

SUZACO MIXED-USE DEVELOPMENT AIR QUALITY ASSESSMENT

San José, California

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Introduction

The purpose of this report is to address air quality and community health risk impacts associated with the proposed SuZaCo Mixed-Use Development project located at the southwestern corner of the South 4th Street and East Santa Clara Street intersection in San José, California. The air quality impacts from this project would be associated with the demolition of the existing land uses, construction of the new buildings and infrastructure, and operation of the project. Air pollutants associated with construction and operation of the project were predicted using appropriate computer models. In addition, the potential project health risk impacts (construction and operation) and the impacts of existing toxic air contaminant (TAC) sources affecting the nearby sensitive receptors were evaluated. The analysis was conducted following guidance provided by the Bay Area Air Quality Management District (BAAQMD).¹

Project Description

The project proposes the construction of a u-shaped, four- to six-story building which would consist of below-grade and ground-level retail/restaurant use and office use on the upper floors. The proposed project would include the demolition of three existing two-story buildings, with a portion of one historical building façade remaining. The project would also include an emergency generator on the roof towards the rear of the building, which would have a capacity of 100 kilowatts (kW). The project is within the San José Downtown Strategy 2040 Plan area.

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 (PM₁₀), and fine particulate matter (PM_{2.5}).

Air Pollutants of Concern

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

Particulate matter is another problematic air pollutant of the Bay Area. Particulate matter is assessed and measured in terms of respirable particulate matter or particles that have a diameter of 10 micrometers or less (PM₁₀) and fine particulate matter where particles have a diameter of 2.5 micrometers or less (PM_{2.5}). Elevated concentrations of PM₁₀ 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

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

Diesel exhaust is the predominant TAC in urban air and is estimated to represent about three-quarters of the cancer risk from TACs (based on the Bay Area average). According to the California Air Resources Board (CARB), diesel exhaust is a complex mixture of gases, vapors, and fine particles. This complexity makes the evaluation of health effects of diesel exhaust a complex scientific issue. Some of the chemicals in diesel exhaust, such as benzene and formaldehyde, have been previously identified as TACs by the CARB, and are listed as carcinogens either under the State's Proposition 65 or under the Federal Hazardous Air Pollutants programs. The most recent Office of Environmental Health Hazard Assessment (OEHHA) risk assessment guidelines were published in February of 2015.² 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, the elderly over 65, athletes, and people with cardiovascular and chronic respiratory diseases. These groups are classified as sensitive receptors. Locations that may contain a high concentration of these sensitive population groups include residential areas, hospitals, daycare facilities, elder care facilities, elementary schools, and parks. For cancer risk assessments, children are the most sensitive receptors, since they are more susceptible to cancer causing TACs. Residential locations are assumed to include infants and small children. The closest sensitive receptors to the project site are the residences in the upper floors of the adjacent mixed-use buildings to the west and within the u-shape of the project site and the future residences in the adjacent future multi-family building to the south of the site. There are more sensitive receptors at farther distances. In addition, there is a preschool (Little Einstein's Montessori Preschool, children 2 years and older) and an elementary school (Horace Mann Elementary School, children 2 years and older) to the northeast of the site.

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.

Regulatory Setting

Federal Regulations

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

In the past decade the EPA has established a number of emission standards for on- and non-road heavy-duty diesel engines used in trucks and other equipment. This was done in part because diesel engines are a significant source of NO_x and particulate matter (PM₁₀ and PM_{2.5}) and because the EPA has identified DPM as a probable carcinogen. Implementation of the heavy-duty diesel on-road vehicle standards and the non-road diesel engine standards are estimated to reduce particulate matter and NO_x emissions from diesel engines up to 95 percent in 2030 when the heavy-duty vehicle fleet is completely replaced with newer heavy-duty vehicles that comply with these emission standards.³

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

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

State Regulations

To address the issue of diesel emissions in the state, CARB developed the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles.⁴ In addition to requiring more stringent emission standards for new on-road and off-road mobile sources and stationary diesel-fueled engines to reduce particulate matter emissions by 90 percent, a significant component of the plan involves application of emission control strategies to existing diesel vehicles and equipment. Many 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.

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.

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

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

Bay Area Air Quality Management District (BAAQMD)

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

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

BAAQMD's Community Air Risk Evaluation (CARE) program was initiated in 2004 to evaluate and reduce health risks associated with exposures to outdoor TACs in the Bay Area.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 being implemented in three phases that includes an assessment of the sources of TAC emissions, modeling and measurement

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

programs to estimate concentrations of TAC, and an assessment of exposures and health risks. Throughout the program, information derived from the technical analyses will be used to focus emission reduction measures in areas with high TAC exposures and high density of sensitive populations. Risk reduction activities associated with the CARE program are focused on the most at-risk communities in the Bay Area. Overburdened communities are areas located (i) within a census tract identified by the California Communities Environmental Health Screening Tool (CalEnviroScreen), Version 4.0 implemented by OEHHA, as having an overall CalEnviroScreen score at or above the 70th percentile, or (ii) within 1,000 feet of any such census tract.⁶ The BAAQMD has identified six communities as impacted: Concord, Richmond/San Pablo, Western Alameda County, San José, Redwood City/East Palo Alto, and Eastern San Francisco. The project site is in the center of the San José area but not within a BAAQMD overburdened area as identified by CalEnviroScreen as the Project site is scored at the 65th percentile.

The BAAQMD California Environmental Quality Act (CEQA) *Air Quality Guidelines*⁷ were prepared to assist in the evaluation of air quality impacts of projects and plans proposed within the Bay Area. The guidelines provide recommended procedures for evaluating potential air impacts during the environmental review process consistent with CEQA requirements including thresholds of significance, mitigation measures, and background air quality information. They also include assessment methodologies for air toxics, odors, and greenhouse gas emissions. *Attachment 1* includes detailed community risk modeling methodology.

BAAQMD Rules and Regulations

Combustion equipment associated with the proposed project that includes new diesel engines to power generators would establish new sources of particulate matter and gaseous emissions. Emissions would primarily result from the testing of the emergency backup generators. Certain emission sources would be subject to BAAQMD Regulations and Rules. The District's rules and regulations that may apply to the project include:

- Regulation 2 – Permits
 - Rule 2-1: General Requirements
 - Rule 2-2: New Source Review
- Regulation 6 – Particulate Matter and Visible Emissions
 - Rule 6-3: Wood-Burning Devices
- Regulation 9 – Inorganic Gaseous Pollutants
 - Rule 9-1: Sulfur Dioxide
 - Rule 9-7: Nitrogen Oxides and Carbon Monoxide from Industrial, Institutional, and Commercial Boilers, Steam Generators, And Process Heaters
 - Rule 9-8: Nitrogen Oxides and Carbon Monoxide from Stationary Internal Combustion Engines

⁶ See BAAQMD: https://www.baaqmd.gov/~media/dotgov/files/rules/reg-2-permits/2021-amendments/documents/20210722_01_appendixd_mapsofverburdenedcommunities-pdf.pdf?la=en, accessed 10/1/2021.

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

Permits

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

Rule 2-1-302 requires that written authorization from the BAAQMD in the form of a Permit to Operate (PTO) be secured before any such equipment is used or operated.

Rule 2-1 lists sources that are exempt from permitting.

New Source Review

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

Rule 2-2-301 requires that an applicant for an ATC or PTO apply Best Available Control Technology (BACT) to any new or modified source that results in an increase in emissions and has emissions of precursor organic compounds, non-precursor organic compounds, NO_x, SO₂, PM₁₀, or CO of 10.0 pounds or more per highest day. Based on the estimated emissions from the proposed project, BACT will be required for NO_x emissions from the diesel-fueled generator engines.

Stationary Diesel Airborne Toxic Control Measure

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

Offsets

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

Prohibitory Rules

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

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

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

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

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

BACT for Diesel Generator Engines

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

I.C. Engine – Compression Ignition >50hp and <1,000hp: BAAQMD applies BACT 2 emission limits based on the ACTM for stationary emergency standby diesel engines larger than 50 brake-horsepower (BHP). NO_x emission factor limit is subject to the CARB ACTM that ranges from 3.0 to 3.5 grams per horsepower hour (g/hp-hr). The PM (PM₁₀ or PM_{2.5}) limit is 0.15 g/hp-hr per CARB's ACTM.

I.C. Engine – Compression Ignition <999hp: BAAQMD applies specific BACT emission limits for stationary emergency standby diesel engines equal or larger than 1,000 brake-horsepower (BHP). NO_x emission factor limit is subject to the CARB ACTM that ranges from 0.5 g/hp-hr. The PM (PM₁₀ or PM_{2.5}) limit is 0.02 g/hp-hr. POC (i.e., ROG) limits are 0.14 g/hp-hr.

San José Envision 2040 General Plan

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

Applicable Goals – Air Pollutant Emission Reduction

Goal MS-10 Minimize emissions from new development.

Applicable Policies – Air Pollutant Emission Reduction

- MS-10.1 Assess projected air emissions from new development in conformance with the Bay Area Air Quality Management District (BAAQMD) CEQA Guidelines and relative to state and federal standards. Identify and implement feasible air emission reduction measures.
- MS-10.2 Consider the cumulative air quality impacts from proposed developments for proposed land use designation changes and new development, consistent with the region's Clean Air Plan and State law.
- MS-10.3 Promote the expansion and improvement of public transportation services and facilities, where appropriate, to both encourage energy conservation and reduce air pollution.

Applicable Goals – Toxic Air Contaminants

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

Applicable Policies – Toxic Air Contaminants

- MS-11.2 For projects that emit toxic air contaminants, require project proponents to prepare health risk assessments in accordance with BAAQMD-recommended procedures as part of environmental review and employ effective mitigation to reduce possible health risks to a less than significant level. Alternatively, require new projects (such as, but not limited to, industrial, manufacturing, and processing facilities) that are sources of TACs to be located an adequate distance from residential areas and other sensitive receptors.
- MS-11.5 Encourage the use of pollution absorbing trees and vegetation in buffer areas between substantial sources of TACs and sensitive land uses.

Actions – Toxic Air Contaminants

- MS-11.7 Consult with BAAQMD to identify stationary and mobile TAC sources and determine the need for and requirements of a health risk assessment for proposed developments.
- MS-11.8 For new projects that generate truck traffic, require signage which reminds drivers that the State truck idling law limits truck idling to five minutes.

Applicable Goals – Construction Air Emissions

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

Applicable Policies – Construction Air Emissions

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

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

Applicable Actions – Construction Air Emissions

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

Downtown Strategy 2040 Plan

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

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

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

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

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

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

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

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

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

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

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

Significance Thresholds

In June 2010, BAAQMD adopted thresholds of significance to assist in the review of projects under CEQA and these significance thresholds were contained in the District's 2011 CEQA Air Quality Guidelines. These thresholds were designed to establish the level at which BAAQMD believed air pollution emissions would cause significant environmental impacts under CEQA. The thresholds were challenged through a series of court challenges and were mostly upheld. BAAQMD updated the CEQA Air Quality Guidelines in 2017 to include the latest significance thresholds, which were used in this analysis and are summarized in Table 1. Impacts exceeding the thresholds are considered potentially significant. Note that the DTS Plan Draft Environmental Impact Report (DEIR) evaluated traffic-related emissions of criteria air pollutants (and their precursors) and GHGs from planned development that includes the Proposed Project. Stationary source operational emissions, if any are proposed as part of the project, would still be required to be analyzed. Operational emissions from the Proposed Project are predicted in this assessment.

Table 1. BAAQMD Air Quality Exceedance 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	<i>Evaluated in DTS Strategy DEIR</i>	
NO _x	54		
PM ₁₀	82 (Exhaust)		
PM _{2.5}	54 (Exhaust)		
CO	Not Applicable		
Fugitive Dust	Construction Dust Ordinance or other Best Management Practices	Not Applicable	
Health Risks and Hazards	Single Sources Within 1,000-foot Zone of Influence	Combined Sources (Cumulative from all sources within 1,000-foot zone of influence)	
Excess Cancer Risk	10 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	

AIR QUALITY IMPACTS AND MITIGATION MEASURES

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

BAAQMD is the regional agency responsible for overseeing compliance with State and Federal laws, regulations, and programs within the San Francisco Bay Area Air Basin (SFBAAB). BAAQMD, with assistance from the Association of Bay Area Governments (ABAG) and Metropolitan Transportation Commission (MTC), prepares and implements specific plans to meet the applicable laws, regulations, and programs. The most recent and comprehensive of which is the *Bay Area 2017 Clean Air Plan*.⁸ The primary goals of the Clean Air Plan are to attain air quality standards, reduce population exposure and protect public health, and reduce GHG emissions and protect the climate. The BAAQMD has also developed CEQA guidelines to assist lead agencies in evaluating the significance of air quality and GHG impacts. In formulating compliance strategies, BAAQMD relies on planned land uses established by local general plans. Land use planning affects vehicle travel, which, in turn, affects region-wide emissions of air pollutants and GHGs.

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

⁸ Bay Area Air Quality Management District (BAAQMD), 2017. *Final 2017 Clean Air Plan*.

the project would be located near employment centers, 5) the project would be located near transit with regional connections.

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

The Bay Area is considered a non-attainment area for ground-level ozone and PM_{2.5} under both the Federal Clean Air Act and the California Clean Air Act. The area is also considered non-attainment for PM₁₀ under the California Clean Air Act, but not the federal act. The area has attained both State and federal ambient air quality standards for carbon monoxide. As part of an effort to attain and maintain ambient air quality standards for ozone and PM₁₀, the BAAQMD has established thresholds of significance for these air pollutants and their precursors. These thresholds are for ozone precursor pollutants (ROG and NO_x), PM₁₀, and PM_{2.5} and apply to both construction period and operational period impacts.

Construction Period Emissions

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

CalEEMod 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 Inputs¹⁰

Project Land Uses	Size	Units	Square Feet	Acreage
General Office Building	64.74	1,000-sf	64,742	0.34
Regional Shopping Center	10.51	1,000-sf	10,509	
Enclosed Parking Structure	2	Parking Spaces	800	

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

¹⁰ The project land uses have been updated since this analysis was conducted. Including mechanical circulation, the office square footage would decrease to 63,461-sf, the retail square footage would increase to 11,790-sf, and there would be no on-site parking spaces. However, the overall total building square footage would remain the same and construction activities (i.e., equipment quantities, hours used) would not change with the updated project land uses. While emissions (i.e., ROG, Energy) would decrease slightly from these land uses changes, the project's criteria pollutant and GHG emissions and the community risk impacts are below the thresholds and any minor decrease would cause the emissions and impacts to remain below thresholds.

Construction Inputs

CalEEMod computes annual emissions for construction that are based on the project type, size, and acreage. The model provides emission estimates for both on-site and off-site construction activities. On-site activities are primarily made up of construction equipment emissions, while off-site activity includes worker, hauling, and vendor traffic.

The CalEEMod model generates a default set of construction assumptions for “typical construction site scenarios”; however, these are not appropriate for a project like this that involves demolition, excavation, and extensive vertical construction on a relatively small site.¹¹ For this project, the construction build-out scenario, including equipment list and schedule, were based on data provided by the project applicant. The project construction equipment worksheet provided by the applicant included the schedule for each phase (included in *Attachment 2*). Within each phase, the quantity of equipment to be used along with the average hours per day and total number of workdays was provided. Since different equipment would have different estimates of the working days per phase, the hours per day for each phase was computed by dividing the total number of hours that the equipment would be used by the total number of days in that phase. The construction schedule assumed that the earliest possible start date would be September 2022 and the project would be built out over a period of approximately 18 months or 543 construction workdays. The earliest year of operation was assumed to be 2024.

Construction Traffic Emissions

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

The latest version of the CalEEMod model is based on the older version of the CARB EMFAC2017 motor vehicle emission factor model. This model has been superseded by the EMFAC2021 model; however, CalEEMod has not been updated to include EMFAC2021. The construction traffic information was combined with EMFAC2021 motor vehicle emissions factors. EMFAC2021 provides aggregate emission rates in grams per mile for each vehicle type. The vehicle mix for this study was based on CalEEMod defaults, where worker trips are assumed to be comprised of light-duty autos (EMFAC category LDA) and light duty trucks (EMFAC category LDT1 and LDT2). Vendor trips are comprised of delivery and large trucks (EMFAC category MHDT and HHDT) and haul trips, including cement trucks, are comprised of large trucks (EMFAC category HHDT). Travel distances are based on CalEEMod default lengths, which are

¹¹ SCAQMD. 2005. *Sample Construction Scenarios for Projects Less than Five Acres in Size*. February. Note that this is the supporting report used to develop CalEEMod default construction inputs (see Appendix E – Technical Source Documentation of the CalEEMod User’s Guide).

10.8 miles for worker travel, 7.3 miles for vendor trips and 20 miles for hauling (demolition material export and soil import/export). Since CalEEMod does not address cement or asphalt trucks, these were treated as vendor travel distances. Each trip was assumed to include an idle time of 5 minutes. Emissions associated with vehicle starts were also included. On-road emission rates from the years 2022-2024 for Santa Clara County were used. Table 3 provides the traffic inputs that were combined with the EMFAC2021 emission database to compute vehicle emissions.

Table 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	1,080	-	80	15,000-sf existing building and 56 tons of pavement demolition. CalEEMod default worker trips.
Site Preparation	390	-	-	CalEEMod default worker trips.
Grading	1,080	-	500	4,000-cy of export volume. CalEEMod default worker trips.
Trenching/Foundation	350	-	60	30 cement truck round trips. CalEEMod default worker trips.
Building Construction	4,320	2,160	-	CalEEMod default worker and vendor trips.
Architectural Coating	600	-	-	CalEEMod default worker trips.
Paving	260	-	12	50-cy asphalt. CalEEMod default worker trips.
Notes: ¹ Based on 2022-2024 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. Cement and asphalt trips estimated based on data provided by the applicant.				

Summary of Computed Construction Period Emissions

Average daily emissions were annualized for each year of construction by dividing the annual construction emissions by the number of active workdays during that year. Table 4 shows the annualized average daily construction emissions of ROG, NO_x, PM₁₀ exhaust, and PM_{2.5} exhaust during construction of the project. As indicated in Table 4, predicted annualized project construction emissions would not exceed the BAAQMD significance thresholds during any year of construction.

Table 4. Construction Period Emissions

Year	ROG	NOx	PM ₁₀ Exhaust	PM _{2.5} Exhaust
<i>Construction Emissions Per Year (Tons)</i>				
2022	0.03	0.32	0.02	0.01
2023	0.29	0.97	0.04	0.04
2024	0.21	0.17	<0.01	<0.01
<i>Average Daily Construction Emissions Per Year (pounds/day)</i>				
2022 (122 construction workdays)	0.58	5.59	0.28	0.24
2023 (365 construction workdays)	1.67	5.62	0.25	0.23
2024 (56 construction workdays)	7.53	6.34	0.16	0.14
<i>BAAQMD Thresholds (pounds per day)</i>	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 PM₁₀ 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 and the project is less than screening criteria. The DTS requires control measures to implement the standard BAAQMD CEQA Air Quality Guidelines best management practices to control dust and exhaust during construction. However, enhanced measures to control dust are required for this project's community health risk impact. *Mitigation Measure AQ-1 would implement BAAQMD's standard and enhanced best management practices.*

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

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

1. All exposed surfaces shall be watered at a frequency adequate to maintain minimum soil moisture of 12 percent. Moisture content can be verified by lab samples or moisture probe.
2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
4. All vehicle speeds on unpaved roads shall be limited to 15 mph.

5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
6. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
7. Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.
8. All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph.
9. Wind breaks (e.g., trees, fences) shall be installed on the windward side(s) of actively disturbed areas of construction. Wind breaks should have at maximum 50 percent air porosity.
10. Vegetative ground cover (e.g., fast-germinating native grass seed) shall be planted in disturbed areas as soon as possible and watered appropriately until vegetation is established.
11. The simultaneous occurrence of excavation, grading, and ground-disturbing construction activities on the same area at any one time shall be limited. Activities shall be phased to reduce the amount of disturbed surfaces at any one time.
12. All trucks and equipment, including their tires, shall be washed off prior to leaving the site.
13. Site accesses to a distance of 100 feet from the paved road shall be treated with a 6 to 12 inch compacted layer of wood chips, mulch, or gravel.
14. Sandbags or other erosion control measures shall be installed to prevent silt runoff to public roadways from sites with a slope greater than one percent.
15. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to two minutes. Clear signage shall be provided for construction workers at all access points.
16. Place construction dust tarps/shrouds around the project building facades adjacent to sensitive uses.

Effectiveness of Mitigation Measure AQ-1

Mitigation Measure AQ-1 represents standard and enhanced mitigation measures that would achieve greater than an 84 percent reduction in on-site fugitive PM_{2.5} emissions. These measures are consistent with recommendations in the BAAMQD CEQA Guidance for providing "best management practices" to control construction emissions.

Operational Period Emissions

The impact of operational traffic related emissions was addressed in the DTS DEIR and found to be significant and unavoidable for the entire plan. Traffic-related emissions from the project were computed in this assessment. Operational air emissions from the project would be generated

primarily from autos driven by future employees and customers. Evaporative emissions from architectural coatings and maintenance products (classified as consumer products) are typical emissions from these types of uses. CalEEMod was used to estimate emissions from operation of the proposed project assuming full build-out.

CalEEMod Inputs

Land Uses

The project land uses were 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 full year of operation would be 2024 if construction begins in 2022. Emissions associated with build-out later than 2024 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.¹² The proposed project would produce 620 daily trips after a *Location Based Reduction* and *Office-Retail Internal Reduction*. The daily trip generation was calculated using the size of the project and the adjusted total automobile trips. The Saturday and Sunday trip rates were adjusted by multiplying the ratio of the CalEEMod default rates for Saturday and Sunday trips to the default weekday rate with the project-specific daily weekday trip rate. The default trip lengths and trip types specified by CalEEMod were used.

EMFAC2021 Adjustment

The vehicle emission factors and fleet mix used in CalEEMod are based on EMFAC2014, which is an older CARB emission inventory for on road and off road mobile sources. Since the release of CalEEMod Version 2020.4.0, new emission factors have been produced by CARB. EMFAC2021 became available for use in January 2021. It includes the latest data on California's car and truck fleets and travel activity. The CalEEMod vehicle emission factors and fleet mix were updated with the emission rates and fleet mix from EMFAC2021, which were adjusted with the CARB EMFAC off-model adjustment factors. On road emission rates from 2022-2023 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.¹³

¹² Hexagon Transportation Consultants, Inc., 17 S. 4th Street Mixed-Use Development Local Transportation Analysis, December 22, 2021.

¹³ See CARB 2021: <https://ww2.arb.ca.gov/our-work/programs/mobile-source-emissions-inventory/road-documentation/msei-modeling-tools-emfac>

Project Generator

The project proposes to include one stand-by emergency diesel generator on the roof towards the rear of the building. The generator would be 100-kilowatts (kW) powered by a 134 horsepower (HP) diesel engine. The generator would be tested periodically and power the buildings in the event of a power failure. For modeling purposes, it was assumed that the generator would be operated primarily for testing and maintenance purposes. CARB and BAAQMD requirements limit these engine operations to 50 hours each per year of non-emergency operation. During testing periods, the engine would typically be run for less than one hour. The engine would be required to meet CARB and EPA emission standards and consume commercially available California low-sulfur diesel fuel. Additionally, the generator would have to meet BAAQMD BACT requirements for IC Engine-Compression Ignition: Stationary Emergency, non-Agricultural, non-direct drive fire pump sources. Based on the size of the proposed generator, this would not include emission limits similar to U.S. EPA Tier 4 engines. The generator's emissions were modeled using CalEEMod.

Energy – Electricity

CalEEMod defaults for energy use were used, which include the 2019 Title 24 Building Standards. GHG emissions modeling includes those indirect emissions from electricity consumption. The electricity produced emission rate was modified in CalEEMod. An emission factor of 178 pounds of CO₂ per megawatt of electricity produced was entered into CalEEMod, which is based on San Jose Clean Energy's 2020 emissions rate.¹⁴

Energy – Natural Gas

The City of San José passed an ordinance in December 2020 that prohibits the use of natural gas infrastructure in new buildings.¹⁵ This ordinance applies to any new construction starting August 1, 2021. All project natural gas use was set to zero and assigned to electricity use in CalEEMod.

Other Inputs

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

Existing Uses

The site currently consists of three existing two-story mixed-use buildings. These uses produce low operational and traffic emissions which would not considerably offset emissions from the proposed project. In addition, no project-specific trip generation rates for the existing land uses

¹⁴ San Jose Clean Energy Website, Standard Greensource service. Web: <https://sanjosecleanenergy.org/commercial-rates/>

¹⁵ City of San José, 2020. "Expand Natural Gas Ban", December. Web: <https://www.sanjoseca.gov/Home/Components/News/News/2210/4699>

were available for this assessment. Therefore, the emissions from the existing uses were not considered.

