehicleEF	MHD	6.7520e-003	0.01
tblVehicleEF	MHD	1.0400e-004	9.3000e-005
tblVehicleEF	MHD	3.5500e-004	0.02
tblVehicleEF	MHD	0.02	5.6030e-003
tblVehicleEF	MHD	0.02	0.03
tblVehicleEF	MHD	1.8800e-004	0.00
tblVehicleEF	MHD	0.01	0.03
tblVehicleEF	MHD	0.02	0.05
tblVehicleEF	MHD	0.05	0.05
tblVehicleEF	MHD	6.7200e-004	1.4720e-003
tblVehicleEF	MHD	0.01	0.01
tblVehicleEF	MHD	8.9000e-005	8.1000e-005
tblVehicleEF	MHD	3.5500e-004	0.02
tblVehicleEF	MHD	0.02	5.6030e-003
tblVehicleEF	MHD	0.02	0.04
tblVehicleEF	MHD	1.8800e-004	0.00
tblVehicleEF	MHD	0.02	0.05
tblVehicleEF	MHD	0.02	0.05
tblVehicleEF	MHD	0.05	0.05
tblVehicleEF	OBUS	7.0670e-003	7.5140e-003
tblVehicleEF	OBUS	3.3170e-003	9.5930e-003
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.60	0.52
tblVehicleEF	OBUS	0.39	0.44
tblVehicleEF	OBUS	1.79	1.87
tblVehicleEF	OBUS	94.25	87.04

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tblVehicleEF	OBUS	1,303.83	1,366.10
tblVehicleEF	OBUS	14.82	14.86
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	0.13	0.16
tblVehicleEF	OBUS	0.02	0.01
tblVehicleEF	OBUS	0.39	0.36
tblVehicleEF	OBUS	1.46	0.97
tblVehicleEF	OBUS	1.10	0.99
tblVehicleEF	OBUS	1.2700e-004	4.0400e-004
tblVehicleEF	OBUS	0.13	0.05
tblVehicleEF	OBUS	7.4740e-003	0.02
tblVehicleEF	OBUS	1.4700e-004	1.3100e-004
tblVehicleEF	OBUS	1.2200e-004	3.8700e-004
tblVehicleEF	OBUS	0.06	0.02
tblVehicleEF	OBUS	7.1370e-003	0.01
tblVehicleEF	OBUS	1.3500e-004	1.2100e-004
tblVehicleEF	OBUS	1.0870e-003	0.07
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.05	0.04
tblVehicleEF	OBUS	4.8600e-004	0.00
tblVehicleEF	OBUS	0.02	0.04
tblVehicleEF	OBUS	0.04	0.08
tblVehicleEF	OBUS	0.09	0.09
tblVehicleEF	OBUS	8.9500e-004	8.2300e-004
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	1.0870e-003	0.07
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.06	0.05
tblVehicleEF	OBUS	4.8600e-004	0.00

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tblVehicleEF	OBUS	0.03	0.06
tblVehicleEF	OBUS	0.04	0.08
tblVehicleEF	OBUS	0.09	0.10
tblVehicleEF	SBUS	0.06	0.08
tblVehicleEF	SBUS	5.7290e-003	0.09
tblVehicleEF	SBUS	5.1560e-003	4.8980e-003
tblVehicleEF	SBUS	2.37	1.69
tblVehicleEF	SBUS	0.47	0.86
tblVehicleEF	SBUS	0.74	0.67
tblVehicleEF	SBUS	345.98	189.05
tblVehicleEF	SBUS	1,037.30	1,017.84
tblVehicleEF	SBUS	4.26	3.78
tblVehicleEF	SBUS	0.05	0.02
tblVehicleEF	SBUS	0.13	0.13
tblVehicleEF	SBUS	5.0100e-003	4.3540e-003
tblVehicleEF	SBUS	3.34	1.34
tblVehicleEF	SBUS	4.41	2.41
tblVehicleEF	SBUS	0.90	0.49
tblVehicleEF	SBUS	3.3290e-003	1.2090e-003
tblVehicleEF	SBUS	0.74	0.04
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	0.03	0.01
tblVehicleEF	SBUS	5.1000e-005	4.1000e-005
tblVehicleEF	SBUS	3.1850e-003	1.1550e-003
tblVehicleEF	SBUS	0.32	0.02
tblVehicleEF	SBUS	2.7110e-003	2.6430e-003
tblVehicleEF	SBUS	0.03	0.01
tblVehicleEF	SBUS	4.7000e-005	3.8000e-005
tblVehicleEF	SBUS	5.9800e-004	0.03

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tblVehicleEF	SBUS	5.7950e-003	7.7750e-003
tblVehicleEF	SBUS	0.26	0.19
tblVehicleEF	SBUS	2.6700e-004	0.00
tblVehicleEF	SBUS	0.08	0.05
tblVehicleEF	SBUS	0.01	0.02
tblVehicleEF	SBUS	0.03	0.03
tblVehicleEF	SBUS	3.2940e-003	1.7180e-003
tblVehicleEF	SBUS	9.9090e-003	9.4580e-003
tblVehicleEF	SBUS	4.2000e-005	3.7000e-005
tblVehicleEF	SBUS	5.9800e-004	0.03
tblVehicleEF	SBUS	5.7950e-003	7.7750e-003
tblVehicleEF	SBUS	0.38	0.30
tblVehicleEF	SBUS	2.6700e-004	0.00
tblVehicleEF	SBUS	0.09	0.15
tblVehicleEF	SBUS	0.01	0.02
tblVehicleEF	SBUS	0.03	0.03
tblVehicleEF	UBUS	1.66	0.50
tblVehicleEF	UBUS	1.6700e-003	3.7330e-003
tblVehicleEF	UBUS	12.57	5.88
tblVehicleEF	UBUS	0.14	0.52
tblVehicleEF	UBUS	1,657.49	1,082.15
tblVehicleEF	UBUS	1.39	3.18
tblVehicleEF	UBUS	0.28	0.17
tblVehicleEF	UBUS	1.1100e-003	6.1420e-003
tblVehicleEF	UBUS	0.71	0.30
tblVehicleEF	UBUS	0.01	0.04
tblVehicleEF	UBUS	0.07	0.12
tblVehicleEF	UBUS	0.03	0.04
tblVehicleEF	UBUS	5.2020e-003	5.6850e-003

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tblVehicleEF	UBUS	1.5000e-005	1.2000e-005
tblVehicleEF	UBUS	0.03	0.04
tblVehicleEF	UBUS	8.3320e-003	0.01
tblVehicleEF	UBUS	4.9760e-003	5.4350e-003
tblVehicleEF	UBUS	1.4000e-005	1.1000e-005
tblVehicleEF	UBUS	2.4000e-005	0.01
tblVehicleEF	UBUS	2.0100e-004	3.7860e-003
tblVehicleEF	UBUS	1.1000e-005	0.00
tblVehicleEF	UBUS	0.02	0.06
tblVehicleEF	UBUS	4.0000e-005	7.9870e-003
tblVehicleEF	UBUS	6.9810e-003	0.01
tblVehicleEF	UBUS	0.01	8.8540e-003
tblVehicleEF	UBUS	1.4000e-005	3.1000e-005
tblVehicleEF	UBUS	2.4000e-005	0.01
tblVehicleEF	UBUS	2.0100e-004	3.7860e-003
tblVehicleEF	UBUS	1.1000e-005	0.00
tblVehicleEF	UBUS	1.70	0.57
tblVehicleEF	UBUS	4.0000e-005	7.9870e-003
tblVehicleEF	UBUS	7.6430e-003	0.01
tblVehicleTrips	ST_TR	4.91	3.87
tblVehicleTrips	ST_TR	46.12	34.15
tblVehicleTrips	SU_TR	4.09	3.22
tblVehicleTrips	SU_TR	21.10	15.63
tblVehicleTrips	WD_TR	5.44	4.29
tblVehicleTrips	WD_TR	37.75	27.96
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00

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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
tblWoodstoves	NumberCatalytic	5.12	0.00
tblWoodstoves	NumberNoncatalytic	5.12	0.00
tblWoodstoves	WoodstoveDayYear	14.12	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	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					
2023	0.1205	1.1596	1.1164	2.0400e-003	0.2335	0.0542	0.2878	0.1135	0.0505	0.1640	0.0000	177.2962	177.2962	0.0492	0.0000	178.5257
2024	1.5870	1.5463	1.9321	3.1900e-003	0.0000	0.0714	0.0714	0.0000	0.0670	0.0670	0.0000	275.0429	275.0429	0.0676	0.0000	276.7329
Maximum	**1.5870**	**1.5463**	**1.9321**	**3.1900e-003**	**0.2335**	**0.0714**	**0.2878**	**0.1135**	**0.0670**	**0.1640**	**0.0000**	**275.0429**	**275.0429**	**0.0676**	**0.0000**	**276.7329**

Mitigated Construction

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.0365	0.7578	1.3211	2.0400e-003	0.0911	4.5800e-003	0.0957	0.0221	4.5800e-003	0.0267	0.0000	177.2960	177.2960	0.0492	0.0000	178.5255
2024	1.4784	1.3040	2.1554	3.1900e-003	0.0000	9.1900e-003	9.1900e-003	0.0000	9.1900e-003	9.1900e-003	0.0000	275.0426	275.0426	0.0676	0.0000	276.7325
Maximum	**1.4784**	**1.3040**	**2.1554**	**3.1900e-003**	**0.0911**	**9.1900e-003**	**0.0957**	**0.0221**	**9.1900e-003**	**0.0267**	**0.0000**	**275.0426**	**275.0426**	**0.0676**	**0.0000**	**276.7325**

	ROG	NOx	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	**11.28**	**23.80**	**-14.04**	**0.00**	**61.00**	**89.04**	**70.81**	**80.50**	**88.28**	**84.45**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**6-1-2023**	**8-31-2023**	0.7137	0.3815
2	**9-1-2023**	**11-30-2023**	0.3660	0.2761
3	**12-1-2023**	**2-29-2024**	0.4963	0.3720
4	**3-1-2024**	**5-31-2024**	0.7116	0.5947
5	**6-1-2024**	**8-31-2024**	1.9481	1.8278
6	**9-1-2024**	**9-30-2024**	0.1598	0.1226
		Highest	1.9481	1.8278

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					

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Area	0.9961	0.0219	1.9016	1.0000e-004		0.0106	0.0106		0.0106	0.0106	0.0000	3.1099	3.1099	2.9900e-003	0.0000	3.1846
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	186.8296	186.8296	0.0346	4.2000e-003	188.9466
Mobile	0.8479	0.5681	5.2138	0.0113	1.0613	8.0200e-003	1.0694	0.2647	7.4900e-003	0.2722	0.0000	1,046.4382	1,046.4382	0.0607	0.0509	1,063.1167
Waste						0.0000	0.0000		0.0000	0.0000	27.1440	0.0000	27.1440	1.6042	0.0000	67.2480
Water						0.0000	0.0000		0.0000	0.0000	6.2996	10.9453	17.2449	0.0237	0.0140	21.9934
Total	**1.8440**	**0.5900**	**7.1154**	**0.0114**	**1.0613**	**0.0186**	**1.0799**	**0.2647**	**0.0180**	**0.2827**	**33.4435**	**1,247.3230**	**1,280.7665**	**1.7262**	**0.0690**	**1,344.4893**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.9961	0.0219	1.9016	1.0000e-004		0.0106	0.0106		0.0106	0.0106	0.0000	3.1099	3.1099	2.9900e-003	0.0000	3.1846
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	186.8296	186.8296	0.0346	4.2000e-003	188.9466
Mobile	0.8479	0.5681	5.2138	0.0113	1.0613	8.0200e-003	1.0694	0.2647	7.4900e-003	0.2722	0.0000	1,046.4382	1,046.4382	0.0607	0.0509	1,063.1167
Waste						0.0000	0.0000		0.0000	0.0000	27.1440	0.0000	27.1440	1.6042	0.0000	67.2480
Water						0.0000	0.0000		0.0000	0.0000	6.2996	10.9453	17.2449	0.0237	0.0140	21.9934
Total	**1.8440**	**0.5900**	**7.1154**	**0.0114**	**1.0613**	**0.0186**	**1.0799**	**0.2647**	**0.0180**	**0.2827**	**33.4435**	**1,247.3230**	**1,280.7665**	**1.7262**	**0.0690**	**1,344.4893**

	ROG	NOx	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

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Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/1/2023	7/6/2023	5	26	
2	Site Preparation	Site Preparation	7/10/2023	7/28/2023	5	15	
3	Grading	Grading	8/1/2023	8/29/2023	5	21	
4	Trenching	Trenching	9/5/2023	10/3/2023	5	21	
5	Building Construction	Building Construction	10/4/2023	10/1/2024	5	260	
6	Paving	Paving	3/23/2024	5/20/2024	5	41	
7	Architectural Coating	Architectural Coating	6/1/2024	8/1/2024	5	44	

Acres of Grading (Site Preparation Phase): 22.5

Acres of Grading (Grading Phase): 21

Acres of Paving: 0

Residential Indoor: 379,240; Residential Outdoor: 126,413; Non-Residential Indoor: 22,805; Non-Residential Outdoor: 7,602; 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	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Site Preparation	Graders	0	0.00	187	0.41
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

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Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Trenching	Excavators	1	8.00	158	0.38
Trenching	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Cement and Mortar Mixers	0	0.00	9	0.56
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	2	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

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3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					9.7700e-003	0.0000	9.7700e-003	1.4800e-003	0.0000	1.4800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0295	0.2793	0.2554	5.0000e-004		0.0130	0.0130		0.0121	0.0121	0.0000	44.1897	44.1897	0.0124	0.0000	44.4991
Total	**0.0295**	**0.2793**	**0.2554**	**5.0000e-004**	**9.7700e-003**	**0.0130**	**0.0227**	**1.4800e-003**	**0.0121**	**0.0135**	**0.0000**	**44.1897**	**44.1897**	**0.0124**	**0.0000**	**44.4991**

Unmitigated Construction Off-Site

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

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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					3.8100e-003	0.0000	3.8100e-003	2.9000e-004	0.0000	2.9000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.5900e-003	0.1763	0.3208	5.0000e-004		8.0000e-004	8.0000e-004		8.0000e-004	8.0000e-004	0.0000	44.1896	44.1896	0.0124	0.0000	44.4990
Total	**7.5900e-003**	**0.1763**	**0.3208**	**5.0000e-004**	**3.8100e-003**	**8.0000e-004**	**4.6100e-003**	**2.9000e-004**	**8.0000e-004**	**1.0900e-003**	**0.0000**	**44.1896**	**44.1896**	**0.0124**	**0.0000**	**44.4990**

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

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

3.3 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1474	0.0000	0.1474	0.0758	0.0000	0.0758	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0200	0.2064	0.1368	2.9000e-004		9.5000e-003	9.5000e-003		8.7400e-003	8.7400e-003	0.0000	25.0880	25.0880	8.1100e-003	0.0000	25.2909
Total	**0.0200**	**0.2064**	**0.1368**	**2.9000e-004**	**0.1474**	**9.5000e-003**	**0.1569**	**0.0758**	**8.7400e-003**	**0.0845**	**0.0000**	**25.0880**	**25.0880**	**8.1100e-003**	**0.0000**	**25.2909**

Unmitigated Construction Off-Site

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

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

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0575	0.0000	0.0575	0.0148	0.0000	0.0148	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.2300e-003	0.0912	0.1722	2.9000e-004		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004	0.0000	25.0880	25.0880	8.1100e-003	0.0000	25.2908
Total	**5.2300e-003**	**0.0912**	**0.1722**	**2.9000e-004**	**0.0575**	**4.7000e-004**	**0.0580**	**0.0148**	**4.7000e-004**	**0.0152**	**0.0000**	**25.0880**	**25.0880**	**8.1100e-003**	**0.0000**	**25.2908**

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

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

3.4 Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0763	0.0000	0.0763	0.0363	0.0000	0.0363	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0180	0.1883	0.1549	3.1000e-004		8.1400e-003	8.1400e-003		7.4900e-003	7.4900e-003	0.0000	27.3636	27.3636	8.8500e-003	0.0000	27.5849
Total	**0.0180**	**0.1883**	**0.1549**	**3.1000e-004**	**0.0763**	**8.1400e-003**	**0.0845**	**0.0363**	**7.4900e-003**	**0.0438**	**0.0000**	**27.3636**	**27.3636**	**8.8500e-003**	**0.0000**	**27.5849**

Unmitigated Construction Off-Site

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

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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					0.0298	0.0000	0.0298	7.0700e-003	0.0000	7.0700e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.4600e-003	0.1085	0.1994	3.1000e-004		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004	0.0000	27.3636	27.3636	8.8500e-003	0.0000	27.5849
Total	**5.4600e-003**	**0.1085**	**0.1994**	**3.1000e-004**	**0.0298**	**5.1000e-004**	**0.0303**	**7.0700e-003**	**5.1000e-004**	**7.5800e-003**	**0.0000**	**27.3636**	**27.3636**	**8.8500e-003**	**0.0000**	**27.5849**

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

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

3.5 Trenching - 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	3.5700e-003	0.0324	0.0576	9.0000e-005		1.5900e-003	1.5900e-003		1.4600e-003	1.4600e-003	0.0000	7.6364	7.6364	2.4700e-003	0.0000	7.6981
Total	**3.5700e-003**	**0.0324**	**0.0576**	**9.0000e-005**		**1.5900e-003**	**1.5900e-003**		**1.4600e-003**	**1.4600e-003**	**0.0000**	**7.6364**	**7.6364**	**2.4700e-003**	**0.0000**	**7.6981**

Unmitigated Construction Off-Site

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

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.4000e-003	0.0381	0.0657	9.0000e-005		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004	0.0000	7.6364	7.6364	2.4700e-003	0.0000	7.6981
Total	**1.4000e-003**	**0.0381**	**0.0657**	**9.0000e-005**		**1.4000e-004**	**1.4000e-004**		**1.4000e-004**	**1.4000e-004**	**0.0000**	**7.6364**	**7.6364**	**2.4700e-003**	**0.0000**	**7.6981**

Mitigated Construction Off-Site

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

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Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.6 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0495	0.4531	0.5117	8.5000e-004		0.0220	0.0220		0.0207	0.0207	0.0000	73.0185	73.0185	0.0174	0.0000	73.4527
Total	**0.0495**	**0.4531**	**0.5117**	**8.5000e-004**		**0.0220**	**0.0220**		**0.0207**	**0.0207**	**0.0000**	**73.0185**	**73.0185**	**0.0174**	**0.0000**	**73.4527**

Unmitigated Construction Off-Site

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

Date: 9/28/2022 9:45 AM

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Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0168	0.3437	0.5630	8.5000e-004		2.6600e-003	2.6600e-003		2.6600e-003	2.6600e-003	0.0000	73.0184	73.0184	0.0174	0.0000	73.4527
Total	**0.0168**	**0.3437**	**0.5630**	**8.5000e-004**		**2.6600e-003**	**2.6600e-003**		**2.6600e-003**	**2.6600e-003**	**0.0000**	**73.0184**	**73.0184**	**0.0174**	**0.0000**	**73.4527**

Mitigated Construction Off-Site

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

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3.6 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1450	1.3242	1.5924	2.6500e-003		0.0604	0.0604		0.0568	0.0568	0.0000	228.3714	228.3714	0.0540	0.0000	229.7215
Total	**0.1450**	**1.3242**	**1.5924**	**2.6500e-003**		**0.0604**	**0.0604**		**0.0568**	**0.0568**	**0.0000**	**228.3714**	**228.3714**	**0.0540**	**0.0000**	**229.7215**

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

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	ROG	NOx	CO	SO2	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	0.0526	1.0749	1.7606	2.6500e-003		8.3300e-003	8.3300e-003		8.3300e-003	8.3300e-003	0.0000	228.3711	228.3711	0.0540	0.0000	229.7212
Total	**0.0526**	**1.0749**	**1.7606**	**2.6500e-003**		**8.3300e-003**	**8.3300e-003**		**8.3300e-003**	**8.3300e-003**	**0.0000**	**228.3711**	**228.3711**	**0.0540**	**0.0000**	**229.7212**

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 - 2024

Unmitigated Construction On-Site

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0203	0.1953	0.2998	4.7000e-004		9.6000e-003	9.6000e-003		8.8400e-003	8.8400e-003	0.0000	41.0544	41.0544	0.0133	0.0000	41.3863
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0203**	**0.1953**	**0.2998**	**4.7000e-004**		**9.6000e-003**	**9.6000e-003**		**8.8400e-003**	**8.8400e-003**	**0.0000**	**41.0544**	**41.0544**	**0.0133**	**0.0000**	**41.3863**

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

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.8500e-003	0.2058	0.3546	4.7000e-004		7.7000e-004	7.7000e-004		7.7000e-004	7.7000e-004	0.0000	41.0543	41.0543	0.0133	0.0000	41.3863
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**6.8500e-003**	**0.2058**	**0.3546**	**4.7000e-004**		**7.7000e-004**	**7.7000e-004**		**7.7000e-004**	**7.7000e-004**	**0.0000**	**41.0543**	**41.0543**	**0.0133**	**0.0000**	**41.3863**

