Appendix A

Air Quality Assessment

644 AND 675 PIERCY ROAD INDUSTRIAL DEVELOPMENT PROJECT AIR QUALITY ASSESSMENT

San José, California

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Introduction

The purpose of this report is to address the potential health risk impacts associated with the construction and operation of the proposed industrial warehouse project located at 644 and 675 Piercy Road in San José, California. The air quality impacts from this project would be associated with construction of the new buildings and operation of the project. Air pollutant emissions associated with construction and operation of the project were predicted using appropriate computer models. In addition, the potential project health risk impacts (including construction and operation) and the impact 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 site is located on two vacant lots that are a combined 15.92-acres located at 644 and 675 Piercy Road. The project proposes to construct one industrial warehouse building totaling approximately 225,000 square feet (sf). The project site would be accessed via four new driveways. Two driveways would be located on the southwest side, via Hellyer Avenue, one would be located on the northeast side via Piercy Road, and one would be located on the southeast side via Tennant Avenue. The project would include surface parking lots throughout the totaling 152 parking spaces. The exact usage of the proposed buildings is currently unknown but would likely be used for industrial distribution, manufacturing, and/or research & development.

Setting

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

Air Pollutants of Concern

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

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

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

aggravate respiratory and cardiovascular diseases, reduce lung function, increase mortality (e.g., lung cancer), and result in reduced lung function growth in children.

Toxic Air Contaminants

TACs are a broad class of compounds known to cause morbidity or mortality (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 health risk modeling methodology used in this assessment.

Sensitive Receptors

There are groups of people more affected by air pollution than others. CARB has identified the following persons who are most likely to be affected by air pollution: children under 16, the elderly over 65, athletes, and people with cardiovascular and chronic respiratory diseases. These groups are classified as sensitive receptors. Locations that may contain a high concentration of these sensitive population groups include residential areas, hospitals, daycare facilities, elder care facilities, and elementary schools. For cancer risk assessments, children are the most sensitive receptors, since they are more susceptible to cancer causing TACs. Residential locations are assumed to include infants and small children. The closest sensitive receptors to the project site are the single-family residences southeast and north of the site. This project would not introduce new sensitive receptors (i.e., residents) to the area.

Regulatory Setting

Federal Regulations

National Ambient Air Quality Standards (NAAQS) for criteria air pollutants are established by the United States Environmental Protection Agency (EPA). Where the standards are not met, States

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

are required to develop a State Implementation Plan (SIP) to demonstrate a plan to meet the standard or show progress toward meeting the standard. EPA also establishes 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 sets nationwide fuel standards, however California also has the ability to set motor vehicle emission standards and standards for fuel, as long as they are the same or more stringent than the nationwide standards.

In the past decade the EPA has established a number of emission standards for on- and non-road heavy-duty diesel engines used in trucks and other equipment. This was done in part because diesel engines are a significant source of NO_X and particulate matter (PM_{10} and $PM_{2.5}$) and because the EPA has identified DPM as a probable carcinogen. Implementation of the heavy-duty diesel on-road vehicle standards and the non-road diesel engine standards are estimated to reduce particulate matter and NO_X emissions from diesel engines up to 95 percent in 2030 when the heavy-duty vehicle fleet is completely replaced with newer heavy-duty vehicles that comply with these emission standards.[3]

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

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

State Air Quality Regulations

The CARB is the agency responsible for the coordination and oversight of state and local air pollution control programs in California and for implementing the California Clean Air Act (CCAA), adopted in 1988. The CCAA requires that all air districts in the state achieve and maintain the California Ambient Air Quality Standards (CAAQS) by the earliest practical date. The CCAA specifies that districts should focus on reducing the emissions from transportation and air-wide emission sources and provides districts with the authority to regulate indirect sources.

CARB is also responsible for developing and implementing air pollution control plans to achieve and maintain the NAAQS. CARB is primarily responsible for statewide pollution sources and produces a major part of the SIP. Local air districts provide additional strategies for sources under their jurisdiction. CARB combines this data and submits the completed SIP to the EPA.