Summary of Computed Operational Emissions

Annual emissions were predicted using CalEEMod and daily emissions were estimating assuming 365 days of operation. Table 5 shows average daily construction emissions of ROG, NO_x, total PM₁₀, and total PM_{2.5} during operation of the project. The operational period emissions would not exceed the BAAQMD significance thresholds.

Table 5. Operational Period Emissions

Scenario	ROG	NO_x	PM₁₀	PM_{2.5}
2024 Annual Project Operational Emissions (<i>tons/year</i>)	0.57	0.28	0.37	0.10
<i>BAAQMD Thresholds (tons /year)</i>	<i>10 tons</i>	<i>10 tons</i>	<i>15 tons</i>	<i>10 tons</i>
<i>Exceed Threshold?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>
2024 Daily Project Operational Emissions (<i>pounds/day</i>) ¹	3.14	1.51	2.05	0.53
<i>BAAQMD Thresholds (pounds/day)</i>	<i>54 lbs.</i>	<i>54 lbs.</i>	<i>82 lbs.</i>	<i>54 lbs.</i>
<i>Exceed Threshold?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>

Notes: ¹Assumes 365-day operation.

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

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

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

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

Community Risk Methodology for Construction and Operation

Community risk impacts were addressed by predicting increased cancer risk, the increase in annual PM_{2.5} concentrations and computing the Hazard Index (HI) for non-cancer health risks. The risk impacts from the project are the combination of risks from construction and operation sources. These sources include on-site construction activity, construction truck hauling, 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,¹⁶ 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.

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

Modeled Sensitive Receptors

Receptors for this assessment included locations where sensitive populations would be present for extended periods of time (i.e., chronic exposures). This includes the adjacent existing residences around 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. Community risks were also computed for students attending the preschool and elementary school.

Community Risks from Project Construction

Construction equipment and associated heavy-duty truck traffic generates diesel exhaust, which is a known TAC. These exhaust air pollutant emissions would not be considered to contribute substantially to existing or projected air quality violations. Construction exhaust emissions may still pose health risks for sensitive receptors such as surrounding residents. The primary community risk impact issue associated with construction emissions are cancer risk and exposure to PM_{2.5}. Diesel exhaust poses both a potential health and nuisance impact to nearby receptors. A health risk assessment of the project construction activities was conducted that evaluated potential health effects to nearby sensitive receptors from construction emissions of DPM and PM_{2.5}.¹⁷ This assessment included dispersion modeling to predict the offsite and onsite concentrations resulting from project construction, so that increased cancer risks and non-cancer health effects could be evaluated.

Construction Emissions

The CalEEMod and EMFAC2021 models provided total annual PM₁₀ exhaust emissions (assumed to be DPM) for the off-road construction equipment and for exhaust emissions from on-road vehicles, with total emissions from all construction stages of 0.06 tons (124 pounds). The on-road emissions are a result of haul truck travel during demolition and grading activities, worker travel, and vendor deliveries during construction. A trip length of half a mile was used to represent vehicle

¹⁶ BAAQMD, 2016. *BAAQMD Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines*. December 2016.

¹⁷ DPM is identified by California as a toxic air contaminant due to the potential to cause cancer.

travel while at or near the construction site. Fugitive PM_{2.5} dust emissions were calculated by CalEEMod as 0.08 tons (166 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 (residences, schools) in the vicinity of the project construction area. The AERMOD dispersion model is a BAAQMD-recommended model for use in modeling analysis of these types of emission activities for CEQA projects.^{18,19} 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 20 feet (6 meter) intervals throughout the construction site. This resulted in 39 individual point sources being used to represent mobile equipment DPM exhaust emissions in the construction area, with DPM emissions occurring throughout the project construction site. In addition, the following stack parameters were used: a vertical release, a stack diameter of 2.5 inches, an exhaust temperature of 918°F, and an exit velocity of 309 feet per second. Since these are point sources, plume rise is calculated by the AERMOD dispersion model. Emissions from vehicle travel on- and off-site were also distributed among the point sources throughout the site. The locations of the point sources used for the modeling are identified in Figure 1.

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

AERMOD Inputs and Meteorological Data

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

¹⁸ 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>

¹⁹ 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

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 5:00 p.m. per the project applicant's construction schedule. Annual DPM and PM_{2.5} concentrations from construction activities during the 2022-2024 period were calculated using the model. DPM and PM_{2.5} concentrations were calculated at nearby sensitive receptor locations.

Receptor heights of 10 feet (3 meters), 20 feet (6.1 meters), and 30 feet (9.1 meters) were used to represent the breathing heights on the second through fourth floors (first through third residential levels) of residents in nearby mixed used commercial/residential buildings and apartment buildings.^{20,21} Receptor heights of 3 feet (1 meter) were used to represent the breathing height of the children at the preschool and elementary school.

Summary of Construction Community Risk Impacts

The increased cancer risk calculations were based on applying the BAAQMD recommended age sensitivity factors to the TAC concentrations, as described in *Attachment 1*. Age-sensitivity factors reflect the greater sensitivity of infants and small children to cancer causing TACs. Third trimester, infant, child, and adult exposures were assumed to occur at all residences during the entire construction period. Students at the preschool and elementary school were assumed to be 2 years and older. The child (ages 2 through 16 years old) cancer risk parameters were used to calculate the increased cancer risk for the preschool and elementary school students.

The maximum modeled annual PM_{2.5} concentration was calculated based on combined exhaust and fugitive concentrations. The maximum computed HI values was based on the ratio of the maximum DPM concentration modeled and the chronic inhalation reference exposure level of 5 µg/m³.

The maximum modeled annual DPM and PM_{2.5} concentrations, which includes both the DPM and fugitive PM_{2.5} concentrations, were identified at nearby sensitive receptors to find the MEI. Results of this assessment indicated that the construction MEIs were located at the same location on two different levels. The MEIs were located in the southwest corner of the adjacent residence in the mixed-use building in the u-shape of the project site, with the cancer risk MEI located on the third floor/second residential level (20 feet above ground) and the PM_{2.5} concentration MEI located on the second floor/first residential level (10 feet above ground). The location of the MEIs and nearby sensitive receptors are shown in Figure 1. Table 6 lists the community risks from construction at the location of the residential MEI. *Attachment 4* to this report includes the emission calculations used for the construction modeling and the cancer risk calculations.

Additionally, modeling was conducted to predict the cancer risks, non-cancer health hazards, and maximum PM_{2.5} concentrations associated with construction activities at the nearby preschool and elementary school. The maximum increased cancer risks were adjusted using child exposure

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 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

parameters. The uncontrolled cancer risks, PM_{2.5} concentrations, and HIs at the nearby schools would not exceed their respective BAAQMD single-source significance thresholds, as shown in Table 6.

Figure 1. Project Construction Site, Locations of Modeled DPM Point Sources, Buildings Evaluated for Downwash Effects, and Maximum TAC Location



Community Risks from Project Operation – Traffic and Generators

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

Project Traffic

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 and not considered in the CEQA analysis.²² This

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>

project would generate 620 daily trips²³ 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. 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, such as a distribution center, a quarry, or a manufacturing facility, may potentially expose existing or future planned receptors to substantial cancer risk levels and/or health hazards. This is not a project of concern for non-BAAQMD permitted mobile sources. Emissions from project traffic are considered negligible and not included within this analysis.

Project Stand-By Diesel Generators

The project proposes to include one stand-by emergency diesel generator on roof towards the rear of the building. The generator would be 100-kW powered by a 134-HP diesel engine. Operation of a diesel generator would be a source of TAC emissions. The generator would be operated for testing and maintenance purposes, with a maximum of 50 hours per year of non-emergency operation under normal conditions. During testing periods, the engine would typically be run for less than one hour under light engine loads. The generator engine would be required to meet EPA emission standards and consume commercially available low sulfur diesel fuel. The emissions from the operation of the generator were calculated using the CalEEMod model.

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

To obtain an estimate of potential cancer risks and PM_{2.5} impacts from operation of the emergency generator, the U.S. EPA AERMOD dispersion model was used to calculate the maximum annual DPM concentration at off-site sensitive receptor locations (nearby residences and schools). The same receptors, breathing heights, and BAAQMD San José International Airport meteorological data used in the construction dispersion modeling were used for the generator modeling. Stack parameters (exhaust flow rate, and exhaust gas temperature) for modeling the generator was based on BAAQMD default parameters for emergency generators²⁴ except for the height which was placed on the roof of the project site. Annual average DPM and PM_{2.5} concentrations were modeled assuming that generator testing could occur at any time of the day (24 hours per day, 365 days per year).

²³ Hexagon Transportation Consultants, Inc., *17 S. 4th Street Mixed-Use Development Local Transportation Analysis*, December 22, 2021.

²⁴ The San Francisco Community Risk Reduction Plan: Technical Support Document, BAAQMD, San Francisco Dept. of Public Health, and San Francisco Planning Dept., December 2012

To calculate the increased cancer risk from the generators at the MEI, the cancer risks were also adjusted for exposure duration to account for the MEI being exposed to construction for the first 2 years of the 30-year period. The exposure duration was adjusted for 28 years of exposure. Table 6 lists the community risks from stand-by diesel generator at the location of residential MEIs and maximum school receptors. The emissions and health risk calculations for the proposed generator are included in *Attachment 4*.

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

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

For this project, the sensitive receptors identified in Figure 1 as the construction MEIs are also the project MEIs. At this location, the MEIs would be exposed to 2 years of construction cancer risks and 28 years of operational (includes stand-by generator) cancer risks. The cancer risks from construction and operation of the project were summed together. Unlike, the increased maximum cancer risk, the annual PM_{2.5} concentration and HI risks are not additive but based on an annual maximum risk for the entirety of the project.

Project risk impacts are shown in Table 6. The unmitigated maximum cancer risks and annual PM_{2.5} concentration from construction activities at the residential project MEI locations would exceed the single-source significance thresholds. However, with the incorporation of the *Mitigation Measure AQ-1 and AQ-2*, the mitigated risk and hazard values would no longer exceed the BAAQMD single-source significance thresholds. The unmitigated annual non-cancer hazards at the MEIs from project construction and operation activities would be below the single-source significance thresholds. Additionally, none of the unmitigated risks and hazards at the maximum school receptors would exceed the BAAQMD single-source significance thresholds.

Table 6. Construction and Operation Risk Impacts

Source		Cancer Risk* (per million)	Annual PM _{2.5} * (µg/m ³)	Hazard Index
Residential Sensitive Receptor				
Project Construction (Years 0-2)	Unmitigated	131.54 (infant)	1.64	0.12
	Mitigated**	9.30 (infant)	0.25	0.01
Project Generator, One 100-kW, 134-HP (Years 3-30)		0.01	<0.01	<0.01
Total/Maximum Project Impact (Years 0-30)	Unmitigated	131.55 (infant)	1.64	0.10
	Mitigated**	9.31 (infant)	0.25	0.01
BAAQMD Single-Source Threshold		10	0.3	1.0
Exceed Threshold?	Unmitigated	Yes	Yes	No
	Mitigated**	No	No	No
Little Einstein's Montessori Preschool Child Receptor				
Project Construction (Years 0-2)		0.26 (child)	0.01	<0.01
Project Generator (Year 3)		<0.01	<0.01	<0.01
Unmitigated Total/Maximum Project (Years 0-3)		<0.27 (child)	0.01	<0.01
BAAQMD Single-Source Threshold		10	0.3	1.0
Exceed Threshold?	Unmitigated	No	No	No
Horace Mann Elementary School Child Receptor				
Project Construction (Years 0-2)		0.16 (child)	<0.01	<0.01
Project Generator (Years 3-9)		0.01	<0.01	<0.01
Unmitigated Total/Maximum Project (Years 0-9)		0.17 (child)	<0.01	<0.01
BAAQMD Single-Source Threshold		10	0.3	1.0
Exceed Threshold?	Unmitigated	No	No	No

* Maximum cancer risk and maximum PM_{2.5} concentration occur at the same receptor location on different levels.

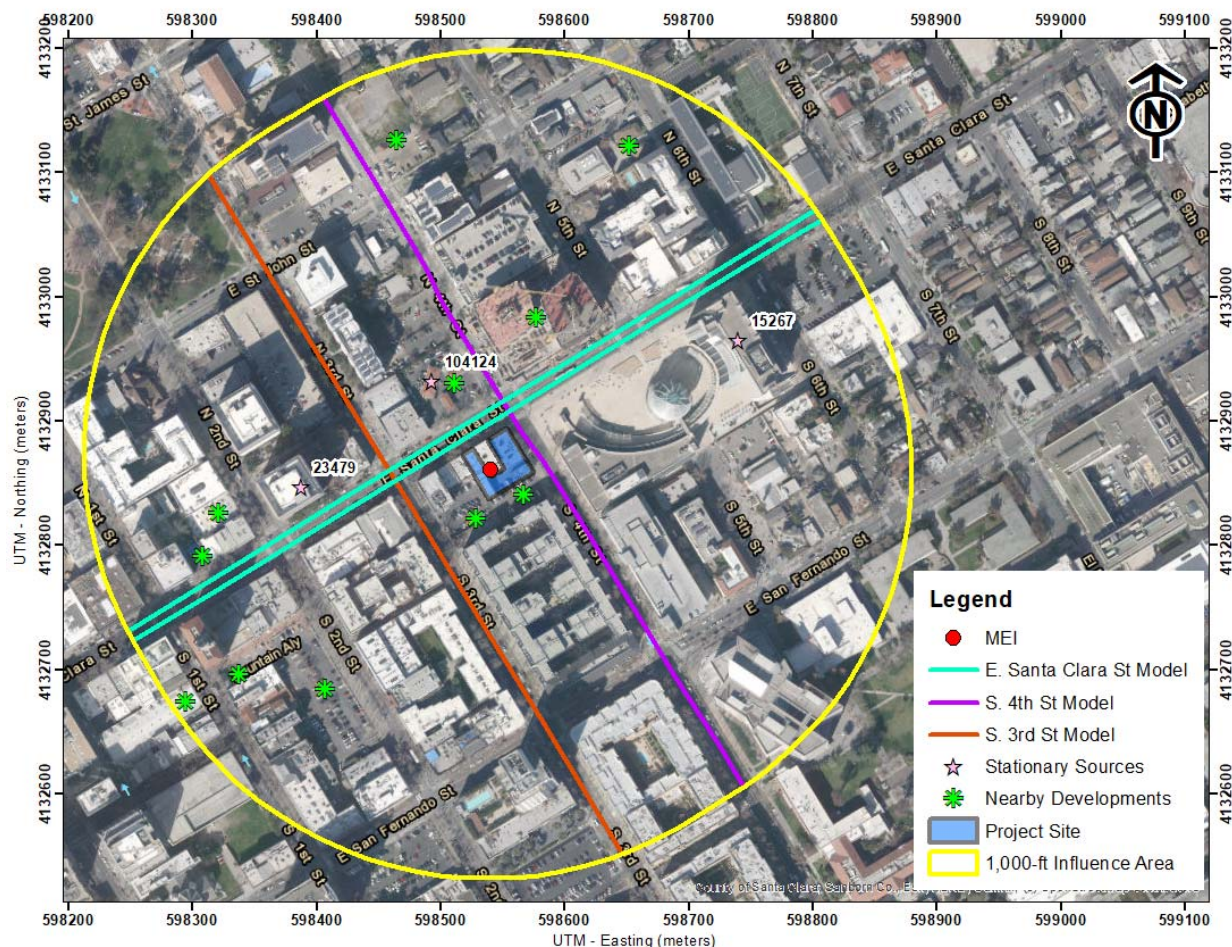
** Construction equipment with Tier 4 final engines, electric cranes, and enhanced BMPs as Mitigation Measures.

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 a project site (i.e., influence area). These sources include rail lines, freeways or highways, busy surface streets, and stationary sources identified by BAAQMD.

A review of the project area based on provided traffic information indicated that traffic on East Santa Clara Street, 3rd Street, and 4th Street would exceed 10,000 vehicles per day. Other nearby streets would have less than 10,000 vehicles per day. A review of BAAQMD's stationary source map website identified three stationary sources with the potential to affect the project MEI. In addition, there are several development projects whose construction would contribute to the cumulative risk. The risk impacts from these developments are included within the analysis. Figure 2 shows the location of the sources affecting the MEIs. Community risk impacts from these sources upon the MEIs are reported in Table 7. Details of the modeling and community risk calculations are included in *Attachment 5*.

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



Local Roadways – East Santa Clara Street, 3rd Street, and 4th Street

A refined analysis of potential health impacts from vehicle traffic on East Santa Clara Street, 3rd Street, and 4th Street was conducted since the roadway was estimated to have average daily traffic (ADT) exceeding 10,000 vehicles. The refined analysis involved predicting emissions for the traffic volume and mix of vehicle types on the roadway near the project site and using an atmospheric dispersion model to predict exposure to TACs. The associated cancer risks are then computed based on the modeled exposures. *Attachment 1* includes a description of how community risk impacts, including cancer risk are computed.

Emission Rates

This analysis involved the development of DPM, organic TACs, and PM_{2.5} emissions for traffic on the roadways using the Caltrans version of the EMFAC2017 emissions model, known as CT-EMFAC2017. CT-EMFAC2017 provides emission factors for mobile source criteria pollutants and TACs, including DPM. Emission processes modeled include running exhaust for DPM, PM_{2.5} and total organic compounds (e.g., TOG), running evaporative losses for TOG, and tire and brake wear and fugitive road dust for PM_{2.5}. All PM_{2.5} emissions from all vehicles were used, rather than

just the PM_{2.5} fraction from diesel powered vehicles, because all vehicle types (i.e., gasoline and diesel powered) produce PM_{2.5}. Additionally, PM_{2.5} emissions from vehicle tire and brake wear and from re-entrained roadway dust were included in these emissions. DPM emissions are projected to decrease in the future and are reflected in the CT-EMFAC2017 emissions data. Inputs to the model include region (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),²⁵ traffic mix assigned by CT-EMFAC2017 for the county, year of analysis (2022 – construction start year), and season (annual).

The ADT for East Santa Clara Street, 3rd Street, and 4th Street were based on AM and PM peak-hour background plus project traffic volumes for the nearby roadway provided by the project's traffic data.²⁶ Assuming a 1 percent per year increase, the predicted ADT on East Santa Clara Street would be 16,323, on 3rd Street the ADT would be 10,566, and on 4th Street the ADT would be 10,400. Average hourly traffic distributions for Santa Clara County roadways were developed using the EMFAC model,²⁷ which were then applied to the ADT volumes to obtain estimated hourly traffic volumes and emissions for the roadway. For all hours of the day, other than during peak a.m. and p.m. periods, average speeds of 25 mph on East Santa Clara Street and 30 mph on 3rd Street and 4th Street were assumed for all vehicles based on posted speed limit signs on the roadway. Traffic speeds during the peak a.m. and p.m. periods were assumed to be 5 miles per hour slower (i.e., 20 mph on East Santa Clara and 25 mph on 3rd Street and 4th Street) to account for congestion and the amount of access in the area.

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 MEIs, the CT-EMFAC2017 model was used to develop vehicle emission factors for the year 2022 (project construction year). Emissions associated with vehicle travel depend on the year of analysis because emission control technology requirements are phased-in over time. Therefore, the earlier the year analyzed in the model, the higher the emission rates utilized by CT-EMFAC2017. Year 2022 emissions were conservatively assumed as being representative of future conditions over the time period that cancer risks are evaluated since, as discussed above, overall vehicle emissions, and in particular diesel truck emissions, will decrease in the future.

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.^{28,29} TAC and PM_{2.5} emissions from traffic on the roadways within 1,000 feet of the project site were

²⁵ 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>

²⁶ Hexagon Transportation Consultants, Inc., 17 S. 4th Street Mixed-Use Development Local Transportation Analysis, December 22, 2021.

²⁷ The Burden output from EMFAC2007, a previous version of CARB's EMFAC model, was used for this since the current web-based version of EMFAC2014 does not include Burden type output with hour by hour traffic volume information.

²⁸ 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>

²⁹ 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

evaluated. Vehicle traffic on the roadway was modeled using a series of adjacent volume sources along a line (line volume sources); with line segments used for the travel directions on the roadways. The same meteorological data and off-site sensitive receptors used in the previous dispersion modeling were used in the roadway modeling. Other inputs to the model included road geometry, hourly traffic emissions, and receptor locations. Annual TAC and PM_{2.5} concentrations for 2022 from traffic on the roadways were calculated using the model. Concentrations were calculated at the project MEIs with receptor heights of 10 feet (3 meters) and 20 feet (6.1 meters) to represent the breathing heights of residents in the multi-family units.

Figure 2 shows the roadway segments modeled and residential MEIs receptor location used in the modeling. Table 7 lists the risks and hazards from the roadway. The emission rates and roadway calculations used in the analysis are shown in *Attachment 5*.

Stationary Sources

Permitted stationary sources of air pollution near the project site were identified using BAAQMD's *Permitted Stationary Sources 2018* GIS website,³⁰ which identifies the location of nearby stationary sources and their estimated risk and hazard impacts, including emissions and adjustments to account for new OEHHA guidance. Three sources were identified using this tool with two sources being diesel generators and one being a gas dispensing facility. A Stationary Source Information Form (SSIF) containing the identified sources was prepared and submitted to BAAQMD. BAAQMD provided updated emissions data and risk values.³¹

The screening level risks and hazards provided by BAAQMD for the stationary sources were adjusted for distance using BAAQMD's *Distance Adjustment Multiplier Tool for Diesel Internal Combustion Engines and Gasoline Dispensing Facility*. Community risk impacts from the stationary sources upon the MEI are reported in Table 7.

Construction Risk Impacts from Nearby Developments

From the City's website,³² the following planned or approved projects are located within 1,000 feet of the proposed project:

- **Miro (SJSC Towers)** – this project is located at 39 North 5th Street, which is located approximately 125 feet northeast of the project site, in the northeastern corner of the North 4th Street/East Santa Clara Street intersection. This project is currently under construction and near completion. Construction of this project should be completed prior to construction of the project. This would not result in a cumulative construction impact.
- **Icon-Echo** – this project is located at 147 East Santa Clara Street, which is north of the project, opposite East Santa Clara Street. This project would include the construction of two towers: a residential tower with 415 units and an office tower with 525,000 of office space. This project is currently in the planning review phase and not expected to start before

³⁰ BAAQMD, <https://baaqmd.maps.arcgis.com/apps/webappviewer/index.html?id=2387ae674013413f987b1071715daa65>

³¹ Correspondence with Areana Flores, MSc, Environmental Planner, BAAQMD, February 9, 2021.

³² City of San Jose, Private / Key Economic Development Projects Map, Web: <https://gis.sanjoseca.gov/maps/devprojects/>

January 2023. Therefore, there is potential for this project to be constructed simultaneously or consecutively with the proposed project.

- **Hotel Clariana** – this project is located at 27 S. 4th Street, adjoining the project site to the west and to the south. This project is currently under review and would consist of a five-story hotel and seven-story condominium building. Construction dates for this project have not been confirmed but would be expected to last for more than one year, and construction could occur simultaneously.
- **4th Street Housing** – this project is in the northeast corner of the N. 4th Street/E. St. John Street intersection, approximately 720 feet north of the project site. This project has been approved and would consist of a 23-story mixed-use building with approximately 10,733 square feet of commercial uses and up to 316 residential units. While the construction schedule is unknown at this time, construction could occur simultaneously.
- **Fountain Alley Mixed-Use** – this project is located at 35 South 2nd Street and would include a 21-story mixed-use building with 194 residential units and 405,000 square feet of office space and 31,959 square feet of ground-level retail. This project is currently in the planning review phase and not expected to start before March 2023. Therefore, construction could occur simultaneously with the proposed project.
- **Fountain Alley Office** – this project is located at 26 S. 1st Street and is approximately 710 feet from the project site. This project is approved but not yet constructed. This project includes a six-story building with 91,992-sf of commercial office and retail space. While the construction schedule is unknown at this time, construction could occur simultaneously or concurrently.
- **19 N. 2nd Street** – this project is located approximately 585 feet northwest of the project site. This mixed-use project would include 210 residential units and 37,240-sf of commercial space. This project is currently in the planning review phase. While the construction schedule is unknown at this time, construction could occur simultaneously.
- **6th Street Project** – this project is located at 73 North 6th Street, approximately 735 feet east of the project site. This 10-story mixed-use building would include up to 197 residential units and approximately 8,000 square feet of ground floor retail. This project has been approved but not constructed. While the construction schedule is unknown at this time, construction could occur simultaneously.
- **27 West** – this project is located at 27 S. 1st Street, which is about 925 feet west of the project site. This project has been approved and consists of a 22-story mixed-use building with 374 residential units and 35,712-sf of retail space. Construction has begun and some phases could occur simultaneously with the proposed project.
- **Eterna Tower** – this project is located at 17 E. Santa Clara Street, which is about 660 feet northwest of the project site. This project is currently under review and consists of a mixed-use building with approximately 2,500-sf of commercial space and 200 residential units.