Mitigated Construction Off-Site

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

3.8 Architectural Coating - 2024

Unmitigated Construction On-Site

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	ROG	NOx	CO	SO2	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	1.4178					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.9800e-003	0.0268	0.0398	7.0000e-005		1.3400e-003	1.3400e-003		1.3400e-003	1.3400e-003	0.0000	5.6172	5.6172	3.2000e-004	0.0000	5.6251
Total	**1.4218**	**0.0268**	**0.0398**	**7.0000e-005**		**1.3400e-003**	**1.3400e-003**		**1.3400e-003**	**1.3400e-003**	**0.0000**	**5.6172**	**5.6172**	**3.2000e-004**	**0.0000**	**5.6251**

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

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.4178					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2000e-003	0.0233	0.0403	7.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	5.6172	5.6172	3.2000e-004	0.0000	5.6251
Total	**1.4190**	**0.0233**	**0.0403**	**7.0000e-005**		**9.0000e-005**	**9.0000e-005**		**9.0000e-005**	**9.0000e-005**	**0.0000**	**5.6172**	**5.6172**	**3.2000e-004**	**0.0000**	**5.6251**

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

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	ROG	NOx	CO	SO2	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	0.8479	0.5681	5.2138	0.0113	1.0613	8.0200e-003	1.0694	0.2647	7.4900e-003	0.2722	0.0000	1,046.4382	1,046.4382	0.0607	0.0509	1,063.1167
Unmitigated	0.8479	0.5681	5.2138	0.0113	1.0613	8.0200e-003	1.0694	0.2647	7.4900e-003	0.2722	0.0000	1,046.4382	1,046.4382	0.0607	0.0509	1,063.1167

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,098.24	990.72	824.32	2,410,649	2,410,649
Enclosed Parking with Elevator	0.00	0.00	0.00		
Regional Shopping Center	424.99	519.08	237.58	721,764	721,764
Total	1,523.23	1,509.80	1,061.90	3,132,414	3,132,414

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
Apartments Mid Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Enclosed Parking with Elevator	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.528224	0.040364	0.230108	0.128589	0.023276	0.005740	0.009425	0.007440	0.001057	0.000413	0.022096	0.000684	0.002585
Enclosed Parking with Elevator	0.528224	0.040364	0.230108	0.128589	0.023276	0.005740	0.009425	0.007440	0.001057	0.000413	0.022096	0.000684	0.002585

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Regional Shopping Center	0.528224	0.040364	0.230108	0.128589	0.023276	0.005740	0.009425	0.007440	0.001057	0.000413	0.022096	0.000684	0.002585

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	186.8296	186.8296	0.0346	4.2000e-003	188.9466
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	186.8296	186.8296	0.0346	4.2000e-003	188.9466
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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					

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Apartments Mid Rise	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
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
Regional Shopping Center	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**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

	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					
Apartments Mid Rise	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
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
Regional Shopping Center	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e

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Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	1.61865e+006	130.6891	0.0242	2.9400e-003	132.1700
Enclosed Parking with Elevator	526880	42.5400	7.8900e-003	9.6000e-004	43.0221
Regional Shopping Center	168449	13.6005	2.5200e-003	3.1000e-004	13.7546
Total		**186.8296**	**0.0346**	**4.2100e-003**	**188.9466**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	1.61865e+006	130.6891	0.0242	2.9400e-003	132.1700
Enclosed Parking with Elevator	526880	42.5400	7.8900e-003	9.6000e-004	43.0221
Regional Shopping Center	168449	13.6005	2.5200e-003	3.1000e-004	13.7546
Total		**186.8296**	**0.0346**	**4.2100e-003**	**188.9466**

6.0 Area Detail

6.1 Mitigation Measures Area

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.9961	0.0219	1.9016	1.0000e-004		0.0106	0.0106		0.0106	0.0106	0.0000	3.1099	3.1099	2.9900e-003	0.0000	3.1846
Unmitigated	0.9961	0.0219	1.9016	1.0000e-004		0.0106	0.0106		0.0106	0.0106	0.0000	3.1099	3.1099	2.9900e-003	0.0000	3.1846

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	0.1418					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7971					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0573	0.0219	1.9016	1.0000e-004		0.0106	0.0106		0.0106	0.0106	0.0000	3.1099	3.1099	2.9900e-003	0.0000	3.1846
Total	**0.9961**	**0.0219**	**1.9016**	**1.0000e-004**		**0.0106**	**0.0106**		**0.0106**	**0.0106**	**0.0000**	**3.1099**	**3.1099**	**2.9900e-003**	**0.0000**	**3.1846**

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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	0.1418					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7971					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0573	0.0219	1.9016	1.0000e-004		0.0106	0.0106		0.0106	0.0106	0.0000	3.1099	3.1099	2.9900e-003	0.0000	3.1846
Total	**0.9961**	**0.0219**	**1.9016**	**1.0000e-004**		**0.0106**	**0.0106**		**0.0106**	**0.0106**	**0.0000**	**3.1099**	**3.1099**	**2.9900e-003**	**0.0000**	**3.1846**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	17.2449	0.0237	0.0140	21.9934
Unmitigated	17.2449	0.0237	0.0140	21.9934

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

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	16.6794 / 10.5153	16.1596	0.0222	0.0131	20.6080
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	1.1259 / 0.690069	1.0852	1.5000e-003	8.8000e-004	1.3855
Total		**17.2449**	**0.0237**	**0.0139**	**21.9934**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	16.6794 / 10.5153	16.1596	0.0222	0.0131	20.6080
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	1.1259 / 0.690069	1.0852	1.5000e-003	8.8000e-004	1.3855

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

Total	**17.2449**	**0.0237**	**0.0139**	**21.9934**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	27.1440	1.6042	0.0000	67.2480
Unmitigated	27.1440	1.6042	0.0000	67.2480

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	117.76	23.9042	1.4127	0.0000	59.2217
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000

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

Regional Shopping Center	15.96	3.2397	0.1915	0.0000	8.0263
Total		**27.1440**	**1.6042**	**0.0000**	**67.2480**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	117.76	23.9042	1.4127	0.0000	59.2217
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	15.96	3.2397	0.1915	0.0000	8.0263
Total		**27.1440**	**1.6042**	**0.0000**	**67.2480**

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

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Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Attachment 3: EMFAC2021 Calculations

Summary of Construction Traffic Emissions (EMFAC2021)

Pollutants YEAR	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	NBio- CO2	CH4	N2O	CO2e
					Tons							*Metric Tons*		
Criteria Pollutants														
2023	0.0465	0.2691	0.5510	0.0025	0.1290	0.0187	0.1477	0.0194	0.0078	0.0272	238.6673	0.0143	0.0258	246.7082
2024	0.0560	0.3299	0.6636	0.0031	0.1657	0.0239	0.1897	0.0249	0.0098	0.0348	301.0152	0.0176	0.0325	311.1296
Toxic Air Contaminants (0.5 Mile Trip Length)														
2023	0.039265	0.074866	0.180511	0.000196	0.006077	0.000976	0.007052	0.000914	0.000451	0.001366	19.1105506	0.004394	0.003082	20.138713
2024	0.047715	0.094213	0.219714	0.000246	0.007809	0.00124	0.009049	0.001175	0.000567	0.001742	24.0763577	0.005412	0.003866	25.3637423

CalEEMod Construction Inputs

Phase	CalEEMod WORKER TRIPS	CalEEMod VENDOR TRIPS	Total Worker Trips	Total Vendor Trips	CalEEMod HAULING TRIPS	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class	*Worker VMT*	*Vendor VMT*	*Hauling VMT*
Demolition	15	0	390	0	148	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	4212	0	2960
Site Preparation	18	0	270	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	2916	0	0
Grading	15	0	315	0	4,312	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	3402	0	86240
Trenching	5	0	105	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	1134	0	0
Building Construction	230	46	59800	11960	4320	10.8	7.3	7.3	LD_Mix	HDT_Mix	HHDT	645840	87308	31536
Paving	15	0	615	0	4	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	6642	0	80
Architectural Coating	46	0	2024	0	0	10.8	7.3	7.3	LD_Mix	HDT_Mix	HHDT	21859.2	0	0

Number of Days Per Year					
2023	6/1/23	12/31/23	214	153	
2024	1/1/24	10/1/24	275	197	
			489	**350**	***Total Workdays***

Phase	Start Date	End Date	Days/Week	Workdays
Demolition	6/1/2023	7/6/2023	5	26
Site Preparation	7/10/2023	7/28/2023	5	15
Grading	8/1/2023	8/29/2023	5	21
Trenching	9/5/2023	10/3/2023	5	21
Building Construction	10/4/2023	10/1/2024	5	260
Paving	3/23/2024	5/20/2024	5	41
Architectural Coating	6/1/2024	8/1/2024	5	44

Source: EMFAC2021 (v1.0.2) Emission Rates
Region Type: County
Region: Santa Clara
Calendar Year: 2023
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for CVMT and EVMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HOTSOAK and RUNLOSS, g/vehicle/day for IDLEX and DIURN. PHEV calculated based on total VMT.

Region	Calendar Y	Vehicle Cat	Model Yea	Speed	Fuel	Population	Total VMT	CVMT	EVMT	Trips	NOx_RUNEX	NOx_IDLEX	NOx_STREX	PM2.5_RU	PM2.5_IDL	PM2.5_STR	PM2.5_PM	PM2.5_PM	PM10_RUI	PM10_IDL	PM10_STR	PM10_PM	PM10_PM	CO2_RUNEX	CO2_IDLEX	CO2_STREX	CH4_RUNEX	CH4_IDLEX	CH4_STREX	N2O_RUNEX	N2O_IDLEX	N2O_STREX	ROG_RUNEX	ROG_IDLEX	ROG_STREX	ROG_HOTS	ROG_RUNL	ROG_DIUR	TOG_RUNEX	TOG_IDLEX	TOG_STREX	TOG_HOTS	TOG_RUNL	TOG_DIUR	NH3_RUNEX	CO_RUNEX	CO_IDLEX	CO_STREX	SOx_RUNE	SOx_IDLEX	SOx_STREX
Santa Clara	2023	HHDT	Aggregate	Aggregate	Gasoline	3.454009	114.3093	114.3093	0	69.10781	8.107874	0	1.602501	0.00493	0	0.0017	0.005	0.035266	0.005362	0	0.001849	0.02	0.100759	2306.817	0	49.81185	0.340225	0	0.00018	0.208909	0	0.045697	2.104867	0	0.000979	0.158374	1.426645	10.65375	3.071416	0	0.001072	0.158374	1.426645	10.65375	0.040468	83.0074	0	1.02738	0.022805	0	0.000492
Santa Clara	2023	HHDT	Aggregate	Aggregate	Diesel	8235.059	991289	991289	0	120860.8	1.969368	63.40488	2.849455	0.025957	0.031631	0	0.008769	0.027531	0.027131	0.033061	0	0.035077	0.078661	1656.801	12241.32	0	0.000809	0.237446	0	0.26103	1.928625	0	0.017417	5.112156	0	0	0	0	0.019828	5.819801	0	0	0	0	0.214624	0.087393	74.20136	0	0.015689	0.115918	0
Santa Clara	2023	HHDT	Aggregate	Aggregate	Electricity	6.70171	411.5054	0	411.5054	103.2044	0	0	0	0	0	0	0	0	0	0	0	0.03496	0.038238	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2023	HHDT	Aggregate	Aggregate	Natural Ga	753.7366	53295.97	53295.97	0	6914.034	1.208444	13.92832	0	0.001774	0.024237	0	0.009	0.046729	0.001929	0.02636	0	0.036	0.133512	1398.51	10630.2	0	2.44811	37.44665	0	0.285095	2.167036	0	0.054572	0.572265	0	0	0	0	2.520799	38.25947	0	0	0	0	0.860105	13.78246	74.03965	0	0	0	0
Santa Clara	2023	LDA	Aggregate	Aggregate	Gasoline	601938.3	22370251	22370251	0	2795479	0.047412	0	0.27189	0.001217	0	0.001992	0.002	0.002656	0.001323	0	0.002167	0.008	0.007588	281.43	0	71.66478	0.002603	0	0.076449	0.004995	0	0.034134	0.01016	0	0.353794	0.094758	0.240611	1.480552	0.014823	0	0.387359	0.094758	0.240611	1.480552	0.033781	0.787617	0	3.436611	0.002782	0	0.000708
Santa Clara	2023	LDA	Aggregate	Aggregate	Diesel	1871.125	56220.8	56220.8	0	8000.531	0.238318	0	0	0.018559	0	0	0.002	0.002698	0.019399	0	0	0.008	0.007709	234.426	0	0	0.001413	0	0	0.036934	0	0	0.030417	0	0	0	0	0	0.034627	0	0	0	0	0	0.0031	0.342459	0	0	0.002221	0	0
Santa Clara	2023	LDA	Aggregate	Aggregate	Electricity	53751.15	2268185	0	2268185	265250.1	0	0	0	0	0	0	0.002	0.001532	0	0	0	0.008	0.004377	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2023	LDA	Aggregate	Aggregate	Plug-in Hyb	15805.32	700610.9	356649.7	343961.3	65355	0.00334	0	0.11551	0.000664	0	0.002171	0.002	0.001373	0.000722	0	0.002361	0.008	0.003922	142.1102	0	66.08871	0.000457	0	0.042604	0.000605	0	0.020916	0.001444	0	0.173285	0.040642	0.036088	0.447056	0.002108	0	0.189725	0.040642	0.036088	0.447056	0.019705	0.219913	0	1.339893	0.001405	0	0.000653
Santa Clara	2023	LDT1	Aggregate	Aggregate	Gasoline	53782.25	1744480	1744480	0	239737.9	0.143293	0	0.404336	0.00185	0	0.002837	0.002	0.003239	0.002012	0	0.003085	0.008	0.009253	332.6535	0	88.31133	0.006987	0	0.112557	0.010257	0	0.039834	0.031222	0	0.583212	0.174145	0.503091	2.807011	0.045546	0	0.638542	0.174145	0.503091	2.807011	0.035775	1.553409	0	5.660037	0.003289	0	0.000873
Santa Clara	2023	LDT1	Aggregate	Aggregate	Diesel	26.04714	391.8698	391.8698	0	75.17737	1.659056	0	0	0.24041	0	0	0.002	0.003728	0.25128	0	0	0.008	0.010651	415.548	0	0	0.013928	0	0	0.06547	0	0	0.299852	0	0	0	0	0	0.341362	0	0	0	0	0	0.0031	1.601395	0	0	0.003938	0	0
Santa Clara	2023	LDT1	Aggregate	Aggregate	Electricity	194.8941	7068.184	0	7068.184	916.4832	0	0	0	0	0	0	0.002	0.00154	0	0	0	0.008	0.0044	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2023	LDT1	Aggregate	Aggregate	Plug-in Hyb	43.27677	2048.369	944.1579	1104.211	178.9495	0.003025	0	0.11551	0.000387	0	0.00141	0.002	0.001383	0.000421	0	0.001534	0.008	0.003951	128.7649	0	70.86641	0.000412	0	0.042439	0.000544	0	0.020762	0.001308	0	0.173285	0.024584	0.021781	0.285922	0.001909	0	0.189725	0.024584	0.021781	0.285922	0.019359	0.199575	0	1.339893	0.001273	0	0.000701
Santa Clara	2023	LDT2	Aggregate	Aggregate	Gasoline	280180.4	10140967	10140967	0	1311796	0.077207	0	0.358346	0.001265	0	0.002003	0.002	0.003125	0.001375	0	0.002179	0.008	0.008929	348.3961	0	89.54446	0.003121	0	0.087759	0.006381	0	0.038646	0.012417	0	0.410727	0.085119	0.224187	1.404898	0.018118	0	0.449694	0.085119	0.224187	1.404898	0.035545	0.896823	0	3.892097	0.003444	0	0.000885
Santa Clara	2023	LDT2	Aggregate	Aggregate	Diesel	978.4967	36936.87	36936.87	0	4673.401	0.046157	0	0	0.005431	0	0	0.002	0.003102	0.005677	0	0	0.008	0.008863	313.0666	0	0	0.00065	0	0	0.049324	0	0	0.013984	0	0	0	0	0	0.015919	0	0	0	0	0	0.0031	0.132099	0	0	0.002966	0	0
Santa Clara	2023	LDT2	Aggregate	Aggregate	Electricity	1105.879	38931.7	0	38931.7	5663.051	0	0	0	0	0	0	0.002	0.001525	0	0	0	0.008	0.004357	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2023	LDT2	Aggregate	Aggregate	Plug-in Hyb	1696.55	77270.66	37142.68	40127.98	7015.234	0.003154	0	0.11551	0.000504	0	0.001759	0.002	0.001378	0.000548	0	0.001913	0.008	0.003938	134.2545	0	77.03601	0.000429	0	0.042457	0.000568	0	0.020778	0.001364	0	0.173285	0.02624	0.024448	0.318232	0.00199	0	0.189725	0.02624	0.024448	0.318232	0.020144	0.207985	0	1.339893	0.001327	0	0.000762
Santa Clara	2023	LHDT1	Aggregate	Aggregate	Gasoline	19180.96	711085.5	711085.5	0	285767.8	0.197814	0.037373	0.6588	0.001595	0	0.000328	0.002	0.0273	0.001734	0	0.000356	0.008	0.078	889.7424	120.2664	25.83956	0.009485	0.115635	0.034516	0.011082	0.003012	0.051891	0.047656	0.428153	0.172233	0.050564	0.277601	2.913784	0.069539	0.62476	0.188574	0.050564	0.277601	2.913784	0.044872	1.225109	3.753425	3.080251	0.008796	0.001189	0.000255
Santa Clara	2023	LHDT1	Aggregate	Aggregate	Diesel	9807.465	384084.8	384084.8	0	123365.6	1.780633	2.029274	0	0.038253	0.026974	0	0.003	0.0273	0.039983	0.028193	0	0.012	0.078	635.427	132.908	0	0.008623	0.005098	0	0.100112	0.02094	0	0.185652	0.10976	0	0	0	0	0.211352	0.124954	0	0	0	0	0.16551	0.518876	0.909745	0	0.006021	0.001259	0
Santa Clara	2023	LHDT2	Aggregate	Aggregate	Gasoline	2494.382	90793.04	90793.04	0	37162.58	0.187016	0.036817	0.642061	0.001446	0	0.00026	0.002	0.03185	0.001572	0	0.000283	0.008	0.091	997.3845	138.7974	25.72325	0.007074	0.114568	0.033461	0.01097	0.002967	0.050452	0.033047	0.42203	0.165607	0.046993	0.25097	2.676301	0.048222	0.613826	0.181319	0.046993	0.25097	2.676301	0.044967	0.961891	3.759407	3.119312	0.00986	0.001372	0.000254
Santa Clara	2023	LHDT2	Aggregate	Aggregate	Diesel	4479.532	176769.2	176769.2	0	56346.87	1.416942	1.998258	0	0.034177	0.027026	0	0.003	0.03185	0.035723	0.028248	0	0.012	0.091	764.5039	212.1206	0	0.007824	0.005098	0	0.120448	0.03342	0	0.168448	0.10976	0	0	0	0	0.191767	0.124954	0	0	0	0	0.178982	0.44054	0.909745	0	0.007244	0.00201	0
Santa Clara	2023	MCY	Aggregate	Aggregate	Gasoline	27894.5	164894.5	164894.5	0	55788.99	0.586927	0	0.142374	0.001778	0	0.003413	0.001	0.0042	0.001899	0	0.003626	0.004	0.012	188.3093	0	49.59811	0.167622	0	0.187482	0.040223	0	0.008379	1.105923	0	1.392636	3.5601	3.745685	3.947874	1.324135	0	1.513873	3.5601	3.745685	3.947874	0.00876	13.08956	0	8.051197	0.001862	0	0.00049
Santa Clara	2023	MDV	Aggregate	Aggregate	Gasoline	153799.1	5358084	5358084	0	712433.9	0.11759	0	0.470106	0.001289	0	0.002144	0.002	0.003187	0.001402	0	0.002331	0.008	0.009106	422.6791	0	109.0331	0.004406	0	0.110292	0.008479	0	0.043081	0.018826	0	0.559259	0.101975	0.285798	1.72733	0.02744	0	0.612315	0.101975	0.285798	1.72733	0.035428	1.067328	0	4.333252	0.004179	0	0.001078
Santa Clara	2023	MDV	Aggregate	Aggregate	Diesel	2374.918	86834.44	86834.44	0	11267.05	0.053096	0	0	0.00515	0	0	0.002	0.003181	0.005383	0	0	0.008	0.00909	411.1632	0	0	0.000529	0	0	0.064779	0	0	0.011397	0	0	0	0	0	0.012975	0	0	0	0	0	0.0031	0.202592	0	0	0.003896	0	0
Santa Clara	2023	MDV	Aggregate	Aggregate	Electricity	1130.115	40073.7	0	40073.7	5799.833	0	0	0	0	0	0	0.002	0.001524	0	0	0	0.008	0.004354	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2023	MDV	Aggregate	Aggregate	Plug-in Hyb	986.0895	41899.14	20787.35	21111.79	4077.48	0.003256	0	0.11551	0.000638	0	0.002151	0.002	0.001376	0.000693	0	0.002339	0.008	0.00393	138.532	0	96.68489	0.000441	0	0.042261	0.000581	0	0.020595	0.001408	0	0.173285	0.02985	0.028058	0.359617	0.002054	0	0.189725	0.02985	0.028058	0.359617	0.020837	0.214483	0	1.339893	0.00137	0	0.000956
Santa Clara	2023	MH	Aggregate	Aggregate	Gasoline	2522.745	22546.87	22546.87	0	252.3754	0.479133	0	0.412521	0.001781	0	0.000428	0.003	0.015756	0.001937	0	0.000466	0.012	0.045017	1948.243	0	31.87585	0.018146	0	0.038028	0.02809	0	0.042647	0.082252	0	0.163779	13.03985	0.30297	4.773625	0.120022	0	0.179318	13.03985	0.30297	4.773625	0.044742	2.111943	0	3.629376	0.01926	0	0.000315
Santa Clara	2023	MH	Aggregate	Aggregate	Diesel	959.1578	9344.849	9344.849	0	95.91578	4.269554	0	0	0.097907	0	0	0.004	0.015675	0.102334	0	0	0.016	0.044785	1081.435	0	0	0.005704	0	0	0.17038	0	0	0.122812	0	0	0	0	0	0.139813	0	0	0	0	0	0.150005	0.410284	0	0	0.010247	0	0
Santa Clara	2023	MHDT	Aggregate	Aggregate	Gasoline	1418.703	70785.86	70785.86	0	28385.41	0.562864	0.088304	0.453053	0.001386	0	0.000555	0.003	0.015756	0.001507	0	0.000603	0.012	0.045017	1792.411	536.9661	47.19918	0.018074	0.254589	0.049387	0.026381	0.007064	0.032566	0.09086	1.010025	0.279571	0.037187	0.302385	3.037923	0.132583	1.473826	0.306095	0.037187	0.302385	3.037923	0.04497	1.909686	15.08517	6.156285	0.01772	0.005308	0.000467
Santa Clara	2023	MHDT	Aggregate	Aggregate	Diesel	10273.55	431550.4	431550.4	0	122418.2	1.337342	13.57242	1.624162	0.016518	0.035742	0	0.003	0.015941	0.017265	0.037358	0	0.012	0.045546	1151.562	2263.789	0	0.001721	0.012298	0	0.181429	0.356661	0	0.037048	0.26478	0	0	0	0	0.042176	0.301431	0	0	0	0	0.209014	0.132571	7.583386	0	0.010905	0.021437	0
Santa Clara	2023	MHDT	Aggregate	Aggregate	Electricity	4.749835	101.8022	0	101.8022	59.6458	0	0	0	0	0	0	0.003	0.00799	0	0	0	0.012	0.022828	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2023	MHDT	Aggregate	Aggregate	Natural Ga	83.841	4047.874	4047.874	0	762.81	0.141319	6.52743	0	0.001137	0.017647	0	0.003	0.016002	0.001236	0.019193	0	0.012	0.045721	989.385	5296.533	0	0.740055	17.59163	0	0.201693	1.079733	0	0.010574	0.25135	0	0	0	0	0.755281	17.95355	0	0	0	0	1.06	2.992708	33.64344	0	0	0	0
Santa Clara	2023	OBUS	Aggregate	Aggregate	Gasoline	458.8974	20830.08	20830.08	0	9181.619	0.553081	0.064991	0.405616	0.000893	0	0.000264	0.003	0.01568	0.000972	0	0.000287	0.012	0.044799	1784.092	381.8461	31.89445	0.015808	0.194938	0.036281	0.026177	0.005253	0.030766	0.078109	0.745234	0.192301	0.034706	0.154035	2.766253	0.113977	1.087444	0.210546	0.034706	0.154035	2.766253	0.044918	1.743956	5.768375	4.071703	0.017638	0.003775	0.000315
Santa Clara	2023	OBUS	Aggregate	Aggregate	Diesel	870.4209	61645.66	61645.66	0	8910.755	1.203188	7.410097	1.541404	0.020323	0.008632	0	0.003	0.018018	0.021242	0.009022	0	0.012	0.05148	1282.538	1552.949	0	0.001991	0.020568	0	0.202064	0.244668	0	0.04286	0.442828	0	0	0	0	0.048793	0.504126	0	0	0	0	0.215865	0.153454	7.510858	0	0.012145	0.014706	0
Santa Clara	2023	OBUS	Aggregate	Aggregate	Natural Ga	6.1456	409.5466	409.5466	0	54.69584	0.219315	1.549107	0	0.000923	0.00362	0	0.003	0.016148	0.001004	0.003937	0	0.012	0.046137	1017.405	1188.285	0	0.774069	4.381267	0	0.207405	0.24224	0	0.01106	0.0626	0	0	0	0	0.789994	4.471404	0	0	0	0	1.06	3.211954	6.724204	0	0	0	0
Santa Clara	2023	SBUS	Aggregate	Aggregate	Gasoline	166.9867	8309.308	8309.308	0	667.9468	0.519317	0.925703	0.7051	0.000862	0	0.00056	0.002	0.015721	0.000937	0	0.000609	0.008	0.044917	815.0909	2602.033	58.66947	0.011871	2.46208	0.074918	0.027733	0.086224	0.064904	0.057744	10.62943	0.427061	0.112221	0.259299	1.591441	0.084259	15.51043	0.467578	0.112221	0.259299	1.591441	0.045	1.469507	82.16746	10.56434	0.008058	0.025724	0.00058
Santa Clara	2023	SBUS	Aggregate	Aggregate	Diesel	667.1185	15392.68	15392.68	0	9659.876	4.028015	22.39863	0.467155	0.020908	0.02125	0	0.003	0.015721	0.021853	0.022211	0	0.012	0.044917	1148.524	2237.814	0	0.002748	0.008083	0	0.18095	0.352568	0	0.059161	0.174017	0	0	0	0	0.06735	0.198106	0	0	0	0	0.144154	0.181489	4.581854	0	0.010876	0.021191	0
Santa Clara	2023	SBUS	Aggregate	Aggregate	Electricity	0.302373	3.510494	0	3.510494	4.378365	0	0	0	0	0	0	0.003	0.00786	0	0	0	0.012	0.022459	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2023	SBUS	Aggregate	Aggregate	Natural Ga	23.50762	595.8705	595.8705	0	340.3903	0.587321	5.282702	0	0.003378	0.011076	0	0.003	0.015721	0.003674	0.012046	0	0.012	0.044917	1271.127	4058.811	0	3.490611	15.40242	0	0.259128	0.827415	0	0.049874	0.22007	0	0	0	0	0.362424	15.7193	0	0	0	0	1.06	11.90284	20.11199	0	0	0	0
Santa Clara	2023	UBUS	Aggregate	Aggregate	Gasoline	45.94709	4798.244	4798.244	0	183.7884	0.026807	0	0.443444	0.001143	0	0.000128	0.002	0.03185	0.001243	0	0.00014	0.008	0.091	926.2924	0	36.84613	0.002031	0	0.041715	0.004215	0	0.070149	0.005614	0	0.147842	0.038144	0.09212	0.456803	0.008192	0	0.161868	0.038144	0.09212	0.456803	0.045	0.571128	0	6.073786	0.009157	0	0.000364
Santa Clara	2023	UBUS	Aggregate	Aggregate	Diesel	436.6681	48829.71	48829.71	0	1746.672	0.386256	0	0	0.007022	0	0	0.0083	0.0385	0.00734	0	0	0.0332	0.11	1100.965	0	0	0.003215	0	0	0.173457	0	0	0.065028	0	0	0	0	0	0.078788	0	0	0	0	0	0.18785	0.079368	0	0	0.010432	0	0
Santa Clara	2023	UBUS	Aggregate	Aggregate	Electricity	5.046757	199.0027	0	199.0027	20.18703	0	0	0	0	0	0	0.009	0.01925	0	0	0	0.036	0.055	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2023	UBUS	Aggregate	Aggregate	Natural Ga	42.26114	4829.673	4829.673	0	169.0446	0.05878	0	0	0.000282	0	0	0.008182	0.0385	0.000295	0	0	0.032727	0.11	1299.127	0	0	4.245742	0	0	0.264835	0	0	0.060663	0	0	0	0	0	4.333091	0	0	0	0	0	0.97	49.04231	0	0	0	0	0