[3] USEPA, 2000. *Regulatory Announcement, Heavy-Duty Engine and Vehicle Standards and Highway Diesel Fuel Sulfur Control Requirements*. EPA420-F-00-057. December.

Other CARB duties include monitoring air quality (in conjunction with air monitoring networks maintained by air pollution control and air quality management districts), establishing CAAQS (which in many cases are more stringent than the NAAQS), determining and updating area designations and maps, and setting emissions standards for new mobile sources, consumer products, small utility engines, and off-road vehicles.

California Clean Air Act

In 1988, the CCAA required that all air districts in the state endeavor to achieve and maintain CAAQS for CO, O_3, SO_2, and NO_2 by the earliest practical date. The CCAA provides districts with authority to regulate indirect sources and mandates that air quality districts focus particular attention on reducing emissions from transportation and area-wide emission sources. Each nonattainment district is required to adopt a plan to achieve a 5 percent annual reduction, averaged over consecutive 3-year periods, in district-wide emissions of each nonattainment pollutant or its precursors. A Clean Air Plan shows how a district would reduce emissions to achieve air quality standards. Generally, the state standards for these pollutants are more stringent than the national standards.

California Air Resources Board Handbook

In 1998, CARB identified particulate matter from diesel-fueled engines as a toxic air contaminant. CARB has completed a risk management process that identified potential cancer risks for a range of activities using diesel-fueled engines.[4] CARB subsequently developed an Air Quality and Land Use Handbook[5] (Handbook) in 2005 that is intended to serve as a general reference guide for evaluating and reducing air pollution impacts associated with new projects that go through the land use decision-making process. The 2005 CARB Handbook recommends that planning agencies consider proximity to air pollution sources when considering new locations for "sensitive" land uses, such as residences, medical facilities, daycare centers, schools, and playgrounds.

Air pollution sources of concern include freeways, rail yards, ports, refineries, distribution centers, chrome plating facilities, dry cleaners, and large gasoline service stations. Key recommendations in the Handbook relative to the Plan Area include taking steps to consider or avoid siting new, sensitive land uses:

- Within 500 feet of a freeway, urban roads with 100,000 vehicles/day or rural roads with 50,000 vehicles/day.
- Within 300 feet of gasoline fueling stations (note that new fueling stations utilize enhanced vapor recovery systems that substantially reduce emissions).
- Within 300 feet of dry-cleaning operations (note that dry cleaning with TACs is being phased out and will be prohibited in 2023).

[4] California Air Resources Board, 2000. *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*. October.
[5] California Air Resources Board, 2005. *Air Quality and Land Use Handbook: A Community Health Perspective.* April.

Truck and Bus Regulation

CARB is actively enforcing heavy-duty diesel vehicle regulations that require fleets to replace or retrofit heavy-duty diesel vehicles, with full implementation of the program scheduled for January 1, 2023. Compliance with the program is generally considered vehicles equipped with a 2010 or newer engine model year. As of January 1, 2020, the DMV cannot register any vehicle that does not meet the requirements of the Truck and Bus Regulation.

Other CARB diesel programs affecting heavy-duty diesel vehicles include:

- Idling limits of no more than 5 minutes with special exceptions.
- Emission Control Labels must be affixed to engines of all commercial heavy-duty diesel vehicles, and must be legible as proof the engine, at minimum, meets U.S. federal emissions standards for the engine model year.
- The Periodic Smoke Inspection Program requires owners of California-based fleets of two or more diesel vehicles to perform annual smoke opacity tests and to keep records for at least two years for each vehicle.
- The Heavy-Duty Vehicle Inspection Program uses random roadside inspections to verify that diesel engines do not smoke excessively and are tamper-free.

Off-Road Vehicle and Equipment Regulations

CARB has also adopted and implemented regulations to reduce DPM and nitrogen oxides (NOx) 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 NOx 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, is expected to substantially reduce emissions of DPM and NOx.