While the construction schedule is unknown at this time, construction could occur simultaneously.

The mitigated construction risks and hazard impact values for certain developments were available from their air quality technical reports either conducted by *Illingworth & Rodin, Inc.* or on the City of San José Environmental Review website for Active EIRs,³³ Completed EIRs,³⁴ or Negative Declaration / Initial Studies.³⁵ For developments that did not have available construction impact results at the time of this study, it was assumed the construction risks would be less than the BAAQMD single-source thresholds for community risks and hazards. If the nearby developments were more than 500 feet from the project site, the construction risks were assumed to be half of the BAAQMD single-source thresholds due to the distance and dispersion between the source and receptors. For the purpose of this analysis, it was conservatively assumed the entire construction period from the proposed project would overlap with the nearby developments' construction schedule. This approach likely provides an overestimate of the community risk and hazard levels because it assumes that maximum impacts from the nearby development occurs concurrently with the proposed project at the proposed project's MEIs. The mitigated construction risks reported in that air quality assessment were included in the cumulative risks 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 and operation (i.e., the project MEIs). The project would have an exceedance with respect to community risk caused by project construction and operation activities, since the unmitigated maximum cancer risk and annual PM_{2.5} concentration exceed the BAAQMD single-source thresholds. The combined unmitigated maximum cancer risk and annual PM_{2.5} concentration would also exceed the BAAQMD cumulative-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 thresholds and the combined unmitigated and mitigated cancer risk would be lowered to a level below the cumulative-source threshold. However, the combined annual PM_{2.5} concentration, which includes unmitigated and mitigated impacts, could exceed its cumulative thresholds due to the concentration from the 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 HI, unmitigated and mitigated, does not exceed the single or cumulative thresholds.

³³ 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>

³⁴ 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>

³⁵ City of San José, *Negative Declaration / Initial Studies*, <https://www.sanjoseca.gov/your-government/departments/planning-building-code-enforcement/planning-division/environmental-planning/environmental-review/negative-declaration-initial-studies>

Table 1. Cumulative Community Risk Impacts at the Location of the Project MEI

Source		Maximum Cancer Risk* (per million)	PM _{2.5} Concentration* (µg/m ³)	Hazard Index
Project Impacts				
Project Construction	Unmitigated	131.55 (infant)	1.64	0.10
	Mitigated	9.31 (infant)	0.25	0.01
BAAQMD Single-Source Threshold		10	0.3	1.0
Exceed Threshold?	Unmitigated	Yes	Yes	No
	Mitigated	No	No	No
Cumulative Operational Sources				
Cumulative Sources				
East Santa Clara Street , ADT 16,323		2.21	0.18	<0.01
3 rd Street , ADT 10,566		1.12	0.07	<0.01
4 th Street , ADT 10,400		1.20	0.07	<0.01
San Jose New City Hall (Facility ID #15267, Generator), MEI at 700 feet		0.40	0.01	<0.01
SV Towers Investments LLC, C/O Harvest Properties (Facility ID #23479, Generator), MEI at 450 feet		0.38	--	--
Chevron #4259 (Facility ID #104124, Gas Station), MEI at 150 feet		4.09	--	0.02
Cumulative Temporary Construction Sources				
Icon-Echo Mitigated Construction Emissions – 100 feet north		<7.46	<0.05	<0.01
Hotel Clariana Mitigated Construction Emissions – adjacent west and south		<8.80	<0.07	<0.01
4 th Street Housing Mitigated Construction Emissions – 720 feet north		<4.30	<0.06	<0.01
Fountain Alley Mixed-use Mitigated Construction Emissions – 560 feet west		<5.11	<0.10	<0.01
Fountain Alley Office Mitigated Construction Emissions – 710 feet west		<4.50	<0.03	<0.01
19 N. 2 nd Street Mitigated Construction Emissions – 585 feet west		<3.07	<0.02	<0.01
6 th Street Mitigated Construction Emissions – 735 feet east		<5.00	<0.15	<0.50
27 West Mitigated Construction Emissions – 925 feet west		<2.40	<0.05	<0.01
Eterna Tower Mitigated Construction Emissions – 660 feet northwest		<4.24	<0.09	<0.01
Combined Sources	Unmitigated	<185.83	<2.59	<0.74
	Mitigated	<63.59	<1.20	<0.65
BAAQMD Cumulative Source Threshold		100	0.8	10.0
Exceed Threshold?	Unmitigated	Yes	Yes	No
	Mitigated	No	Yes	No

* Maximum cancer risk and maximum PM_{2.5} concentration occur at the same receptor location on different levels.

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

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

1. All construction equipment larger than 25 horsepower used at the site for more than two continuous days or 20 hours total shall meet U.S. EPA Tier 4 final emission standards for particulate matter (PM₁₀ 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 a 93 percent or greater reduction in particulate matter exhaust in comparison to uncontrolled equipment; alternatively (or in combination).
 - b. Use of alternatively fueled or electric-powered equipment.
2. Provide line power to the site during the early phases of construction to minimize the use of diesel-powered stationary equipment, such as stationary cranes and air compressors.
3. Limit generators use where feasible.

Alternatively, the applicant could develop a separate feasible plan that reduces on- and near-site construction diesel particulate matter emissions by 93 percent or greater. Such a plan would have to be reviewed and approved by the City.

Effectiveness of Mitigation Measure AQ-1 and AQ-2

CalEEMod was used to compute emissions associated with this mitigation measure assuming that all equipment met U.S. EPA Tier 4 Final engines standards and electric stationary cranes were used along with enhanced BAAQMD best management practices for construction were included. With these implemented, the project's construction cancer risk levels (assuming infant exposure) would be reduced by 93 percent to 9.31 chances per million. The project's annual PM_{2.5} concentrations would be reduced by 85 percent to 0.25 µg/m³. The project's risk impacts would no longer exceed the BAAQMD single-source significance thresholds. This would reduce the cumulative cancer risk and to less than 63.59 chances per million and the cumulative PM_{2.5} concentration risk to less than 1.20 µg/m³. The PM_{2.5} concentration would still exceed the cumulative threshold due to the overwhelming contribution of non-project sources.

Mitigation Measure AQ-1 and AQ-2 represent the best available measures to reduce project construction period emissions. The PM_{2.5} concentration from existing sources alone exceeds the cumulative threshold at 0.95 µg/m³. Cumulative risks exceed the PM_{2.5} concentration threshold because of the influence from local roadways and the overwhelming influence of the potentially

simultaneous nearby developments at the MEIs. The project's mitigated PM_{2.5} concentration represents 21 percent of the total mitigated cumulative concentration. In addition, according to BAAQMD health risks would be less-than-significant to the MEI if the risks from the project are reduced below the single-source thresholds.³⁶ Therefore, the project would not substantially contribute to the total cumulative PM_{2.5} concentration. The project would not be cumulatively considerable and no additional mitigation would be required on the part of the project to mitigate the exceedance of the cumulative source threshold for annual PM_{2.5} concentration. Note that the project would apply best practices in reducing construction emissions, including those of PM_{2.5}.

Supporting Documentation

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

Attachment 2 includes the CalEEMod output for project construction and operational criteria air pollutant. Also included are any modeling assumptions.

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

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

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

³⁶ Correspondence with Areana Flores, MSc, Environmental Planner, BAAQMD, February 23, 2021.

Attachment 1: Health Risk Calculation Methodology

Health Risk Calculation Methodology

A health risk assessment (HRA) for exposure to Toxic Air Contaminates (TACs) requires the application of a risk characterization model to the results from the air dispersion model to estimate potential health risk at each sensitive receptor location. The State of California Office of Environmental Health Hazard Assessment (OEHHA) and California Air Resources Board (CARB) develop recommended methods for conducting health risk assessments. The most recent OEHHA risk assessment guidelines were published in February of 2015.³⁷ 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.³⁸ 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.³⁹ 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.

³⁷ 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.

³⁸ CARB, 2015. *Risk Management Guidance for Stationary Sources of Air Toxics*. July 23.

³⁹ BAAQMD, 2016. *BAAQMD Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines*. December 2016.

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

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

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

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

Where:

CPF = Cancer potency factor (mg/kg-day)⁻¹

ASF = Age sensitivity factor for specified age group

ED = Exposure duration (years)

AT = Averaging time for lifetime cancer risk (years)

FAH = Fraction of time spent at home (unitless)

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

Where:

C_{air} = concentration in air (µg/m³)

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 →	3 rd Trimester	0<2	2 < 16	16 - 30
DPM Cancer Potency Factor (mg/kg-day) ⁻¹		1.10E+00	1.10E+00	1.10E+00	1.10E+00
Daily Breathing Rate (L/kg-day) 80 th Percentile Rate		273	758	572	261
Daily Breathing Rate (L/kg-day) 95 th Percentile Rate		361	1,090	745	335
8-hour Breathing Rate (L/kg-8 hours) 95 th Percentile Rate		-	1,200	520	240
Inhalation Absorption Factor		1	1	1	1
Averaging Time (years)		70	70	70	70
Exposure Duration (years)		0.25	2	14	14*
Exposure Frequency (days/year)		350	350	350	350*
Age Sensitivity Factor		10	10	3	1
Fraction of Time at Home (FAH)		0.85-1.0	0.85-1.0	0.72-1.0	0.73*

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

Non-Cancer Hazards

Non-cancer health risk is usually determined by comparing the predicted level of exposure to a chemical to the level of exposure that is not expected to cause any adverse effects (reference exposure level), even to the most susceptible people. Potential non-cancer health hazards from TAC exposure are expressed in terms of a hazard index (HI), which is the ratio of the TAC concentration to a reference exposure level (REL). OEHHHA 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 (µg/m³).

Annual PM_{2.5} Concentrations

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

Attachment 2: CalEEMod Input Assumptions and Outputs

Air Quality/Noise Construction Information Data Request

Project Name: Suzaco

Complete ALL Portions in Yellow

See Equipment Type TAB for type, horsepower and load factor

Project Size	Dwelling Units	0.34 total project acres disturbed
---------------------	-----------------------	---

s.f. residential

10,509 s.f. retail

53,454 s.f. office/commercial

11,288 s.f. other, specify: Circulation, mechanical

 s.f. parking garage spaces

N/A s.f. parking lot 2 spaces

Construction Hours	7am	am to	5 pm
--------------------	-----	-------	------

Pile Driving? Yes

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

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

Kilowatts/Horsepower: 100kw

Fuel Type: Deisel

Location in project (Plans Desired if Available):

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

[illegible]

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

Traffic Consultant Trip Gen					CalEEMod Default			
Land Use	Size	Daily Trips	New Trips	Weekday Trip Gen	Weekday	Sat	Sun	
General Office Building	1000-sf	64.742	444	297	4.59	9.74	2.21	0.7
Office - Retail Internal Reduction	3%		-13		Rev	1.04	0.33	
Location Based Reduction	31%		-134					
Shopping Center	1000-sf	10.509	397	323	30.74	37.75	46.12	21.1
Office - Retail Internal Reduction			-13		Rev	37.55	17.18	
Location Based Reduction	16%		-61					

17 S 4th Mixed-Use Development VMT Trip Generation Estimates

Land Use	ITE Land Use Code	Location	% of Vehicle Mode Share	% Reduction	Size	Daily		AM Peak Hour						PM Peak Hour					
						Rate	Trip	Pk-Hr Rate	Split		Trip			Pk-Hr Rate	Split		Trip		
									In	Out	In	Out	Total		In	Out	In	Out	Total
Proposed Land Use																			
General Office Building ¹	710				45,624 Square Feet	9.74	444	1.160	86%	14%	46	7	53	1.15	16%	84%	8	44	52
- Office - Retail Internal Reduction ²				3%			-13				-1	0	-1				0	-1	-1
- Location Based Reduction ³		Central City Urban	69%	31%			-134				-14	-2	-16				-2	-13	-15
Shopping Center ¹	820				10,509 Square Feet	37.75	397	0.940	62%	38%	6	4	10	3.81	48%	52%	20	21	41
- Office - Retail Internal Reduction ²							-13				0	-1	-1				-1	0	-1
- Location Based Reduction ³		Central City Urban	84%	16%			-61				-1	0	-1				-3	-3	-6
Baseline Vehicle Trips (Before Reductions)							841				52	11	63				28	65	93
Project Trips After Reductions							620				36	8	44				22	48	70
Total Trips at Site Driveways ⁴							297				31	5	36				6	30	36

Notes:

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

² As prescribed by the Transportation Impact Analysis Guidelines from VTA (October 2014), the maximum trip reduction for a mixed-use development project with employment and employee-serving retail uses is equal to 3% off the office component. The maximum 3% reduction was applied to the PM peak-hour trip estimates. For the AM peak-hour trip estimates, a 50% reduction off the retail trips was applied.

³ The project site is located within central city urban area based on the City of San Jose VMT Evaluation Tool (February 28, 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 Retail uses are not required to provide on-site parking in the Downtown area. Therefore, only project trips generated by the office use will be assigned at the project driveway.

Construction Criteria Air Pollutants						
Unmitigated	ROG	NOX	PM10 Exhaust	PM2.5 Exhaust	CO2e	
Year	Tons				MT	
Construction Equipment						
2022	0.03	0.32	0.02	0.01	36.59	
2023	0.29	0.97	0.04	0.04	181.45	
2024	0.21	0.17	0.004	0.004	45.78	
EMFAC						
2022	0.00	0.02	0.001	0.001	17.41	
2023	0.01	0.05	0.004	0.002	51.23	
2024	0.00	0.01	0.001	0.000	7.86	
Total Construction Emissions by Year						
2022	0.04	0.34	0.02	0.01	54.00	
2023	0.30	1.03	0.05	0.04	232.68	
2024	0.21	0.18	0.004	0.004	53.64	
	Total Construction Emissions					
Tons	0.55	1.54	0.07	0.06	340.32	
Pounds/Workdays	Average Daily Emissions				Workdays	
2022	0.58	5.59	0.28	0.24		122
2023	1.67	5.62	0.25	0.23		365
2024	7.53	6.34	0.16	0.14		56
Threshold - lbs/day	54.0	54.0	82.0	54.0		
	Total Construction Emissions					
Pounds	9.78	17.55	0.69	0.61	0.00	
Average	2.03	5.69	0.25	0.22	0.00	543.00
Threshold - lbs/day	54.0	54.0	82.0	54.0		

Category	CO2e			
	Project	Existing	Project 2030	Existing
Area	0.001			
Energy	100.03			
Mobile	408.39			
Waste	35.83			
Water	16.21			
TOTAL	560.46	0.00	0.00	0.00
Net GHG Emissions		560.46		0.00
Service Population	0.00			
Per Capita Emissions		#DIV/0!		#DIV/0!
CA DOF 1920 =	0 units 0 pphh			

Off-road Equipment - Provided construction equipment and hours

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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 - 0 Trips for EMFAC2021 conversion, pavement dmp = 56 tons, building const = 30 cement truck round trips, paving = 50-cy asphalt

Demolition - Existing building demo = 15,000-sf

Grading - grading = 4,000-cy export

Vehicle Trips - Trip gen rates with reduction adjustments

Vehicle Emission Factors - EMFAC2021 Vehicle Emissions Santa Clara County 2024

Energy Use - No Natural Gas (reach code), all electric

Water And Wastewater - Wastewater treatment, 100% aerobic

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

Energy Mitigation -

Fleet Mix - EMFAC2021 Fleet Mix Santa Clara County 2024

Stationary Sources - Emergency Generators and Fire Pumps - one 100-kw, 134hp diesel generator, 50 hr/yr

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	12.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

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tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	5.00	120.00
tblConstructionPhase	NumDays	100.00	180.00
tblConstructionPhase	NumDays	10.00	60.00
tblConstructionPhase	NumDays	2.00	60.00
tblConstructionPhase	NumDays	5.00	20.00
tblConstructionPhase	NumDays	1.00	30.00
tblEnergyUse	NT24NG	0.06	0.00
tblEnergyUse	T24NG	16.14	0.00
tblEnergyUse	T24NG	2.34	0.00

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tblFleetMix	HHD	6.4040e-003	0.02
tblFleetMix	HHD	6.4040e-003	0.02
tblFleetMix	HHD	6.4040e-003	0.02
tblFleetMix	LDA	0.57	0.55
tblFleetMix	LDA	0.57	0.55
tblFleetMix	LDA	0.57	0.55
tblFleetMix	LDT1	0.06	0.04
tblFleetMix	LDT1	0.06	0.04
tblFleetMix	LDT1	0.06	0.04
tblFleetMix	LDT2	0.19	0.22
tblFleetMix	LDT2	0.19	0.22
tblFleetMix	LDT2	0.19	0.22
tblFleetMix	LHD1	0.02	0.02
tblFleetMix	LHD1	0.02	0.02
tblFleetMix	LHD1	0.02	0.02
tblFleetMix	LHD2	5.1020e-003	5.9020e-003
tblFleetMix	LHD2	5.1020e-003	5.9020e-003
tblFleetMix	LHD2	5.1020e-003	5.9020e-003
tblFleetMix	MCY	0.02	3.5470e-003
tblFleetMix	MCY	0.02	3.5470e-003
tblFleetMix	MCY	0.02	3.5470e-003
tblFleetMix	MDV	0.12	0.12
tblFleetMix	MDV	0.12	0.12
tblFleetMix	MDV	0.12	0.12
tblFleetMix	MH	2.7760e-003	6.7300e-004
tblFleetMix	MH	2.7760e-003	6.7300e-004
tblFleetMix	MH	2.7760e-003	6.7300e-004
tblFleetMix	MHD	7.9340e-003	0.01
tblFleetMix	MHD	7.9340e-003	0.01

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tblFleetMix	MHD	7.9340e-003	0.01
tblFleetMix	OBUS	9.0000e-004	1.7600e-003
tblFleetMix	OBUS	9.0000e-004	1.7600e-003
tblFleetMix	OBUS	9.0000e-004	1.7600e-003
tblFleetMix	SBUS	9.1400e-004	5.2600e-004
tblFleetMix	SBUS	9.1400e-004	5.2600e-004
tblFleetMix	SBUS	9.1400e-004	5.2600e-004
tblFleetMix	UBUS	3.8000e-004	1.2570e-003
tblFleetMix	UBUS	3.8000e-004	1.2570e-003
tblFleetMix	UBUS	3.8000e-004	1.2570e-003
tblGrading	MaterialExported	0.00	4,000.00
tblLandUse	LandUseSquareFeet	64,740.00	64,742.00
tblLandUse	LandUseSquareFeet	10,510.00	10,509.00
tblLandUse	LotAcreage	1.49	0.34
tblLandUse	LotAcreage	0.02	0.00
tblLandUse	LotAcreage	0.24	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	UsageHours	6.00	3.00
tblOffRoadEquipment	UsageHours	6.00	1.30
tblOffRoadEquipment	UsageHours	8.00	1.50
tblOffRoadEquipment	UsageHours	4.00	4.40
tblOffRoadEquipment	UsageHours	6.00	2.30

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tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	8.00	1.00
tblOffRoadEquipment	UsageHours	7.00	1.30
tblOffRoadEquipment	UsageHours	7.00	1.30
tblOffRoadEquipment	UsageHours	6.00	1.20
tblOffRoadEquipment	UsageHours	8.00	2.00
tblOffRoadEquipment	UsageHours	6.00	0.80
tblOffRoadEquipment	UsageHours	7.00	1.20
tblOffRoadEquipment	UsageHours	7.00	0.00
tblOffRoadEquipment	UsageHours	8.00	3.00
tblProjectCharacteristics	CO2IntensityFactor	807.98	178
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	134.00
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	50.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00
tblTripsAndVMT	HaulingTripNumber	68.00	0.00
tblTripsAndVMT	HaulingTripNumber	500.00	0.00
tblTripsAndVMT	VendorTripNumber	12.00	0.00
tblTripsAndVMT	WorkerTripNumber	18.00	0.00
tblTripsAndVMT	WorkerTripNumber	13.00	0.00
tblTripsAndVMT	WorkerTripNumber	18.00	0.00
tblTripsAndVMT	WorkerTripNumber	18.00	0.00
tblTripsAndVMT	WorkerTripNumber	24.00	0.00
tblTripsAndVMT	WorkerTripNumber	5.00	0.00
tblTripsAndVMT	WorkerTripNumber	13.00	0.00
tblVehicleEF	HHD	0.02	0.23
tblVehicleEF	HHD	0.05	0.12
tblVehicleEF	HHD	6.33	5.20
tblVehicleEF	HHD	0.40	0.77
tblVehicleEF	HHD	5.9420e-003	6.2600e-004

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tblVehicleEF	HHD	1,048.88	832.32
tblVehicleEF	HHD	1,413.90	1,617.13
tblVehicleEF	HHD	0.05	0.02
tblVehicleEF	HHD	0.17	0.13
tblVehicleEF	HHD	0.22	0.26
tblVehicleEF	HHD	7.0000e-006	1.9000e-005
tblVehicleEF	HHD	5.39	4.11
tblVehicleEF	HHD	2.69	1.85
tblVehicleEF	HHD	2.32	2.73
tblVehicleEF	HHD	2.5820e-003	2.1820e-003
tblVehicleEF	HHD	0.06	0.08
tblVehicleEF	HHD	0.04	0.04
tblVehicleEF	HHD	0.02	0.03
tblVehicleEF	HHD	2.4710e-003	2.0820e-003
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	8.8830e-003	8.7810e-003
tblVehicleEF	HHD	0.02	0.02
tblVehicleEF	HHD	2.0000e-006	1.9600e-004
tblVehicleEF	HHD	9.3000e-005	5.8000e-005
tblVehicleEF	HHD	0.43	0.33
tblVehicleEF	HHD	1.0000e-006	0.00
tblVehicleEF	HHD	0.03	0.02
tblVehicleEF	HHD	4.1000e-005	5.2500e-004
tblVehicleEF	HHD	2.0000e-006	0.00
tblVehicleEF	HHD	9.7610e-003	7.2800e-003
tblVehicleEF	HHD	0.01	0.01
tblVehicleEF	HHD	2.0000e-006	1.9600e-004
tblVehicleEF	HHD	9.3000e-005	5.8000e-005
tblVehicleEF	HHD	0.49	0.59

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tblVehicleEF	HHD	1.0000e-006	0.00
tblVehicleEF	HHD	0.08	0.14
tblVehicleEF	HHD	4.1000e-005	5.2500e-004
tblVehicleEF	HHD	3.0000e-006	0.00
tblVehicleEF	LDA	1.7200e-003	2.0530e-003
tblVehicleEF	LDA	0.04	0.06
tblVehicleEF	LDA	0.52	0.65
tblVehicleEF	LDA	2.08	2.89
tblVehicleEF	LDA	234.59	246.81
tblVehicleEF	LDA	49.79	63.85
tblVehicleEF	LDA	3.9560e-003	4.1620e-003
tblVehicleEF	LDA	0.02	0.03
tblVehicleEF	LDA	0.03	0.04
tblVehicleEF	LDA	0.16	0.23
tblVehicleEF	LDA	0.04	7.1680e-003
tblVehicleEF	LDA	1.2900e-003	1.1710e-003
tblVehicleEF	LDA	1.6800e-003	1.9100e-003
tblVehicleEF	LDA	0.02	2.5090e-003
tblVehicleEF	LDA	1.1880e-003	1.0780e-003
tblVehicleEF	LDA	1.5440e-003	1.7560e-003
tblVehicleEF	LDA	0.04	0.27
tblVehicleEF	LDA	0.08	0.08
tblVehicleEF	LDA	0.03	0.00
tblVehicleEF	LDA	6.4090e-003	7.8860e-003
tblVehicleEF	LDA	0.03	0.20
tblVehicleEF	LDA	0.19	0.30
tblVehicleEF	LDA	2.3210e-003	2.4400e-003
tblVehicleEF	LDA	4.9300e-004	6.3100e-004
tblVehicleEF	LDA	0.04	0.27