Source: EMFAC2021 (v1.0.2) Emission Rates
Region Type: County
Region: Santa Clara
Calendar Year: 2024
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for CVMT and EVMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HOTSOAK and RUNLOSS, g/vehicle/day for IDLEX and DIURN. PHEV calculated based on total VMT.

Region	Calendar Y	Vehicle Cat	Model Yea	Speed	Fuel	Population	Total VMT	CVMT	EVMT	Trips	NOx_RUNEX	NOx_IDLEX	NOx_STREX	PM2.5_RU	PM2.5_IDL	PM2.5_STR	PM2.5_DIU	PM2.5_TIR	PM10_RUI	PM10_IDL	PM10_STR	PM10_DIU	PM10_TIR	CO2_RUNEX	CO2_IDLEX	CO2_STREX	CH4_RUNEX	CH4_IDLEX	CH4_STREX	N2O_RUNEX	N2O_IDLEX	N2O_STREX	ROG_RUNEX	ROG_IDLEX	ROG_STREX	ROG_HOTS	ROG_RUNL	ROG_DIUR	TOG_RUNEX	TOG_IDLEX	TOG_STREX	TOG_HOTS	TOG_RUNL	TOG_DIUR	NH3_RUNEX	CO_RUNEX	CO_IDLEX	CO_STREX	SOx_RUNE	SOx_IDLEX	SOx_STREX
Santa Clara	2024	HHDT	Aggregate	Aggregate	Gasoline	2.588708	115.1526	115.1526	0	51.79487	7.013725	0	1.695629	0.003612	0	0.001433	0.005	0.03384	0.003929	0	0.001559	0.02	0.096686	2166.164	0	50.04419	0.246012	0	0.000205	0.192927	0	0.049797	1.47824	0	0.001115	0.149022	1.34233	10.02547	2.157045	0	0.001221	0.149022	1.34233	10.02547	0.04274	52.51903	0	1.60109	0.021415	0	0.000495
Santa Clara	2024	HHDT	Aggregate	Aggregate	Diesel	8486.693	1001095	1001095	0	124748.4	1.894567	62.32042	2.898867	0.025674	0.03017	0	0.008877	0.027454	0.026835	0.031534	0	0.035082	0.07844	1634.1	11997.01	0	0.000777	0.23663	0	0.257453	1.890134	0	0.016732	5.094584	0	0	0	0	0.019048	5.799796	0	0	0	0	0	0.215084	0.082524	74.10576	0	0.015474	0.113605	0
Santa Clara	2024	HHDT	Aggregate	Aggregate	Electricity	28.33039	2794.261	0	2794.261	378.7946	0	0	0	0	0	0	0.008585	0.014055	0	0	0	0.034341	0.040158	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2024	HHDT	Aggregate	Aggregate	Natural Ga	794.401	54591.27	54591.27	0	7249.717	1.128254	13.55515	0	0.001724	0.024776	0	0.009	0.047521	0.001875	0.026946	0	0.036	0.135775	1387.534	10583.64	0	2.344742	36.30276	0	0.282858	2.157544	0	0.050833	0.550696	0	0	0	0	0.41272	37.08609	0	0	0	0	0	0.85184	13.40196	74.43135	0	0	0	0
Santa Clara	2024	LDA	Aggregate	Aggregate	Gasoline	600108.2	22290344	22290344	0	2786617	0.042281	0	0.257993	0.001177	0	0.001931	0.002	0.002656	0.00128	0	0.0021	0.008	0.007587	275.9552	0	70.08069	0.002338	0	0.072036	0.004672	0	0.033228	0.008937	0	0.328953	0.090491	0.230394	1.422636	0.013041	0	0.360162	0.090491	0.230394	1.422636	0.034712	0.737516	0	3.233068	0.002728	0	0.000693
Santa Clara	2024	LDA	Aggregate	Aggregate	Diesel	1750.024	51573.48	51573.48	0	7442.61	0.213181	0	0	0.016747	0	0	0.002	0.002706	0.017504	0	0	0.008	0.00773	232.3976	0	0	0.001289	0	0	0.036614	0	0	0.027749	0	0	0	0	0	0.03159	0	0	0	0	0	0.0031	0.331109	0	0	0.002202	0	0
Santa Clara	2024	LDA	Aggregate	Aggregate	Electricity	57627.4	2472767	0	2472767	282733	0	0	0	0	0	0	0.002	0.001533	0	0	0	0.008	0.00438	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2024	LDA	Aggregate	Aggregate	Plug-in Hyb	17457.1	767059.2	381568.7	385490.5	72185.1	0.003264	0	0.11551	0.000618	0	0.00207	0.002	0.001377	0.000672	0	0.002252	0.008	0.003935	138.86	0	65.1247	0.000444	0	0.04244	0.000587	0	0.020762	0.001412	0	0.173285	0.041111	0.037292	0.447104	0.00206	0	0.189725	0.041111	0.037292	0.447104	0.019502	0.214853	0	1.339893	0.001373	0	0.000644
Santa Clara	2024	LDT1	Aggregate	Aggregate	Gasoline	52693.37	1706864	1706864	0	234793.4	0.128357	0	0.381294	0.001737	0	0.002678	0.002	0.00324	0.001889	0	0.002913	0.008	0.009258	327.2571	0	86.38434	0.006261	0	0.105365	0.009424	0	0.03869	0.027741	0	0.539321	0.165332	0.472477	2.667158	0.040475	0	0.590488	0.165332	0.472477	2.667158	0.036079	1.427621	0	5.253053	0.003235	0	0.000854
Santa Clara	2024	LDT1	Aggregate	Aggregate	Diesel	23.46233	343.9308	343.9308	0	66.44459	1.651932	0	0	0.239373	0	0	0.002	0.003724	0.250196	0	0	0.008	0.01064	415.3002	0	0	0.013862	0	0	0.065431	0	0	0.298448	0	0	0	0	0	0.339763	0	0	0	0	0	0.0031	1.593665	0	0	0.003935	0	0
Santa Clara	2024	LDT1	Aggregate	Aggregate	Electricity	211.0028	8008.646	0	8008.646	994.4346	0	0	0	0	0	0	0.002	0.001539	0	0	0	0.008	0.004397	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2024	LDT1	Aggregate	Aggregate	Plug-in Hyb	67.64578	3164.46	1414.302	1750.158	279.7153	0.002933	0	0.11551	0.000367	0	0.001381	0.002	0.001389	0.0004	0	0.001502	0.008	0.003967	124.8456	0	69.31208	0.000397	0	0.042219	0.000522	0	0.020556	0.001268	0	0.173285	0.024153	0.020965	0.279628	0.001851	0	0.189725	0.024153	0.020965	0.279628	0.018771	0.19347	0	1.339893	0.001234	0	0.000685
Santa Clara	2024	LDT2	Aggregate	Aggregate	Gasoline	285585.4	10322758	10322758	0	1336438	0.069091	0	0.334237	0.001227	0	0.001959	0.002	0.003127	0.001334	0	0.00213	0.008	0.008936	340.3247	0	87.29427	0.002864	0	0.082985	0.005943	0	0.037254	0.011242	0	0.384216	0.081741	0.217688	1.368189	0.016404	0	0.420668	0.081741	0.217688	1.368189	0.036359	0.842122	0	3.673764	0.003364	0	0.000863
Santa Clara	2024	LDT2	Aggregate	Aggregate	Diesel	1015.453	37944.26	37944.26	0	4835.434	0.041515	0	0	0.004813	0	0	0.002	0.003113	0.005031	0	0	0.008	0.008895	307.1615	0	0	0.000609	0	0	0.048393	0	0	0.013105	0	0	0	0	0	0.014919	0	0	0	0	0	0.0031	0.129976	0	0	0.002911	0	0
Santa Clara	2024	LDT2	Aggregate	Aggregate	Electricity	1597.567	55532.59	0	55532.59	8150.927	0	0	0	0	0	0	0.002	0.001526	0	0	0	0.008	0.004359	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2024	LDT2	Aggregate	Aggregate	Plug-in Hyb	2116.58	94757.71	44376.61	50381.09	8752.056	0.003073	0	0.11551	0.000467	0	0.001672	0.002	0.001383	0.000508	0	0.001819	0.008	0.003953	130.7877	0	75.60584	0.000416	0	0.042233	0.000547	0	0.020569	0.001329	0	0.173285	0.025949	0.023686	0.309385	0.001939	0	0.189725	0.025949	0.023686	0.309385	0.019635	0.202568	0	1.339893	0.001293	0	0.000747
Santa Clara	2024	LHDT1	Aggregate	Aggregate	Gasoline	19314.14	722529.3	722529.3	0	287751.9	0.17374	0.036221	0.636996	0.001534	0	0.000302	0.002	0.0273	0.001668	0	0.000328	0.008	0.078	871.4559	119.0993	25.78022	0.008358	0.112945	0.032997	0.009778	0.002977	0.050968	0.041718	0.415023	0.163611	0.047402	0.263136	2.768514	0.060875	0.605601	0.179134	0.047402	0.263136	2.768514	0.044898	1.142278	3.756209	3.123927	0.008615	0.001177	0.000255
Santa Clara	2024	LHDT1	Aggregate	Aggregate	Diesel	10107.74	398004.1	398004.1	0	127142.6	1.563015	1.92168	0	0.035058	0.026804	0	0.003	0.0273	0.036643	0.028016	0	0.012	0.078	631.4008	131.1503	0	0.008006	0.005098	0	0.099477	0.020663	0	0.172364	0.10976	0	0	0	0	0.196225	0.124954	0	0	0	0	0	0.172781	0.473594	0.909745	0	0.005983	0.001243	0
Santa Clara	2024	LHDT1	Aggregate	Aggregate	Electricity	70.82836	5110.544	0	5110.544	989.4273	0	0	0	0	0	0	0.002	0.01365	0	0	0	0.008	0.039	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2024	LHDT2	Aggregate	Aggregate	Gasoline	2506.906	91452.57	91452.57	0	37349.16	0.16518	0.035604	0.621534	0.00139	0	0.000239	0.002	0.03185	0.001512	0	0.000259	0.008	0.091	980.0361	137.5922	25.51292	0.006183	0.111453	0.031983	0.009819	0.00291	0.049384	0.028613	0.40822	0.157242	0.04419	0.238167	2.558385	0.041752	0.595674	0.17216	0.04419	0.238167	2.558385	0.044971	0.899209	3.762546	3.129931	0.009689	0.00136	0.000252
Santa Clara	2024	LHDT2	Aggregate	Aggregate	Diesel	4663.455	183558.4	183558.4	0	58660.4	1.266102	1.895403	0	0.032055	0.027	0	0.003	0.03185	0.033504	0.028221	0	0.012	0.091	756.8682	209.5618	0	0.007406	0.005098	0	0.119245	0.033017	0	0.159439	0.10976	0	0	0	0	0.18151	0.124954	0	0	0	0	0	0.184132	0.411861	0.909745	0	0.007172	0.001986	0
Santa Clara	2024	LHDT2	Aggregate	Aggregate	Electricity	18.33259	1253.286	0	1253.286	242.668	0	0	0	0	0	0	0.002	0.015925	0	0	0	0.008	0.0455	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2024	MCY	Aggregate	Aggregate	Gasoline	28171.51	1660222.3	1660222.3	0	56343.02	0.571344	0	0.135477	0.001779	0	0.003248	0.001	0.0042	0.001902	0	0.003456	0.004	0.012	187.743	0	48.37697	0.162609	0	0.181972	0.039558	0	0.00802	1.062175	0	1.345317	3.559276	3.75283	3.900294	1.276951	0	1.462608	3.559276	3.75283	3.900294	0.008808	12.6697	0	8.002987	0.001856	0	0.000478
Santa Clara	2024	MDV	Aggregate	Aggregate	Gasoline	156642.4	5468054	5468054	0	726101.1	0.101279	0	0.42828	0.001229	0	0.002042	0.002	0.003184	0.001336	0	0.002221	0.008	0.009096	412.8049	0	106.2216	0.003873	0	0.10186	0.007628	0	0.040967	0.01626	0	0.508806	0.097051	0.275722	1.677059	0.023715	0	0.557077	0.097051	0.275722	1.677059	0.036179	0.972241	0	4.022964	0.004081	0	0.00105
Santa Clara	2024	MDV	Aggregate	Aggregate	Diesel	2400.615	86292.69	86292.69	0	11318.82	0.048844	0	0	0.004909	0	0	0.002	0.003206	0.005131	0	0	0.008	0.009159	405.6621	0	0	0.00051	0	0	0.063912	0	0	0.010978	0	0	0	0	0	0.012498	0	0	0	0	0	0.0031	0.201538	0	0	0.003844	0	0
Santa Clara	2024	MDV	Aggregate	Aggregate	Electricity	1678.684	58660.63	0	58660.63	8578.496	0	0	0	0	0	0	0.002	0.001525	0	0	0	0.008	0.004358	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2024	MDV	Aggregate	Aggregate	Plug-in Hyb	1250.857	52904.03	25301.52	27602.51	5172.294	0.003138	0	0.11551	0.000561	0	0.001962	0.002	0.001382	0.00061	0	0.002134	0.008	0.003948	133.5372	0	94.06379	0.000423	0	0.042047	0.000554	0	0.020395	0.001357	0	0.173285	0.030318	0.026684	0.341695	0.00198	0	0.189725	0.030318	0.026684	0.341695	0.020087	0.206737	0	1.339893	0.00132	0	0.00093
Santa Clara	2024	MH	Aggregate	Aggregate	Gasoline	2420.57	22012.3	22012.3	0	242.1538	0.420938	0	0.419963	0.001679	0	0.000404	0.003	0.015756	0.001826	0	0.000439	0.012	0.045017	1947.501	0	31.65056	0.015478	0	0.037539	0.025731	0	0.04407	0.06827	0	0.159123	12.21143	0.286769	4.596479	0.09962	0	0.174219	12.21143	0.286769	4.596479	0.044846	1.682224	0	3.497247	0.019253	0	0.000313
Santa Clara	2024	MH	Aggregate	Aggregate	Diesel	977.3606	9498.302	9498.302	0	977.3606	4.117169	0	0	0.091772	0	0	0.004	0.015675	0.095921	0	0	0.016	0.044785	1081.931	0	0	0.005558	0	0	0.170459	0	0	0.11965	0	0	0	0	0	0.136214	0	0	0	0	0	0.155539	0.397281	0	0	0.010252	0	0
Santa Clara	2024	MHDT	Aggregate	Aggregate	Gasoline	1414.552	71600.35	71600.35	0	28302.35	0.470752	0.088485	0.440963	0.001362	0	0.000533	0.003	0.015756	0.001482	0	0.000579	0.012	0.045017	1768.687	531.8002	46.25227	0.015051	0.25808	0.047572	0.022913	0.00727	0.03271	0.074951	1.01271	0.265405	0.033945	0.276365	2.798712	0.109368	1.477744	0.290585	0.033945	0.276365	2.798712	0.04498	1.56073	15.11634	5.825814	0.017485	0.005257	0.000457
Santa Clara	2024	MHDT	Aggregate	Aggregate	Diesel	10390.53	434043.6	434043.6	0	123939	1.232824	13.11952	1.642732	0.014397	0.029902	0	0.003	0.015941	0.015048	0.031254	0	0.012	0.045546	1147.309	2248.547	0	0.001507	0.01158	0	0.180759	0.35426	0	0.032455	0.249319	0	0	0	0	0.036947	0.283831	0	0	0	0	0	0.210532	0.120871	7.556027	0	0.010864	0.021292	0
Santa Clara	2024	MHDT	Aggregate	Aggregate	Electricity	30.91601	1660.353	0	1660.353	407.4536	0	0	0	0	0	0	0.003	0.007956	0	0	0	0.012	0.022732	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2024	MHDT	Aggregate	Aggregate	Natural Ga	90.59449	4303.581	4303.581	0	827.6228	0.133415	6.499719	0	0.001179	0.018131	0	0.003	0.016007	0.001282	0.019719	0	0.012	0.045734	984.6917	5301.101	0	0.74573	17.31409	0	0.200736	1.080664	0	0.010655	0.247384	0	0	0	0	0.761072	17.6703	0	0	0	0	0	1.06	2.995842	34.7393	0	0	0	0
Santa Clara	2024	OBUS	Aggregate	Aggregate	Gasoline	443.1467	19894.31	19894.31	0	8866.48	0.49672	0.06506	0.408547	0.000907	0	0.000252	0.003	0.01568	0.000987	0	0.000274	0.012	0.044799	1764.001	379.4143	31.61308	0.013757	0.195733	0.03606	0.024018	0.005304	0.031028	0.067076	0.746281	0.190964	0.033873	0.154922	2.818385	0.097877	1.088971	0.209081	0.033873	0.154922	2.818385	0.044969	1.491576	5.774637	4.000641	0.017439	0.003751	0.000313
Santa Clara	2024	OBUS	Aggregate	Aggregate	Diesel	893.1376	61949.05	61949.05	0	9141.625	1.178643	7.363387	1.543157	0.019849	0.008167	0	0.003	0.018015	0.020746	0.008536	0	0.012	0.051472	1273.38	1538.564	0	0.001935	0.020479	0	0.200622	0.242401	0	0.04166	0.440905	0	0	0	0	0.047427	0.501937	0	0	0	0	0	0.216021	0.150181	7.500483	0	0.012058	0.014569	0
Santa Clara	2024	OBUS	Aggregate	Aggregate	Electricity	1.087481	92.50105	0	92.50105	21.75833	0	0	0	0	0	0	0.003	0.00784	0	0	0	0.012	0.022399	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2024	OBUS	Aggregate	Aggregate	Natural Ga	7.05737	469.3876	469.3876	0	62.81059	0.190585	1.537414	0	0.00106	0.003899	0	0.003	0.016148	0.001153	0.004241	0	0.012	0.046137	1004.237	1191.581	0	0.789796	4.236895	0	0.20472	0.242912	0	0.011285	0.060537	0	0	0	0	0.806045	4.324062	0	0	0	0	0	1.06	3.254325	7.353064	0	0	0	0
Santa Clara	2024	SBUS	Aggregate	Aggregate	Gasoline	172.6948	8584.866	8584.866	0	690.7791	0.50288	0.925939	0.716801	0.000864	0	0.000567	0.002	0.015721	0.000939	0	0.000616	0.008	0.044917	810.6064	2589.131	58.1367	0.011135	2.464862	0.074893	0.027101	0.086311	0.065929	0.054059	10.63288	0.426367	0.113914	0.274691	1.686167	0.078883	15.51547	0.466819	0.113914	0.274691	1.686167	0.045	1.38705	82.18841	10.36621	0.008014	0.025596	0.000575
Santa Clara	2024	SBUS	Aggregate	Aggregate	Diesel	670.5958	15345.26	15345.26	0	9710.228	3.821388	21.87689	0.482851	0.019766	0.019703	0	0.003	0.015721	0.02066	0.020594	0	0.012	0.044917	1144.18	2229	0	0.002665	0.008001	0	0.180266	0.35118	0	0.057376	0.172257	0	0	0	0	0.065318	0.196101	0	0	0	0	0	0.148025	0.1775	4.677792	0	0.010835	0.021107	0
Santa Clara	2024	SBUS	Aggregate	Aggregate	Electricity	2.064666	64.35501	0	64.35501	23.64639	0	0	0	0	0	0	0.002539	0.00786	0	0	0	0.010157	0.022459	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2024	SBUS	Aggregate	Aggregate	Natural Ga	24.3995	612.0941	612.0941	0	353.3048	0.567729	5.270895	0	0.003378	0.011357	0	0.003	0.015721	0.003674	0.012352	0	0.012	0.044917	1261.305	4066.736	0	3.436672	15.25665	0	0.257125	0.829031	0	0.049103	0.217987	0	0	0	0	3.507376	15.57053	0	0	0	0	0	1.06	11.64901	20.74693	0	0	0	0
Santa Clara	2024	UBUS	Aggregate	Aggregate	Gasoline	46.08313	4812.451	4812.451	0	184.3325	0.027483	0	0.457232	0.001143	0	0.000128	0.002	0.03185	0.001243	0	0.00014	0.008	0.091	926.0836	0	36.94783	0.002034	0	0.043067	0.004288	0	0.071717	0.005634	0	0.152979	0.038099	0.092116	0.456438	0.008221	0	0.167492	0.038099	0.092116	0.456438	0.045	0.581148	0	6.130495	0.009155	0	0.000365
Santa Clara	2024	UBUS	Aggregate	Aggregate	Diesel	437.4745	48917.61	48917.61	0	1749.898	0.386257	0	0	0.007023	0	0	0.0083	0.0385	0.00734	0	0	0.0332	0.11	1101.14	0	0	0.003215	0	0	0.173485	0	0	0.069208	0	0	0	0	0	0.078788	0	0	0	0	0	0.187908	0.079368	0	0	0.010434	0	0
Santa Clara	2024	UBUS	Aggregate	Aggregate	Electricity	5.347565	235.0626	0	235.0626	21.39026	0	0	0	0	0	0	0.008888	0.01925	0	0	0	0.03552	0.055	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2024	UBUS	Aggregate	Aggregate	Natural Ga	42.58696	4865.187	4865.187	0	170.3478	0.058788	0	0	0.000282	0	0	0.008183	0.0385	0.000295	0	0	0.032731	0.11	1299.206	0	0	4.246059	0	0	0.264852	0	0	0.060668	0	0	0	0	0	4.333415	0	0	0	0	0	0.97	49.04786	0	0	0	0	0