Fleet owners must report the vehicle and engine information for all vehicles within their fleets operating in California. Fleet owners must also report owner information. Fleet owners should report using DOORS, which is CARB’s online reporting tool. CARB issues a unique Equipment Identification Number (EIN) that is assigned to each vehicle. The fleet owner must label their vehicles with the EIN.

Other CARB diesel programs affecting off-road vehicles and equipment include:

- Idling limits of no more than 5 minutes with special exceptions.
- Portable engines 50 hp or greater may require a permit or registration to legally operate. BAAQMD is responsible for taking enforcement action against individuals who own or operate portable equipment without a registration or permit.

Bay Area Air Quality Management District (BAAQMD)

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

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

BAAQMD's Community Air Risk Evaluation (CARE) program was initiated in 2004 to evaluate and reduce health risks associated with exposures to outdoor TACs in the Bay Area.[6] The program examines TAC emissions from point sources, area sources, and on-road and off-road mobile sources with an emphasis on diesel exhaust, which is a major contributor to airborne health risk in California. The CARE program is an on-going program that encourages community involvement and input. The technical analysis portion of the CARE program is being implemented in three phases that includes an assessment of the sources of TAC emissions, modeling and measurement programs to estimate concentrations of TAC, and an assessment of exposures and health risks. Throughout the program, information derived from the technical analyses will be used to focus emission reduction measures in areas with high TAC exposures and high density of sensitive populations. Risk reduction activities associated with the CARE program are focused on the most at-risk communities in the Bay Area. The BAAQMD defines overburdened communities are areas located (i) within a census tract identified by the California Communities Environmental Health Screening Tool (CalEnviroScreen), Version 4.0 implemented by OEHHA, as having an overall CalEnviroScreen score at or above the 70th percentile, or (ii) within 1,000 feet of any such census tract.[7] The CalEnviroScreen 4.0 overall percentile score is 17.0. The project site and its environs are not within a CARE area and are not within a BAAQMD overburdened area as identified by CalEnviroScreen. [8]

The BAAQMD California Environmental Quality Act (*CEQA) Air Quality Guidelines*[9] 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

[6] See BAAQMD: https://www.baaqmd.gov/community-health/community-health-protection-program/community-air-risk-evaluation-care-program , accessed 2/18/2021.
[7] See BAAQMD: https://www.baaqmd.gov/~/media/dotgov/files/rules/reg-2-permits/2021-amendments/documents/20210722_01_appendixd_mapsofoverburdenedcommunities-pdf.pdf?la=en , accessed 10/1/2021.
[8] OEHAA, CalEnviroScreen 4.0 Indicator Maps https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-40
[9] Bay Area Air Quality Management District, 2017. *CEQA Air Quality Guidelines*. May.

assessment methodologies for air toxics, odors, and greenhouse gas emissions. *Attachment 1* includes detailed health risk modeling methodology.

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

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

Actions – Toxic Air Contaminants

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

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

Applicable Goals – Construction Air Emissions

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

Applicable Policies – Construction Air Emissions

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

Applicable Actions – Construction Air Emissions

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

Significance Thresholds

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

Table 1. BAAQMD CEQA Significance Thresholds

Criteria Air Pollutant	Construction Thresholds	
	Average Daily Emissions (lbs./day)	
ROG	54	
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	
Health Risks and Hazards	**Single Sources Within 1,000-foot Zone of Influence**	**Combined Sources (Cumulative from all sources within 1000-foot zone of influence)**
Excess Cancer Risk	10 per one million	100 per one million
Hazard Index	1.0	10.0
Incremental annual $PM_{2.5}$	0.3 µg/m^3	0.8 µg/m^3
Note: ROG = reactive organic gases, NOx = nitrogen oxides, PM_{10} = course particulate matter or particulates with an aerodynamic diameter of 10 micrometers (µm) or less, $PM_{2.5}$ = fine particulate matter or particulates with an aerodynamic diameter of 2.5µm or less.		