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tblVehicleEF	LDA	0.08	0.08
tblVehicleEF	LDA	0.03	0.00
tblVehicleEF	LDA	9.3170e-003	0.01
tblVehicleEF	LDA	0.03	0.20
tblVehicleEF	LDA	0.21	0.32
tblVehicleEF	LDT1	3.6010e-003	6.2220e-003
tblVehicleEF	LDT1	0.06	0.10
tblVehicleEF	LDT1	0.85	1.42
tblVehicleEF	LDT1	2.26	5.22
tblVehicleEF	LDT1	280.86	327.08
tblVehicleEF	LDT1	60.30	86.29
tblVehicleEF	LDT1	5.8110e-003	9.3750e-003
tblVehicleEF	LDT1	0.03	0.04
tblVehicleEF	LDT1	0.07	0.13
tblVehicleEF	LDT1	0.21	0.38
tblVehicleEF	LDT1	0.04	9.2260e-003
tblVehicleEF	LDT1	1.6380e-003	1.9270e-003
tblVehicleEF	LDT1	2.1080e-003	2.8980e-003
tblVehicleEF	LDT1	0.02	3.2290e-003
tblVehicleEF	LDT1	1.5070e-003	1.7740e-003
tblVehicleEF	LDT1	1.9380e-003	2.6650e-003
tblVehicleEF	LDT1	0.07	0.60
tblVehicleEF	LDT1	0.15	0.16
tblVehicleEF	LDT1	0.06	0.00
tblVehicleEF	LDT1	0.02	0.03
tblVehicleEF	LDT1	0.08	0.47
tblVehicleEF	LDT1	0.27	0.54
tblVehicleEF	LDT1	2.7790e-003	3.2330e-003
tblVehicleEF	LDT1	5.9700e-004	8.5300e-004

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tblVehicleEF	LDT1	0.07	0.60
tblVehicleEF	LDT1	0.15	0.16
tblVehicleEF	LDT1	0.06	0.00
tblVehicleEF	LDT1	0.02	0.04
tblVehicleEF	LDT1	0.08	0.47
tblVehicleEF	LDT1	0.30	0.59
tblVehicleEF	LDT2	2.9320e-003	2.8180e-003
tblVehicleEF	LDT2	0.06	0.08
tblVehicleEF	LDT2	0.73	0.83
tblVehicleEF	LDT2	2.69	3.62
tblVehicleEF	LDT2	301.75	340.73
tblVehicleEF	LDT2	65.36	87.22
tblVehicleEF	LDT2	5.6680e-003	6.0190e-003
tblVehicleEF	LDT2	0.03	0.04
tblVehicleEF	LDT2	0.06	0.07
tblVehicleEF	LDT2	0.25	0.33
tblVehicleEF	LDT2	0.04	8.8660e-003
tblVehicleEF	LDT2	1.3400e-003	1.3330e-003
tblVehicleEF	LDT2	1.7010e-003	2.1080e-003
tblVehicleEF	LDT2	0.02	3.1030e-003
tblVehicleEF	LDT2	1.2340e-003	1.2260e-003
tblVehicleEF	LDT2	1.5640e-003	1.9380e-003
tblVehicleEF	LDT2	0.06	0.29
tblVehicleEF	LDT2	0.12	0.08
tblVehicleEF	LDT2	0.06	0.00
tblVehicleEF	LDT2	0.01	0.01
tblVehicleEF	LDT2	0.06	0.21
tblVehicleEF	LDT2	0.28	0.38
tblVehicleEF	LDT2	2.9850e-003	3.3680e-003

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tblVehicleEF	LDT2	6.4700e-004	8.6200e-004
tblVehicleEF	LDT2	0.06	0.29
tblVehicleEF	LDT2	0.12	0.08
tblVehicleEF	LDT2	0.06	0.00
tblVehicleEF	LDT2	0.02	0.02
tblVehicleEF	LDT2	0.06	0.21
tblVehicleEF	LDT2	0.31	0.42
tblVehicleEF	LHD1	4.9880e-003	5.3690e-003
tblVehicleEF	LHD1	7.8580e-003	8.1950e-003
tblVehicleEF	LHD1	0.01	0.02
tblVehicleEF	LHD1	0.18	0.20
tblVehicleEF	LHD1	0.71	0.90
tblVehicleEF	LHD1	1.05	2.16
tblVehicleEF	LHD1	8.86	8.72
tblVehicleEF	LHD1	779.34	782.62
tblVehicleEF	LHD1	11.55	17.84
tblVehicleEF	LHD1	7.4200e-004	6.4000e-004
tblVehicleEF	LHD1	0.04	0.04
tblVehicleEF	LHD1	0.02	0.04
tblVehicleEF	LHD1	0.06	0.05
tblVehicleEF	LHD1	0.65	0.66
tblVehicleEF	LHD1	0.30	0.44
tblVehicleEF	LHD1	8.4200e-004	6.8100e-004
tblVehicleEF	LHD1	0.08	0.08
tblVehicleEF	LHD1	9.7790e-003	9.4140e-003
tblVehicleEF	LHD1	9.6230e-003	0.01
tblVehicleEF	LHD1	2.4700e-004	2.2700e-004
tblVehicleEF	LHD1	8.0500e-004	6.5100e-004
tblVehicleEF	LHD1	0.03	0.03

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tblVehicleEF	LHD1	2.4450e-003	2.3540e-003
tblVehicleEF	LHD1	9.1590e-003	0.01
tblVehicleEF	LHD1	2.2800e-004	2.0900e-004
tblVehicleEF	LHD1	1.9120e-003	0.13
tblVehicleEF	LHD1	0.07	0.03
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	9.8500e-004	0.00
tblVehicleEF	LHD1	0.09	0.09
tblVehicleEF	LHD1	0.20	0.18
tblVehicleEF	LHD1	0.07	0.11
tblVehicleEF	LHD1	8.6000e-005	8.5000e-005
tblVehicleEF	LHD1	7.6080e-003	7.6450e-003
tblVehicleEF	LHD1	1.1400e-004	1.7600e-004
tblVehicleEF	LHD1	1.9120e-003	0.13
tblVehicleEF	LHD1	0.07	0.03
tblVehicleEF	LHD1	0.03	0.03
tblVehicleEF	LHD1	9.8500e-004	0.00
tblVehicleEF	LHD1	0.11	0.11
tblVehicleEF	LHD1	0.20	0.18
tblVehicleEF	LHD1	0.08	0.12
tblVehicleEF	LHD2	3.0380e-003	3.1580e-003
tblVehicleEF	LHD2	6.6540e-003	6.9670e-003
tblVehicleEF	LHD2	7.7290e-003	0.01
tblVehicleEF	LHD2	0.14	0.14
tblVehicleEF	LHD2	0.59	0.57
tblVehicleEF	LHD2	0.60	1.22
tblVehicleEF	LHD2	13.88	13.77
tblVehicleEF	LHD2	754.92	827.31
tblVehicleEF	LHD2	7.59	9.92

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tblVehicleEF	LHD2	1.7350e-003	1.6800e-003
tblVehicleEF	LHD2	0.07	0.08
tblVehicleEF	LHD2	0.01	0.02
tblVehicleEF	LHD2	0.09	0.09
tblVehicleEF	LHD2	0.77	0.90
tblVehicleEF	LHD2	0.17	0.24
tblVehicleEF	LHD2	1.4370e-003	1.3710e-003
tblVehicleEF	LHD2	0.09	0.09
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	1.2700e-004	1.0100e-004
tblVehicleEF	LHD2	1.3750e-003	1.3110e-003
tblVehicleEF	LHD2	0.04	0.03
tblVehicleEF	LHD2	2.6920e-003	2.6640e-003
tblVehicleEF	LHD2	0.01	0.02
tblVehicleEF	LHD2	1.1700e-004	9.3000e-005
tblVehicleEF	LHD2	9.8500e-004	0.07
tblVehicleEF	LHD2	0.04	0.02
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	5.1400e-004	0.00
tblVehicleEF	LHD2	0.11	0.12
tblVehicleEF	LHD2	0.09	0.09
tblVehicleEF	LHD2	0.04	0.06
tblVehicleEF	LHD2	1.3300e-004	1.3200e-004
tblVehicleEF	LHD2	7.2890e-003	7.9720e-003
tblVehicleEF	LHD2	7.5000e-005	9.8000e-005
tblVehicleEF	LHD2	9.8500e-004	0.07
tblVehicleEF	LHD2	0.04	0.02
tblVehicleEF	LHD2	0.02	0.02

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tblVehicleEF	LHD2	5.1400e-004	0.00
tblVehicleEF	LHD2	0.13	0.13
tblVehicleEF	LHD2	0.09	0.09
tblVehicleEF	LHD2	0.04	0.07
tblVehicleEF	MCY	0.33	0.16
tblVehicleEF	MCY	0.25	0.18
tblVehicleEF	MCY	18.60	12.67
tblVehicleEF	MCY	9.06	8.00
tblVehicleEF	MCY	210.08	187.74
tblVehicleEF	MCY	60.71	48.38
tblVehicleEF	MCY	0.07	0.04
tblVehicleEF	MCY	0.02	8.0200e-003
tblVehicleEF	MCY	1.15	0.57
tblVehicleEF	MCY	0.27	0.14
tblVehicleEF	MCY	0.01	0.01
tblVehicleEF	MCY	1.9970e-003	1.9020e-003
tblVehicleEF	MCY	2.9300e-003	3.4560e-003
tblVehicleEF	MCY	5.0400e-003	4.2000e-003
tblVehicleEF	MCY	1.8650e-003	1.7790e-003
tblVehicleEF	MCY	2.7520e-003	3.2480e-003
tblVehicleEF	MCY	0.90	3.90
tblVehicleEF	MCY	0.68	3.56
tblVehicleEF	MCY	0.49	0.00
tblVehicleEF	MCY	2.19	1.06
tblVehicleEF	MCY	0.53	3.75
tblVehicleEF	MCY	1.93	1.35
tblVehicleEF	MCY	2.0790e-003	1.8560e-003
tblVehicleEF	MCY	6.0100e-004	4.7800e-004
tblVehicleEF	MCY	0.90	0.09

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tblVehicleEF	MCY	0.68	3.56
tblVehicleEF	MCY	0.49	0.00
tblVehicleEF	MCY	2.72	1.28
tblVehicleEF	MCY	0.53	3.75
tblVehicleEF	MCY	2.10	1.46
tblVehicleEF	MDV	3.4000e-003	3.7500e-003
tblVehicleEF	MDV	0.07	0.10
tblVehicleEF	MDV	0.78	0.94
tblVehicleEF	MDV	2.95	3.90
tblVehicleEF	MDV	364.87	411.00
tblVehicleEF	MDV	77.92	104.37
tblVehicleEF	MDV	7.5920e-003	8.3490e-003
tblVehicleEF	MDV	0.03	0.04
tblVehicleEF	MDV	0.07	0.10
tblVehicleEF	MDV	0.29	0.41
tblVehicleEF	MDV	0.04	9.0000e-003
tblVehicleEF	MDV	1.4300e-003	1.3730e-003
tblVehicleEF	MDV	1.8100e-003	2.1610e-003
tblVehicleEF	MDV	0.02	3.1500e-003
tblVehicleEF	MDV	1.3190e-003	1.2660e-003
tblVehicleEF	MDV	1.6640e-003	1.9870e-003
tblVehicleEF	MDV	0.07	0.35
tblVehicleEF	MDV	0.13	0.09
tblVehicleEF	MDV	0.07	0.00
tblVehicleEF	MDV	0.01	0.02
tblVehicleEF	MDV	0.06	0.27
tblVehicleEF	MDV	0.34	0.49
tblVehicleEF	MDV	3.6060e-003	4.0610e-003
tblVehicleEF	MDV	7.7100e-004	1.0320e-003

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tblVehicleEF	MDV	0.07	0.35
tblVehicleEF	MDV	0.13	0.09
tblVehicleEF	MDV	0.07	0.00
tblVehicleEF	MDV	0.02	0.02
tblVehicleEF	MDV	0.06	0.27
tblVehicleEF	MDV	0.38	0.54
tblVehicleEF	MH	9.5570e-003	0.01
tblVehicleEF	MH	0.02	0.03
tblVehicleEF	MH	0.93	1.29
tblVehicleEF	MH	2.03	2.49
tblVehicleEF	MH	1,501.42	1,686.59
tblVehicleEF	MH	18.14	22.55
tblVehicleEF	MH	0.06	0.07
tblVehicleEF	MH	0.03	0.03
tblVehicleEF	MH	1.31	1.54
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	2.6100e-004	3.1300e-004
tblVehicleEF	MH	0.06	0.02
tblVehicleEF	MH	3.2790e-003	3.3010e-003
tblVehicleEF	MH	0.02	0.03
tblVehicleEF	MH	2.4000e-004	2.8800e-004
tblVehicleEF	MH	0.64	32.73
tblVehicleEF	MH	0.05	8.70
tblVehicleEF	MH	0.23	0.00
tblVehicleEF	MH	0.06	0.08
tblVehicleEF	MH	0.01	0.20

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tblVehicleEF	MH	0.09	0.11
tblVehicleEF	MH	0.01	0.02
tblVehicleEF	MH	1.7900e-004	2.2300e-004
tblVehicleEF	MH	0.64	32.73
tblVehicleEF	MH	0.05	8.70
tblVehicleEF	MH	0.23	0.00
tblVehicleEF	MH	0.08	0.11
tblVehicleEF	MH	0.01	0.20
tblVehicleEF	MH	0.10	0.12
tblVehicleEF	MHD	3.5790e-003	0.01
tblVehicleEF	MHD	1.6940e-003	9.6580e-003
tblVehicleEF	MHD	9.1320e-003	8.7730e-003
tblVehicleEF	MHD	0.39	0.67
tblVehicleEF	MHD	0.23	0.35
tblVehicleEF	MHD	1.07	1.07
tblVehicleEF	MHD	72.08	160.26
tblVehicleEF	MHD	1,080.76	1,229.18
tblVehicleEF	MHD	9.15	8.53
tblVehicleEF	MHD	0.01	0.02
tblVehicleEF	MHD	0.14	0.16
tblVehicleEF	MHD	7.2440e-003	6.0320e-003
tblVehicleEF	MHD	0.41	0.89
tblVehicleEF	MHD	1.45	1.11
tblVehicleEF	MHD	1.70	1.41
tblVehicleEF	MHD	3.6900e-004	2.1280e-003
tblVehicleEF	MHD	0.13	0.05
tblVehicleEF	MHD	7.0230e-003	0.01
tblVehicleEF	MHD	1.1500e-004	1.0700e-004
tblVehicleEF	MHD	3.5300e-004	2.0350e-003

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tblVehicleEF	MHD	0.06	0.02
tblVehicleEF	MHD	6.7130e-003	0.01
tblVehicleEF	MHD	1.0600e-004	9.8000e-005
tblVehicleEF	MHD	3.8300e-004	0.03
tblVehicleEF	MHD	0.02	6.2600e-003
tblVehicleEF	MHD	0.02	0.03
tblVehicleEF	MHD	1.9800e-004	0.00
tblVehicleEF	MHD	0.02	0.04
tblVehicleEF	MHD	0.02	0.05
tblVehicleEF	MHD	0.05	0.05
tblVehicleEF	MHD	6.8400e-004	1.4900e-003
tblVehicleEF	MHD	0.01	0.01
tblVehicleEF	MHD	9.1000e-005	8.4000e-005
tblVehicleEF	MHD	3.8300e-004	0.03
tblVehicleEF	MHD	0.02	6.2600e-003
tblVehicleEF	MHD	0.02	0.04
tblVehicleEF	MHD	1.9800e-004	0.00
tblVehicleEF	MHD	0.02	0.05
tblVehicleEF	MHD	0.02	0.05
tblVehicleEF	MHD	0.05	0.05
tblVehicleEF	OBUS	7.0640e-003	7.4580e-003
tblVehicleEF	OBUS	3.6240e-003	9.2750e-003
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.58	0.51
tblVehicleEF	OBUS	0.43	0.49
tblVehicleEF	OBUS	1.84	1.96
tblVehicleEF	OBUS	92.66	85.71
tblVehicleEF	OBUS	1,326.08	1,388.86
tblVehicleEF	OBUS	15.18	15.49

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tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	0.13	0.16
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.38	0.37
tblVehicleEF	OBUS	1.47	1.01
tblVehicleEF	OBUS	1.09	0.98
tblVehicleEF	OBUS	1.2200e-004	4.2300e-004
tblVehicleEF	OBUS	0.13	0.05
tblVehicleEF	OBUS	7.3930e-003	0.02
tblVehicleEF	OBUS	1.4500e-004	1.3400e-004
tblVehicleEF	OBUS	1.1700e-004	4.0500e-004
tblVehicleEF	OBUS	0.06	0.02
tblVehicleEF	OBUS	7.0600e-003	0.02
tblVehicleEF	OBUS	1.3300e-004	1.2400e-004
tblVehicleEF	OBUS	1.0900e-003	0.07
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.05	0.04
tblVehicleEF	OBUS	4.8500e-004	0.00
tblVehicleEF	OBUS	0.02	0.05
tblVehicleEF	OBUS	0.04	0.08
tblVehicleEF	OBUS	0.09	0.09
tblVehicleEF	OBUS	8.8000e-004	8.1100e-004
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	1.5000e-004	1.5300e-004
tblVehicleEF	OBUS	1.0900e-003	0.07
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.06	0.05
tblVehicleEF	OBUS	4.8500e-004	0.00
tblVehicleEF	OBUS	0.03	0.06

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tblVehicleEF	OBUS	0.04	0.08
tblVehicleEF	OBUS	0.10	0.10
tblVehicleEF	SBUS	0.05	0.07
tblVehicleEF	SBUS	6.0180e-003	0.09
tblVehicleEF	SBUS	4.9720e-003	4.8000e-003
tblVehicleEF	SBUS	2.27	1.65
tblVehicleEF	SBUS	0.49	0.88
tblVehicleEF	SBUS	0.72	0.66
tblVehicleEF	SBUS	346.78	189.38
tblVehicleEF	SBUS	1,049.23	1,027.72
tblVehicleEF	SBUS	4.12	3.73
tblVehicleEF	SBUS	0.05	0.03
tblVehicleEF	SBUS	0.13	0.13
tblVehicleEF	SBUS	4.7550e-003	4.2250e-003
tblVehicleEF	SBUS	3.44	1.39
tblVehicleEF	SBUS	4.65	2.57
tblVehicleEF	SBUS	0.86	0.48
tblVehicleEF	SBUS	3.6120e-003	1.3090e-003
tblVehicleEF	SBUS	0.74	0.04
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	0.03	0.01
tblVehicleEF	SBUS	4.8000e-005	4.0000e-005
tblVehicleEF	SBUS	3.4560e-003	1.2520e-003
tblVehicleEF	SBUS	0.32	0.02
tblVehicleEF	SBUS	2.7190e-003	2.6500e-003
tblVehicleEF	SBUS	0.03	0.01
tblVehicleEF	SBUS	4.4000e-005	3.6000e-005
tblVehicleEF	SBUS	5.6700e-004	0.03
tblVehicleEF	SBUS	5.5090e-003	7.3010e-003

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tblVehicleEF	SBUS	0.25	0.18
tblVehicleEF	SBUS	2.4700e-004	0.00
tblVehicleEF	SBUS	0.08	0.06
tblVehicleEF	SBUS	0.01	0.02
tblVehicleEF	SBUS	0.03	0.03
tblVehicleEF	SBUS	3.3010e-003	1.7230e-003
tblVehicleEF	SBUS	0.01	9.5530e-003
tblVehicleEF	SBUS	4.1000e-005	3.7000e-005
tblVehicleEF	SBUS	5.6700e-004	0.03
tblVehicleEF	SBUS	5.5090e-003	7.3010e-003
tblVehicleEF	SBUS	0.36	0.30
tblVehicleEF	SBUS	2.4700e-004	0.00
tblVehicleEF	SBUS	0.10	0.16
tblVehicleEF	SBUS	0.01	0.02
tblVehicleEF	SBUS	0.03	0.03
tblVehicleEF	UBUS	1.35	0.35
tblVehicleEF	UBUS	1.5380e-003	3.7340e-003
tblVehicleEF	UBUS	10.12	4.17
tblVehicleEF	UBUS	0.14	0.53
tblVehicleEF	UBUS	1,597.16	1,098.80
tblVehicleEF	UBUS	1.39	3.20
tblVehicleEF	UBUS	0.26	0.17
tblVehicleEF	UBUS	1.0770e-003	6.2180e-003
tblVehicleEF	UBUS	0.73	0.33
tblVehicleEF	UBUS	0.01	0.04
tblVehicleEF	UBUS	0.07	0.11
tblVehicleEF	UBUS	0.03	0.03
tblVehicleEF	UBUS	5.3280e-003	6.2290e-003
tblVehicleEF	UBUS	1.5000e-005	1.2000e-005

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tblVehicleEF	UBUS	0.03	0.04
tblVehicleEF	UBUS	8.3320e-003	8.1710e-003
tblVehicleEF	UBUS	5.0960e-003	5.9560e-003
tblVehicleEF	UBUS	1.4000e-005	1.1000e-005
tblVehicleEF	UBUS	2.1000e-005	9.8940e-003
tblVehicleEF	UBUS	1.6100e-004	3.3030e-003
tblVehicleEF	UBUS	9.0000e-006	0.00
tblVehicleEF	UBUS	0.02	0.06
tblVehicleEF	UBUS	2.9000e-005	7.9870e-003
tblVehicleEF	UBUS	6.4070e-003	0.01
tblVehicleEF	UBUS	0.01	9.4250e-003
tblVehicleEF	UBUS	1.4000e-005	3.2000e-005
tblVehicleEF	UBUS	2.1000e-005	9.8940e-003
tblVehicleEF	UBUS	1.6100e-004	3.3030e-003
tblVehicleEF	UBUS	9.0000e-006	0.00
tblVehicleEF	UBUS	1.38	0.42
tblVehicleEF	UBUS	2.9000e-005	7.9870e-003
tblVehicleEF	UBUS	7.0150e-003	0.01
tblVehicleTrips	ST_TR	2.21	1.04
tblVehicleTrips	ST_TR	46.12	37.55
tblVehicleTrips	SU_TR	0.70	0.33
tblVehicleTrips	SU_TR	21.10	17.18
tblVehicleTrips	WD_TR	9.74	4.59
tblVehicleTrips	WD_TR	37.75	30.74
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00

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tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00

2.0 Emissions Summary**2.1 Overall Construction****Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.0319	0.3196	0.2125	4.2000e-004	0.1306	0.0155	0.1461	0.0627	0.0144	0.0771	0.0000	36.3519	36.3519	9.6800e-003	0.0000	36.5938
2023	0.2943	0.9714	1.1766	2.0800e-003	0.0402	0.0424	0.0826	0.0199	0.0401	0.0600	0.0000	180.3933	180.3933	0.0422	0.0000	181.4491
2024	0.2093	0.1693	0.3351	5.2000e-004	0.0000	3.8000e-003	3.8000e-003	0.0000	3.5800e-003	3.5800e-003	0.0000	45.4381	45.4381	0.0136	0.0000	45.7791
Maximum	0.2943	0.9714	1.1766	2.0800e-003	0.1306	0.0424	0.1461	0.0627	0.0401	0.0771	0.0000	180.3933	180.3933	0.0422	0.0000	181.4491

Mitigated Construction

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

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2022	4.8900e-003	0.0212	0.2306	4.2000e-004	0.0510	6.5000e-004	0.0516	9.7800e-003	6.5000e-004	0.0104	0.0000	36.3519	36.3519	9.6800e-003	0.0000	36.5938
2023	0.2220	0.3318	1.1870	1.7500e-003	0.0157	2.6400e-003	0.0183	3.1100e-003	2.6400e-003	5.7500e-003	0.0000	151.5286	151.5286	0.0329	0.0000	152.3509
2024	0.2081	0.2577	0.3856	5.2000e-004	0.0000	8.3000e-004	8.3000e-004	0.0000	8.3000e-004	8.3000e-004	0.0000	45.4380	45.4380	0.0136	0.0000	45.7790
Maximum	0.2220	0.3318	1.1870	1.7500e-003	0.0510	2.6400e-003	0.0516	9.7800e-003	2.6400e-003	0.0104	0.0000	151.5286	151.5286	0.0329	0.0000	152.3509

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	18.76	58.18	-4.59	10.93	61.00	93.31	69.56	84.40	92.91	87.90	0.00	11.01	11.01	14.25	0.00	11.03

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	9-1-2022	11-30-2022	0.2518	0.0186
2	12-1-2022	2-28-2023	0.2187	0.0197
3	3-1-2023	5-31-2023	0.2359	0.0242
4	6-1-2023	8-31-2023	0.2454	0.0240
5	9-1-2023	11-30-2023	0.4775	0.3169
6	12-1-2023	2-29-2024	0.4599	0.5094
7	3-1-2024	5-31-2024	0.0980	0.1219
		Highest	0.4775	0.5094