Source: EMFAC2021 (v1.0.2) Emission Rates
Region Type: County
Region: Santa Clara
Calendar Year: 2025
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for CVMT and EVMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HOTSOAK and RUNLOSS, g/vehicle/day for IDLEX and DIURN. PHEV calculated based on total VMT.

Region	Calendar Y	Vehicle Cat	Model Yea	Speed	Fuel	Population	Total VMT	CVMT	EVMT	Trips	NOx_RUNEX	NOx_IDLEX	NOx_STREX	PM2.5_RU	PM2.5_IDL	PM2.5_STR	PM2.5_DIU	PM2.5_TIR	PM2.5_BW	PM10_RUN	PM10_IDL	PM10_STR	PM10_DIU	PM10_TIR	PM10_BW	CO2_RUNEX	CO2_IDLEX	CO2_STREX	CH4_RUNEX	CH4_IDLEX	CH4_STREX	N2O_RUNEX	N2O_IDLEX	N2O_STREX	ROG_RUNEX	ROG_IDLEX	ROG_STREX	ROG_HOTS	ROG_RUNL	ROG_DIUR	TOG_RUNEX	TOG_IDLEX	TOG_STREX	TOG_HOTS	TOG_RUNL	TOG_DIUR	NH3_RUNEX	CO_RUNEX	CO_IDLEX	CO_STREX	SOx_RUNEX	SOx_IDLEX	SOx_STREX
Santa Clara	2025	HHDT	Aggregate	Aggregate	Gasoline	2.330359	124.9448	124.9448	0	0	46.62582	5.556909	0	1.379041	0.003103	0	0.001399	0.005	0.033068	0.003375	0	0.001521	0.02	0.09448	2106.229	0	50.03138	0.207413	0	0.000226	0.167059	0	0.041557	1.222197	0	0.00123	0.140217	1.263022	9.434649	1.783427	0	0.001346	0.140217	1.263022	9.434649	0.043157	47.7242	0	2.001616	0.020822	0	0.000495
Santa Clara	2025	HHDT	Aggregate	Aggregate	Diesel	8692.575	1008964	1008964	0	127877.1	1.825194	60.91449	2.931995	0.025335	0.028938	0	0.008772	0.027421	0.02648	0.030247	0	0.035088	0.078345	1608.776	11755.34	0	0.00075	0.235891	0	0.253463	1.852058	0	0.016139	5.078674	0	0	0	0	0	0.018373	5.781684	0	0	0	0	0	0.215507	0.078083	74.00904	0	0.015234	0.111316	0
Santa Clara	2025	HHDT	Aggregate	Aggregate	Electricity	63.3712	6579.675	0	6579.675	825.9972	0	0	0	0	0	0	0.008551	0.014281	0	0	0	0	0.034206	0.040802	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2025	HHDT	Aggregate	Aggregate	Natural Ga	832.405	55779.38	55779.38	0	7555.504	1.049864	13.18492	0	0.00168	0.025258	0	0.009	0.048303	0.001827	0.02747	0	0.036	0.138007	1375.94	10529.31	0	2.235928	35.17609	0	0.280494	2.146469	0	0.047235	0.530122	0	0	0	0	0	0.299347	35.93114	0	0	0	0	0	0.843784	13.01274	74.75478	0	0	0	0
Santa Clara	2025	LDA	Aggregate	Aggregate	Gasoline	598860.3	22133915	22133915	0	2780384	0.038209	0	0.245539	0.001142	0	0.00188	0.002	0.002655	0.001242	0	0.002044	0.008	0.007587	270.1738	0	68.47346	0.002117	0	0.067825	0.004408	0	0.032293	0.007947	0	0.306311	0.087189	0.224301	1.384954	0.011596	0	0.335372	0.087189	0.224301	1.384954	0.035611	0.6952	0	3.049452	0.002671	0	0.000677
Santa Clara	2025	LDA	Aggregate	Aggregate	Diesel	1620.04	46912.85	46912.85	0	6871.193	0.18842	0	0	0.015236	0	0	0.002	0.002712	0.015925	0	0	0.008	0.007748	229.9477	0	0	0.001193	0	0	0.036228	0	0	0.025693	0	0	0	0	0	0	0.02925	0	0	0	0	0	0.0031	0.319914	0	0	0.002179	0	0
Santa Clara	2025	LDA	Aggregate	Aggregate	Electricity	61443.19	2670452	0	2670452	299852.7	0	0	0	0	0	0	0.002	0.001534	0	0	0	0.008	0.004382	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2025	LDA	Aggregate	Aggregate	Plug-in Hyb	19037.66	825567.7	401013	424554.8	78720.74	0.003187	0	0.11551	0.000578	0	0.001985	0.002	0.001382	0.000629	0	0.002159	0.008	0.003948	135.5854	0	64.10836	0.000432	0	0.042249	0.000569	0	0.020584	0.001378	0	0.173285	0.041164	0.03735	0.440525	0.002011	0	0.189725	0.041164	0.03735	0.440525	0.019241	0.209757	0	1.339893	0.00134	0	0.000634
Santa Clara	2025	LDT1	Aggregate	Aggregate	Gasoline	51680.86	1664706	1664706	0	230186	0.115355	0	0.35972	0.001639	0	0.002543	0.002	0.003241	0.001782	0	0.002766	0.008	0.00926	321.489	0	84.45547	0.005621	0	0.098552	0.008687	0	0.037511	0.02471	0	0.498818	0.156963	0.442299	2.52236	0.038056	0	0.546143	0.156963	0.442299	2.52236	0.036453	1.317416	0	4.886115	0.003178	0	0.000835
Santa Clara	2025	LDT1	Aggregate	Aggregate	Diesel	21.28272	302.8258	302.8258	0	59.13231	1.64381	0	0	0.238169	0	0	0.002	0.00372	0.248938	0	0	0.008	0.010628	414.9442	0	0	0.013797	0	0	0.065375	0	0	0.297038	0	0	0	0	0	0	0.338158	0	0	0	0	0	0.0031	1.585068	0	0	0.003932	0	0
Santa Clara	2025	LDT1	Aggregate	Aggregate	Electricity	234.4578	9323.704	0	9323.704	1109.796	0	0	0	0	0	0	0.002	0.001537	0	0	0	0.008	0.004392	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2025	LDT1	Aggregate	Aggregate	Plug-in Hyb	98.13198	4519.182	1961.286	2557.896	405.7758	0.002848	0	0.11551	0.000353	0	0.001365	0.002	0.001394	0.000383	0	0.001485	0.008	0.003982	121.222	0	67.75681	0.000383	0	0.041987	0.000501	0	0.020339	0.001231	0	0.173285	0.023895	0.020384	0.276746	0.001797	0	0.189725	0.023895	0.020384	0.276746	0.018228	0.187824	0	1.339893	0.001198	0	0.00067
Santa Clara	2025	LDT2	Aggregate	Aggregate	Gasoline	290874.7	10447706	10447706	0	1360241	0.06257	0	0.314364	0.001192	0	0.001919	0.002	0.00313	0.001296	0	0.002087	0.008	0.008944	332.1841	0	85.06833	0.002642	0	0.078494	0.005588	0	0.036037	0.010244	0	0.360071	0.079452	0.214938	1.349256	0.014949	0	0.394233	0.079452	0.214938	1.349256	0.03712	0.795621	0	3.47417	0.003284	0	0.000841
Santa Clara	2025	LDT2	Aggregate	Aggregate	Diesel	1049.952	38652.34	38652.34	0	4980.34	0.039332	0	0	0.004727	0	0	0.002	0.003123	0.004941	0	0	0.008	0.008921	301.0055	0	0	0.000603	0	0	0.047424	0	0	0.01298	0	0	0	0	0	0	0.014777	0	0	0	0	0	0.0031	0.129797	0	0	0.002852	0	0
Santa Clara	2025	LDT2	Aggregate	Aggregate	Electricity	2157.059	73663.77	0	73663.77	10962.38	0	0	0	0	0	0	0.002	0.001527	0	0	0	0.008	0.004362	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2025	LDT2	Aggregate	Aggregate	Plug-in Hyb	2561.885	112327.2	51267.44	61059.78	10593.4	0.002995	0	0.11551	0.000438	0	0.00161	0.002	0.001388	0.000477	0	0.001751	0.008	0.003967	127.4509	0	74.14084	0.000403	0	0.041992	0.000528	0	0.020344	0.001295	0	0.173285	0.026071	0.023359	0.305362	0.001893	0	0.189725	0.026071	0.023359	0.305362	0.019143	0.197358	0	1.339893	0.00126	0	0.000733
Santa Clara	2025	LHDT1	Aggregate	Aggregate	Gasoline	19422.46	728337	728337	0	289365.8	0.152112	0.035118	0.61458	0.001478	0	0.000276	0.002	0.0273	0.001607	0	0.0003	0.008	0.078	855.4024	117.9783	25.70715	0.007214	0.110329	0.031611	0.008613	0.002941	0.049929	0.03557	0.40247	0.15588	0.044275	0.247775	2.616411	0.051904	0.587284	0.170669	0.044275	0.247775	2.616411	0.044934	1.05316	3.759094	3.16195	0.008457	0.001166	0.000254
Santa Clara	2025	LHDT1	Aggregate	Aggregate	Diesel	10387.1	408019.3	408019.3	0	130656.7	1.379237	1.823414	0	0.032347	0.026692	0	0.003	0.0273	0.03381	0.027899	0	0.012	0.078	628.07	129.5472	0	0.007468	0.005098	0	0.098953	0.02041	0	0.160779	0.10976	0	0	0	0	0	0.183036	0.124954	0	0	0	0	0	0.17898	0.435087	0.909745	0	0.005951	0.001228	0
Santa Clara	2025	LHDT1	Aggregate	Aggregate	Electricity	196.402	13079.06	0	13079.06	2746.629	0	0	0	0	0	0	0.002	0.01365	0	0	0	0.008	0.039	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2025	LHDT2	Aggregate	Aggregate	Gasoline	2512.652	91345.05	91345.05	0	37434.78	0.146187	0.034452	0.600885	0.001346	0	0.00022	0.002	0.03185	0.001464	0	0.000239	0.008	0.091	964.5764	136.4471	25.31105	0.005467	0.108422	0.030581	0.008804	0.002854	0.048245	0.025115	0.395081	0.149459	0.041982	0.228581	2.471298	0.036648	0.576501	0.163639	0.041982	0.228581	2.471298	0.044974	0.850878	3.765161	3.139903	0.009536	0.001349	0.00025
Santa Clara	2025	LHDT2	Aggregate	Aggregate	Diesel	4837.236	188645	188645	0	60846.34	1.139289	1.802658	0	0.030296	0.027005	0	0.003	0.03185	0.031666	0.028226	0	0.012	0.091	750.3571	207.2396	0	0.007043	0.005098	0	0.118219	0.032651	0	0.151622	0.10976	0	0	0	0	0	0.172612	0.124954	0	0	0	0	0	0.188496	0.387904	0.909745	0	0.00711	0.001964	0
Santa Clara	2025	LHDT2	Aggregate	Aggregate	Electricity	50.46202	3193.251	0	3193.251	669.175	0	0	0	0	0	0	0.002	0.015925	0	0	0	0.008	0.0455	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2025	MCY	Aggregate	Aggregate	Gasoline	28484.89	166414.5	166414.5	0	56969.79	0.557882	0	0.129146	0.001799	0	0.003253	0.001	0.0042	0.001925	0	0.003464	0.004	0.012	187.2679	0	47.30784	0.158292	0	0.177199	0.038984	0	0.007691	1.024683	0	1.305157	3.558651	3.760078	3.860886	1.236542	0	1.419098	3.558651	3.760078	3.860886	0.008851	12.31202	0	7.965438	0.001851	0	0.000468
Santa Clara	2025	MDV	Aggregate	Aggregate	Gasoline	159532.2	5551044	5551044	0	739781.4	0.087905	0	0.391886	0.001179	0	0.001962	0.002	0.003182	0.001282	0	0.002134	0.008	0.009091	402.7635	0	103.4378	0.003431	0	0.094137	0.006921	0	0.039073	0.014165	0	0.463643	0.092515	0.265086	1.620407	0.020668	0	0.50763	0.092515	0.265086	1.620407	0.036883	0.895922	0	3.753621	0.003982	0	0.001023
Santa Clara	2025	MDV	Aggregate	Aggregate	Diesel	2421.364	85326.8	85326.8	0	11351.14	0.044948	0	0	0.004686	0	0	0.002	0.003225	0.004898	0	0	0.008	0.009216	399.4952	0	0	0.000492	0	0	0.062941	0	0	0.010592	0	0	0	0	0	0	0.012058	0	0	0	0	0	0.0031	0.199936	0	0	0.003785	0	0
Santa Clara	2025	MDV	Aggregate	Aggregate	Electricity	2274.547	77934.96	0	77934.96	11571.06	0	0	0	0	0	0	0.002	0.001526	0	0	0	0.008	0.004361	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2025	MDV	Aggregate	Aggregate	Plug-in Hyb	1542.366	64484.39	29833.21	34651.18	6377.683	0.003036	0	0.11551	0.000507	0	0.00183	0.002	0.001388	0.000551	0	0.00199	0.008	0.003965	129.1743	0	91.64114	0.000407	0	0.041816	0.00053	0	0.02018	0.001313	0	0.173285	0.02949	0.025333	0.327899	0.001916	0	0.189725	0.02949	0.025333	0.327899	0.019431	0.199968	0	1.339893	0.001277	0	0.000906
Santa Clara	2025	MH	Aggregate	Aggregate	Gasoline	2337.876	21506.19	21506.19	0	233.8812	0.37652	0	0.425905	0.001612	0	0.000388	0.003	0.015756	0.001753	0	0.000422	0.012	0.045017	1947.057	0	31.4529	0.013722	0	0.036945	0.023864	0	0.045303	0.059455	0	0.154277	11.38549	0.268831	4.357209	0.086757	0	0.168914	11.38549	0.268831	4.357209	0.044879	1.426924	0	3.382931	0.019249	0	0.000311
Santa Clara	2025	MH	Aggregate	Aggregate	Diesel	994.5437	9603.893	9603.893	0	99.45437	3.976372	0	0	0.086098	0	0	0.004	0.015675	0.08999	0	0	0.016	0.044785	1082.401	0	0	0.005421	0	0	0.170533	0	0	0.116701	0	0	0	0	0	0	0.132856	0	0	0	0	0	0.160635	0.385118	0	0	0.010256	0	0
Santa Clara	2025	MHDT	Aggregate	Aggregate	Gasoline	1412.263	72039.87	72039.87	0	28256.55	0.394798	0.086175	0.424333	0.001347	0	0.000513	0.003	0.015756	0.001465	0	0.000558	0.012	0.045017	1746.959	526.7233	45.37618	0.012585	0.261076	0.04598	0.019987	0.007219	0.032398	0.061949	1.015127	0.253154	0.030988	0.250472	2.558011	0.090397	1.481271	0.277172	0.030988	0.250472	2.558011	0.044991	1.276089	15.1444	5.531626	0.01727	0.005207	0.000449
Santa Clara	2025	MHDT	Aggregate	Aggregate	Diesel	10548.06	435100.6	435100.6	0	125915.2	1.128155	12.48973	1.646559	0.012461	0.024792	0	0.003	0.015941	0.013024	0.025912	0	0.012	0.045545	1141.328	2229.374	0	0.00131	0.010957	0	0.179817	0.351239	0	0.028195	0.235896	0	0	0	0	0	0.032098	0.268549	0	0	0	0	0	0.211891	0.109646	7.535393	0	0.010808	0.021111	0
Santa Clara	2025	MHDT	Aggregate	Aggregate	Electricity	90.80851	4838.906	0	4838.906	1182.343	0	0	0	0	0	0	0.003	0.007951	0	0	0	0.012	0.022718	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2025	MHDT	Aggregate	Aggregate	Natural Ga	98.90628	4590.307	4590.307	0	911.9208	0.12435	6.45266	0	0.002126	0.018594	0	0.003	0.016009	0.001333	0.020223	0	0.012	0.045741	979.0142	5290.545	0	0.751438	16.97256	0	0.199578	1.078512	0	0.010737	0.242504	0	0	0	0	0	0.766898	17.32175	0	0	0	0	0	1.06	2.996166	35.80775	0	0	0	0
Santa Clara	2025	OBUS	Aggregate	Aggregate	Gasoline	430.7023	18962.49	18962.49	0	8617.491	0.460353	0.06398	0.405045	0.000939	0	0.000255	0.003	0.01568	0.001022	0	0.000278	0.012	0.044799	1744.286	377.0226	31.37018	0.012641	0.195762	0.035581	0.02242	0.005219	0.030806	0.061504	0.74652	0.188569	0.033827	0.158433	2.881145	0.089747	1.089321	0.206459	0.033827	0.158433	2.881145	0.04498	1.352776	5.776073	3.953891	0.017244	0.003727	0.00031
Santa Clara	2025	OBUS	Aggregate	Aggregate	Diesel	921.4116	62304.89	62304.89	0	9451.527	1.133246	7.151668	1.532624	0.018916	0.007596	0	0.003	0.018017	0.019772	0.007939	0	0.012	0.051478	1259.126	1532.11	0	0.001844	0.020685	0	0.198376	0.241385	0	0.039711	0.445333	0	0	0	0	0	0.045208	0.506978	0	0	0	0	0	0.216212	0.14449	7.587325	0	0.011923	0.014508	0
Santa Clara	2025	OBUS	Aggregate	Aggregate	Electricity	2.672031	221.771	0	221.771	53.46199	0	0	0	0	0	0	0.003	0.00784	0	0	0	0.012	0.022399	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2025	OBUS	Aggregate	Aggregate	Natural Ga	8.125306	537.7468	537.7468	0	72.31523	0.164816	1.526623	0	0.001183	0.004157	0	0.003	0.016148	0.001287	0.004521	0	0.012	0.046137	987.912	1189.826	0	0.803903	4.103659	0	0.201392	0.242554	0	0.011486	0.058633	0	0	0	0	0	0.820442	4.188085	0	0	0	0	0	1.06	3.29233	7.933419	0	0	0	0
Santa Clara	2025	SBUS	Aggregate	Aggregate	Gasoline	178.2436	8812.851	8812.851	0	712.9742	0.487257	0.905562	0.722985	0.000866	0	0.000573	0.002	0.015721	0.000942	0	0.000623	0.008	0.044917	806.3455	2576.863	57.67146	0.010523	2.465929	0.074733	0.026439	0.084425	0.066434	0.051046	10.63602	0.42511	0.118631	0.292211	1.797789	0.074486	15.52005	0.465442	0.118631	0.292211	1.797789	0.045	1.308927	82.20747	10.20511	0.007972	0.025475	0.00057
Santa Clara	2025	SBUS	Aggregate	Aggregate	Diesel	673.2048	15283.75	15283.75	0	9748.005	3.614242	21.25646	0.496308	0.018677	0.018235	0	0.003	0.015721	0.019521	0.019059	0	0.012	0.044917	1139.829	2219.616	0	0.002583	0.007936	0	0.179581	0.349701	0	0.055601	0.170862	0	0	0	0	0	0.063298	0.194514	0	0	0	0	0	0.151888	0.17348	4.777291	0	0.010794	0.021018	0
Santa Clara	2025	SBUS	Aggregate	Aggregate	Electricity	4.481168	145.0761	0	145.0761	51.24766	0	0	0	0	0	0	0.002	0.002556	0.00786	0	0	0	0.010226	0.022459	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2025	SBUS	Aggregate	Aggregate	Natural Ga	25.28439	627.586	627.586	0	366.118	0.5494	5.260001	0	0.003378	0.011617	0	0.003	0.015721	0.003674	0.012635	0	0.012	0.044917	1252.115	4074.049	0	3.386209	15.12215	0	0.255252	0.830522	0	0.048382	0.216066	0	0	0	0	0	3.455875	15.43326	0	0	0	0	0	1.06	11.41153	21.33281	0	0	0	0
Santa Clara	2025	UBUS	Aggregate	Aggregate	Gasoline	46.21918	4826.658	4826.658	0	184.8767	0.027276	0	0.449893	0.001143	0	0.000128	0.002	0.03185	0.001243	0	0.00014	0.008	0.091	925.8676	0	36.64281	0.001993	0	0.043054	0.004259	0	0.070843	0.005515	0	0.152699	0.04366	0.092112	0.471505	0.008047	0	0.167186	0.04366	0.092112	0.471505	0.045	0.586139	0	5.942314	0.009153	0	0.000362
Santa Clara	2025	UBUS	Aggregate	Aggregate	Diesel	405.3675	44987.37	44987.37	0	1621.47	0.382968	0	0	0.006962	0	0	0.008	0.03238	0.0385	0.007277	0	0	0.032951	0.11	1121.875	0	0	0.003193	0	0	0.176752	0	0	0.06875	0	0	0	0	0	0.078266	0	0	0	0	0	0.22	0.0787	0	0	0.01063	0	0
Santa Clara	2025	UBUS	Aggregate	Aggregate	Electricity	23.31202	2427.54	0	2427.54	93.24809	0	0	0	0	0	0	0.008977	0.01925	0	0	0	0	0.035907	0.055	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2025	UBUS	Aggregate	Aggregate	Natural Ga	58.16247	6762.418	6762.418	0	232.6499	0.060506	0	0	0.000287	0	0	0.008408	0.0385	0.0003	0	0	0	0.033634	0.11	1317.877	0	0	4.320397	0	0	0.268658	0	0	0.06173	0	0	0	0	0	4.409282	0	0	0	0	0	0.97	50.3461	0	0	0	0	0