Source: Bay Area Air Quality Management District, 2017

Health Risk Impacts and Mitigation Measures

Project impacts related to increased health risk can occur either by generating emissions of TACs and air pollutants or by introducing a new sensitive receptor in proximity to an existing source of TACs. This project would be a source of new emissions. Temporary project construction activity would generate emissions of DPM from equipment and trucks and also generate dust on a temporary basis that could affect nearby sensitive receptors. The project would also include new truck trips, which would produce TAC and air pollutant emissions. A health risk assessment was prepared to address project construction and operational impacts on the surrounding off-site sensitive receptors.

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. The project would not introduce new residents that are sensitive receptors who would be exposed to existing sources of TACs and localized air pollutants in the vicinity of the project.

Health risk impacts are addressed by predicting increased lifetime cancer risk, the increase in annual $PM_{2.5}$ concentrations, and computing the Hazard Index (HI) for non-cancer health risks. Construction equipment and associated heavy-duty truck traffic generates diesel exhaust, which is a known TAC. These exhaust emissions pose health risks for sensitive receptors such as surrounding residents. The primary health risk impact issues associated with construction and operational emissions are cancer risk and exposure to $PM_{2.5}$. A health risk assessment of the project construction and operational activities was conducted that evaluated potential health effects to nearby sensitive receptors from construction and operational emissions of DPM and $PM_{2.5}$.[10] Diesel exhaust (i.e., DPM) poses both a potential health and nuisance impact to nearby receptors. This assessment included dispersion modeling to predict the offsite and onsite concentrations resulting from project construction and operation, so that lifetime cancer risks and non-cancer health effects could be evaluated. The methodology for computing health risks impacts is contained in *Attachment 1.*

Construction Period Emissions

The California Emissions Estimator Model (CalEEMod) Online Version 2022.1.1 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 CalEEMod model output along with construction inputs are included in *Attachment 2*.

CalEEMod Modeling

Land Use Inputs

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

Table 2. Summary of Project Land Use Inputs

Project Land Uses	Size	Units	Square Feet	Acreage
Unrefrigerated Warehouse – No Rail	225	1,000-sf	225,000	15.92
Parking Lot	152	Parking Spaces	-	

Construction Inputs

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

The CalEEMod construction equipment worksheet provided by the applicant included the schedule for each phase of construction (included in *Attachment 2*). Within each of the CalEEMod construction phases, the quantity of equipment to be used along with the average hours per day and total number of workdays was provided by the applicant. Since different equipment would have different estimates of the use per phase, the hours per day for each piece of equipment 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 October 2023 and would be built out over a period of approximately 10 months, or 264 construction workdays. The earliest year of full operation was assumed to be 2025. Emission

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

rates for construction equipment and traffic are lower in future years as newer equipment with lower emissions rates is introduced into the overall fleet replacing older equipment with high emission rates.

Construction Truck Traffic Emissions

Construction would produce traffic in the form of worker trips and truck traffic. The traffic-related emissions are based on worker and vendor trip estimates produced by CalEEMod and haul trips that were computed based on the estimate of soil material imported and/or exported to the site and the estimate of concrete and asphalt truck trips. CalEEMod provides daily estimates of worker and vendor trips for each applicable phase. The total trips for worker and vendor trips were computed by multiplying the daily trip rate by the number of days in that phase. Daily haul trips for grading were developed by CalEEMod using the provided soil grading volumes (42,000-cy import and 111,000-cy export), assuming each truck could carry 10 tons per load. The number of concrete and asphalt total round haul trips were estimated for the project and converted to daily one-way trips, assuming two trips per delivery.

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 construction workdays that year. Table 3 shows the annualized average daily construction emissions of ROG, NO_X, PM_{10} exhaust, and $PM_{2.5}$ exhaust during construction of the project. As indicated in Table 3, predicted annualized project construction emissions would not exceed the BAAQMD significance thresholds during any year of construction.