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	0.3333	1.0000e-005	7.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.3800e-003	1.3800e-003	0.0000	0.0000	1.4700e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	98.9065	98.9065	0.0183	2.2200e-003	100.0273
Mobile	0.2343	0.2601	1.6745	4.3100e-003	0.3701	3.3400e-003	0.3734	0.0924	3.1300e-003	0.0956	0.0000	401.0052	401.0052	0.0222	0.0229	408.3914
Stationary	5.5000e-003	0.0154	0.0200	3.0000e-005		8.1000e-004	8.1000e-004		8.1000e-004	8.1000e-004	0.0000	2.5513	2.5513	3.6000e-004	0.0000	2.5603
Waste						0.0000	0.0000		0.0000	0.0000	14.4631	0.0000	14.4631	0.8548	0.0000	35.8317
Water						0.0000	0.0000		0.0000	0.0000	4.3465	7.4948	11.8413	0.0164	9.6200e-003	15.1169
Total	0.5730	0.2755	1.6951	4.3400e-003	0.3701	4.1500e-003	0.3742	0.0924	3.9400e-003	0.0964	18.8096	509.9593	528.7688	0.9120	0.0348	561.9291

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	0.3333	1.0000e-005	7.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.3800e-003	1.3800e-003	0.0000	0.0000	1.4700e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	98.9065	98.9065	0.0183	2.2200e-003	100.0273
Mobile	0.2343	0.2601	1.6745	4.3100e-003	0.3701	3.3400e-003	0.3734	0.0924	3.1300e-003	0.0956	0.0000	401.0052	401.0052	0.0222	0.0229	408.3914
Stationary	5.5000e-003	0.0154	0.0200	3.0000e-005		8.1000e-004	8.1000e-004		8.1000e-004	8.1000e-004	0.0000	2.5513	2.5513	3.6000e-004	0.0000	2.5603
Waste						0.0000	0.0000		0.0000	0.0000	14.4631	0.0000	14.4631	0.8548	0.0000	35.8317
Water						0.0000	0.0000		0.0000	0.0000	4.3465	7.4948	11.8413	0.0164	9.6200e-003	15.1169
Total	0.5730	0.2755	1.6951	4.3400e-003	0.3701	4.1500e-003	0.3742	0.0924	3.9400e-003	0.0964	18.8096	509.9593	528.7688	0.9120	0.0348	561.9291

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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
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	9/1/2022	11/23/2022	5	60	
2	Site Preparation	Site Preparation	11/1/2022	12/12/2022	5	30	
3	Grading	Grading	12/2/2022	2/23/2023	5	60	
4	Trenching	Trenching	2/1/2023	5/9/2023	5	70	
5	Building Construction	Building Construction	4/12/2023	12/19/2023	5	180	
6	Architectural Coating	Architectural Coating	10/9/2023	3/22/2024	5	120	
7	Paving	Paving	2/6/2024	3/4/2024	5	20	

Acres of Grading (Site Preparation Phase): 16.88**Acres of Grading (Grading Phase): 9****Acres of Paving: 0****Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 112,877; Non-Residential Outdoor: 37,626; Striped Parking Area: 48****OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	2	1.50	81	0.73
Demolition	Excavators	1	1.00	158	0.38
Demolition	Rubber Tired Dozers	2	1.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	2	0.80	97	0.37

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

Site Preparation	Graders	1	1.00	187	0.41
Site Preparation	Rubber Tired Dozers	2	4.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	2	3.00	97	0.37
Grading	Concrete/Industrial Saws	2	1.20	81	0.73
Grading	Excavators	2	1.20	158	0.38
Grading	Graders	0	0.00	187	0.41
Grading	Rubber Tired Dozers	2	1.20	247	0.40
Grading	Tractors/Loaders/Backhoes	1	1.20	97	0.37
Trenching	Air Compressors	1	1.70	78	0.48
Trenching	Bore/Drill Rigs	1	1.70	221	0.50
Trenching	Cranes	1	1.70	231	0.29
Trenching	Forklifts	1	1.70	89	0.20
Trenching	Pumps	1	1.70	84	0.74
Trenching	Tractors/Loaders/Backhoes	2	3.40	97	0.37
Building Construction	Cranes	1	4.40	231	0.29
Building Construction	Forklifts	5	2.30	89	0.20
Building Construction	Generator Sets	2	3.30	84	0.74
Building Construction	Tractors/Loaders/Backhoes	2	2.00	97	0.37
Building Construction	Welders	5	0.30	46	0.45
Architectural Coating	Aerial Lifts	12	6.00	63	0.31
Architectural Coating	Air Compressors	1	3.00	78	0.48
Paving	Cement and Mortar Mixers	2	1.30	9	0.56
Paving	Pavers	1	1.30	130	0.42
Paving	Paving Equipment	1	1.30	132	0.36
Paving	Rollers	1	1.30	80	0.38
Paving	Tractors/Loaders/Backhoes	0	0.00	97	0.37

Trips and VMT

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Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	7	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	5	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	7	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	7	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	15	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	13	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Alternative Fuel for Construction Equipment

Use Cleaner Engines for Construction Equipment

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.3800e-003	0.0000	7.3800e-003	1.1200e-003	0.0000	1.1200e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0121	0.1142	0.0937	1.7000e-004		5.6800e-003	5.6800e-003		5.3600e-003	5.3600e-003	0.0000	15.0164	15.0164	3.2300e-003	0.0000	15.0971
Total	0.0121	0.1142	0.0937	1.7000e-004	7.3800e-003	5.6800e-003	0.0131	1.1200e-003	5.3600e-003	6.4800e-003	0.0000	15.0164	15.0164	3.2300e-003	0.0000	15.0971

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

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.8800e-003	0.0000	2.8800e-003	1.7000e-004	0.0000	1.7000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.9500e-003	8.4700e-003	0.1009	1.7000e-004		2.6000e-004	2.6000e-004		2.6000e-004	2.6000e-004	0.0000	15.0164	15.0164	3.2300e-003	0.0000	15.0971
Total	1.9500e-003	8.4700e-003	0.1009	1.7000e-004	2.8800e-003	2.6000e-004	3.1400e-003	1.7000e-004	2.6000e-004	4.3000e-004	0.0000	15.0164	15.0164	3.2300e-003	0.0000	15.0971

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

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

3.3 Site Preparation - 2022**Unmitigated Construction On-Site**

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

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

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0387	0.0000	0.0387	7.9000e-003	0.0000	7.9000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.1500e-003	9.3100e-003	0.0894	1.8000e-004		2.9000e-004	2.9000e-004		2.9000e-004	2.9000e-004	0.0000	15.4193	15.4193	4.9900e-003	0.0000	15.5440
Total	2.1500e-003	9.3100e-003	0.0894	1.8000e-004	0.0387	2.9000e-004	0.0390	7.9000e-003	2.9000e-004	8.1900e-003	0.0000	15.4193	15.4193	4.9900e-003	0.0000	15.5440

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

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

3.4 Grading - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0240	0.0000	0.0240	0.0110	0.0000	0.0110	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.6600e-003	0.0448	0.0366	7.0000e-005		2.2000e-003	2.2000e-003		2.0600e-003	2.0600e-003	0.0000	5.9163	5.9163	1.4600e-003	0.0000	5.9527
Total	4.6600e-003	0.0448	0.0366	7.0000e-005	0.0240	2.2000e-003	0.0262	0.0110	2.0600e-003	0.0130	0.0000	5.9163	5.9163	1.4600e-003	0.0000	5.9527

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

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					9.3500e-003	0.0000	9.3500e-003	1.7100e-003	0.0000	1.7100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.9000e-004	3.4100e-003	0.0403	7.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	5.9163	5.9163	1.4600e-003	0.0000	5.9527
Total	7.9000e-004	3.4100e-003	0.0403	7.0000e-005	9.3500e-003	1.0000e-004	9.4500e-003	1.7100e-003	1.0000e-004	1.8100e-003	0.0000	5.9163	5.9163	1.4600e-003	0.0000	5.9527

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

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

3.4 Grading - 2023**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0402	0.0000	0.0402	0.0199	0.0000	0.0199	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.5000e-003	0.0704	0.0652	1.3000e-004		3.2900e-003	3.2900e-003		3.0900e-003	3.0900e-003	0.0000	10.9885	10.9885	2.6900e-003	0.0000	11.0558
Total	7.5000e-003	0.0704	0.0652	1.3000e-004	0.0402	3.2900e-003	0.0435	0.0199	3.0900e-003	0.0230	0.0000	10.9885	10.9885	2.6900e-003	0.0000	11.0558

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

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0157	0.0000	0.0157	3.1100e-003	0.0000	3.1100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.4600e-003	6.3300e-003	0.0748	1.3000e-004		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004	0.0000	10.9885	10.9885	2.6900e-003	0.0000	11.0558
Total	1.4600e-003	6.3300e-003	0.0748	1.3000e-004	0.0157	1.9000e-004	0.0159	3.1100e-003	1.9000e-004	3.3000e-003	0.0000	10.9885	10.9885	2.6900e-003	0.0000	11.0558

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

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

3.5 Trenching - 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	0.0138	0.1298	0.1493	3.0000e-004		6.0800e-003	6.0800e-003		5.7300e-003	5.7300e-003	0.0000	25.8205	25.8205	6.5200e-003	0.0000	25.9834
Total	0.0138	0.1298	0.1493	3.0000e-004		6.0800e-003	6.0800e-003		5.7300e-003	5.7300e-003	0.0000	25.8205	25.8205	6.5200e-003	0.0000	25.9834

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

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.9200e-003	0.0127	0.1585	2.5000e-004		3.9000e-004	3.9000e-004		3.9000e-004	3.9000e-004	0.0000	22.0500	22.0500	5.3000e-003	0.0000	22.1825
Total	2.9200e-003	0.0127	0.1585	2.5000e-004		3.9000e-004	3.9000e-004		3.9000e-004	3.9000e-004	0.0000	22.0500	22.0500	5.3000e-003	0.0000	22.1825

Mitigated Construction Off-Site

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

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

3.6 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	0.0645	0.6077	0.6401	1.1600e-003		0.0294	0.0294		0.0279	0.0279	0.0000	99.9223	99.9223	0.0199	0.0000	100.4200
Total	0.0645	0.6077	0.6401	1.1600e-003		0.0294	0.0294		0.0279	0.0279	0.0000	99.9223	99.9223	0.0199	0.0000	100.4200

Unmitigated Construction Off-Site

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

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.7700e-003	0.0561	0.5821	8.7000e-004		1.2500e-003	1.2500e-003		1.2500e-003	1.2500e-003	0.0000	74.8281	74.8281	0.0118	0.0000	75.1229
Total	9.7700e-003	0.0561	0.5821	8.7000e-004		1.2500e-003	1.2500e-003		1.2500e-003	1.2500e-003	0.0000	74.8281	74.8281	0.0118	0.0000	75.1229

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

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

3.7 Architectural Coating - 2023**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1963					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0122	0.1635	0.3220	5.0000e-004		3.5500e-003	3.5500e-003		3.3500e-003	3.3500e-003	0.0000	43.6620	43.6620	0.0131	0.0000	43.9898
Total	0.2085	0.1635	0.3220	5.0000e-004		3.5500e-003	3.5500e-003		3.3500e-003	3.3500e-003	0.0000	43.6620	43.6620	0.0131	0.0000	43.9898

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

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1963					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0116	0.2568	0.3716	5.0000e-004		8.0000e-004	8.0000e-004		8.0000e-004	8.0000e-004	0.0000	43.6619	43.6619	0.0131	0.0000	43.9897
Total	0.2079	0.2568	0.3716	5.0000e-004		8.0000e-004	8.0000e-004		8.0000e-004	8.0000e-004	0.0000	43.6619	43.6619	0.0131	0.0000	43.9897

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

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

3.7 Architectural Coating - 2024**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1963					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0121	0.1604	0.3222	5.0000e-004		3.3800e-003	3.3800e-003		3.1800e-003	3.1800e-003	0.0000	43.6620	43.6620	0.0131	0.0000	43.9894
Total	0.2083	0.1604	0.3222	5.0000e-004		3.3800e-003	3.3800e-003		3.1800e-003	3.1800e-003	0.0000	43.6620	43.6620	0.0131	0.0000	43.9894

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

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1963					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0116	0.2568	0.3716	5.0000e-004		8.0000e-004	8.0000e-004		8.0000e-004	8.0000e-004	0.0000	43.6619	43.6619	0.0131	0.0000	43.9894
Total	0.2079	0.2568	0.3716	5.0000e-004		8.0000e-004	8.0000e-004		8.0000e-004	8.0000e-004	0.0000	43.6619	43.6619	0.0131	0.0000	43.9894

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

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

3.8 Paving - 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	9.9000e-004	8.9400e-003	0.0129	2.0000e-005		4.3000e-004	4.3000e-004		4.0000e-004	4.0000e-004	0.0000	1.7761	1.7761	5.4000e-004	0.0000	1.7896
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	9.9000e-004	8.9400e-003	0.0129	2.0000e-005		4.3000e-004	4.3000e-004		4.0000e-004	4.0000e-004	0.0000	1.7761	1.7761	5.4000e-004	0.0000	1.7896

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
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SuZaCo MU, San Jose - Santa Clara County, Annual

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

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.3000e-004	9.9000e-004	0.0141	2.0000e-005		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	1.7761	1.7761	5.4000e-004	0.0000	1.7896
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	2.3000e-004	9.9000e-004	0.0141	2.0000e-005		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	1.7761	1.7761	5.4000e-004	0.0000	1.7896

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
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SuZaCo MU, San Jose - Santa Clara County, Annual

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

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

4.0 Operational Detail - Mobile**4.1 Mitigation Measures Mobile**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.2343	0.2601	1.6745	4.3100e-003	0.3701	3.3400e-003	0.3734	0.0924	3.1300e-003	0.0956	0.0000	401.0052	401.0052	0.0222	0.0229	408.3914
Unmitigated	0.2343	0.2601	1.6745	4.3100e-003	0.3701	3.3400e-003	0.3734	0.0924	3.1300e-003	0.0956	0.0000	401.0052	401.0052	0.0222	0.0229	408.3914

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT

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

Enclosed Parking Structure	0.00	0.00	0.00		
General Office Building	297.16	67.33	21.36	537,516	537,516
Regional Shopping Center	323.08	394.65	180.56	548,684	548,684
Total	620.23	461.98	201.93	1,086,200	1,086,200

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Enclosed Parking Structure	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Enclosed Parking Structure	0.546472	0.036708	0.224534	0.121034	0.024046	0.005902	0.010929	0.022614	0.001760	0.001257	0.003547	0.000526	0.000673
General Office Building	0.546472	0.036708	0.224534	0.121034	0.024046	0.005902	0.010929	0.022614	0.001760	0.001257	0.003547	0.000526	0.000673
Regional Shopping Center	0.546472	0.036708	0.224534	0.121034	0.024046	0.005902	0.010929	0.022614	0.001760	0.001257	0.003547	0.000526	0.000673

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	98.9065	98.9065	0.0183	2.2200e-003	100.0273

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

Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	98.9065	98.9065	0.0183	2.2200e-003	100.0273
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					
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	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					

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

Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	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
Land Use	kWh/yr	MT/yr			
Enclosed Parking Structure	4200	0.3391	6.0000e-005	1.0000e-005	0.3430
General Office Building	1.11162e+006	89.7516	0.0166	2.0200e-003	90.7686
Regional Shopping Center	109189	8.8158	1.6300e-003	2.0000e-004	8.9157
Total		98.9065	0.0183	2.2300e-003	100.0273

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Land Use	kWh/yr	MT/yr			
Enclosed Parking Structure	4200	0.3391	6.0000e-005	1.0000e-005	0.3430
General Office Building	1.11162e+006	89.7516	0.0166	2.0200e-003	90.7686
Regional Shopping Center	109189	8.8158	1.6300e-003	2.0000e-004	8.9157
Total		98.9065	0.0183	2.2300e-003	100.0273

6.0 Area Detail**6.1 Mitigation Measures Area**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.3333	1.0000e-005	7.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.3800e-003	1.3800e-003	0.0000	0.0000	1.4700e-003
Unmitigated	0.3333	1.0000e-005	7.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.3800e-003	1.3800e-003	0.0000	0.0000	1.4700e-003

6.2 Area by SubCategory**Unmitigated**

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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
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0393					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2939					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	7.0000e-005	1.0000e-005	7.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.3800e-003	1.3800e-003	0.0000	0.0000	1.4700e-003
Total	0.3333	1.0000e-005	7.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.3800e-003	1.3800e-003	0.0000	0.0000	1.4700e-003

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0393					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2939					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	7.0000e-005	1.0000e-005	7.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.3800e-003	1.3800e-003	0.0000	0.0000	1.4700e-003
Total	0.3333	1.0000e-005	7.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.3800e-003	1.3800e-003	0.0000	0.0000	1.4700e-003

7.0 Water Detail**7.1 Mitigation Measures Water**

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

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	11.8413	0.0164	9.6200e-003	15.1169
Unmitigated	11.8413	0.0164	9.6200e-003	15.1169

7.2 Water by Land Use**Unmitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Enclosed Parking Structure	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	11.5065 / 7.05236	11.0909	0.0153	9.0100e-003	14.1590
Regional Shopping Center	0.778502 / 0.477147	0.7504	1.0400e-003	6.1000e-004	0.9580
Total		11.8413	0.0164	9.6200e-003	15.1169

Mitigated

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

Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Enclosed Parking Structure	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	11.5065 / 7.05236	11.0909	0.0153	9.0100e-003	14.1590
Regional Shopping Center	0.778502 / 0.477147	0.7504	1.0400e-003	6.1000e-004	0.9580
Total		11.8413	0.0164	9.6200e-003	15.1169

8.0 Waste Detail**8.1 Mitigation Measures Waste****Category/Year**

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	14.4631	0.8548	0.0000	35.8317
Unmitigated	14.4631	0.8548	0.0000	35.8317

8.2 Waste by Land Use

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

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000
General Office Building	60.21	12.2221	0.7223	0.0000	30.2797
Regional Shopping Center	11.04	2.2410	0.1324	0.0000	5.5520
Total		14.4631	0.8547	0.0000	35.8317

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000
General Office Building	60.21	12.2221	0.7223	0.0000	30.2797
Regional Shopping Center	11.04	2.2410	0.1324	0.0000	5.5520
Total		14.4631	0.8547	0.0000	35.8317

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**9.0 Operational Offroad**

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment**Fire Pumps and Emergency Generators**

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	1	0	50	134	0.73	Diesel

Boilers

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

Equipment Type	Number
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10.1 Stationary Sources**Unmitigated/Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	tons/yr										MT/yr					
Emergency Generator - Diesel (100-175 HP)	5.5000e-003	0.0154	0.0200	3.0000e-005		8.1000e-004	8.1000e-004		8.1000e-004	8.1000e-004	0.0000	2.5513	2.5513	3.6000e-004	0.0000	2.5603
Total	5.5000e-003	0.0154	0.0200	3.0000e-005		8.1000e-004	8.1000e-004		8.1000e-004	8.1000e-004	0.0000	2.5513	2.5513	3.6000e-004	0.0000	2.5603

11.0 Vegetation

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

Attachment 3: EMFAC2021 Emissions Calculations

CalEEMod Construction Inputs

Phase	CalEEMod WORKER TRIPS	CalEEMod VENDOR TRIPS	Total Worker Trips	Total Vendor Trips	CalEEMod HAULING TRIPS	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class	Worker VMT	Vendor VMT	Hauling VMT
Demolition	18	0	1080	0	80	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	11664	0	1600
Site Preparation	13	0	390	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	4212	0	0
Grading	18	0	1080	0	500	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	11664	0	10000
Trenching	18	0	1260	0	60	10.8	7.3	7.3	LD_Mix	HDT_Mix	HHDT	13608	0	438
Building Construction	24	12	4320	2160	0	10.8	7.3	7.3	LD_Mix	HDT_Mix	HHDT	46656	15768	0
Architectural Coating	5	0	600	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	6480	0	0
Paving	13	0	260	0	12	10.8	7.3	7.3	LD_Mix	HDT_Mix	HHDT	2808	0	87.6

Number of Days Per Year

2022	9/1/22	12/31/22	122	122
2023	1/1/23	12/31/23	365	365
2024	1/1/24	2/25/24	56	56
			543	543 Total Workdays

Phase	Start Date	End Date	Days/Week	Workdays
Demolition	9/1/2022	10/30/2022	7	60
Site Preparation	11/1/2022	11/30/2022	7	30
Grading	12/2/2022	1/30/2023	7	60
Trenching	2/1/2023	4/11/2023	7	70
Building Construction	4/12/2023	10/8/2023	7	180
Architectural Coating	10/9/2023	2/5/2024	7	120
Paving	2/6/2024	2/25/2024	7	20

Summary of Construction Traffic Emissions (EMFAC2021)

Pollutants YEAR	ROG	NOx	CO	SO2	Fugitive PM10 <i>Tons</i>	Exhaust PM10 <i>Tons</i>	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	NBio- CO2	CH4 <i>Metric Tons</i>	N2O	CO2e
Criteria Pollutants														
2022	0.0037	0.0213	0.0420	0.0002	0.0093	0.0013	0.0106	0.0014	0.0005	0.0019	16.8576	0.0009	0.0018	17.4081
2023	0.0101	0.0539	0.1173	0.0005	0.0277	0.0038	0.0315	0.0042	0.0016	0.0057	49.6133	0.0028	0.0052	51.2280
2024	0.0015	0.0083	0.0180	0.0001	0.0042	0.0006	0.0048	0.0006	0.0002	0.0009	7.6119	0.0004	0.0008	7.8596
Toxic Air Contaminants (0.5 Mile Trip Length)														
2022	0.0030	0.0051	0.0134	0.0000	0.0004	0.0001	0.0005	0.0001	0.0000	0.0001	1.3259	0.0003	0.0002	1.3971
2023	0.0085	0.0147	0.0381	0.0000	0.0013	0.0002	0.0015	0.0002	0.0001	0.0003	3.8826	0.0009	0.0006	4.0905
2024	0.0013	0.0023	0.0058	0.0000	0.0002	0.0000	0.0002	0.0000	0.0000	0.0000	0.5957	0.0001	0.0001	0.6276