CalEEMod EMFAC2021 Fleet Mix Input — Year 2025

FleetMixLandUseSubType	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.528224	0.040364	0.230108	0.128589	0.023276	0.00574	0.009425	0.00744	0.001057	0.000413	0.022096	0.000684	0.002585
Enclosed Parking with Elevator	0.528224	0.040364	0.230108	0.128589	0.023276	0.00574	0.009425	0.00744	0.001057	0.000413	0.022096	0.000684	0.002585
Regional Shopping Center	0.528224	0.040364	0.230108	0.128589	0.023276	0.00574	0.009425	0.00744	0.001057	0.000413	0.022096	0.000684	0.002585

CalEEMod EMFAC2021 Emission Factors Input — Year 2025

Season	EmissionType	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
A	CH4_IDLEX	0	0	0	0	0.005194	0.003023	0.013842	0.229861003	0.007514	0	0	0.076044	0
A	CH4_RUNEX	0.001841	0.005577	0.002592	0.003307	0.007222	0.006455	0.009536	0.117132109	0.009593	0.497756349	0.158292	0.090769	0.011159
A	CH4_STREX	0.060617	0.097956	0.077312	0.090898	0.021636	0.011648	0.008314	7.74759E-08	0.016852	0.003733046	0.177199	0.004898	0.025922
A	CO_IDLEX	0	0	0	0	0.195049	0.141036	0.668176	5.176290252	0.524506	0	0	1.692209	0
A	CO_RUNEX	0.606604	1.307107	0.781421	0.865797	0.821777	0.532869	0.296939	0.756535609	0.44406	5.878094388	12.31202	0.85843	1.105311
A	CO_STREX	2.711494	4.855262	3.417927	3.621729	2.164208	1.195973	1.000247	0.000684691	1.872658	0.515229574	7.965438	0.66885	2.373596
A	CO2_NBIO_IDLEX	0	0	0	0	8.602925	13.6884	158.593	813.9732577	87.04447	0	0	189.0522	0
A	CO2_NBIO_RUNEX	237.6743	319.1813	327.6236	394.2305	764.972	810.9955	1213.655	1586.833625	1366.1	1082.148951	187.2679	1017.838	1680.132
A	CO2_NBIO_STREX	61.73081	84.00027	84.00689	100.2571	17.59535	9.640849	8.205073	0.017114195	14.85767	3.177121883	47.30784	3.779827	22.06858
A	NOX_IDLEX	0	0	0	0	0.046413	0.089605	0.847928	3.965211308	0.364367	0	0	1.342517	0
A	NOX_RUNEX	0.033383	0.114688	0.061427	0.085138	0.585978	0.806102	1.006394	1.774057666	0.968278	0.301158242	0.557882	2.407715	1.487818
A	NOX_STREX	0.218516	0.357478	0.309231	0.377914	0.420652	0.228874	1.403485	2.751173324	0.987981	0.039008099	0.129146	0.492123	0.298831
A	PM10_IDLEX	0	0	0	0	0.000685	0.001389	0.001762	0.002096665	0.000404	0	0	0.001209	0
A	PM10_PMBW	0.007137	0.009219	0.00886	0.008972	0.077556	0.090487	0.04526	0.081222471	0.04982	0.123663808	0.012	0.044786	0.044946
A	PM10_PMTW	0.008	0.008	0.008	0.008	0.00942	0.010665	0.012	0.035128275	0.012	0.042521858	0.004	0.010572	0.013235
A	PM10_RUNEX	0.00112	0.001813	0.001292	0.00131	0.01302	0.021567	0.011186	0.025031341	0.015263	0.005684616	0.001925	0.012423	0.028992
A	PM10_STREX	0.001849	0.00275	0.002061	0.002069	0.000206	9.12E-05	0.000101	5.20395E-07	0.000131	1.2108E-05	0.003464	4.08E-05	0.000296
A	PM25_IDLEX	0	0	0	0	0.000656	0.001329	0.001685	0.001999711	0.000387	0	0	0.001155	0
A	PM25_PMBW	0.002498	0.003227	0.003101	0.00314	0.027145	0.03167	0.015841	0.028427865	0.017437	0.043282333	0.0042	0.015675	0.015731
A	PM25_PMTW	0.002	0.002	0.002	0.002	0.002355	0.002666	0.003	0.008782069	0.003	0.010630465	0.001	0.002643	0.003309
A	PM25_RUNEX	0.001031	0.001669	0.001189	0.001207	0.012419	0.020616	0.010694	0.023944936	0.014593	0.005434911	0.001799	0.01187	0.027693
A	PM25_STREX	0.0017	0.002528	0.001895	0.001902	0.000189	8.39E-05	9.28E-05	4.78484E-07	0.000121	1.11329E-05	0.003253	3.76E-05	0.000272
A	ROG_DIURN	0.264632	0.562584	0.283569	0.336782	0.120201	0.063181	0.023118	0.000161301	0.068202	0.010220489	3.860886	0.029457	30.55965
A	ROG_HTSK	0.077597	0.155938	0.078131	0.089235	0.030304	0.015991	0.005603	4.7964E-05	0.016021	0.003785535	3.558651	0.007775	7.988502
A	ROG_IDLEX	0	0	0	0	0.021187	0.015503	0.025251	0.32711902	0.04025	0	0	0.185349	0
A	ROG_RESTL	0	0	0	0	0	0	0	0	0	0	0	0	0
A	ROG_RUNEX	0.006942	0.024558	0.010089	0.013778	0.079612	0.109106	0.032483	0.017799596	0.044456	0.059943987	1.024683	0.053481	0.077128
A	ROG_RUNLS	0.197921	0.439329	0.211003	0.255197	0.16959	0.087065	0.045291	0.000432041	0.075038	0.007986552	3.760078	0.019152	0.188623
A	ROG_STREX	0.273326	0.495732	0.354505	0.447416	0.106693	0.056928	0.045776	4.20633E-07	0.089311	0.013239776	1.305157	0.027862	0.108247
A	SO2_IDLEX	0	0	0	0	8.37E-05	0.000131	0.001472	0.007098942	0.000823	0	0	0.001718	0
A	SO2_RUNEX	0.002349	0.003155	0.003238	0.003895	0.007471	0.007812	0.011512	0.014348163	0.013043	0.00885381	0.001851	0.009458	0.016473
A	SO2_STREX	0.00061	0.00083	0.00083	0.000991	0.000174	9.53E-05	8.11E-05	1.69191E-07	0.000147	3.14091E-05	0.000468	3.74E-05	0.000218
A	TOG_DIURN	0.264632	0.562584	0.283569	0.336782	0.120201	0.063181	0.023118	0.000161301	0.068202	0.010220489	0.08531	0.029457	30.55965
A	TOG_HTSK	0.077597	0.155938	0.078131	0.089235	0.030304	0.015991	0.005603	4.7964E-05	0.016021	0.003785535	3.558651	0.007775	7.988502
A	TOG_IDLEX	0	0	0	0	0.03005	0.020889	0.042478	0.588143126	0.05333	0	0	0.302207	0
A	TOG_RESTL	0	0	0	0	0	0	0	0	0	0	0	0	0
A	TOG_RUNEX	0.010114	0.035818	0.014707	0.020053	0.097862	0.126808	0.046457	0.137213337	0.060464	0.565677917	1.236542	0.152507	0.100988
A	TOG_RUNLS	0.197921	0.439329	0.211003	0.255197	0.16959	0.087065	0.045291	0.000432041	0.075038	0.007986552	3.760078	0.019152	0.188623
A	TOG_STREX	0.299257	0.542764	0.388138	0.489864	0.116815	0.062329	0.050119	4.6054E-07	0.097784	0.014495888	1.419098	0.030505	0.118517
A	N2O_IDLEX	0	0	0	0	0.000637	0.00168	0.024457	0.131219379	0.012456	0	0	0.024955	0
A	N2O_RUNEX	0.003885	0.008627	0.005647	0.007583	0.040583	0.081593	0.156018	0.253304032	0.157183	0.165902975	0.038984	0.126174	0.069141
A	N2O_STREX	0.028873	0.037292	0.035503	0.037751	0.034174	0.018376	0.005858	1.42154E-05	0.01459	0.006142466	0.007691	0.004354	0.031786

Attachment 4: Project Construction Emissions and Health Risk Calculations

1520 W. San Carlos Street Mixed-Use, San Jose, CA

DPM Construction Emissions and Modeling Emission Rates

Construction Year	Activity	DPM (ton/year)	Source Type	No. Sources	DPM Emissions (lb/yr)	DPM Emissions (lb/hr)	DPM Emissions (g/s)	Emissions per Point Source (g/s)
2023	Construction	0.0552	Point	179	110.4	0.03858	4.86E-03	2.72E-05
2024	Construction	0.0726	Point	179	145.3	0.05080	6.40E-03	3.58E-05
Total		***0.1278***			***255.6***	***0.0894***	***0.0113***	

Emissions assumed to be evenly distributed over each construction areas

hr/day =	11	(7am - 6pm)
days/yr =	260	
hours/year =	2860	

1520 W. San Carlos Street Mixed-Use, San Jose, CA

PM2.5 Fugitive Dust Construction Emissions for Modeling

Construction Year	Activity	Area Source	PM2.5 Emissions (ton/year)	PM2.5 Emissions (lb/yr)	PM2.5 Emissions (lb/hr)	PM2.5 Emissions (g/s)	Modeled Area (m^2)	DPM Emission Rate $g/s/m^2$
2023	Construction	CON_FUG	0.1144	228.8	0.08001	1.01E-02	6479.9	1.56E-06
2024	Construction	CON_FUG	0.0012	2.4	0.00082	1.04E-04	6479.9	1.60E-08
Total			***0.1156***	***231.2***	***0.0808***	***0.0102***		

Emissions assumed to be evenly distributed over each construction areas

hr/day =	11	(7am - 6pm)
days/yr =	260	
hours/year =	2860	

DPM Construction Emissions and Modeling Emission Rates - With Mitigation

Construction Year	Activity	DPM (ton/year)	Source Type	No. Sources	DPM Emissions (lb/yr)	DPM Emissions (lb/hr)	DPM Emissions (g/s)	Emissions per Point Source (g/s)
2023	Construction	0.0056	Point	179	11.1	0.00388	4.90E-04	2.73E-06
2024	Construction	0.0104	Point	179	20.9	0.00729	9.19E-04	5.13E-06
Total		***0.0160***			***32.0***	***0.0112***	***0.0014***	

Emissions assumed to be evenly distributed over each construction areas

hr/day =	11	(7am - 6pm)
days/yr =	260	
hours/year =	2860	

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

Construction Year	Activity	Area Source	PM2.5 Emissions (ton/year)	PM2.5 Emissions (lb/yr)	PM2.5 Emissions (lb/hr)	PM2.5 Emissions (g/s)	Modeled Area (m^2)	DPM Emission Rate $g/s/m^2$
2023	Construction	CON_FUG	0.0230	46.0	0.01609	2.03E-03	6479.9	3.13E-07
2024	Construction	CON_FUG	0.0012	2.4	0.00082	1.04E-04	6479.9	1.60E-08
Total			***0.0242***	***48.4***	***0.0169***	***0.0021***		

Emissions assumed to be evenly distributed over each construction areas

hr/day =	11	(7am - 6pm)
days/yr =	260	
hours/year =	2860	

1520 W. San Carlos Street Mixed-Use, San Jose, CA

Year	Unmitigated DPM	DPM EMFAC2021	Unmitigated Emissions	Unmitigated Fug PM2.5	Fug PM2.5 EMFAC2021	Unmitigated Emissions
2023	0.0542	0.0010	0.0552	0.1135	0.0009	0.1144
2024	0.0714	0.0012	0.0726	0.0000	0.0012	0.0012

Year	Mitigated DPM	DPM EMFAC2021	Mitigated Emissions	Mitigated Fug PM2.5	Fug PM2.5 EMFAC2021	Mitigated Emissions
2023	0.0046	0.0010	0.0056	0.0221	0.0009	0.0230
2024	0.0092	0.0012	0.0104	0.0000	0.0012	0.0012

1520 W. San Carlos Street Mixed-Use, San Jose, CA - Construction Health Impact Summary

Maximum Impacts at MEI Residential Location - Without Mitigation

Emissions Year	Maximum Concentrations: Exhaust PM10/DPM ($\mu g/m^3$)	Maximum Concentrations: Fugitive PM2.5 ($\mu g/m^3$)	Cancer Risk* (per million): Infant/Child	Cancer Risk* (per million): Adult	Hazard Index (-)	Maximum Annual PM2.5 Concentration* ($\mu g/m^3$)
2023	0.1557	0.9911	27.68	0.45	0.03	1.08
2024	0.2049	0.0102	33.66	0.59	0.04	0.17
Total	-	-	**61.34**	**1.04**	-	-
Maximum	0.2049	0.9911	-	-	**0.04**	**1.08**

* Maximum cancer risk and maximum PM2.5 concentration occur at different receptors.

Maximum Impacts at MEI Residential Location - With Mitigation

Emissions Year	Maximum Concentrations: Exhaust PM10/DPM ($\mu g/m^3$)	Maximum Concentrations: Fugitive PM2.5 ($\mu g/m^3$)	Cancer Risk* (per million): Infant/Child	Cancer Risk* (per million): Adult	Hazard Index (-)	Maximum Annual PM2.5 Concentration* ($\mu g/m^3$)
2023	0.0157	0.1989	2.79	0.04	0.003	0.21
2024	0.0294	0.0102	4.83	0.08	0.01	0.03
Total	-	-	**7.62**	**0.13**	-	-
Maximum	0.0294	0.1989	-	-	**0.01**	**0.21**

* Maximum cancer risk and maximum PM2.5 concentration occur at different receptors.