Table 3. Construction Period Emissions

Year	ROG	NOx	PM_{10} Exhaust	$PM_{2.5}$ Exhaust
Construction Emissions Per Year (Tons)				
2023-2024	1.36	1.71	0.07	0.07
Average Daily Construction Emissions Per Year (pounds/day)				
2023-2024 (264 construction workdays)	10.30	12.95	0.53	0.53
BAAQMD Thresholds (pounds per day)	***54* lbs./day**	***54* lbs./day**	***82* lbs./day**	***54* lbs./day**
Exceed Threshold?	No	No	No	No

Construction activities, particularly during site preparation and grading, would temporarily generate fugitive dust in the form of PM_{10} and $PM_{2.5}$. Sources of fugitive dust would include disturbed soils at the construction site and trucks carrying uncovered loads of soils. Unless properly controlled, vehicles leaving the site would deposit mud on local streets, which could be an additional source of airborne dust after it dries. The BAAQMD CEQA Air Quality Guidelines consider these impacts to be less-than-significant if best management practices are implemented to reduce these emissions. San Jose General Policy MS-10.1 specifies that projects should assess projected air emissions from new developments in conformance with the BAAQMD CEQA Guidelines and relative to state and federal standards and identify and implement feasible air emission reduction measures requires construction projects to implement these measures. *Mitigation Measure AQ-1 would implement BAAQMD's standard best management practices*.

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

Measures to reduce fugitive dust (i.e., $PM_{2.5}$) emissions from construction are recommended to reduce fugitive dust emissions 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 basic 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 best management practices:

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

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

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

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

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

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

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

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

Effectiveness of Mitigation Measure AQ-1

Mitigation Measure AQ-1 represents standard mitigation measures that would reduce 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.

Health Risk from Project Construction

Construction Emissions

The CalEEMod model provided total annual PM_{10} exhaust emissions (assumed to be DPM) for the off-road construction equipment and for exhaust emissions from on-road vehicles. 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 a half-mile was used to represent vehicle travel while at or near the construction site. Total uncontrolled DPM emissions from on-site construction activities were estimated to be 0.07 tons (140 pounds). Uncontrolled fugitive dust ($PM_{2.5}$) emissions were estimated to be as less than 0.115 tons (230 pounds) for the project.

Dispersion Modeling

The U.S. EPA AERMOD dispersion model was used to predict DPM and $PM_{2.5}$ concentrations at sensitive receptors (i.e., residences) in the vicinity of the project construction area. The AERMOD dispersion model is an EPA approved dispersion model and a BAAQMD-recommended model for use in modeling analysis of these types of emission activities for CEQA projects.[11,12] Emission sources for the construction site were grouped into two categories: exhaust emissions of DPM and fugitive $PM_{2.5}$ dust emissions.