CalEEMod EMFAC2021 Emission Factors Input													Year	2024
Season	EmissionType	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
A	CH4_IDLEX	0	0	0	0	0.005369	0.003158	0.013383	0.232934116	0.007458	0	0	0.074531	0
A	CH4_RUNEX	0.002053	0.006222	0.002818	0.00375	0.008195	0.006967	0.009658	0.121678903	0.009275	0.353982676	0.162609	0.091035	0.012488
A	CH4_STREX	0.06472	0.104817	0.081929	0.09875	0.022831	0.012442	0.008773	8.02769E-08	0.017671	0.00373411	0.181972	0.0048	0.026745
A	CO_IDLEX	0	0	0	0	0.196553	0.142433	0.671381	5.195559849	0.514566	0	0	1.654918	0
A	CO_RUNEX	0.649711	1.418726	0.829327	0.943281	0.900659	0.571321	0.346173	0.774886828	0.491534	4.169725719	12.6697	0.884386	1.294901
A	CO_STREX	2.891746	5.224818	3.623598	3.897928	2.161459	1.21759	1.07433	0.000626211	1.960551	0.531545824	8.002987	0.664389	2.491606
A	CO2_NBIO_IDLEX	0	0	0	0	8.718619	13.77168	160.2598	832.3166934	85.70845	0	0	189.3786	0
A	CO2_NBIO_RUNEX	246.8081	327.0753	340.7339	411.0049	782.6209	827.3106	1229.181	1617.129696	1388.863	1098.799805	187.743	1027.722	1686.59
A	CO2_NBIO_STREX	63.85069	86.28718	87.22044	104.3653	17.83745	9.92491	8.529312	0.019573043	15.49228	3.203569186	48.37697	3.726088	22.54937
A	NOX_IDLEX	0	0	0	0	0.048387	0.092995	0.894313	4.111213715	0.365684	0	0	1.389668	0
A	NOX_RUNEX	0.037369	0.127832	0.068032	0.098516	0.66417	0.895916	1.112922	1.850604526	1.007061	0.328284112	0.571344	2.57268	1.5351
A	NOX_STREX	0.230953	0.379266	0.329632	0.414782	0.44074	0.241786	1.407896	2.731408381	0.979918	0.039644426	0.135477	0.480958	0.299202
A	PM10_IDLEX	0	0	0	0	0.000681	0.001371	0.002128	0.002182492	0.000423	0	0	0.001309	0
A	PM10_PMBW	0.007168	0.009226	0.008866	0.009	0.077823	0.090794	0.045399	0.08129752	0.049798	0.11066361	0.012	0.044858	0.044947
A	PM10_PMTW	0.008	0.008	0.008	0.008	0.009414	0.010658	0.012	0.035125425	0.012	0.032683644	0.004	0.0106	0.013206
A	PM10_RUNEX	0.001171	0.001927	0.001333	0.001373	0.014027	0.022761	0.012985	0.025474433	0.015841	0.006229362	0.001902	0.013303	0.03019
A	PM10_STREX	0.00191	0.002898	0.002108	0.002161	0.000227	0.000101	0.000107	6.09682E-07	0.000134	1.21066E-05	0.003456	3.95E-05	0.000313
A	PM25_IDLEX	0	0	0	0	0.000651	0.001311	0.002035	0.002082052	0.000405	0	0	0.001252	0
A	PM25_PMBW	0.002509	0.003229	0.003103	0.00315	0.027238	0.031778	0.01589	0.028454132	0.017429	0.038732263	0.0042	0.0157	0.015732
A	PM25_PMTW	0.002	0.002	0.002	0.002	0.002354	0.002664	0.003	0.008781356	0.003	0.008170911	0.001	0.00265	0.003301
A	PM25_RUNEX	0.001078	0.001774	0.001226	0.001266	0.01338	0.021758	0.012415	0.0243688	0.015147	0.005956092	0.001779	0.012712	0.028836
A	PM25_STREX	0.001756	0.002665	0.001938	0.001987	0.000209	9.28E-05	9.82E-05	5.6058E-07	0.000124	1.11315E-05	0.003248	3.63E-05	0.000288
A	ROG_DIURN	0.273594	0.595257	0.288173	0.350288	0.128573	0.066802	0.025795	0.000195977	0.069031	0.00989389	3.900294	0.027017	32.73442
A	ROG_HTSK	0.08102	0.164422	0.0806	0.094021	0.032798	0.017191	0.00626	5.82846E-05	0.0166	0.00330336	3.559276	0.007301	8.700008
A	ROG_IDLEX	0	0	0	0	0.021942	0.01599	0.026359	0.329789936	0.040067	0	0	0.181581	0
A	ROG_RESTL	0	0	0	0	0	0	0	0	0	0	0	0	0
A	ROG_RUNEX	0.007886	0.027617	0.0111	0.015872	0.087722	0.115408	0.038113	0.018605536	0.047576	0.063024567	1.062175	0.055863	0.083758
A	ROG_RUNLS	0.204737	0.46982	0.214357	0.266704	0.182065	0.092651	0.050964	0.000525006	0.075921	0.007986926	3.75283	0.017605	0.204308
A	ROG_STREX	0.295072	0.536464	0.379183	0.493019	0.113203	0.061169	0.048943	4.36152E-07	0.093584	0.013264046	1.345317	0.027327	0.113367
A	SO2_IDLEX	0	0	0	0	8.49E-05	0.000132	0.00149	0.007280347	0.000811	0	0	0.001723	0
A	SO2_RUNEX	0.00244	0.003233	0.003368	0.004061	0.007645	0.007972	0.011664	0.014635772	0.013275	0.009424712	0.001856	0.009553	0.01654
A	SO2_STREX	0.000631	0.000853	0.000862	0.001032	0.000176	9.81E-05	8.43E-05	1.93499E-07	0.000153	3.16705E-05	0.000478	3.68E-05	0.000223
A	TOG_DIURN	0.273594	0.595257	0.288173	0.350288	0.128573	0.066802	0.025795	0.000195977	0.069031	0.00989389	0.086215	0.027017	32.73442
A	TOG_HTSK	0.08102	0.164422	0.0806	0.094021	0.032798	0.017191	0.00626	5.82846E-05	0.0166	0.00330336	3.559276	0.007301	8.700008
A	TOG_IDLEX	0	0	0	0	0.031162	0.021623	0.043266	0.594148623	0.053137	0	0	0.296054	0
A	TOG_RESTL	0	0	0	0	0	0	0	0	0	0	0	0	0
A	TOG_RUNEX	0.011489	0.040276	0.016182	0.023096	0.108455	0.134423	0.053054	0.142671417	0.063874	0.424552446	1.276951	0.155502	0.11065
A	TOG_RUNLS	0.204737	0.46982	0.214357	0.266704	0.182065	0.092651	0.050964	0.000525006	0.075921	0.007986926	3.75283	0.017605	0.204308
A	TOG_STREX	0.323066	0.58736	0.415158	0.539792	0.123943	0.066973	0.053586	4.77531E-07	0.102462	0.014522461	1.462608	0.029919	0.124122
A	N2O_IDLEX	0	0	0	0	0.00064	0.00168	0.024689	0.134071724	0.012191	0	0	0.02511	0
A	N2O_RUNEX	0.004162	0.009375	0.006019	0.008349	0.04145	0.08248	0.15825	0.258076714	0.157784	0.166507004	0.039558	0.128269	0.069357
A	N2O_STREX	0.029881	0.038494	0.03679	0.03974	0.035265	0.019211	0.006032	1.94763E-05	0.015206	0.006218272	0.00802	0.004225	0.031398

CalEEMod EMFAC2021 Fleet Mix Input												Year	2024
FleetMixLandUseSubType	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Enclosed Parking Structure	0.546472	0.036708	0.224534	0.121034	0.024046	0.005902	0.010929	0.022614	0.00176	0.001257	0.003547	0.000526	0.000673
General Office Building	0.546472	0.036708	0.224534	0.121034	0.024046	0.005902	0.010929	0.022614	0.00176	0.001257	0.003547	0.000526	0.000673
Regional Shopping Center	0.546472	0.036708	0.224534	0.121034	0.024046	0.005902	0.010929	0.022614	0.00176	0.001257	0.003547	0.000526	0.000673

[illegible]

Units: miles/day for CVMT and EVMT, trips/day for Trips, kWh/day for Energy Consumption, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HOTSOAK and RUNLOSS, g/vehicle/day for IDLEX and DIURNAL.

[illegible]

Attachment 4: Project Construction Dispersion Modeling Inputs and Risk Calculations

Construction Health Risk Assessment and Calculations

SuZaCo MU, San Jose, CA

Year	Unmitigated	DPM	Unmitigated	Unmitigated	Fug PM2.5	Unmitigated
	DPM	EMFAC2021	Emissions	Fug PM2.5	EMFAC2021	Emissions
2022	0.0164	0.0001	0.0165	0.0672	0.0001	0.0673
2023	0.0430	0.0002	0.0432	0.0155	0.0002	0.0157
2024	0.0025	0.0000	0.0025	0.0000	0.0000	0.0000
Year	Mitigated	DPM	Mitigated	Mitigated	Fug PM2.5	Mitigated
	DPM	EMFAC2021	Emissions	Fug PM2.5	EMFAC2021	Emissions
2022	0.0007	0.0001	0.0008	0.0105	0.0001	0.0106
2023	0.0029	0.0002	0.0031	0.0024	0.0002	0.0026
2024	0.0005	0.0000	0.0005	0.0000	0.0000	0.0000

SuZaCo MU, San Jose, CA

DPM Construction Emissions and Modeling Emission Rates

Construction		DPM	Source	No.	DPM Emissions			Emissions per Point Source
Year	Activity	(ton/year)	Type	Sources	(lb/yr)	(lb/hr)	(g/s)	(g/s)
2022	Construction	0.0165	Point	39	32.9	0.00902	1.14E-03	2.92E-05
2023-2024*	Construction	0.0457	Point	39	91.4	0.02503	3.15E-03	8.09E-05
Total		0.0621			124.3	0.0341	0.0043	

* Includes 2024 (two months of construction)

Emissions assumed to be evenly distributed over each construction areas

hr/day = 10 (7am - 5pm Everyday)
 days/yr = 365
 hours/year = 3650

SuZaCo MU, San Jose, CA

PM2.5 Fugitive Dust Construction Emissions for Modeling

Construction		Area	PM2.5 Emissions				Modeled Area	DPM Emission Rate
Year	Activity	Source	(ton/year)	(lb/yr)	(lb/hr)	(g/s)	(m ²)	g/s/m ²
2022	Construction	CON_FUG	0.0673	134.5	0.03686	4.64E-03	1413.2	3.29E-06
2023-2024*	Construction	CON_FUG	0.0157	31.5	0.00862	1.09E-03	1413.2	7.68E-07
Total			0.0830	166.0	0.0455	0.0057		

* Includes 2024 (two months of construction)

Emissions assumed to be evenly distributed over each construction areas

hr/day = 10 (7am - 5pm Everyday)
 days/yr = 365
 hours/year = 3650

DPM Construction Emissions and Modeling Emission Rates - With Mitigation

Construction Year	Activity	DPM (ton/year)	Source Type	No. Sources	DPM Emissions			Emissions per Point Source (g/s)
					(lb/yr)	(lb/hr)	(g/s)	
2022	Construction	0.0008	Point	39	1.5	0.00042	5.30E-05	1.36E-06
2023-2024*	Construction	0.0037	Point	39	7.3	0.00201	2.53E-04	6.48E-06
Total		0.0044			8.9	0.0024	0.0003	

* Includes 2024 (two months of construction)

Emissions assumed to be evenly distributed over each construction areas

hr/day = 10 (7am - 5pm Everyday)
 days/yr = 365
 hours/year = 3650

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

Construction Year	Activity	Area Source	PM2.5 Emissions				Modeled Area (m ²)	DPM Emission Rate g/s/m ²
			(ton/year)	(lb/yr)	(lb/hr)	(g/s)		
2022	Construction	CON_FUG	0.0106	21.1	0.00579	7.29E-04	1413.2	5.16E-07
2023-2024*	Construction	CON_FUG	0.0026	5.3	0.00144	1.82E-04	1413.2	1.29E-07
Total			0.0132	26.4	0.0072	0.0009		

* Includes 2024 (two months of construction)

Emissions assumed to be evenly distributed over each construction areas

hr/day = 10 (7am - 5pm Everyday)
 days/yr = 365
 hours/year = 3650

SuZaCo MU, San Jose, CA - Construction Health Impact Modeling

Source Parameters for Point Sources Used in Construction Modeling

Source	Stack Height (ft)	Stack Diam (in)	Exhaust Temp (F)	Volume Flow (acfm)	Velocity (ft/min)	Velocity (ft/sec)
Construction Equipment	9.0	2.5	918	632	18540	309.0
Source	Stack Height (m)	Stack Diam (m)	Exhaust Temp (K)			Velocity (ft/sec)
Construction Equipment	2.74	0.064	765.37			94.2

SuZaCo MU, San Jose, CA - Construction Health Impact Summary

Maximum Impacts at MEI Location - Without Mitigation

Emissions Year	Unmitigated Emissions					
	Maximum Concentrations		Cancer Risk (per million)		Hazard Index	Maximum Annual PM2.5 Concentration
	Exhaust PM10/DPM	Fugitive PM2.5				
	(µg/m ³)	(µg/m ³)	Infant/Child	Adult	(-)	(µg/m ³)
2022	0.2077	1.5769	36.93	0.60	0.04	1.64
2023-2024*	0.5760	0.0368	94.61	1.65	0.12	0.55
Total	-	-	131.54	2.25	-	-
Maximum	0.5760	1.5769	-	-	0.12	1.64

* Includes 2024 (two months of construction)

Maximum Impacts at MEI Location - With Mitigation

Emissions Year	Mitigated Emissions					Maximum Annual PM2.5 Concentration (µg/m ³)
	Maximum Concentrations		Cancer Risk (per million)		Hazard Index	
	Exhaust PM10/DPM (µg/m ³)	Fugitive PM2.5 (µg/m ³)				
			Infant/Child	Adult	(-)	
2022	0.0097	0.2473	1.72	0.03	0.002	0.25
2023-2024*	0.0462	0.0618	7.58	0.13	0.01	0.08
Total	-	-	9.30	0.16	-	-
Maximum	0.0462	0.2473	-	-	0.01	0.25

* Includes 2024 (two months of construction)

- Tier 4 Final Engine and Enhanced BMPs Mitigation

Maximum Impacts at Little Einstein's Montessori Preschool - Without Mitigation

Construction Year	Unmitigated Emissions				
	Maximum Concentrations		Child Cancer Risk (per million)	Hazard Index (-)	Maximum Annual PM2.5 Concentration (µg/m ³)
	Exhaust PM10/DPM (µg/m ³)	Fugitive PM2.5 (µg/m ³)			
2022	0.0011	0.0047	0.07	0.0002	0.01
2023-2024*	0.0031	0.0011	0.19	0.001	0.004
Total	-	-	0.26	-	-
Maximum	0.0031	0.0047	-	0.001	0.01

* Includes 2024 (two months of construction)

Maximum Impacts at Horace Mann Elementary School - Without Mitigation

Construction Year	Unmitigated Emissions				
	Maximum Concentrations		Child Cancer Risk (per million)	Hazard Index (-)	Maximum Annual PM2.5 Concentration (µg/m ³)
	Exhaust PM10/DPM (µg/m ³)	Fugitive PM2.5 (µg/m ³)			
2022	0.0007	0.0028	0.04	0.0001	0.003
2023-2024*	0.0019	0.0006	0.12	0.0004	0.003
Total	-	-	0.16	-	-
Maximum	0.0019	0.0028	-	0.0004	0.003

* Includes 2024 (two months of construction)

SuZaCo MU, San Jose, CA - Construction Impacts - Without Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at Off-Site MEI Location - 3 meter receptor height

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

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

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

Where: C_{air} = concentration in air (µg/m³)
 DBR = daily breathing rate (L/kg body weight-day)
 A = Inhalation absorption factor
 EF = Exposure frequency (days/year)
 10⁻⁶ = Conversion factor

Values

Age -> Parameter	Infant/Child			Adult
	3rd Trimester	0 - 2	2 - 16	16 - 30
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

Exposure Year	Exposure Duration (years)	Age	Infant/Child - Exposure Information			Infant/Child Cancer Risk (per million)	Adult - Exposure Information			Adult Cancer Risk (per million)	Maximum		
			DPM Conc (ug/m3)		Age Sensitivity Factor		Modeled		Age Sensitivity Factor		Hazard Index	Fugitive PM2.5	Total PM2.5
			Year	Annual			DPM Conc (ug/m3)	Year					
0	0.25	-0.25 - 0*	2022	0.0652	10	0.89	2022	0.0652	-	-			
1	1	0 - 1	2022	0.0652	10	10.70	2022	0.0652	1	0.19	0.01	1.58	1.64
2	1	1 - 2	2023-2024**	0.1807	10	29.68	2023-2024**	0.1807	1	0.52	0.04	0.04	0.55
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						41.3				0.71			

* Third trimester of pregnancy

** Includes 2024 (two months of construction)

SuZaCo MU, San Jose, CA - Construction Impacts - Without Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at Off-Site MEI Location - 6.1 meter receptor height

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

Where: CPF = Cancer potency factor (mg/kg-day)⁻¹

ASF = Age sensitivity factor for specified age group

ED = Exposure duration (years)

AT = Averaging time for lifetime cancer risk (years)

FAH = Fraction of time spent at home (unitless)

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

Where: C_{air} = concentration in air (µg/m³)

DBR = daily breathing rate (L/kg body weight-day)

A = Inhalation absorption factor

EF = Exposure frequency (days/year)

10⁻⁶ = Conversion factor

Values

Age → Parameter	Infant/Child			Adult
	3rd Trimester	0 - 2	2 - 16	16 - 30
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

Exposure Year	Exposure Duration (years)	Age	Infant/Child - Exposure Information			Infant/Child Cancer Risk (per million)	Adult - Exposure Information			Adult Cancer Risk (per million)	Maximum		
			DPM Conc (ug/m3)		Age Sensitivity Factor		Modeled DPM Conc (ug/m3)		Age Sensitivity Factor		Hazard Index	Fugitive PM2.5	Total PM2.5
			Year	Annual		Year	Annual						
0	0.25	-0.25 - 0*	2022	0.2077	10	2.82	2022	0.2077	-	-			
1	1	0 - 1	2022	0.2077	10	34.11	2022	0.2077	1	0.60	0.04	0.45	0.58
2	1	1 - 2	2023-2024**	0.5760	10	94.61	2023-2024**	0.5760	1	1.65	0.12	0.10	0.63
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						131.54				2.25			

* Third trimester of pregnancy

** Includes 2024 (two months of construction)

SuZaCo MU, San Jose, CA - Construction Impacts - Without Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at Off-Site MEI Location - 9.1 meter receptor height

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

Where: CPF = Cancer potency factor (mg/kg-day)⁻¹

ASF = Age sensitivity factor for specified age group

ED = Exposure duration (years)

AT = Averaging time for lifetime cancer risk (years)

FAH = Fraction of time spent at home (unitless)

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

Where: C_{air} = concentration in air (µg/m³)

DBR = daily breathing rate (L/kg body weight-day)

A = Inhalation absorption factor

EF = Exposure frequency (days/year)

10⁻⁶ = Conversion factor

Values

Age → Parameter	Infant/Child			Adult
	3rd Trimester	0 - 2	2 - 16	16 - 30
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

Exposure Year	Exposure Duration (years)	Age	Infant/Child - Exposure Information			Infant/Child Cancer Risk (per million)	Adult - Exposure Information			Adult Cancer Risk (per million)	Maximum		
			DPM Conc (ug/m3)		Age Sensitivity Factor		Modeled		Age Sensitivity Factor		Hazard Index	Fugitive PM2.5	Total PM2.5
			Year	Annual			Year	Annual					
0	0.25	-0.25 - 0*	2022	0.1277	10	1.74	2022	0.1277	-	-			
1	1	0 - 1	2022	0.1277	10	20.98	2022	0.1277	1	0.37	0.03	0.21	0.29
2	1	1 - 2	2023-2024**	0.3543	10	58.19	2023-2024**	0.3543	1	1.02	0.07	0.05	0.38
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						80.9				1.38			

* Third trimester of pregnancy

** Includes 2024 (two months of construction)

SuZaCo MU, San Jose, CA - Construction Impacts - With Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at Off-Site MEI Location - 3 meter receptor height

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

Where: CPF = Cancer potency factor (mg/kg-day)⁻¹

ASF = Age sensitivity factor for specified age group

ED = Exposure duration (years)

AT = Averaging time for lifetime cancer risk (years)

FAH = Fraction of time spent at home (unitless)

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

Where: C_{air} = concentration in air (µg/m³)

DBR = daily breathing rate (L/kg body weight-day)

A = Inhalation absorption factor

EF = Exposure frequency (days/year)

10⁻⁶ = Conversion factor

Values

Age → Parameter	Infant/Child			Adult
	3rd Trimester	0 - 2	2 - 16	16 - 30
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

Exposure Year	Exposure Duration (years)	Age	Infant/Child - Exposure Information			Infant/Child Cancer Risk (per million)	Adult - Exposure Information			Adult Cancer Risk (per million)
			DPM Conc (ug/m3)		Age Sensitivity Factor		Modeled		Age Sensitivity Factor	
							DPM Conc (ug/m3)			
			Year	Annual	Factor		Year	Annual	Factor	
0	0.25	-0.25 - 0*	2022	0.0030	10	0.04	2022	0.0030	-	-
1	1	0 - 1	2022	0.0030	10	0.50	2022	0.0030	1	0.01
2	1	1 - 2	2023-2024**	0.0145	10	2.38	2023-2024**	0.0145	1	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						2.9				0.05

* Third trimester of pregnancy

** Includes 2024 (two months of construction)

Maximum		
Hazard Index	Fugitive PM2.5	Total PM2.5
0.001	0.25	0.25
0.003	0.06	0.08

SuZaCo MU, San Jose, CA - Construction Impacts - With Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at Off-Site MEI Location - 6.1 meter receptor height

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

Where: CPF = Cancer potency factor (mg/kg-day)⁻¹

ASF = Age sensitivity factor for specified age group

ED = Exposure duration (years)

AT = Averaging time for lifetime cancer risk (years)

FAH = Fraction of time spent at home (unitless)

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

Where: C_{air} = concentration in air (µg/m³)

DBR = daily breathing rate (L/kg body weight-day)

A = Inhalation absorption factor

EF = Exposure frequency (days/year)

10⁻⁶ = Conversion factor

Values

Age → Parameter	Infant/Child			Adult
	3rd Trimester	0 - 2	2 - 16	16 - 30
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

Exposure Year	Exposure Duration (years)	Age	Infant/Child - Exposure Information			Infant/Child Cancer Risk (per million)	Adult - Exposure Information			Adult Cancer Risk (per million)	Maximum		
			DPM Conc (ug/m3)		Age Sensitivity Factor		Modeled		Age Sensitivity Factor		Hazard Index	Fugitive PM2.5	Total PM2.5
			Year	Annual			Year	Annual					
0	0.25	-0.25 - 0*	2022	0.0097	10	0.13	2022	0.0097	-	-			
1	1	0 - 1	2022	0.0097	10	1.59	2022	0.0097	1	0.03	0.002	0.07	0.07
2	1	1 - 2	2023-2024**	0.0462	10	7.58	2023-2024**	0.0462	1	0.13	0.01	0.02	0.06
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						9.30				0.16			

* Third trimester of pregnancy

** Includes 2024 (two months of construction)

SuZaCo MU, San Jose, CA - Construction Impacts - Without Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at Little Einstein's Montessori Preschool (2 years and older) - 1 meters - Child Exposure

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

Where: CPF = Cancer potency factor (mg/kg-day)⁻¹
 ASF = Age sensitivity factor for specified age group
 ED = Exposure duration (years)
 AT = Averaging time for lifetime cancer risk (years)

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

Where: C_{air} = concentration in air (µg/m³)
 SAF = Student Adjustment Factor (unitless)
 = (24 hrs/9 hrs) x (7 days/5 days) = 3.73
 8-Hr BR = Eight-hour breathing rate (L/kg body weight-per 8 hrs)
 A = Inhalation absorption factor
 EF = Exposure frequency (days/year)
 10⁻⁶ = Conversion factor

Values

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

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Exposure Year	Exposure Duration (years)	Age	Child - Exposure Information			Child Cancer Risk (per million)
			DPM Conc (ug/m3)		Age* Sensitivity	
			Year	Annual	Factor	
1	1	2 - 3	2022	0.0011	3	0.07
2	1	3 - 4	2023-2024**	0.0031	3	0.19
3	1	4 - 5		0.0000	3	0.00
4	1	5 - 6		0.0000	3	0.00
5	1	6 - 7		0.0000	3	0.00
6	1	7 - 8		0.0000	3	0.00
7	1	8 - 9		0.0000	3	0.00
8	1	9 - 10		0.0000	3	0.00
9	1	10 - 11		0.0000	3	0.00
Total Increased Cancer Risk						0.26

* Children assumed to be 2 years of age or older

** Includes 2024 (two months of construction)

Maximum		
Hazard Index	Fugitive PM2.5	Total PM2.5
0.0002	0.005	0.01
0.001	0.001	0.004

SuZaCo MU, San Jose, CA - Construction Impacts - Without Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at Horace Mann Elementary School (2 years and older) - 1 meter - Child Exposure

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

Where: CPF = Cancer potency factor (mg/kg-day)⁻¹
 ASF = Age sensitivity factor for specified age group
 ED = Exposure duration (years)
 AT = Averaging time for lifetime cancer risk (years)

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

Where: C_{air} = concentration in air (µg/m³)
 SAF = Student Adjustment Factor (unitless)
 = (24 hrs/9 hrs) x (7 days/5 days) = 3.73
 8-Hr BR = Eight-hour breathing rate (L/kg body weight-per 8 hrs)
 A = Inhalation absorption factor
 EF = Exposure frequency (days/year)
 10⁻⁶ = Conversion factor

Values

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

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Exposure Year	Exposure Duration (years)	Age	Child - Exposure Information			Child Cancer Risk (per million)
			DPM Conc (ug/m3)		Age* Sensitivity	
			Year	Annual	Factor	
1	1	2 - 3	2022	0.0007	3	0.04
2	1	3 - 4	2023-2024**	0.0019	3	0.12
3	1	4 - 5		0.0000	3	0.00
4	1	5 - 6		0.0000	3	0.00
5	1	6 - 7		0.0000	3	0.00
6	1	7 - 8		0.0000	3	0.00
7	1	8 - 9		0.0000	3	0.00
8	1	9 - 10		0.0000	3	0.00
9	1	10 - 11		0.0000	3	0.00
Total Increased Cancer Risk						0.16

* Children assumed to be 2 years of age or older

** Includes 2024 (two months of construction)

Maximum		
Hazard Index	Fugitive PM2.5	Total PM2.5
0.0001	0.003	0.003
0.0004	0.001	0.003

Project Generator Health Risk Assessment and Calculations

SuZaCo MU, San Jose, CA

Standby Emergency Generator Impacts

Off-site Sensitive Receptors

MEI Locations = 3 meter (PM2.5) and 6.1 meter (Cancer Risk) receptor heights

DPM Emission Rates		
Source Type	DPM Emissions per Generator	
	Max Daily	Annual
	(lb/day)	(lb/year)
One, 100-kW, 134-hp Generator	0.004	1.62
CalEEMod DPM Emissions	8.10E-04	tons/year

Modeling Information	
Model	AERMOD
Source	Diesel Generator Engine
Source Type	Point
Meteorological Data	2013-2017 San Jose Airport Meteorological Data
Point Source Stack Parameters	
Generator Engine Size (hp)***	134
Stack Height (ft)***	90.00 roof level release
Stack Diameter (ft)**	0.60
Exhaust Gas Flowrate (CFM)*	2527.73
Stack Exit Velocity (ft/sec)**	149.00
Exhaust Temperature (°F)**	872.00
Emissions Rate (lb/hr)	0.0002