- Tier 4 Interim Engines and Enhanced BMPs Mitigation

1520 W. San Carlos Street Mixed-Use, San Jose, CA
- Construction Health Impact Modeling
Source Parameters for Point Sources Used in Construction Modeling

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

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

1520 W. San Carlos Street Mixed-Use, San Jose, CA - Construction Impacts - Without Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at Off-Site MEI Location - 1.5 meter receptor height (1st Floor Level)

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

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

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

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

Values

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

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

			Infant/Child - Exposure Information				Adult - Exposure Information				Maximum		
			DPM Conc (ug/m3)		Age	Infant/Child	Modeled DPM Conc (ug/m3)		Age	Adult			
Exposure Year	Exposure Duration (years)	Age	Year	Annual	Sensitivity Factor	Cancer Risk (per million)	Year	Annual	Sensitivity Factor	Cancer Risk (per million)	Hazard Index	Fugitive PM2.5	Total PM2.5
0	0.25	-0.25 - 0*	2023	0.1192	10	1.62	2023	0.1192	-	-			
1	1	0 - 1	2023	0.1192	10	19.58	2023	0.1192	1	0.34	0.02	0.99	1.08
2	1	1 - 2	2024	0.1569	10	25.77	2024	0.1569	1	0.45	0.03	0.01	0.17
3	1	2 - 3		0.0000	3	0.00		0.0000	1	0.00			
4	1	3 - 4		0.0000	3	0.00		0.0000	1	0.00			
5	1	4 - 5		0.0000	3	0.00		0.0000	1	0.00			
6	1	5 - 6		0.0000	3	0.00		0.0000	1	0.00			
7	1	6 - 7		0.0000	3	0.00		0.0000	1	0.00			
8	1	7 - 8		0.0000	3	0.00		0.0000	1	0.00			
9	1	8 - 9		0.0000	3	0.00		0.0000	1	0.00			
10	1	9 - 10		0.0000	3	0.00		0.0000	1	0.00			
11	1	10 - 11		0.0000	3	0.00		0.0000	1	0.00			
12	1	11 - 12		0.0000	3	0.00		0.0000	1	0.00			
13	1	12 - 13		0.0000	3	0.00		0.0000	1	0.00			
14	1	13 - 14		0.0000	3	0.00		0.0000	1	0.00			
15	1	14 - 15		0.0000	3	0.00		0.0000	1	0.00			
16	1	15 - 16		0.0000	3	0.00		0.0000	1	0.00			
17	1	16-17		0.0000	1	0.00		0.0000	1	0.00			
18	1	17-18		0.0000	1	0.00		0.0000	1	0.00			
19	1	18-19		0.0000	1	0.00		0.0000	1	0.00			
20	1	19-20		0.0000	1	0.00		0.0000	1	0.00			
21	1	20-21		0.0000	1	0.00		0.0000	1	0.00			
22	1	21-22		0.0000	1	0.00		0.0000	1	0.00			
23	1	22-23		0.0000	1	0.00		0.0000	1	0.00			
24	1	23-24		0.0000	1	0.00		0.0000	1	0.00			
25	1	24-25		0.0000	1	0.00		0.0000	1	0.00			
26	1	25-26		0.0000	1	0.00		0.0000	1	0.00			
27	1	26-27		0.0000	1	0.00		0.0000	1	0.00			
28	1	27-28		0.0000	1	0.00		0.0000	1	0.00			
29	1	28-29		0.0000	1	0.00		0.0000	1	0.00			
30	1	29-30		0.0000	1	0.00		0.0000	1	0.00			
Total Increased Cancer Risk						**46.97**				**0.79**			

* Third trimester of pregnancy

1520 W. San Carlos Street Mixed-Use, San Jose, CA - Construction Impacts - Without Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at Off-Site MEI Location - 4.5 meter receptor height (2nd Floor Level)

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

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

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

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

Values

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

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

			Infant/Child - Exposure Information				Adult - Exposure Information				Maximum		
			DPM Conc (ug/m3)		Age	Infant/Child	Modeled DPM Conc (ug/m3)		Age	Adult			
Exposure Year	Exposure Duration (years)	Age	Year	Annual	Sensitivity Factor	Cancer Risk (per million)	Year	Annual	Sensitivity Factor	Cancer Risk (per million)	Hazard Index	Fugitive PM2.5	Total PM2.5
0	0.25	-0.25 - 0*	2023	0.1557	10	2.12	2023	0.1557	-	-			
1	1	0 - 1	2023	0.1557	10	25.56	2023	0.1557	1	0.45	0.03	0.63	0.79
2	1	1 - 2	2024	0.2049	10	33.66	2024	0.2049	1	0.59	0.04	0.01	0.21
3	1	2 - 3		0.0000	3	0.00		0.0000	1	0.00			
4	1	3 - 4		0.0000	3	0.00		0.0000	1	0.00			
5	1	4 - 5		0.0000	3	0.00		0.0000	1	0.00			
6	1	5 - 6		0.0000	3	0.00		0.0000	1	0.00			
7	1	6 - 7		0.0000	3	0.00		0.0000	1	0.00			
8	1	7 - 8		0.0000	3	0.00		0.0000	1	0.00			
9	1	8 - 9		0.0000	3	0.00		0.0000	1	0.00			
10	1	9 - 10		0.0000	3	0.00		0.0000	1	0.00			
11	1	10 - 11		0.0000	3	0.00		0.0000	1	0.00			
12	1	11 - 12		0.0000	3	0.00		0.0000	1	0.00			
13	1	12 - 13		0.0000	3	0.00		0.0000	1	0.00			
14	1	13 - 14		0.0000	3	0.00		0.0000	1	0.00			
15	1	14 - 15		0.0000	3	0.00		0.0000	1	0.00			
16	1	15 - 16		0.0000	3	0.00		0.0000	1	0.00			
17	1	16-17		0.0000	1	0.00		0.0000	1	0.00			
18	1	17-18		0.0000	1	0.00		0.0000	1	0.00			
19	1	18-19		0.0000	1	0.00		0.0000	1	0.00			
20	1	19-20		0.0000	1	0.00		0.0000	1	0.00			
21	1	20-21		0.0000	1	0.00		0.0000	1	0.00			
22	1	21-22		0.0000	1	0.00		0.0000	1	0.00			
23	1	22-23		0.0000	1	0.00		0.0000	1	0.00			
24	1	23-24		0.0000	1	0.00		0.0000	1	0.00			
25	1	24-25		0.0000	1	0.00		0.0000	1	0.00			
26	1	25-26		0.0000	1	0.00		0.0000	1	0.00			
27	1	26-27		0.0000	1	0.00		0.0000	1	0.00			
28	1	27-28		0.0000	1	0.00		0.0000	1	0.00			
29	1	28-29		0.0000	1	0.00		0.0000	1	0.00			
30	1	29-30		0.0000	1	0.00		0.0000	1	0.00			
Total Increased Cancer Risk						**61.34**				**1.04**			

* Third trimester of pregnancy

1520 W. San Carlos Street Mixed-Use, San Jose, CA - Construction Impacts - With Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at Off-Site MEI Location - 1.5 meter receptor height (1st Floor Level)

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

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

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

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

Values

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

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

			Infant/Child - Exposure Information				Adult - Exposure Information				Maximum		
			DPM Conc (ug/m3)		Age	Infant/Child	Modeled DPM Conc (ug/m3)		Age	Adult			
Exposure Year	Exposure Duration (years)	Age	Year	Annual	Sensitivity Factor	Cancer Risk (per million)	Year	Annual	Sensitivity Factor	Cancer Risk (per million)	Hazard Index	Fugitive PM2.5	Total PM2.5
0	0.25	-0.25 - 0*	2023	0.0120	10	0.16	2023	0.0120	-	-			
1	1	0 - 1	2023	0.0120	10	1.97	2023	0.0120	1	0.03	0.002	0.20	0.21
2	1	1 - 2	2024	0.0225	10	3.70	2024	0.0225	1	0.06	0.005	0.01	0.03
3	1	2 - 3		0.0000	3	0.00		0.0000	1	0.00			
4	1	3 - 4		0.0000	3	0.00		0.0000	1	0.00			
5	1	4 - 5		0.0000	3	0.00		0.0000	1	0.00			
6	1	5 - 6		0.0000	3	0.00		0.0000	1	0.00			
7	1	6 - 7		0.0000	3	0.00		0.0000	1	0.00			
8	1	7 - 8		0.0000	3	0.00		0.0000	1	0.00			
9	1	8 - 9		0.0000	3	0.00		0.0000	1	0.00			
10	1	9 - 10		0.0000	3	0.00		0.0000	1	0.00			
11	1	10 - 11		0.0000	3	0.00		0.0000	1	0.00			
12	1	11 - 12		0.0000	3	0.00		0.0000	1	0.00			
13	1	12 - 13		0.0000	3	0.00		0.0000	1	0.00			
14	1	13 - 14		0.0000	3	0.00		0.0000	1	0.00			
15	1	14 - 15		0.0000	3	0.00		0.0000	1	0.00			
16	1	15 - 16		0.0000	3	0.00		0.0000	1	0.00			
17	1	16-17		0.0000	1	0.00		0.0000	1	0.00			
18	1	17-18		0.0000	1	0.00		0.0000	1	0.00			
19	1	18-19		0.0000	1	0.00		0.0000	1	0.00			
20	1	19-20		0.0000	1	0.00		0.0000	1	0.00			
21	1	20-21		0.0000	1	0.00		0.0000	1	0.00			
22	1	21-22		0.0000	1	0.00		0.0000	1	0.00			
23	1	22-23		0.0000	1	0.00		0.0000	1	0.00			
24	1	23-24		0.0000	1	0.00		0.0000	1	0.00			
25	1	24-25		0.0000	1	0.00		0.0000	1	0.00			
26	1	25-26		0.0000	1	0.00		0.0000	1	0.00			
27	1	26-27		0.0000	1	0.00		0.0000	1	0.00			
28	1	27-28		0.0000	1	0.00		0.0000	1	0.00			
29	1	28-29		0.0000	1	0.00		0.0000	1	0.00			
30	1	29-30		0.0000	1	0.00		0.0000	1	0.00			
Total Increased Cancer Risk						**5.83**				**0.10**			

* Third trimester of pregnancy

1520 W. San Carlos Street Mixed-Use, San Jose, CA - Construction Impacts - With Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at Off-Site MEI Location - 4.5 meter receptor height (2nd Floor Level)

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

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

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

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

Values

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

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

			Infant/Child - Exposure Information			Infant/Child	Adult - Exposure Information			Adult	Maximum		
			DPM Conc (ug/m3)		Age	Cancer	Modeled DPM Conc (ug/m3)		Age	Cancer			
Exposure Year	Exposure Duration (years)	Age	Year	Annual	Sensitivity Factor	Risk (per million)	Year	Annual	Sensitivity Factor	Risk (per million)	Hazard Index	Fugitive PM2.5	Total PM2.5
0	0.25	-0.25 - 0*	2023	0.0157	10	0.21	2023	0.0157	-	-			
1	1	0 - 1	2023	0.0157	10	2.57	2023	0.0157	1	0.04	0.003	0.13	0.14
2	1	1 - 2	2024	0.0294	10	4.83	2024	0.0294	1	0.08	0.01	0.01	0.04
3	1	2 - 3		0.0000	3	0.00		0.0000	1	0.00			
4	1	3 - 4		0.0000	3	0.00		0.0000	1	0.00			
5	1	4 - 5		0.0000	3	0.00		0.0000	1	0.00			
6	1	5 - 6		0.0000	3	0.00		0.0000	1	0.00			
7	1	6 - 7		0.0000	3	0.00		0.0000	1	0.00			
8	1	7 - 8		0.0000	3	0.00		0.0000	1	0.00			
9	1	8 - 9		0.0000	3	0.00		0.0000	1	0.00			
10	1	9 - 10		0.0000	3	0.00		0.0000	1	0.00			
11	1	10 - 11		0.0000	3	0.00		0.0000	1	0.00			
12	1	11 - 12		0.0000	3	0.00		0.0000	1	0.00			
13	1	12 - 13		0.0000	3	0.00		0.0000	1	0.00			
14	1	13 - 14		0.0000	3	0.00		0.0000	1	0.00			
15	1	14 - 15		0.0000	3	0.00		0.0000	1	0.00			
16	1	15 - 16		0.0000	3	0.00		0.0000	1	0.00			
17	1	16-17		0.0000	1	0.00		0.0000	1	0.00			
18	1	17-18		0.0000	1	0.00		0.0000	1	0.00			
19	1	18-19		0.0000	1	0.00		0.0000	1	0.00			
20	1	19-20		0.0000	1	0.00		0.0000	1	0.00			
21	1	20-21		0.0000	1	0.00		0.0000	1	0.00			
22	1	21-22		0.0000	1	0.00		0.0000	1	0.00			
23	1	22-23		0.0000	1	0.00		0.0000	1	0.00			
24	1	23-24		0.0000	1	0.00		0.0000	1	0.00			
25	1	24-25		0.0000	1	0.00		0.0000	1	0.00			
26	1	25-26		0.0000	1	0.00		0.0000	1	0.00			
27	1	26-27		0.0000	1	0.00		0.0000	1	0.00			
28	1	27-28		0.0000	1	0.00		0.0000	1	0.00			
29	1	28-29		0.0000	1	0.00		0.0000	1	0.00			
30	1	29-30		0.0000	1	0.00		0.0000	1	0.00			
Total Increased Cancer Risk						**7.62**				**0.13**			

* Third trimester of pregnancy

Attachment 5: Community Risk Modeling Information and Calculations

File Name: 1520 WSC - Santa Clara (SF) - 2023 - Annual.EF
CT-EMFAC2017 Version: 1.0.2.27401
Run Date: 9/28/2022 13:52
Area: Santa Clara (SF)
Analysis Year: 2023
Season: Annual

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

Road Type: Major/Collector
Silt Loading Factor: CARB 0.032 g/m2
Precipitation Correction: CARB P = 64 days N = 365 days

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

Pollutant Name	<= 5 mph	10 mph	15 mph	20 mph	25 mph	30 mph	35 mph	40 mph	45 mph	50 mph	55 mph	60 mph	65 mph	70 mph	75 mph
PM2.5	0.009229	0.005981	0.004054	0.002896	0.002194	0.001765	0.001511	0.001375	0.001329	0.001357	0.001452	0.001618	0.001864	0.00197	0.00197
TOG	0.195764	0.127928	0.086105	0.061055	0.046181	0.036838	0.030861	0.027137	0.025044	0.024259	0.024675	0.026385	0.029656	0.032036	0.032118
Diesel PM	0.000904	0.000732	0.000563	0.000446	0.000382	0.000353	0.00035	0.00037	0.000411	0.000473	0.000556	0.000654	0.000766	0.000766	0.000766

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

Pollutant Name	Emission Factor
TOG	1.35761

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

Pollutant Name	Emission Factor
PM2.5	0.002108

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

Pollutant Name	Emission Factor
PM2.5	0.016808

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

Pollutant Name	Emission Factor
PM2.5	0.014855

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

1520 W. San Carlos Street Mixed-Use, San Jose, CA - Offsite Residential Roadway Modeling
Cumulative Operation - W. San Carlos Street
DPM Modeling - Roadway Links, Traffic Volumes, and DPM Emissions
Year = **2023**

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
DPM_EB_WSC	W. San Carlos Street Eastbound	EB	2	683.1	0.42	13.3	43.7	3.4	30	8,624
DPM_WB_WSC	W. San Carlos Street Westbound	WB	2	680.8	0.42	13.3	43.7	3.4	30	8,624
									Total	17,248

Emission Factors - DPM

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

Emisson Factors from CT-EMFAC2017

2023 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	3.91%	337	1.40E-05	9	6.50%	561	2.33E-05	17	5.58%	481	2.00E-05
2	2.59%	223	9.30E-06	10	7.36%	635	2.64E-05	18	3.28%	283	1.18E-05
3	2.88%	248	1.03E-05	11	6.33%	546	2.27E-05	19	2.36%	204	8.47E-06
4	3.34%	288	1.20E-05	12	6.84%	590	2.46E-05	20	0.92%	79	3.30E-06
5	2.19%	189	7.86E-06	13	6.15%	530	2.21E-05	21	2.99%	258	1.07E-05
6	3.39%	292	1.22E-05	14	6.15%	530	2.21E-05	22	4.14%	357	1.49E-05
7	5.98%	516	2.15E-05	15	5.23%	451	1.88E-05	23	2.47%	213	8.87E-06
8	4.66%	402	1.67E-05	16	3.91%	337	1.40E-05	24	0.86%	74	3.09E-06
								Total		8,625	

2023 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	3.91%	337	1.40E-05	9	6.50%	561	2.33E-05	17	5.58%	481	2.00E-05
2	2.59%	223	9.27E-06	10	7.36%	635	2.63E-05	18	3.28%	283	1.17E-05
3	2.88%	248	1.03E-05	11	6.33%	546	2.26E-05	19	2.36%	204	8.44E-06
4	3.34%	288	1.19E-05	12	6.84%	590	2.45E-05	20	0.92%	79	3.29E-06
5	2.19%	189	7.83E-06	13	6.15%	530	2.20E-05	21	2.99%	258	1.07E-05
6	3.39%	292	1.21E-05	14	6.15%	530	2.20E-05	22	4.14%	357	1.48E-05
7	5.98%	516	2.14E-05	15	5.23%	451	1.87E-05	23	2.47%	213	8.84E-06
8	4.66%	402	1.67E-05	16	3.91%	337	1.40E-05	24	0.86%	74	3.08E-06
								Total		8,625	

1520 W. San Carlos Street Mixed-Use, San Jose, CA - Offsite Residential Roadway Modeling
Cumulative Operation - W. San Carlos Street
PM2.5 Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions
Year = 2023

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
PM25_EB_WSC	W. San Carlos Street Eastbound	EB	2	683.1	0.42	13.3	44	1.3	30	8,624
PM25_WB_WSC	W. San Carlos Street Westbound	WB	2	680.8	0.42	13.3	44	1.3	30	8,624
									Total	17,248

Emission Factors - PM2.5

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

Emisson Factors from CT-EMFAC2017

2023 Hourly Traffic Volumes and PM2.5 Emissions - PM25_EB_WSC

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	99	2.06E-05	9	7.11%	613	1.28E-04	17	7.38%	636	1.32E-04
2	0.42%	36	7.54E-06	10	4.39%	379	7.88E-05	18	8.17%	705	1.47E-04
3	0.41%	35	7.36E-06	11	4.66%	402	8.36E-05	19	5.70%	492	1.02E-04
4	0.26%	22	4.67E-06	12	5.89%	508	1.06E-04	20	4.27%	368	7.66E-05
5	0.50%	43	8.97E-06	13	6.15%	530	1.10E-04	21	3.26%	281	5.85E-05
6	0.90%	78	1.62E-05	14	6.04%	521	1.08E-04	22	3.30%	285	5.92E-05
7	3.79%	327	6.80E-05	15	7.01%	605	1.26E-04	23	2.46%	212	4.41E-05
8	7.76%	669	1.39E-04	16	7.14%	616	1.28E-04	24	1.86%	160	3.34E-05
								Total		8,622	

2023 Hourly Traffic Volumes Per Direction and PM2.5 Emissions - PM25_WB_WSC

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	99	2.06E-05	9	7.11%	613	1.27E-04	17	7.38%	636	1.32E-04
2	0.42%	36	7.51E-06	10	4.39%	379	7.85E-05	18	8.17%	705	1.46E-04
3	0.41%	35	7.33E-06	11	4.66%	402	8.34E-05	19	5.70%	492	1.02E-04
4	0.26%	22	4.65E-06	12	5.89%	508	1.05E-04	20	4.27%	368	7.64E-05
5	0.50%	43	8.94E-06	13	6.15%	530	1.10E-04	21	3.26%	281	5.83E-05
6	0.90%	78	1.61E-05	14	6.04%	521	1.08E-04	22	3.30%	285	5.90E-05
7	3.79%	327	6.78E-05	15	7.01%	605	1.25E-04	23	2.46%	212	4.40E-05
8	7.76%	669	1.39E-04	16	7.14%	616	1.28E-04	24	1.86%	160	3.33E-05
								Total		8,622	

1520 W. San Carlos Street Mixed-Use, San Jose, CA - Offsite Residential Roadway Modeling
Cumulative Operation - W. San Carlos Street
TOG Exhaust Modeling - Roadway Links, Traffic Volumes, and TOG Exhaust Emissions
Year = 2023

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
TEXH_EB_WSC	W. San Carlos Street Eastbound	EB	2	683.1	0.42	13.3	44	1.3	30	8,624
TEXH_WB_WSC	W. San Carlos Street Westbound	WB	2	680.8	0.42	13.3	44	1.3	30	8,624
									Total	17,248

Emission Factors - TOG Exhaust

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

Emisson Factors from CT-EMFAC2017

2023 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%	99	4.31E-04	9	7.11%	613	2.66E-03	17	7.38%	636	2.76E-03
2	0.42%	36	1.57E-04	10	4.39%	379	1.64E-03	18	8.17%	705	3.06E-03
3	0.41%	35	1.54E-04	11	4.66%	402	1.75E-03	19	5.70%	492	2.14E-03
4	0.26%	22	9.74E-05	12	5.89%	508	2.21E-03	20	4.27%	368	1.60E-03
5	0.50%	43	1.87E-04	13	6.15%	530	2.30E-03	21	3.26%	281	1.22E-03
6	0.90%	78	3.37E-04	14	6.04%	521	2.26E-03	22	3.30%	285	1.24E-03
7	3.79%	327	1.42E-03	15	7.01%	605	2.63E-03	23	2.46%	212	9.21E-04
8	7.76%	669	2.91E-03	16	7.14%	616	2.67E-03	24	1.86%	160	6.97E-04
								Total		8,622	