* AERMOD default

**BAAQMD default generator parameters

***Project Generator Information

SuZaCo MU, San Jose - Cancer Risks from Project Operation
Project Emergency Generators
Impacts at Construction MEI Receptor- 3m (PM2.5) & 6.1m (Cancer Risk) Receptor Heights
Impact at Project Cancer Risk and PM2.5 MEIs (28-year Exposure)

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

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

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

Where: C_{air} = concentration in air (µg/m³)
 DBR = daily breathing rate (L/kg body weight-day)
 A = Inhalation absorption factor
 EF = Exposure frequency (days/year)
 10⁻⁶ = Conversion factor

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

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

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

Exposure Year	Exposure Duration (years)	Age	Infant/Child - Exposure Information			Cancer Risk (per million)	Hazard Index	Total PM2.5	
			DPM Conc (ug/m3)		Age Sensitivity Factor				
			Year	Annual					
0	0.25	-0.25 - 0*	2022	0.00000	10	0.000			
1	1	0 - 1	2022	0.00000	10	0.000			
2	1	1 - 2	2023	0.00000	10	0.000			
3	1	2 - 3	2024	0.00002	3	0.001	0.000004	0.00001	
4	1	3 - 4	2025	0.00002	3	0.001	0.000004	0.00001	
5	1	4 - 5	2026	0.00002	3	0.001	0.000004	0.00001	
6	1	5 - 6	2027	0.00002	3	0.001	0.000004	0.00001	
7	1	6 - 7	2028	0.00002	3	0.001	0.000004	0.00001	
8	1	7 - 8	2029	0.00002	3	0.001	0.000004	0.00001	
9	1	8 - 9	2030	0.00002	3	0.001	0.000004	0.00001	
10	1	9 - 10	2031	0.00002	3	0.001	0.000004	0.00001	
11	1	10 - 11	2032	0.00002	3	0.001	0.000004	0.00001	
12	1	11 - 12	2033	0.00002	3	0.001	0.000004	0.00001	
13	1	12 - 13	2034	0.00002	3	0.001	0.000004	0.00001	
14	1	13 - 14	2035	0.00002	3	0.001	0.000004	0.00001	
15	1	14 - 15	2036	0.00002	3	0.001	0.000004	0.00001	
16	1	15 - 16	2037	0.00002	3	0.001	0.000004	0.00001	
17	1	16-17	2038	0.00002	1	0.0001	0.000004	0.00001	
18	1	17-18	2039	0.00002	1	0.0001	0.000004	0.00001	
19	1	18-19	2040	0.00002	1	0.0001	0.000004	0.00001	
20	1	19-20	2041	0.00002	1	0.0001	0.000004	0.00001	
21	1	20-21	2042	0.00002	1	0.0001	0.000004	0.00001	
22	1	21-22	2043	0.00002	1	0.0001	0.000004	0.00001	
23	1	22-23	2044	0.00002	1	0.0001	0.000004	0.00001	
24	1	23-24	2045	0.00002	1	0.0001	0.000004	0.00001	
25	1	24-25	2046	0.00002	1	0.0001	0.000004	0.00001	
26	1	25-26	2047	0.00002	1	0.0001	0.000004	0.00001	
27	1	26-27	2048	0.00002	1	0.0001	0.000004	0.00001	
28	1	27-28	2049	0.00002	1	0.0001	0.000004	0.00001	
29	1	28-29	2050	0.00002	1	0.0001	0.000004	0.00001	
30	1	29-30	2051	0.00002	1	0.0001	0.000004	0.00001	
Total Increased Cancer Risk						0.01	Max	0.000004	0.00001

* Third trimester of pregnancy

SuZaCo MU, San Jose, CA - Construction Impacts - Without Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at Little Einstein's Montessori Preschool (2 years and older) - 1 meters - Child Exposure

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

Where: CPF = Cancer potency factor (mg/kg-day)⁻¹
 ASF = Age sensitivity factor for specified age group
 ED = Exposure duration (years)
 AT = Averaging time for lifetime cancer risk (years)

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

Where: C_{air} = concentration in air (µg/m³)
 SAF = Student Adjustment Factor (unitless)
 = (24 hrs/9 hrs) x (7 days/5 days) = 3.73
 8-Hr BR = Eight-hour breathing rate (L/kg body weight-per 8 hrs)
 A = Inhalation absorption factor
 EF = Exposure frequency (days/year)
 10⁻⁶ = Conversion factor

Values

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

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Exposure Year	Exposure Duration (years)	Age	Child - Exposure Information			Child Cancer Risk (per million)
			DPM Conc (ug/m3)		Age* Sensitivity	
			Year	Annual	Factor	
1	1	2 - 3	2022	0.0000	3	0.00
2	1	3 - 4	2023	0.0000	3	0.00
3	1	4 - 5	2024	0.00003	3	0.002
4	1	5 - 6		0.0000	3	0.00
5	1	6 - 7		0.0000	3	0.00
6	1	7 - 8		0.0000	3	0.00
7	1	8 - 9		0.0000	3	0.00
8	1	9 - 10		0.0000	3	0.00
9	1	10 - 11		0.0000	3	0.00
Total Increased Cancer Risk						0.002

* Children assumed to be 2 years of age or older

Maximum	
Hazard Index	Total PM2.5
0.00001	0.00003

SuZaCo MU, San Jose, CA - Construction Impacts - Without Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at Horace Mann Elementary School (2 years and older) - 1 meter - Child Exposure

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

Where: CPF = Cancer potency factor (mg/kg-day)⁻¹
 ASF = Age sensitivity factor for specified age group
 ED = Exposure duration (years)
 AT = Averaging time for lifetime cancer risk (years)

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

Where: C_{air} = concentration in air (µg/m³)
 SAF = Student Adjustment Factor (unitless)
 = (24 hrs/9 hrs) x (7 days/5 days) = 3.73
 8-Hr BR = Eight-hour breathing rate (L/kg body weight-per 8 hrs)
 A = Inhalation absorption factor
 EF = Exposure frequency (days/year)
 10⁻⁶ = Conversion factor

Values

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

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Exposure Year	Exposure Duration (years)	Age	Child - Exposure Information			Child Cancer Risk (per million)
			DPM Conc (ug/m3)		Age* Sensitivity Factor	
			Year	Annual		
1	1	2 - 3	2022	0.0000	3	0.00
2	1	3 - 4	2023	0.0000	3	0.00
3	1	4 - 5	2024	0.00002	3	0.001
4	1	5 - 6	2025	0.00002	3	0.001
5	1	6 - 7	2026	0.00002	3	0.001
6	1	7 - 8	2027	0.00002	3	0.001
7	1	8 - 9	2028	0.00002	3	0.001
8	1	9 - 10	2029	0.00002	3	0.001
9	1	10 - 11	2030	0.00002	3	0.001
Total Increased Cancer Risk						0.01

* Children assumed to be 2 years of age or older

Maximum	
Hazard Index	Total PM2.5
0.000004	0.00002

Attachment 5: Cumulative Community Risk from Existing TAC Sources

CT-EMFAC2017 Emissions Factors for Santa Clara County 2022

File Name: SuZaCo - Santa Clara (SF) - 2022 - Annual.EF
CT-EMFAC2017 Version: 1.0.2.27401
Run Date: 9/23/2021 10:54
Area: Santa Clara (SF)
Analysis Year: 2022
Season: Annual

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

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

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

Pollutant Name	<= 5 mph	10 mph	15 mph	20 mph	25 mph	30 mph	35 mph	40 mph
PM2.5	0.010417	0.006915	0.004735	0.003408	0.002622	0.002145	0.001861	0.001715
TOG	0.220898	0.145348	0.097291	0.068555	0.051819	0.041294	0.034513	0.030252
Diesel PM	0.001756	0.001459	0.001108	0.000865	0.000743	0.000683	0.000662	0.000677

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

Pollutant Name	Emission Factor
TOG	1.418515

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

Pollutant Name	Emission Factor
PM2.5	0.002108

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

Pollutant Name	Emission Factor
PM2.5	0.016811

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

Pollutant Name	Emission Factor
PM2.5	0.014871

=====END=====

East Santa Clara Street Traffic Emissions and Health Risk Calculations

Analysis Year = 2022

Vehicle Type	2018 Caltrans Vehicles (veh/day)	2022 Vehicles (veh/day)
Total	15,695	16,323

Increase From 2018 1.04
Vehicles/Direction 8,161
 Avg Vehicles/Hour/Direction 340

Traffic Data Year = 2018

Hotel Clariana Phase I Traffic Report Volumes	AADT Total	Total Truck
Background + Project Condition - E. Santa Clara St	15,695	551

Percent of Total Vehicles 3.51%

Traffic Increase per Year (%) = 1.00%

13.3152

[illegible]

Emission Factors

Speed Category	1	2	3	4
Travel Speed (mph)	25	20		
Emissions per Vehicle (g/VMT)	0.00074	0.000865		

Emission Factors from CT-EMFAC2017

2022 Hourly Traffic Volumes and DPM Emissions - DPM_EB_ESC

[illegible]

2022 Hourly Traffic Volumes Per Direction and DPM Emissions - DPM_WB_ESC

[illegible]

**SuZaCo MU, San Jose, CA - Off-Site Residential
Cumulative Operation - E. Santa Clara Street
PM2.5 Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions
Year = 2022**

[illegible]

Emission Factors - PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	25	20		
Emissions per Vehicle (g/VMT)	0.002622	0.00341		

Emission Factors from CT-EMFAC2017

2022 Hourly Traffic Volumes and PM2.5 Emissions - PM2.5_EB_ESC

[illegible]

2022 Hourly Traffic Volumes Per Direction and PM2.5 Emissions - PM2.5 WB ESC

[illegible]

**SuZaCo MU, San Jose, CA - Off-Site Residential
Cumulative Operation - E. Santa Clara Street
TOG Exhaust Modeling - Roadway Links, Traffic Volumes, and TOG Exhaust Emissions
Year = 2022**

[illegible]

Emission Factors - TOG Exhaust

Speed Category	1	2	3	4
Travel Speed (mph)	25	20		
Emissions per Vehicle (g/VMT)	0.05182	0.06856		

Emission Factors from CT-EMFAC2017

2022 Hourly Traffic Volumes and TOG Exhaust Emissions - TEXH EB ESC

[illegible]

2022 Hourly Traffic Volumes Per Direction and TOG Exhaust Emissions - TEXH_WB_ESC

[illegible]

Year = 2022

[illegible]

**SuZaCo MU, San Jose, CA - Off-Site Residential
Cumulative Operation - E. Santa Clara Street
Fugitive Road PM2.5 Modeling - Roadway Links, Traffic Volumes, and Fugitive Road PM2.5 Emissions
Year = 2022**

[illegible]

Emission Factors - Fugitive PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	25	20		
Tire Wear - Emissions per Vehicle (g/VMT)	0.00211	0.00211		
Brake Wear - Emissions per Vehicle (g/VMT)	0.01681	0.01681		
Road Dust - Emissions per Vehicle (g/VMT)	0.01487	0.01487		
Total Fugitive PM2.5 - Emissions per Vehicle (g/VMT)	0.03379	0.03379		

Emission Factors from CT-EMFAC2017

2022 Hourly Traffic Volumes and Fugitive PM2.5 Emissions - FUG EB ESC

[illegible]

2022 Hourly Traffic Volumes Per Direction and Fugitive PM2.5 Emissions - FUG_WB_ESC

[illegible]

**SuZaCo MU, San Jose, CA - E. Santa Clara Street Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
at Construction MEI Receptors (PM2.5 3m receptor height, Cancer Risk 6.1m height)**

Emission Year 2022
Receptor Information Construction MEI receptors
 Number of Receptors 2
 Receptor Height PM2.5 3 meters, Cancer Risk 6.1 meters
 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 Maximum Concentrations - 6.1m

Meteorological Data Years	Concentration (µg/m3)		
	DPM	Exhaust TOG	Evaporative TOG
2013-2017	0.0022	0.1352	0.1452

Construction PM2.5 MEI Maximum Concentrations - 3m

Meteorological Data Years	PM2.5 Concentration (µg/m3)		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013-2017	0.1753	0.1617	0.01356

SuZaCo MU, San Jose, CA - E. Santa Clara Street Traffic Cancer Risk
Impacts at Construction MEIs - PM2.5 3 meter receptor height, Cancer Risk 6.1m height
30 Year Residential Exposure

Cancer Risk Calculation Method

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

Where: CPF = Cancer potency factor (mg/kg-day)⁻¹

ASF = Age sensitivity factor for specified age group

ED = Exposure duration (years)

AT = Averaging time for lifetime cancer risk (years)

FAH = Fraction of time spent at home (unitless)

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

Where: C_{air} = concentration in air (µg/m³)

DBR = daily breathing rate (L/kg body weight-day)

A = Inhalation absorption factor

EF = Exposure frequency (days/year)

10⁻⁶ = Conversion factor

Cancer Potency Factors (mg/kg-day)⁻¹

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

Values

Age -> Parameter	Infant/Child			Adult
	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	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	
	Duration (years)										
0	0.25	-0.25 - 0*	2022	10	0.0022	0.1352	0.1452	0.029	0.010	0.0007	0.04
1	1	0 - 1	2022	10	0.0022	0.1352	0.1452	0.353	0.127	0.0080	0.49
2	1	1 - 2	2023	10	0.0022	0.1352	0.1452	0.353	0.127	0.0080	0.49
3	1	2 - 3	2024	3	0.0022	0.1352	0.1452	0.056	0.020	0.0013	0.08
4	1	3 - 4	2025	3	0.0022	0.1352	0.1452	0.056	0.020	0.0013	0.08
5	1	4 - 5	2026	3	0.0022	0.1352	0.1452	0.056	0.020	0.0013	0.08
6	1	5 - 6	2027	3	0.0022	0.1352	0.1452	0.056	0.020	0.0013	0.08
7	1	6 - 7	2028	3	0.0022	0.1352	0.1452	0.056	0.020	0.0013	0.08
8	1	7 - 8	2029	3	0.0022	0.1352	0.1452	0.056	0.020	0.0013	0.08
9	1	8 - 9	2030	3	0.0022	0.1352	0.1452	0.056	0.020	0.0013	0.08
10	1	9 - 10	2031	3	0.0022	0.1352	0.1452	0.056	0.020	0.0013	0.08
11	1	10 - 11	2032	3	0.0022	0.1352	0.1452	0.056	0.020	0.0013	0.08
12	1	11 - 12	2033	3	0.0022	0.1352	0.1452	0.056	0.020	0.0013	0.08
13	1	12 - 13	2034	3	0.0022	0.1352	0.1452	0.056	0.020	0.0013	0.08
14	1	13 - 14	2035	3	0.0022	0.1352	0.1452	0.056	0.020	0.0013	0.08
15	1	14 - 15	2036	3	0.0022	0.1352	0.1452	0.056	0.020	0.0013	0.08
16	1	15 - 16	2037	3	0.0022	0.1352	0.1452	0.056	0.020	0.0013	0.08
17	1	16-17	2038	1	0.0022	0.1352	0.1452	0.006	0.002	0.0001	0.01
18	1	17-18	2039	1	0.0022	0.1352	0.1452	0.006	0.002	0.0001	0.01
19	1	18-19	2040	1	0.0022	0.1352	0.1452	0.006	0.002	0.0001	0.01
20	1	19-20	2041	1	0.0022	0.1352	0.1452	0.006	0.002	0.0001	0.01
21	1	20-21	2042	1	0.0022	0.1352	0.1452	0.006	0.002	0.0001	0.01
22	1	21-22	2043	1	0.0022	0.1352	0.1452	0.006	0.002	0.0001	0.01
23	1	22-23	2044	1	0.0022	0.1352	0.1452	0.006	0.002	0.0001	0.01
24	1	23-24	2045	1	0.0022	0.1352	0.1452	0.006	0.002	0.0001	0.01
25	1	24-25	2046	1	0.0022	0.1352	0.1452	0.006	0.002	0.0001	0.01
26	1	25-26	2047	1	0.0022	0.1352	0.1452	0.006	0.002	0.0001	0.01
27	1	26-27	2048	1	0.0022	0.1352	0.1452	0.006	0.002	0.0001	0.01
28	1	27-28	2049	1	0.0022	0.1352	0.1452	0.006	0.002	0.0001	0.01
29	1	28-29	2050	1	0.0022	0.1352	0.1452	0.006	0.002	0.0001	0.01
30	1	29-30	2051	1	0.0022	0.1352	0.1452	0.006	0.002	0.0001	0.01
Total Increased Cancer Risk								1.60	0.574	0.036	2.21

* Third trimester of pregnancy

Maximum
Hazard Index 0.0004
Fugitive PM2.5 0.16
Total PM2.5 0.18

3rd Street Traffic Emissions and Health Risk Calculations

Analysis Year = 2022

Vehicle Type	2018 Caltrans Vehicles (veh/day)	2022 Vehicles (veh/day)
Total	10,160	10,566

Increase From 2018	1.04
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Vehicles/Direction	5,283
---------------------------	--------------

Avg Vehicles/Hour/Direction	220
-----------------------------	-----

Traffic Data Year = 2018

SuZaCo Traffic Report Volumes	AADT Total	Total Truck
Background + Project Condition - S. 3rd Street	10,160	357

Percent of Total Vehicles	3.51%
---------------------------	-------

Traffic Increase per Year (%) = 1.00%

SuZaCo MU, San Jose, CA - Off-Site Residential

Cumulative Operation - S. 3rd Street

DPM Modeling - Roadway Links, Traffic Volumes, and DPM Emissions

Year = 2022

13.3152

[illegible]

Emission Factors

Speed Category	1	2	3	4
Travel Speed (mph)	30	25		
Emissions per Vehicle (g/VMT)	0.00068	0.000743		

Emission Factors from CT-EMFAC2017

2022 Hourly Traffic Volumes and DPM Emissions - DPM NB 3rd

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	3.91%	413	3.12E-05	9	6.44%	681	5.59E-05	17	5.52%	583	4.79E-05
2	2.59%	273	2.07E-05	10	7.25%	766	5.78E-05	18	3.34%	352	2.90E-05
3	2.82%	298	2.25E-05	11	6.33%	668	5.05E-05	19	2.42%	255	1.93E-05
4	3.39%	358	2.71E-05	12	6.90%	729	5.51E-05	20	0.92%	97	7.34E-06
5	2.19%	231	1.74E-05	13	6.27%	662	5.00E-05	21	2.99%	316	2.39E-05
6	3.39%	358	2.71E-05	14	6.15%	650	4.91E-05	22	4.14%	437	3.30E-05
7	6.10%	644	4.86E-05	15	5.12%	541	4.08E-05	23	2.47%	261	1.97E-05
8	4.66%	492	4.04E-05	16	3.85%	407	3.07E-05	24	0.86%	91	6.88E-06
Total										10,566	

**SuZaCo MU, San Jose, CA - Off-Site Residential
Cumulative Operation - S. 3rd Street
PM2.5 Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions
Year = 2022**

[illegible]

Emission Factors - PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	30	25		
Emissions per Vehicle (g/VMT)	0.002145	0.00262		

Emission Factors from CT-EMFAC2017

2022 Hourly Traffic Volumes and PM2.5 Emissions - PM2.5 NB 3rd

[illegible]

**SuZaCo MU, San Jose, CA - Off-Site Residential
Cumulative Operation - S. 3rd Street
TOG Exhaust Modeling - Roadway Links, Traffic Volumes, and TOG Exhaust Emissions
Year = 2022**

[illegible]

Emission Factors - TOG Exhaust

Speed Category	1	2	3	4
Travel Speed (mph)	30	25		
Emissions per Vehicle (g/VMT)	0.04129	0.05182		

Emission Factors from CT-EMFAC2017

2022 Hourly Traffic Volumes and TOG Exhaust Emissions - TEXH_NB_3rd

[illegible]

Year = 2022

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	122	6.36E-04	9	7.11%	752	4.72E-03	17	7.39%	780	4.90E-03
2	0.42%	44	2.32E-04	10	4.39%	464	2.43E-03	18	8.17%	863	5.42E-03
3	0.41%	43	2.26E-04	11	4.67%	493	2.58E-03	19	5.70%	602	3.15E-03
4	0.27%	28	1.47E-04	12	5.89%	623	3.26E-03	20	4.27%	452	2.36E-03
5	0.50%	53	2.76E-04	13	6.15%	650	3.40E-03	21	3.26%	344	1.80E-03
6	0.91%	96	5.01E-04	14	6.03%	638	3.33E-03	22	3.30%	349	1.82E-03
7	3.79%	401	2.10E-03	15	7.01%	741	3.87E-03	23	2.46%	260	1.36E-03
8	7.76%	820	5.15E-03	16	7.13%	754	3.94E-03	24	1.86%	197	1.03E-03
Total										10,566	

**SuZaCo MU, San Jose, CA - S. 3rd Street Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
at Construction MEI Receptors (PM2.5 3m receptor height, Cancer Risk 6.1m height)**

<u>Emission Year</u>	2022
<u>Receptor Information</u>	Construction MEI receptors
Number of Receptors	2
Receptor Height	PM2.5 3 meters, Cancer Risk 6.1 meters
Receptor Distances	At Construction MEI locations

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

Construction Cancer Risk MEI Maximum Concentrations - 6.1m

Meteorological Data Years	Concentration (µg/m3)		
	DPM	Exhaust TOG	Evaporative TOG
2013-2017	0.0011	0.0711	0.0802

Construction PM2.5 MEI Maximum Concentrations - 3m

Meteorological Data Years	PM2.5 Concentration (µg/m3)		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013-2017	0.0735	0.0689	0.00461

SuZaCo MU, San Jose, CA - S. 3rd Street Traffic Cancer Risk
Impacts at Construction MEIs - PM2.5 3 meter receptor height, Cancer Risk 6.1m height
30 Year Residential Exposure

Cancer Risk Calculation Method

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

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

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

Where: C_{air} = concentration in air (µg/m³)
 DBR = daily breathing rate (L/kg body weight-day)
 A = Inhalation absorption factor
 EF = Exposure frequency (days/year)
 10⁻⁶ = Conversion factor

Cancer Potency Factors (mg/kg-day)⁻¹

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

Values

Age -> Parameter	Infant/Child			Adult
	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	Age	Year	Age Sensitivity Factor		Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	
	Duration (years)				DPM						
0	0.25	-0.25 - 0*	2022	10	0.0011	0.0711	0.0802	0.015	0.006	0.0004	0.02
1	1	0 - 1	2022	10	0.0011	0.0711	0.0802	0.176	0.067	0.0044	0.25
2	1	1 - 2	2023	10	0.0011	0.0711	0.0802	0.176	0.067	0.0044	0.25
3	1	2 - 3	2024	3	0.0011	0.0711	0.0802	0.028	0.010	0.0007	0.04
4	1	3 - 4	2025	3	0.0011	0.0711	0.0802	0.028	0.010	0.0007	0.04
5	1	4 - 5	2026	3	0.0011	0.0711	0.0802	0.028	0.010	0.0007	0.04
6	1	5 - 6	2027	3	0.0011	0.0711	0.0802	0.028	0.010	0.0007	0.04
7	1	6 - 7	2028	3	0.0011	0.0711	0.0802	0.028	0.010	0.0007	0.04
8	1	7 - 8	2029	3	0.0011	0.0711	0.0802	0.028	0.010	0.0007	0.04
9	1	8 - 9	2030	3	0.0011	0.0711	0.0802	0.028	0.010	0.0007	0.04
10	1	9 - 10	2031	3	0.0011	0.0711	0.0802	0.028	0.010	0.0007	0.04
11	1	10 - 11	2032	3	0.0011	0.0711	0.0802	0.028	0.010	0.0007	0.04
12	1	11 - 12	2033	3	0.0011	0.0711	0.0802	0.028	0.010	0.0007	0.04
13	1	12 - 13	2034	3	0.0011	0.0711	0.0802	0.028	0.010	0.0007	0.04
14	1	13 - 14	2035	3	0.0011	0.0711	0.0802	0.028	0.010	0.0007	0.04
15	1	14 - 15	2036	3	0.0011	0.0711	0.0802	0.028	0.010	0.0007	0.04
16	1	15 - 16	2037	3	0.0011	0.0711	0.0802	0.028	0.010	0.0007	0.04
17	1	16-17	2038	1	0.0011	0.0711	0.0802	0.003	0.001	0.0001	0.00
18	1	17-18	2039	1	0.0011	0.0711	0.0802	0.003	0.001	0.0001	0.00
19	1	18-19	2040	1	0.0011	0.0711	0.0802	0.003	0.001	0.0001	0.00
20	1	19-20	2041	1	0.0011	0.0711	0.0802	0.003	0.001	0.0001	0.00
21	1	20-21	2042	1	0.0011	0.0711	0.0802	0.003	0.001	0.0001	0.00
22	1	21-22	2043	1	0.0011	0.0711	0.0802	0.003	0.001	0.0001	0.00
23	1	22-23	2044	1	0.0011	0.0711	0.0802	0.003	0.001	0.0001	0.00
24	1	23-24	2045	1	0.0011	0.0711	0.0802	0.003	0.001	0.0001	0.00
25	1	24-25	2046	1	0.0011	0.0711	0.0802	0.003	0.001	0.0001	0.00
26	1	25-26	2047	1	0.0011	0.0711	0.0802	0.003	0.001	0.0001	0.00
27	1	26-27	2048	1	0.0011	0.0711	0.0802	0.003	0.001	0.0001	0.00
28	1	27-28	2049	1	0.0011	0.0711	0.0802	0.003	0.001	0.0001	0.00
29	1	28-29	2050	1	0.0011	0.0711	0.0802	0.003	0.001	0.0001	0.00
30	1	29-30	2051	1	0.0011	0.0711	0.0802	0.003	0.001	0.0001	0.00
Total Increased Cancer Risk								0.80	0.302	0.020	1.12