2023 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%	99	4.29E-04	9	7.11%	613	2.65E-03	17	7.38%	636	2.76E-03
2	0.42%	36	1.57E-04	10	4.39%	379	1.64E-03	18	8.17%	705	3.05E-03
3	0.41%	35	1.53E-04	11	4.66%	402	1.74E-03	19	5.70%	492	2.13E-03
4	0.26%	22	9.71E-05	12	5.89%	508	2.20E-03	20	4.27%	368	1.59E-03
5	0.50%	43	1.87E-04	13	6.15%	530	2.30E-03	21	3.26%	281	1.22E-03
6	0.90%	78	3.36E-04	14	6.04%	521	2.25E-03	22	3.30%	285	1.23E-03
7	3.79%	327	1.41E-03	15	7.01%	605	2.62E-03	23	2.46%	212	9.18E-04
8	7.76%	669	2.90E-03	16	7.14%	616	2.67E-03	24	1.86%	160	6.94E-04
								Total		8,622	

1520 W. San Carlos Street Mixed-Use, San Jose, CA - Offsite Residential Roadway Modeling
Cumulative Operation - W. San Carlos Street
TOG Evaporative Emissions Modeling - Roadway Links, Traffic Volumes, and TOG Evaporative Emissions
Year = 2023

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
TEVAP_EB_WSC	W. San Carlos Street Eastbound	EB	2	683.1	0.42	13.3	44	1.3	30	8,624
TEVAP_WB_WSC	W. San Carlos Street Westbound	WB	2	680.8	0.42	13.3	44	1.3	30	8,624
									Total	17,248

Emission Factors - PM2.5 - Evaporative TOG

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

Emisson Factors from CT-EMFAC2017

2023 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%	99	5.29E-04	9	7.11%	613	3.27E-03	17	7.38%	636	3.40E-03
2	0.42%	36	1.93E-04	10	4.39%	379	2.02E-03	18	8.17%	705	3.76E-03
3	0.41%	35	1.89E-04	11	4.66%	402	2.14E-03	19	5.70%	492	2.62E-03
4	0.26%	22	1.20E-04	12	5.89%	508	2.71E-03	20	4.27%	368	1.96E-03
5	0.50%	43	2.30E-04	13	6.15%	530	2.83E-03	21	3.26%	281	1.50E-03
6	0.90%	78	4.14E-04	14	6.04%	521	2.78E-03	22	3.30%	285	1.52E-03
7	3.79%	327	1.74E-03	15	7.01%	605	3.23E-03	23	2.46%	212	1.13E-03
8	7.76%	669	3.57E-03	16	7.14%	616	3.29E-03	24	1.86%	160	8.56E-04
								Total		8,622	

2023 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%	99	5.27E-04	9	7.11%	613	3.26E-03	17	7.38%	636	3.38E-03
2	0.42%	36	1.93E-04	10	4.39%	379	2.01E-03	18	8.17%	705	3.75E-03
3	0.41%	35	1.88E-04	11	4.66%	402	2.14E-03	19	5.70%	492	2.61E-03
4	0.26%	22	1.19E-04	12	5.89%	508	2.70E-03	20	4.27%	368	1.96E-03
5	0.50%	43	2.29E-04	13	6.15%	530	2.82E-03	21	3.26%	281	1.50E-03
6	0.90%	78	4.13E-04	14	6.04%	521	2.77E-03	22	3.30%	285	1.51E-03
7	3.79%	327	1.74E-03	15	7.01%	605	3.21E-03	23	2.46%	212	1.13E-03
8	7.76%	669	3.56E-03	16	7.14%	616	3.27E-03	24	1.86%	160	8.53E-04
								Total		8,622	

1520 W. San Carlos Street Mixed-Use, San Jose, CA - Offsite Residential Roadway Modeling
Cumulative Operation - W. San Carlos Street
Fugitive Road PM2.5 Modeling - Roadway Links, Traffic Volumes, and Fugitive Road PM2.5 Emissions
Year = 2023

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
FUG_EB_WSC	W. San Carlos Street Eastbound	EB	2	683.1	0.42	13.3	44	1.3	30	8,624
FUG_WB_WSC	W. San Carlos Street Westbound	WB	2	680.8	0.42	13.3	44	1.3	30	8,624
									Total	17,248

Emission Factors - Fugitive PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	30			
Tire Wear - Emissions per Vehicle (g/VMT)	0.00211			
Brake Wear - Emissions per Vehicle (g/VMT)	0.01681			
Road Dust - Emissions per Vehicle (g/VMT)	0.01486			
Total Fugitive PM2.5 - Emissions per Vehicle (g/VMT)	0.03377			

Emisson Factors from CT-EMFAC2017

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

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	99	3.95E-04	9	7.11%	613	2.44E-03	17	7.38%	636	2.53E-03
2	0.42%	36	1.44E-04	10	4.39%	379	1.51E-03	18	8.17%	705	2.81E-03
3	0.41%	35	1.41E-04	11	4.66%	402	1.60E-03	19	5.70%	492	1.96E-03
4	0.26%	22	8.93E-05	12	5.89%	508	2.02E-03	20	4.27%	368	1.47E-03
5	0.50%	43	1.72E-04	13	6.15%	530	2.11E-03	21	3.26%	281	1.12E-03
6	0.90%	78	3.09E-04	14	6.04%	521	2.07E-03	22	3.30%	285	1.13E-03
7	3.79%	327	1.30E-03	15	7.01%	605	2.41E-03	23	2.46%	212	8.45E-04
8	7.76%	669	2.66E-03	16	7.14%	616	2.45E-03	24	1.86%	160	6.39E-04
								Total		8,622	

2023 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%	99	3.94E-04	9	7.11%	613	2.43E-03	17	7.38%	636	2.53E-03
2	0.42%	36	1.44E-04	10	4.39%	379	1.50E-03	18	8.17%	705	2.80E-03
3	0.41%	35	1.40E-04	11	4.66%	402	1.59E-03	19	5.70%	492	1.95E-03
4	0.26%	22	8.90E-05	12	5.89%	508	2.02E-03	20	4.27%	368	1.46E-03
5	0.50%	43	1.71E-04	13	6.15%	530	2.10E-03	21	3.26%	281	1.12E-03
6	0.90%	78	3.08E-04	14	6.04%	521	2.07E-03	22	3.30%	285	1.13E-03
7	3.79%	327	1.30E-03	15	7.01%	605	2.40E-03	23	2.46%	212	8.42E-04
8	7.76%	669	2.66E-03	16	7.14%	616	2.44E-03	24	1.86%	160	6.37E-04
								Total		8,622	

File Name: 1520 WSC - Santa Clara (SF) - 2025 - Annual.EF
CT-EMFAC2017 Version: 1.0.2.27401
Run Date: 9/28/2022 13:52
Area: Santa Clara (SF)
Analysis Year: 2025
Season: Annual

Vehicle Category	VMT Fraction Across Category	Diesel VMT Fraction Within Category	Gas VMT Fraction Within Category
Truck 1	0.015	0.502	0.498
Truck 2	0.02	0.936	0.048
Non-Truck	0.965	0.015	0.951

Road Type: Major/Collector
Silt Loading Factor: CARB 0.032 g/m2
Precipitation Correction: CARB P = 64 days N = 365 days

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

Pollutant Name	<= 5 mph	10 mph	15 mph	20 mph	25 mph	30 mph	35 mph	40 mph	45 mph	50 mph	55 mph	60 mph	65 mph	70 mph	75 mph
PM2.5	0.008489	0.005501	0.00373	0.002665	0.00202	0.001628	0.001397	0.001277	0.00124	0.001271	0.001366	0.001527	0.001762	0.001858	0.001858
TOG	0.172619	0.113109	0.076066	0.0539	0.040836	0.03264	0.027389	0.02411	0.022258	0.021553	0.0219	0.023386	0.026243	0.028322	0.028408
Diesel PM	0.000788	0.00065	0.000505	0.000405	0.00035	0.000326	0.000328	0.000351	0.000395	0.000458	0.000541	0.00064	0.000753	0.000753	0.000753

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

Pollutant Name	Emission Factor
TOG	1.255395

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

Pollutant Name	Emission Factor
PM2.5	0.002108

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

Pollutant Name	Emission Factor
PM2.5	0.016801

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

Pollutant Name	Emission Factor
PM2.5	0.014826

END

1520 W. San Carlos Street Mixed-Use, San Jose, CA - Onsite Residential Roadway Modeling
Cumulative Operation - W. San Carlos Street
DPM Modeling - Roadway Links, Traffic Volumes, and DPM Emissions
Year = **2025**

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. San Carlos Street Eastbound	EB	2	683.1	0.42	13.3	43.7	3.4	30	8,793
DPM_WB_WSC	W. San Carlos Street Westbound	WB	2	680.8	0.42	13.3	43.7	3.4	30	8,793
									Total	17,586

Emission Factors - DPM

Speed Category	1	2	3	4
Travel Speed (mph)	30			
Emissions per Vehicle (g/VMT)	0.00033			

Emisson Factors from CT-EMFAC2017

2025 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	3.93%	346	1.33E-05	9	6.41%	564	2.17E-05	17	5.55%	488	1.88E-05
2	2.62%	230	8.86E-06	10	7.36%	647	2.49E-05	18	3.16%	278	1.07E-05
3	2.85%	251	9.63E-06	11	6.34%	557	2.14E-05	19	2.36%	208	7.98E-06
4	3.31%	291	1.12E-05	12	6.92%	608	2.34E-05	20	0.87%	77	2.94E-06
5	2.17%	191	7.33E-06	13	6.29%	553	2.13E-05	21	3.09%	272	1.04E-05
6	3.36%	295	1.14E-05	14	6.23%	548	2.11E-05	22	4.12%	362	1.39E-05
7	6.00%	528	2.03E-05	15	5.15%	453	1.74E-05	23	2.58%	227	8.72E-06
8	4.58%	403	1.55E-05	16	3.84%	338	1.30E-05	24	0.92%	81	3.11E-06
								Total		8,794	

2025 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	3.93%	346	1.32E-05	9	6.41%	564	2.16E-05	17	5.55%	488	1.87E-05
2	2.62%	230	8.83E-06	10	7.36%	647	2.48E-05	18	3.16%	278	1.06E-05
3	2.85%	251	9.60E-06	11	6.34%	557	2.14E-05	19	2.36%	208	7.95E-06
4	3.31%	291	1.11E-05	12	6.92%	608	2.33E-05	20	0.87%	77	2.93E-06
5	2.17%	191	7.31E-06	13	6.29%	553	2.12E-05	21	3.09%	272	1.04E-05
6	3.36%	295	1.13E-05	14	6.23%	548	2.10E-05	22	4.12%	362	1.39E-05
7	6.00%	528	2.02E-05	15	5.15%	453	1.73E-05	23	2.58%	227	8.69E-06
8	4.58%	403	1.54E-05	16	3.84%	338	1.29E-05	24	0.92%	81	3.10E-06
								Total		8,794	

1520 W. San Carlos Street Mixed-Use, San Jose, CA - Onsite Residential Roadway Modeling
Cumulative Operation - W. San Carlos Street
PM2.5 Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions
Year = 2025

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
PM25_EB_WSC	W. San Carlos Street Eastbound	EB	2	683.1	0.42	13.3	44	1.3	30	8,793
PM25_WB_WSC	W. San Carlos Street Westbound	WB	2	680.8	0.42	13.3	44	1.3	30	8,793
									Total	17,586

Emission Factors - PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	30			
Emissions per Vehicle (g/VMT)	0.001628			

Emisson Factors from CT-EMFAC2017

2025 Hourly Traffic Volumes and PM2.5 Emissions - PM25_EB_WSC

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	101	1.94E-05	9	7.11%	625	1.20E-04	17	7.39%	650	1.25E-04
2	0.42%	37	7.09E-06	10	4.39%	386	7.41E-05	18	8.18%	719	1.38E-04
3	0.41%	36	6.92E-06	11	4.66%	410	7.87E-05	19	5.69%	500	9.60E-05
4	0.26%	23	4.39E-06	12	5.89%	518	9.94E-05	20	4.28%	376	7.22E-05
5	0.50%	44	8.44E-06	13	6.15%	541	1.04E-04	21	3.25%	286	5.49E-05
6	0.91%	80	1.54E-05	14	6.04%	531	1.02E-04	22	3.30%	290	5.57E-05
7	3.79%	333	6.40E-05	15	7.01%	616	1.18E-04	23	2.46%	216	4.15E-05
8	7.77%	683	1.31E-04	16	7.14%	628	1.21E-04	24	1.86%	164	3.14E-05
								Total		8,794	

2025 Hourly Traffic Volumes Per Direction and PM2.5 Emissions - PM25_WB_WSC

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	101	1.93E-05	9	7.11%	625	1.20E-04	17	7.39%	650	1.24E-04
2	0.42%	37	7.07E-06	10	4.39%	386	7.38E-05	18	8.18%	719	1.38E-04
3	0.41%	36	6.90E-06	11	4.66%	410	7.84E-05	19	5.69%	500	9.57E-05
4	0.26%	23	4.37E-06	12	5.89%	518	9.91E-05	20	4.28%	376	7.20E-05
5	0.50%	44	8.41E-06	13	6.15%	541	1.03E-04	21	3.25%	286	5.47E-05
6	0.91%	80	1.53E-05	14	6.04%	531	1.02E-04	22	3.30%	290	5.55E-05
7	3.79%	333	6.38E-05	15	7.01%	616	1.18E-04	23	2.46%	216	4.14E-05
8	7.77%	683	1.31E-04	16	7.14%	628	1.20E-04	24	1.86%	164	3.13E-05
								Total		8,794	

1520 W. San Carlos Street Mixed-Use, San Jose, CA - Onsite Residential Roadway Modeling
Cumulative Operation - W. San Carlos Street
TOG Exhaust Modeling - Roadway Links, Traffic Volumes, and TOG Exhaust Emissions
Year = **2025**

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. San Carlos Street Eastbound	EB	2	683.1	0.42	13.3	44	1.3	30	8,793
TEXH_WB_WSC	W. San Carlos Street Westbound	WB	2	680.8	0.42	13.3	44	1.3	30	8,793
									Total	17,586

Emission Factors - TOG Exhaust

Speed Category	1	2	3	4
Travel Speed (mph)	30			
Emissions per Vehicle (g/VMT)	0.03264			

Emisson Factors from CT-EMFAC2017

2025 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%	101	3.89E-04	9	7.11%	625	2.41E-03	17	7.39%	650	2.50E-03
2	0.42%	37	1.42E-04	10	4.39%	386	1.49E-03	18	8.18%	719	2.77E-03
3	0.41%	36	1.39E-04	11	4.66%	410	1.58E-03	19	5.69%	500	1.93E-03
4	0.26%	23	8.80E-05	12	5.89%	518	1.99E-03	20	4.28%	376	1.45E-03
5	0.50%	44	1.69E-04	13	6.15%	541	2.08E-03	21	3.25%	286	1.10E-03
6	0.91%	80	3.08E-04	14	6.04%	531	2.04E-03	22	3.30%	290	1.12E-03
7	3.79%	333	1.28E-03	15	7.01%	616	2.37E-03	23	2.46%	216	8.32E-04
8	7.77%	683	2.63E-03	16	7.14%	628	2.42E-03	24	1.86%	164	6.29E-04
								Total		8,794	

2025 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%	101	3.88E-04	9	7.11%	625	2.40E-03	17	7.39%	650	2.49E-03
2	0.42%	37	1.42E-04	10	4.39%	386	1.48E-03	18	8.18%	719	2.76E-03
3	0.41%	36	1.38E-04	11	4.66%	410	1.57E-03	19	5.69%	500	1.92E-03
4	0.26%	23	8.77E-05	12	5.89%	518	1.99E-03	20	4.28%	376	1.44E-03
5	0.50%	44	1.69E-04	13	6.15%	541	2.07E-03	21	3.25%	286	1.10E-03
6	0.91%	80	3.07E-04	14	6.04%	531	2.04E-03	22	3.30%	290	1.11E-03
7	3.79%	333	1.28E-03	15	7.01%	616	2.36E-03	23	2.46%	216	8.30E-04
8	7.77%	683	2.62E-03	16	7.14%	628	2.41E-03	24	1.86%	164	6.27E-04
								Total		8,794	

1520 W. San Carlos Street Mixed-Use, San Jose, CA - Onsite Residential Roadway Modeling
Cumulative Operation - W. San Carlos Street
TOG Evaporative Emissions Modeling - Roadway Links, Traffic Volumes, and TOG Evaporative Emissions
Year = 2025

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. San Carlos Street Eastbound	EB	2	683.1	0.42	13.3	44	1.3	30	8,793
TEVAP_WB_WSC	W. San Carlos Street Westbound	WB	2	680.8	0.42	13.3	44	1.3	30	8,793
									Total	17,586

Emission Factors - PM2.5 - Evaporative TOG

Speed Category	1	2	3	4
Travel Speed (mph)	30			
Emissions per Vehicle per Hour (g/hour)	1.25540			
Emissions per Vehicle per Mile (g/VMT)	0.04185			

Emisson Factors from CT-EMFAC2017

2025 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%	101	4.99E-04	9	7.11%	625	3.08E-03	17	7.39%	650	3.21E-03
2	0.42%	37	1.82E-04	10	4.39%	386	1.90E-03	18	8.18%	719	3.55E-03
3	0.41%	36	1.78E-04	11	4.66%	410	2.02E-03	19	5.69%	500	2.47E-03
4	0.26%	23	1.13E-04	12	5.89%	518	2.56E-03	20	4.28%	376	1.86E-03
5	0.50%	44	2.17E-04	13	6.15%	541	2.67E-03	21	3.25%	286	1.41E-03
6	0.91%	80	3.95E-04	14	6.04%	531	2.62E-03	22	3.30%	290	1.43E-03
7	3.79%	333	1.64E-03	15	7.01%	616	3.04E-03	23	2.46%	216	1.07E-03
8	7.77%	683	3.37E-03	16	7.14%	628	3.10E-03	24	1.86%	164	8.07E-04
								Total		8,794	

2025 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%	101	4.97E-04	9	7.11%	625	3.07E-03	17	7.39%	650	3.20E-03
2	0.42%	37	1.82E-04	10	4.39%	386	1.90E-03	18	8.18%	719	3.54E-03
3	0.41%	36	1.77E-04	11	4.66%	410	2.01E-03	19	5.69%	500	2.46E-03
4	0.26%	23	1.12E-04	12	5.89%	518	2.55E-03	20	4.28%	376	1.85E-03
5	0.50%	44	2.16E-04	13	6.15%	541	2.66E-03	21	3.25%	286	1.41E-03
6	0.91%	80	3.93E-04	14	6.04%	531	2.61E-03	22	3.30%	290	1.43E-03
7	3.79%	333	1.64E-03	15	7.01%	616	3.03E-03	23	2.46%	216	1.06E-03
8	7.77%	683	3.36E-03	16	7.14%	628	3.09E-03	24	1.86%	164	8.04E-04
								Total		8,794	

1520 W. San Carlos Street Mixed-Use, San Jose, CA - Onsite Residential Roadway Modeling
Cumulative Operation - W. San Carlos Street
Fugitive Road PM2.5 Modeling - Roadway Links, Traffic Volumes, and Fugitive Road PM2.5 Emissions
Year = **2025**

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. San Carlos Street Eastbound	EB	2	683.1	0.42	13.3	44	1.3	30	8,793
FUG_WB_WSC	W. San Carlos Street Westbound	WB	2	680.8	0.42	13.3	44	1.3	30	8,793
									Total	17,586

Emission Factors - Fugitive PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	30			
Tire Wear - Emissions per Vehicle (g/VMT)	0.00211			
Brake Wear - Emissions per Vehicle (g/VMT)	0.01680			
Road Dust - Emissions per Vehicle (g/VMT)	0.01483			
Total Fugitive PM2.5 - Emissions per Vehicle (g/VMT)	0.03374			

Emisson Factors from CT-EMFAC2017

2025 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%	101	4.02E-04	9	7.11%	625	2.49E-03	17	7.39%	650	2.58E-03
2	0.42%	37	1.47E-04	10	4.39%	386	1.54E-03	18	8.18%	719	2.86E-03
3	0.41%	36	1.43E-04	11	4.66%	410	1.63E-03	19	5.69%	500	1.99E-03
4	0.26%	23	9.09E-05	12	5.89%	518	2.06E-03	20	4.28%	376	1.50E-03
5	0.50%	44	1.75E-04	13	6.15%	541	2.15E-03	21	3.25%	286	1.14E-03
6	0.91%	80	3.18E-04	14	6.04%	531	2.11E-03	22	3.30%	290	1.15E-03
7	3.79%	333	1.33E-03	15	7.01%	616	2.45E-03	23	2.46%	216	8.60E-04
8	7.77%	683	2.72E-03	16	7.14%	628	2.50E-03	24	1.86%	164	6.51E-04
								Total		8,794	