* Third trimester of pregnancy

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

4th Street Traffic Emissions and Health Risk Calculations

Analysis Year = 2022

Vehicle Type	2018 Caltrans Vehicles (veh/day)	2022 Vehicles (veh/day)
Total	10,000	10,400

Increase From 2018 1.04

Vehicles/Direction	5,200
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Avg Vehicles/Hour/Direction	217
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Traffic Data Year = 2018

SuZaCo Traffic Report Volumes	AADT Total	Total Truck
Background + Project Condition - S. 4th Street	10,000	351

Percent of Total Vehicles	3.51%
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Traffic Increase per Year (%) = 1.00%

SuZaCo MU, San Jose, CA - Off-Site Residential

Cumulative Operation - S. 4th Street

DPM Modeling - Roadway Links, Traffic Volumes, and DPM Emissions

Year = 2022

13.3152

[illegible]

Emission Factors

Speed Category	1	2	3	4
Travel Speed (mph)	30	25		
Emissions per Vehicle (g/VMT)	0.00068	0.000743		

Emission Factors from CT-EMFAC2017

2022 Hourly Traffic Volumes Per Direction and DPM Emissions - DPM SB 4th

	% Per	VPH	g/mile		% Per	VPH	g/mile	Total	% Per	VPH	g/mile
Hour	Hour			Hour	Hour			Hour	Hour		
1	3.91%	407	3.12E-05	9	6.44%	670	5.59E-05	17	5.52%	574	4.79E-05
2	2.59%	269	2.07E-05	10	7.25%	754	5.78E-05	18	3.34%	347	2.90E-05
3	2.82%	293	2.25E-05	11	6.33%	658	5.05E-05	19	2.42%	251	1.93E-05
4	3.39%	353	2.71E-05	12	6.90%	718	5.51E-05	20	0.92%	96	7.34E-06
5	2.19%	227	1.74E-05	13	6.27%	652	5.00E-05	21	2.99%	311	2.39E-05
6	3.39%	353	2.71E-05	14	6.15%	640	4.91E-05	22	4.14%	431	3.30E-05
7	6.10%	634	4.86E-05	15	5.12%	532	4.08E-05	23	2.47%	257	1.97E-05
8	4.66%	484	4.04E-05	16	3.85%	401	3.07E-05	24	0.86%	90	6.88E-06
Total										10,400	

**SuZaCo MU, San Jose, CA - Off-Site Residential
Cumulative Operation - S. 4th Street
PM2.5 Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions
Year = 2022**

[illegible]

Emission Factors - PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	30	25		
Emissions per Vehicle (g/VMT)	0.002145	0.00262		

Emission Factors from CT-EMFAC2017

2022 Hourly Traffic Volumes Per Direction and PM2.5 Emissions - PM2.5 SB 4th

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	120	2.88E-05	9	7.11%	740	2.18E-04	17	7.39%	768	2.26E-04
2	0.42%	44	1.05E-05	10	4.39%	457	1.10E-04	18	8.17%	850	2.50E-04
3	0.41%	43	1.03E-05	11	4.67%	485	1.17E-04	19	5.70%	592	1.43E-04
4	0.27%	28	6.68E-06	12	5.89%	613	1.48E-04	20	4.27%	444	1.07E-04
5	0.50%	52	1.25E-05	13	6.15%	639	1.54E-04	21	3.26%	339	8.17E-05
6	0.91%	94	2.27E-05	14	6.03%	628	1.51E-04	22	3.30%	343	8.27E-05
7	3.79%	395	9.51E-05	15	7.01%	729	1.76E-04	23	2.46%	255	6.16E-05
8	7.76%	807	2.38E-04	16	7.13%	742	1.79E-04	24	1.86%	194	4.67E-05
Total										10,400	

**SuZaCo MU, San Jose, CA - Off-Site Residential
Cumulative Operation - S. 4th Street
TOG Exhaust Modeling - Roadway Links, Traffic Volumes, and TOG Exhaust Emissions
Year = 2022**

[illegible]

Emission Factors - TOG Exhaust

Speed Category	1	2	3	4
Travel Speed (mph)	30	25		
Emissions per Vehicle (g/VMT)	0.04129	0.05182		

Emission Factors from CT-EMFAC2017

2022 Hourly Traffic Volumes Per Direction and TOG Exhaust Emissions - TEXH SB 4th

[illegible]

Year = 2022

[illegible]

Cumulative Operation - S. 4th Street

Year = 2022

Emission Factors - Fugitive PM_{2.5}

Emission Factors from CT-EMFAC2017

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	120	4.54E-04	9	7.11%	740	2.81E-03	17	7.39%	768	2.92E-03
2	0.42%	44	1.65E-04	10	4.39%	457	1.73E-03	18	8.17%	850	3.23E-03
3	0.41%	43	1.62E-04	11	4.67%	485	1.84E-03	19	5.70%	592	2.25E-03
4	0.27%	28	1.05E-04	12	5.89%	613	2.33E-03	20	4.27%	444	1.69E-03
5	0.50%	52	1.97E-04	13	6.15%	639	2.43E-03	21	3.26%	339	1.29E-03
6	0.91%	94	3.58E-04	14	6.03%	628	2.38E-03	22	3.30%	343	1.30E-03
7	3.79%	395	1.50E-03	15	7.01%	729	2.77E-03	23	2.46%	255	9.70E-04
8	7.76%	807	3.06E-03	16	7.13%	742	2.82E-03	24	1.86%	194	7.36E-04
Total										10,400	

**SuZaCo MU, San Jose, CA - S. 4th Street Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
at Construction MEI Receptors (PM2.5 3m receptor height, Cancer Risk 6.1m height)**

<u>Emission Year</u>	2022
<u>Receptor Information</u>	Construction MEI receptors
Number of Receptors	2
Receptor Height	PM2.5 3 meters, Cancer Risk 6.1 meters
Receptor Distances	At Construction MEI locations

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

Construction Cancer Risk MEI Maximum Concentrations - 6.1m

Meteorological Data Years	Concentration (µg/m3)		
	DPM	Exhaust TOG	Evaporative TOG
2013-2017	0.0013	0.0599	0.0675

Construction PM2.5 MEI Maximum Concentrations - 3m

Meteorological Data Years	PM2.5 Concentration (µg/m3)		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013-2017	0.0690	0.0647	0.00435

SuZaCo MU, San Jose, CA - S. 4th Street Traffic Cancer Risk
Impacts at Construction MEIs - PM2.5 3 meter receptor height, Cancer Risk 6.1m height
30 Year Residential Exposure

Cancer Risk Calculation Method

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

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

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

Where: C_{air} = concentration in air (µg/m³)
 DBR = daily breathing rate (L/kg body weight-day)
 A = Inhalation absorption factor
 EF = Exposure frequency (days/year)
 10⁻⁶ = Conversion factor

Cancer Potency Factors (mg/kg-day)⁻¹

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

Values

Age -> Parameter	Infant/Child			Adult
	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	Age	Year	Age Sensitivity Factor		Exhaust	Evaporative	DPM	Exhaust TOG	Evaporative TOG	
	Duration (years)				DPM	TOG	TOG				
0	0.25	-0.25 - 0*	2022	10	0.0013	0.0599	0.0675	0.017	0.005	0.0003	0.02
1	1	0 - 1	2022	10	0.0013	0.0599	0.0675	0.205	0.056	0.0037	0.27
2	1	1 - 2	2023	10	0.0013	0.0599	0.0675	0.205	0.056	0.0037	0.27
3	1	2 - 3	2024	3	0.0013	0.0599	0.0675	0.032	0.009	0.0006	0.04
4	1	3 - 4	2025	3	0.0013	0.0599	0.0675	0.032	0.009	0.0006	0.04
5	1	4 - 5	2026	3	0.0013	0.0599	0.0675	0.032	0.009	0.0006	0.04
6	1	5 - 6	2027	3	0.0013	0.0599	0.0675	0.032	0.009	0.0006	0.04
7	1	6 - 7	2028	3	0.0013	0.0599	0.0675	0.032	0.009	0.0006	0.04
8	1	7 - 8	2029	3	0.0013	0.0599	0.0675	0.032	0.009	0.0006	0.04
9	1	8 - 9	2030	3	0.0013	0.0599	0.0675	0.032	0.009	0.0006	0.04
10	1	9 - 10	2031	3	0.0013	0.0599	0.0675	0.032	0.009	0.0006	0.04
11	1	10 - 11	2032	3	0.0013	0.0599	0.0675	0.032	0.009	0.0006	0.04
12	1	11 - 12	2033	3	0.0013	0.0599	0.0675	0.032	0.009	0.0006	0.04
13	1	12 - 13	2034	3	0.0013	0.0599	0.0675	0.032	0.009	0.0006	0.04
14	1	13 - 14	2035	3	0.0013	0.0599	0.0675	0.032	0.009	0.0006	0.04
15	1	14 - 15	2036	3	0.0013	0.0599	0.0675	0.032	0.009	0.0006	0.04
16	1	15 - 16	2037	3	0.0013	0.0599	0.0675	0.032	0.009	0.0006	0.04
17	1	16-17	2038	1	0.0013	0.0599	0.0675	0.004	0.001	0.0001	0.00
18	1	17-18	2039	1	0.0013	0.0599	0.0675	0.004	0.001	0.0001	0.00
19	1	18-19	2040	1	0.0013	0.0599	0.0675	0.004	0.001	0.0001	0.00
20	1	19-20	2041	1	0.0013	0.0599	0.0675	0.004	0.001	0.0001	0.00
21	1	20-21	2042	1	0.0013	0.0599	0.0675	0.004	0.001	0.0001	0.00
22	1	21-22	2043	1	0.0013	0.0599	0.0675	0.004	0.001	0.0001	0.00
23	1	22-23	2044	1	0.0013	0.0599	0.0675	0.004	0.001	0.0001	0.00
24	1	23-24	2045	1	0.0013	0.0599	0.0675	0.004	0.001	0.0001	0.00
25	1	24-25	2046	1	0.0013	0.0599	0.0675	0.004	0.001	0.0001	0.00
26	1	25-26	2047	1	0.0013	0.0599	0.0675	0.004	0.001	0.0001	0.00
27	1	26-27	2048	1	0.0013	0.0599	0.0675	0.004	0.001	0.0001	0.00
28	1	27-28	2049	1	0.0013	0.0599	0.0675	0.004	0.001	0.0001	0.00
29	1	28-29	2050	1	0.0013	0.0599	0.0675	0.004	0.001	0.0001	0.00
30	1	29-30	2051	1	0.0013	0.0599	0.0675	0.004	0.001	0.0001	0.00
Total Increased Cancer Risk								0.93	0.255	0.017	1.20

* Third trimester of pregnancy

Maximum
 Hazard Index 0.0003
 Fugitive PM2.5 0.06
 Total PM2.5 0.07



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 conducting risk & hazard screening, including roadways & freeways, refer to the District's Risk & Hazard Analysis flow chart.](#)

[Click here for District's Recommended Methods for Screening and Modeling Local Risks and Hazards document.](#)

Table A: Requester Contact Information

Date of Request	9/3/2021
Contact Name	Casey Divine
Affiliation	Illingworth & Rodkin, Inc.
Phone	707-794-0400 x103
Email	cdivine@illingworthrodkin.com
Project Name	SuZaCo Mixed-Use
Address	17 S 4th Street
City	San Jose
County	Santa Clara
Type (residential, commercial, mixed use, industrial, etc.)	Office
Project Size (# of units or building square feet)	65,000sf
Comments:	

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

1. Complete all the contact and project information requested in **Table A**. Incomplete forms will not be processed. Please include a project site map.
2. Download and install the free program Google Earth, <http://www.google.com/earth/download/ge/>, and then download the county specific Google Earth stationary source application files from the District's website, <http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Tools-and-Methodology.aspx>. The small points on the map represent stationary sources permitted by the District (Map A on right). These permitted sources include diesel back-up generators, gas stations, dry cleaners, boilers, printers, auto spray booths, etc. Click on a point to view the source's Information Table, including the name, location, and preliminary estimated cancer risk, hazard index, and PM2.5 concentration.
3. Find the project site in Google Earth by inputting the site's address in the Google Earth search box.
4. Identify stationary sources within at least a 1000ft radius of project site. Verify that the location of the source on the map matches with the source's address in the Information Table, by using the Google Earth address search box to confirm the source's address location. Please report any mapping errors to the District.
5. List the stationary source information in **Table B** - five 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 Matthew Hanson at 415-749-8733, or mhanson@baaqmd.gov

Table B: Google Earth data											Construction MEIs			
Distance from Receptor (feet) or MEI ¹	Plant No.	Facility Name	Address	Cancer Risk ²	Hazard Risk ²	PM _{2.5} ²	Source No. ³	Type of Source ⁴	Fuel Code ⁵	Status/Comments	Distance Adjustment Multiplier	Adjusted Cancer Risk Estimate	Adjusted Hazard Risk	Adjusted PM2.5
700	15267	San Jose New City Hall	200 E Santa Clara St	5.73	0.02	0.19		Generator, Boiler (2)		2018 Dataset	0.07	0.40	0.001	0.01
450	23479	SV Towers Investments LLC, C/O Harvest Properties	75 E Santa Clara St	2.73	--	--		Generators		2018 Dataset	0.14	0.38	#VALUE!	#VALUE!
150	104124	Chevron #4259	147 E Santa Clara St	13.39	0.06	--		Gas Dispensing Facility		2018 Dataset	0.31	4.09	0.02	#VALUE!

Footnotes:

1. Maximally exposed individual

2. These Cancer Risk, Hazard Index, and PM2.5 columns represent the values in the Google Earth Plant Information Table.

3. Each plant may have multiple permits and sources.

4. Permitted sources include diesel back-up generators, gas stations, dry cleaners, boilers, printers, auto spray booths, etc.

5. Fuel codes: 98 = diesel, 189 = Natural Gas.

6. If a Health Risk Screening Assessment (HRSA) was completed for the source, the application number will be listed here.

7. The date that the HRSA was completed.

8. Engineer who completed the HRSA. For District purposes only.

9. All HRSA completed before 1/5/2010 need to be multiplied by an age sensitivity factor of 1.7.

10. The HRSA "Chronic Health" number represents the Hazard Index.

11. Further information about common sources:

a. Sources that only include diesel internal combustion engines can be adjusted using the BAAQMD's Diesel Multiplier worksheet.

b. The risk from natural gas boilers used for space heating when <25 MM BTU/hr would have an estimated cancer risk of one in a million or less, and a chronic hazard index of 0.003 or

c. BAAQMD Reg 11 Rule 16 required that all co-residential (sharing a wall, floor, ceiling or is in the same building as a residential unit) dry cleaners cease use of perc on July 1, 2010. Therefore, there is no cancer risk, hazard or PM2.5 concentrations from co-residential dry cleaning businesses in the BAAQMD.

d. Non co-residential dry cleaners must phase out use of perc by Jan. 1, 2023. Therefore, the risk from these dry cleaners does not need to be factored in over a 70-year period, but instead should reflect

e. Gas stations can be adjusted using BAAQMD's Gas Station Distance Multitplier 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.

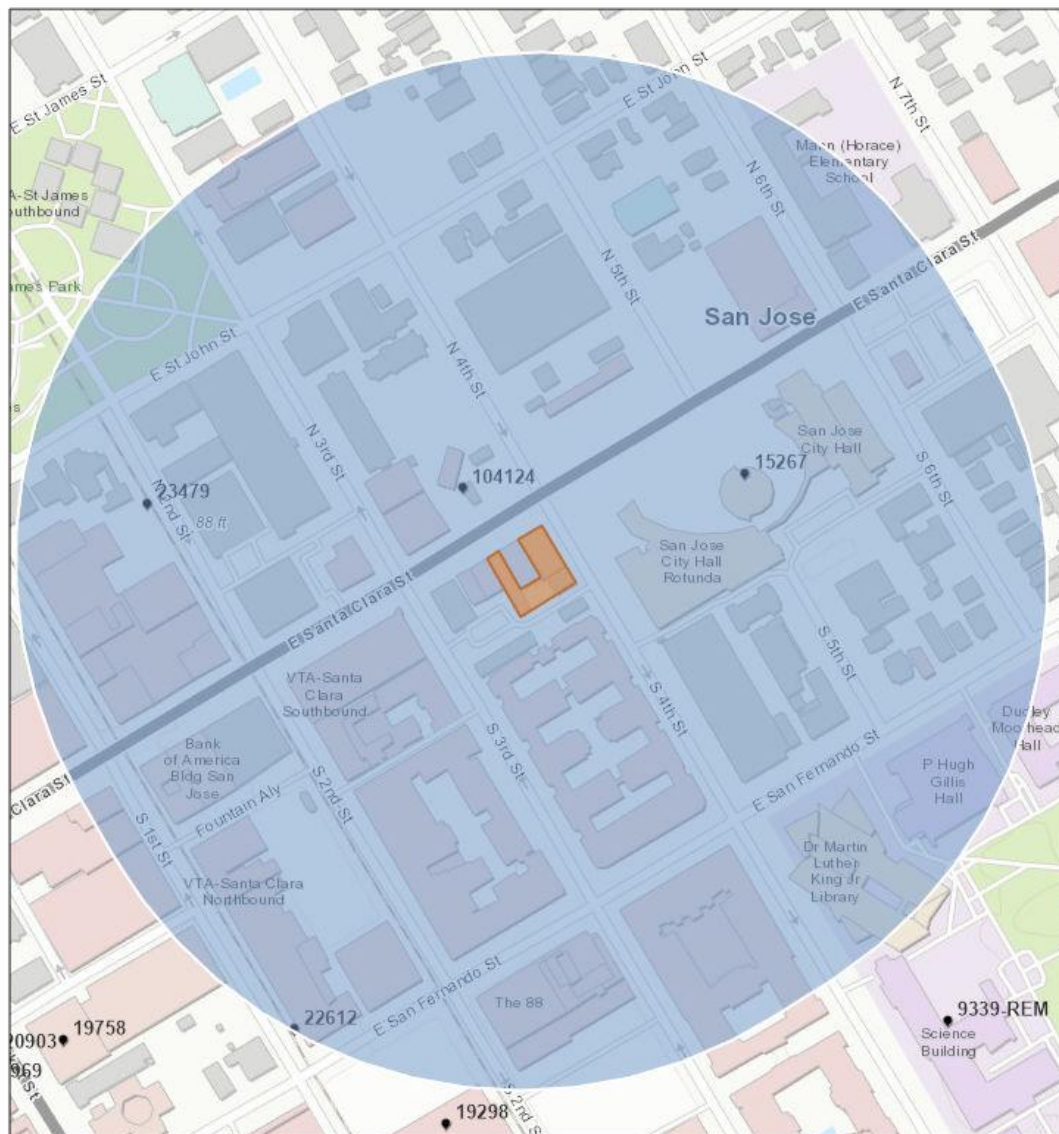


Stationary Source Risk & Hazards Screening Report

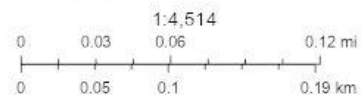
Area of Interest (AOI) Information

Area : 3,709,840.59 ft²

Sep 3 2021 14:21:03 Pacific Daylight Time



● Permitted Facilities 2018



City of San Jose, County of Santa Clara, Bureau of Land Management,
Esri, HERE, Garmin, INCREMENT P, USGS, EPA, USDA

Summary

Name	Count	Area(ft ²)	Length(ft)
Permitted Facilities 2018	3	N/A	N/A

Permitted Facilities 2018

#	FACID	Name	Address	City	St
1	15267	San Jose New City Hall	200 E Santa Clara St	San Jose	CA
2	23479	SV Towers Investments LLC, C/O Harvest Properties	75 E Santa Clara St	San Jose	CA
3	104124	Chevron #4259	147 E Santa Clara St	San Jose	CA

#	Zip	County	Cancer	Hazard	PM_25	Type	Count
1	95113	Santa Clara	5.730	0.020	0.190	Contact BAAQMD	1
2	95113	Santa Clara	2.730	0.000	0.000	Generators	1
3	95113	Santa Clara	13.390	0.060	0.000	Gas Dispensing Facility	1

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

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

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M E M O

Date: May 4, 2022

To: Fiona Phung
Project Manager
David J. Powers & Associates, Inc.
1871 The Alameda, Suite 200
San José, CA 95126

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

Via E-mail: fphung@davidipowers.com

SUBJECT: SuZaCo Mixed-Use Development, San José, CA – Job# 21-073
Response to City's Comments on Air Quality Assessment

The purpose of this memo is to address an air quality comment raised by City of San José staff for the SuZaCo Mixed-Use Development project. Illingworth & Rodkin, Inc. (I&R) completed an evaluation of the air quality impacts for the project in March 2022.¹ This assessment evaluated the air quality impacts in terms of emissions from construction and operation of the project and addressed health risks associated with the project.

The City's comment was concerning:

1. The parking for the proposed project would be using an existing parking garage located at 88 South Fourth Street. How would this affect the air quality analysis since it is currently not accounted for in the original analysis?

I&R's response to this comment is as follows:

1. The project would be utilizing an existing parking garage and not constructing any new parking for the project, so there would be no new construction emissions associated with the project's parking. The air quality assessment accounted for the traffic emissions produced by the 620 project trips in the operational modeling. This analysis is not

¹ Illingworth & Rodkin, Inc., *SuZaCo Mixed-Use Development Air Quality Assessment*, March 30, 2022.

dependent on the location of the parking facilities. The project's traffic impacts were found to be below operational emissions thresholds and negligible pertaining to health risk impacts. The project traffic emissions indirectly account for the off-site parking.

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M E M O

Date: September 23, 2021

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

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

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

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

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

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

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

Alternatively, I&R reached out to BAAQMD¹ to get direction on how to address the cumulative impact threshold when a project’s maximally exposure individual (MEI) is at receptors that has existing exposure levels already exceeding cumulative thresholds. This would mean that no matter what mitigation was applied to the project, the resulting cumulative level would be above the threshold. I&R’s approach has been (1) apply mitigation to the project to minimize project impacts to below the single-source threshold and (2) explain that the cumulative sources alone exceed the cumulative threshold, and the project, using best available mitigation measures, would only contribute a small percentage to the total cumulative risk impact, and therefore the project’s impact is not cumulatively considerable. BAAQMD response concurred with this approach and that the impact would not be considered significant after mitigation is applied.

It should be noted that BAAQMD is considering new cancer risk thresholds for overburdened communities.² The District recently held a workshop to encourage public comment. These would include a lower cancer risk threshold of 6 chances per million at an MEI. Overburdened communities are proposed to be defined as an area located (1) within a census tract identified by the California Communities Environmental Health Screening Tool (CalEnviroScreen), Version 4.0 implemented by OEHHA, as having an overall CalEnviroScreen score at or above the 70th percentile, or (2) within 1,000 feet of any such census tract. The City, as a lead agency, could consider areas with cumulative cancer risk greater than 100 per million or annual PM_{2.5} concentrations greater than 0.8 micrograms per cubic meter to also be overburdened. The District’s proposal is only that and is currently going through the public workshop process. The risk of 6 chances per million as at this stage and idea and not adopted. We are aware of one other community that has a similar approach, which is San Francisco. In overburdened areas of that City (considered Air Pollution Exposure Zones), they use a cancer risk threshold of 7 chances per million.

¹ Correspondence with Areana Flores, MSc, Environmental Planner, BAAQMD, February 23, 2021.

² See BAAQMD Proposed Regulation 2: Permits - 2021 Amendments to Rules 2-1 and 2-5 (Under Development) https://www.baaqmd.gov/rules-and-compliance/rules/reg-2-permits?rule_version=2021%20Amendments