2025 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%	101	4.01E-04	9	7.11%	625	2.48E-03	17	7.39%	650	2.58E-03
2	0.42%	37	1.46E-04	10	4.39%	386	1.53E-03	18	8.18%	719	2.85E-03
3	0.41%	36	1.43E-04	11	4.66%	410	1.62E-03	19	5.69%	500	1.98E-03
4	0.26%	23	9.06E-05	12	5.89%	518	2.05E-03	20	4.28%	376	1.49E-03
5	0.50%	44	1.74E-04	13	6.15%	541	2.14E-03	21	3.25%	286	1.13E-03
6	0.91%	80	3.17E-04	14	6.04%	531	2.11E-03	22	3.30%	290	1.15E-03
7	3.79%	333	1.32E-03	15	7.01%	616	2.44E-03	23	2.46%	216	8.57E-04
8	7.77%	683	2.71E-03	16	7.14%	628	2.49E-03	24	1.86%	164	6.48E-04
								Total		8,794	

1520 W. San Carlos Street Mixed-Use, San Jose, CA - W. San Carlos Street Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
at Construction MEI Receptors, PM2.5 1.5m, Cancer Risk 4.5m receptor heights

Emission Year	2023
Receptor Information	Construction MEI receptors
Number of Receptors	2
Receptor Height	PM2.5 1.5m, Cancer Risk 4.5m
Receptor Distances	At Construction MEI locations

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

Construction Cancer Risk MEI Cancer Risk Maximum Concentrations

Meteorological Data Years	Concentration (µg/m3)		
	DPM	Exhaust TOG	Evaporative TOG
2013-2017	0.0007	0.0718	0.0881

Construction PM2.5 MEI PM2.5 Maximum Concentrations

Meteorological Data Years	PM2.5 Concentration (µg/m3)		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013-2017	0.0664	0.0631	0.0033

1520 W. San Carlos Street Mixed-Use, San Jose, CA - W. San Carlos Street Cancer Risk & PM2.5 Impacts at Construction MEIs - PM2.5 1.5m, Cancer Risk 4.5m receptor heights
30 Year Residential Exposure

Cancer Risk Calculation Method

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

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

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

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

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

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

Values

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

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)			
Exposure Year	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	TOTAL
0	0.25	-0.25 - 0*	2023	10	0.0007	0.0718	0.0881	0.009	0.006	0.0004	0.01
1	1	0 - 1	2023	10	0.0007	0.0718	0.0881	0.108	0.067	0.0049	0.18
2	1	1 - 2	2024	10	0.0007	0.0718	0.0881	0.108	0.067	0.0049	0.18
3	1	2 - 3	2025	3	0.0007	0.0718	0.0881	0.017	0.011	0.0008	0.03
4	1	3 - 4	2026	3	0.0007	0.0718	0.0881	0.017	0.011	0.0008	0.03
5	1	4 - 5	2027	3	0.0007	0.0718	0.0881	0.017	0.011	0.0008	0.03
6	1	5 - 6	2028	3	0.0007	0.0718	0.0881	0.017	0.011	0.0008	0.03
7	1	6 - 7	2029	3	0.0007	0.0718	0.0881	0.017	0.011	0.0008	0.03
8	1	7 - 8	2030	3	0.0007	0.0718	0.0881	0.017	0.011	0.0008	0.03
9	1	8 - 9	2031	3	0.0007	0.0718	0.0881	0.017	0.011	0.0008	0.03
10	1	9 - 10	2032	3	0.0007	0.0718	0.0881	0.017	0.011	0.0008	0.03
11	1	10 - 11	2033	3	0.0007	0.0718	0.0881	0.017	0.011	0.0008	0.03
12	1	11 - 12	2034	3	0.0007	0.0718	0.0881	0.017	0.011	0.0008	0.03
13	1	12 - 13	2035	3	0.0007	0.0718	0.0881	0.017	0.011	0.0008	0.03
14	1	13 - 14	2036	3	0.0007	0.0718	0.0881	0.017	0.011	0.0008	0.03
15	1	14 - 15	2037	3	0.0007	0.0718	0.0881	0.017	0.011	0.0008	0.03
16	1	15 - 16	2038	3	0.0007	0.0718	0.0881	0.017	0.011	0.0008	0.03
17	1	16-17	2039	1	0.0007	0.0718	0.0881	0.002	0.001	0.0001	0.00
18	1	17-18	2040	1	0.0007	0.0718	0.0881	0.002	0.001	0.0001	0.00
19	1	18-19	2041	1	0.0007	0.0718	0.0881	0.002	0.001	0.0001	0.00
20	1	19-20	2042	1	0.0007	0.0718	0.0881	0.002	0.001	0.0001	0.00
21	1	20-21	2043	1	0.0007	0.0718	0.0881	0.002	0.001	0.0001	0.00
22	1	21-22	2044	1	0.0007	0.0718	0.0881	0.002	0.001	0.0001	0.00
23	1	22-23	2045	1	0.0007	0.0718	0.0881	0.002	0.001	0.0001	0.00
24	1	23-24	2046	1	0.0007	0.0718	0.0881	0.002	0.001	0.0001	0.00
25	1	24-25	2047	1	0.0007	0.0718	0.0881	0.002	0.001	0.0001	0.00
26	1	25-26	2048	1	0.0007	0.0718	0.0881	0.002	0.001	0.0001	0.00
27	1	26-27	2049	1	0.0007	0.0718	0.0881	0.002	0.001	0.0001	0.00
28	1	27-28	2050	1	0.0007	0.0718	0.0881	0.002	0.001	0.0001	0.00
29	1	28-29	2051	1	0.0007	0.0718	0.0881	0.002	0.001	0.0001	0.00
30	1	29-30	2052	1	0.0007	0.0718	0.0881	0.002	0.001	0.0001	0.00
Total Increased Cancer Risk								0.49	0.305	0.022	**0.82**

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

* Third trimester of pregnancy

1520 W. San Carlos Street Mixed-Use, San Jose, CA - W. San Carlos Street Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
On-Site 1st (1.5m), 2nd (6.1m), & 3rd (9.1m) Floor Receptors Heights

Emission Year	2025
Receptor Information	Maximum On-Site Receptor
Number of Receptors	179
Receptor Height	1st (1.5m), 2nd (6.1m), & 3rd (9.1m) Floors
Receptor Distances	6 meter grid spacing in residential areas

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

On-Site Cancer Risk Maximum Concentrations

Meteorological Data Years	Concentration (µg/m3)			
	DPM	Exhaust TOG	Evaporative TOG	
2013-2017	0.0008	0.0839	0.1074	1st Floor
2013-2017	0.0010	0.1004	0.1286	2nd Floor
2013-2017	0.0009	0.0631	0.0808	3rd Floor

On-Site PM2.5 Maximum Concentrations

Meteorological Data Years	PM2.5 Concentration (µg/m3)			
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5	
2013-2017	0.0907	0.0866	0.0042	1st Floor
2013-2017	0.1087	0.1037	0.0050	2nd Floor
2013-2017	0.0683	0.0651	0.0031	3rd Floor

1520 W. San Carlos Street Mixed-Use, San Jose, CA - W. San Carlos Street Cancer Risk & PM2.5 Impacts at On-Site 1st Floor Receptors - 1.5m receptor heights
30 Year Residential Exposure

Cancer Risk Calculation Method

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

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

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

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

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

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

Values

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

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)			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*	2025	10	0.0008	0.0839	0.1074	0.010	0.007	0.0005	0.02
1	1	0 - 1	2025	10	0.0008	0.0839	0.1074	0.126	0.079	0.0059	0.21
2	1	1 - 2	2026	10	0.0008	0.0839	0.1074	0.126	0.079	0.0059	0.21
3	1	2 - 3	2027	3	0.0008	0.0839	0.1074	0.020	0.012	0.0009	0.03
4	1	3 - 4	2028	3	0.0008	0.0839	0.1074	0.020	0.012	0.0009	0.03
5	1	4 - 5	2029	3	0.0008	0.0839	0.1074	0.020	0.012	0.0009	0.03
6	1	5 - 6	2030	3	0.0008	0.0839	0.1074	0.020	0.012	0.0009	0.03
7	1	6 - 7	2031	3	0.0008	0.0839	0.1074	0.020	0.012	0.0009	0.03
8	1	7 - 8	2032	3	0.0008	0.0839	0.1074	0.020	0.012	0.0009	0.03
9	1	8 - 9	2033	3	0.0008	0.0839	0.1074	0.020	0.012	0.0009	0.03
10	1	9 - 10	2034	3	0.0008	0.0839	0.1074	0.020	0.012	0.0009	0.03
11	1	10 - 11	2035	3	0.0008	0.0839	0.1074	0.020	0.012	0.0009	0.03
12	1	11 - 12	2036	3	0.0008	0.0839	0.1074	0.020	0.012	0.0009	0.03
13	1	12 - 13	2037	3	0.0008	0.0839	0.1074	0.020	0.012	0.0009	0.03
14	1	13 - 14	2038	3	0.0008	0.0839	0.1074	0.020	0.012	0.0009	0.03
15	1	14 - 15	2039	3	0.0008	0.0839	0.1074	0.020	0.012	0.0009	0.03
16	1	15 - 16	2040	3	0.0008	0.0839	0.1074	0.020	0.012	0.0009	0.03
17	1	16-17	2041	1	0.0008	0.0839	0.1074	0.002	0.001	0.0001	0.00
18	1	17-18	2042	1	0.0008	0.0839	0.1074	0.002	0.001	0.0001	0.00
19	1	18-19	2043	1	0.0008	0.0839	0.1074	0.002	0.001	0.0001	0.00
20	1	19-20	2044	1	0.0008	0.0839	0.1074	0.002	0.001	0.0001	0.00
21	1	20-21	2045	1	0.0008	0.0839	0.1074	0.002	0.001	0.0001	0.00
22	1	21-22	2046	1	0.0008	0.0839	0.1074	0.002	0.001	0.0001	0.00
23	1	22-23	2047	1	0.0008	0.0839	0.1074	0.002	0.001	0.0001	0.00
24	1	23-24	2048	1	0.0008	0.0839	0.1074	0.002	0.001	0.0001	0.00
25	1	24-25	2049	1	0.0008	0.0839	0.1074	0.002	0.001	0.0001	0.00
26	1	25-26	2050	1	0.0008	0.0839	0.1074	0.002	0.001	0.0001	0.00
27	1	26-27	2051	1	0.0008	0.0839	0.1074	0.002	0.001	0.0001	0.00
28	1	27-28	2052	1	0.0008	0.0839	0.1074	0.002	0.001	0.0001	0.00
29	1	28-29	2053	1	0.0008	0.0839	0.1074	0.002	0.001	0.0001	0.00
30	1	29-30	2054	1	0.0008	0.0839	0.1074	0.002	0.001	0.0001	0.00
Total Increased Cancer Risk								0.57	0.356	0.027	**0.96**

Maximum Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.0002	0.09	0.09

* Third trimester of pregnancy

1520 W. San Carlos Street Mixed-Use, San Jose, CA - W. San Carlos Street Cancer Risk & PM2.5 Impacts at On-Site 2nd Floor Receptors - 6.1m receptor heights
30 Year Residential Exposure

Cancer Risk Calculation Method

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

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

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

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

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

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

Values

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

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)			TOTAL
Exposure Year	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	
0	0.25	-0.25 - 0*	2025	10	0.0010	0.1004	0.1286	0.013	0.008	0.0006	0.02
1	1	0 - 1	2025	10	0.0010	0.1004	0.1286	0.161	0.094	0.0071	0.26
2	1	1 - 2	2026	10	0.0010	0.1004	0.1286	0.161	0.094	0.0071	0.26
3	1	2 - 3	2027	3	0.0010	0.1004	0.1286	0.025	0.015	0.0011	0.04
4	1	3 - 4	2028	3	0.0010	0.1004	0.1286	0.025	0.015	0.0011	0.04
5	1	4 - 5	2029	3	0.0010	0.1004	0.1286	0.025	0.015	0.0011	0.04
6	1	5 - 6	2030	3	0.0010	0.1004	0.1286	0.025	0.015	0.0011	0.04
7	1	6 - 7	2031	3	0.0010	0.1004	0.1286	0.025	0.015	0.0011	0.04
8	1	7 - 8	2032	3	0.0010	0.1004	0.1286	0.025	0.015	0.0011	0.04
9	1	8 - 9	2033	3	0.0010	0.1004	0.1286	0.025	0.015	0.0011	0.04
10	1	9 - 10	2034	3	0.0010	0.1004	0.1286	0.025	0.015	0.0011	0.04
11	1	10 - 11	2035	3	0.0010	0.1004	0.1286	0.025	0.015	0.0011	0.04
12	1	11 - 12	2036	3	0.0010	0.1004	0.1286	0.025	0.015	0.0011	0.04
13	1	12 - 13	2037	3	0.0010	0.1004	0.1286	0.025	0.015	0.0011	0.04
14	1	13 - 14	2038	3	0.0010	0.1004	0.1286	0.025	0.015	0.0011	0.04
15	1	14 - 15	2039	3	0.0010	0.1004	0.1286	0.025	0.015	0.0011	0.04
16	1	15 - 16	2040	3	0.0010	0.1004	0.1286	0.025	0.015	0.0011	0.04
17	1	16-17	2041	1	0.0010	0.1004	0.1286	0.003	0.002	0.0001	0.00
18	1	17-18	2042	1	0.0010	0.1004	0.1286	0.003	0.002	0.0001	0.00
19	1	18-19	2043	1	0.0010	0.1004	0.1286	0.003	0.002	0.0001	0.00
20	1	19-20	2044	1	0.0010	0.1004	0.1286	0.003	0.002	0.0001	0.00
21	1	20-21	2045	1	0.0010	0.1004	0.1286	0.003	0.002	0.0001	0.00
22	1	21-22	2046	1	0.0010	0.1004	0.1286	0.003	0.002	0.0001	0.00
23	1	22-23	2047	1	0.0010	0.1004	0.1286	0.003	0.002	0.0001	0.00
24	1	23-24	2048	1	0.0010	0.1004	0.1286	0.003	0.002	0.0001	0.00
25	1	24-25	2049	1	0.0010	0.1004	0.1286	0.003	0.002	0.0001	0.00
26	1	25-26	2050	1	0.0010	0.1004	0.1286	0.003	0.002	0.0001	0.00
27	1	26-27	2051	1	0.0010	0.1004	0.1286	0.003	0.002	0.0001	0.00
28	1	27-28	2052	1	0.0010	0.1004	0.1286	0.003	0.002	0.0001	0.00
29	1	28-29	2053	1	0.0010	0.1004	0.1286	0.003	0.002	0.0001	0.00
30	1	29-30	2054	1	0.0010	0.1004	0.1286	0.003	0.002	0.0001	0.00
Total Increased Cancer Risk								0.73	0.427	0.032	**1.19**

Maximum Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.0002	0.10	0.11

* Third trimester of pregnancy

1520 W. San Carlos Street Mixed-Use, San Jose, CA - W. San Carlos Street Cancer Risk & PM2.5 Impacts at On-Site 3rd Floor Receptors - 9.1m receptor heights
30 Year Residential Exposure

Cancer Risk Calculation Method

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

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

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

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

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

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

Values

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

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)			TOTAL
Exposure Year	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	
0	0.25	-0.25 - 0*	2025	10	0.0009	0.0631	0.0808	0.012	0.005	0.0004	0.02
1	1	0 - 1	2025	10	0.0009	0.0631	0.0808	0.145	0.059	0.0045	0.21
2	1	1 - 2	2026	10	0.0009	0.0631	0.0808	0.145	0.059	0.0045	0.21
3	1	2 - 3	2027	3	0.0009	0.0631	0.0808	0.023	0.009	0.0007	0.03
4	1	3 - 4	2028	3	0.0009	0.0631	0.0808	0.023	0.009	0.0007	0.03
5	1	4 - 5	2029	3	0.0009	0.0631	0.0808	0.023	0.009	0.0007	0.03
6	1	5 - 6	2030	3	0.0009	0.0631	0.0808	0.023	0.009	0.0007	0.03
7	1	6 - 7	2031	3	0.0009	0.0631	0.0808	0.023	0.009	0.0007	0.03
8	1	7 - 8	2032	3	0.0009	0.0631	0.0808	0.023	0.009	0.0007	0.03
9	1	8 - 9	2033	3	0.0009	0.0631	0.0808	0.023	0.009	0.0007	0.03
10	1	9 - 10	2034	3	0.0009	0.0631	0.0808	0.023	0.009	0.0007	0.03
11	1	10 - 11	2035	3	0.0009	0.0631	0.0808	0.023	0.009	0.0007	0.03
12	1	11 - 12	2036	3	0.0009	0.0631	0.0808	0.023	0.009	0.0007	0.03
13	1	12 - 13	2037	3	0.0009	0.0631	0.0808	0.023	0.009	0.0007	0.03
14	1	13 - 14	2038	3	0.0009	0.0631	0.0808	0.023	0.009	0.0007	0.03
15	1	14 - 15	2039	3	0.0009	0.0631	0.0808	0.023	0.009	0.0007	0.03
16	1	15 - 16	2040	3	0.0009	0.0631	0.0808	0.023	0.009	0.0007	0.03
17	1	16-17	2041	1	0.0009	0.0631	0.0808	0.003	0.001	0.0001	0.00
18	1	17-18	2042	1	0.0009	0.0631	0.0808	0.003	0.001	0.0001	0.00
19	1	18-19	2043	1	0.0009	0.0631	0.0808	0.003	0.001	0.0001	0.00
20	1	19-20	2044	1	0.0009	0.0631	0.0808	0.003	0.001	0.0001	0.00
21	1	20-21	2045	1	0.0009	0.0631	0.0808	0.003	0.001	0.0001	0.00
22	1	21-22	2046	1	0.0009	0.0631	0.0808	0.003	0.001	0.0001	0.00
23	1	22-23	2047	1	0.0009	0.0631	0.0808	0.003	0.001	0.0001	0.00
24	1	23-24	2048	1	0.0009	0.0631	0.0808	0.003	0.001	0.0001	0.00
25	1	24-25	2049	1	0.0009	0.0631	0.0808	0.003	0.001	0.0001	0.00
26	1	25-26	2050	1	0.0009	0.0631	0.0808	0.003	0.001	0.0001	0.00
27	1	26-27	2051	1	0.0009	0.0631	0.0808	0.003	0.001	0.0001	0.00
28	1	27-28	2052	1	0.0009	0.0631	0.0808	0.003	0.001	0.0001	0.00
29	1	28-29	2053	1	0.0009	0.0631	0.0808	0.003	0.001	0.0001	0.00
30	1	29-30	2054	1	0.0009	0.0631	0.0808	0.003	0.001	0.0001	0.00
Total Increased Cancer Risk								0.65	0.268	0.020	**0.94**

Maximum Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.0002	0.07	0.07

* Third trimester of pregnancy

Bay Area Air Quality Management District

Risk & Hazard Stationary Source Inquiry Form

This form is required when users request stationary source data from BAAQMD

This form is to be used with the BAAQMD's Google Earth stationary source screening tables.

Click here for guidance on coducting risk & hazard screening, including roadways & freeways, refer to the District's Risk & Hazard Analysis flow chart.

Click here for District's Recommended Methods for Screening and Modeling Local Risks and Hazards document.

Table A: Requester Contact Information

Date of Request	**8/30/2022**
Contact Name	Zachary Palm
Affiliation	Illingworth & Rodkin, Inc.
Phone	707-794-0400 x117
Email	zpalm@illingworthrodkin.com
Project Name	1520 W San Carlos
Address	1520 W San Carlos
City	San Jose
County	Santa Clara
Type (residential, commercial, mixed use, industrial, etc.)	Residential
Project Size (# of units or building square feet)	256 du
Comments:	

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

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

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

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

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

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

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

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

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

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

Table B: Google Earth data

Distance from Receptor (feet) or MEI[1]	Plant No.	Facility Name	Address	Cancer Risk[2]	Hazard Risk[2]	$PM_{2.5}$[2]	Source No.[3]	Type of Source[4]	Fuel Code[5]	Status/Comments
535	19794	San Jose Water Company	420 Buena Vista Ave	25.12	0.01	0.03		Generator		2020 Dataset

Construction MEIs

Distance Adjustment Multiplier	Adjusted Cancer Risk Estimate	Adjusted Hazard Risk	Adjusted PM2.5
0.10	2.51	0.001	0.00

Project Site

Distance from Receptor (feet) or MEI[1]	FACID (Plant No.)	Distance Adjustment Multiplier	Adjusted Cancer Risk Estimate	Adjusted Hazard Risk	Adjusted PM2.5
490	19794	0.14	3.52	0.001	0.004

Footnotes:

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

Date last updated:
03/13/2018

Screening Report

Area of Interest (AOI) Information

Area : 4,337,261.19 ft²

Aug 30 2022 10:32:42 Pacific Daylight Time

Summary

Name	Count	Area(ft²)	Length(ft)
Permitted Stationary Sources	1	N/A	N/A

Permitted Stationary Sources

#	FacID	FacName	Address	City	Street
1	19794	San Jose Water Company	420 Buena Vista Ave	San Jose	CA

#	Zip	County	Latitude	Longitude	Details
1	95,126.00	Santa Clara	37.32	-121.92	Generator

#	NAICS	Sector	Sub_Sector	Industry	ChronicHI
1	221,310.00	Utilities	Utilities	Water Supply and Irrigation Systems	0.0067488

#	PM2_5	Cancer Risk {expression/expr0}	Chronic Hazard Index {expression/expr1}	PM2.5 {expression/expr2}	Count
1	0.0316180	25.115	0.007	0.032	1

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