Construction Sources

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

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

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

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

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

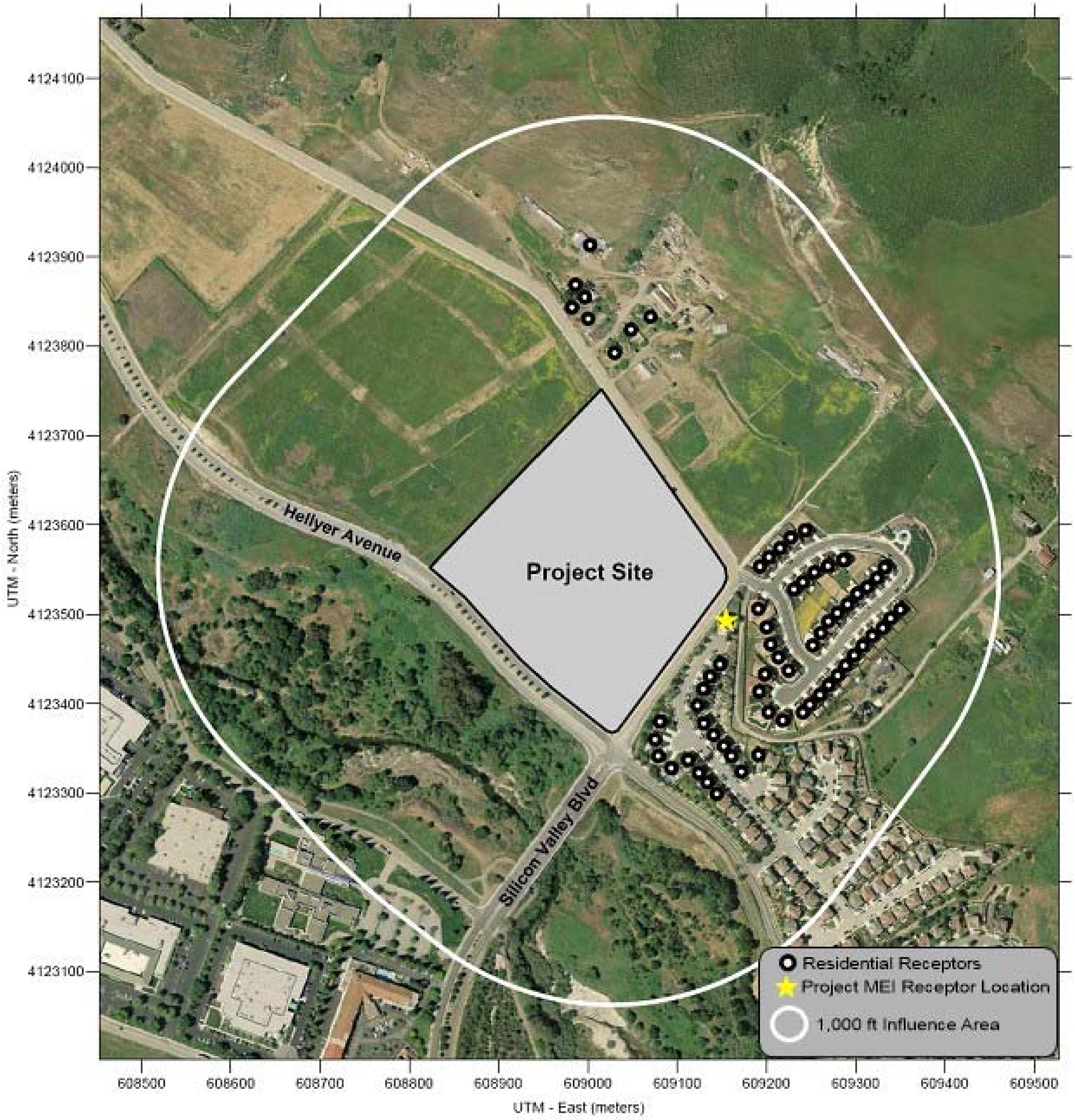
soil and other materials, etc. All of these activities result in fugitive dust emissions at various heights at the point(s) of generation. Once generated, the dust plume will tend to rise as it moves downwind across the site and exit the site at a higher elevation than when it was generated. For all these reasons, a 7-foot release height was used as the average release height across the construction site. Emissions from the construction equipment and on-road vehicle travel were distributed throughout the modeled area sources. Figure 1 shows the project construction site and receptors.

AERMOD Inputs and Meteorological Data

The modeling used a five-year data set (2013 - 2017) of hourly meteorological data from the San José Airport prepared for use with the AERMOD model by BAAQMD. Construction emissions were modeled as occurring Monday through Friday between 8:00 a.m. to 5:00 p.m., per the project applicant's construction schedule. The modeling accounted for the local terrain. Construction source and receptor elevations were based on USGS National Elevation Data (NED) with a 10-meter resolution. Annual DPM and $PM_{2.5}$ concentrations from construction activities during the 2023-2024 period were calculated using the model. DPM and $PM_{2.5}$ concentrations were calculated at nearby sensitive receptors. Receptor heights of 5 feet (1.5 meters) were used to represent the breathing height on the first floor of nearby single-family residences.[14]

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

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



Health Risk from Project Operation

Operation of the project would have long-term emissions from mobile sources (i.e., truck trips) and stationary sources (i.e., fire pump). While these emissions would not be as intensive at or near the site as construction activity, they would contribute to long-term effects to sensitive receptors. The project proposes to use a 150-horsepower fire pump and that fire pump would be electric. Since the operational equipment would not be diesel powered and therefore not emit substantial TACs, a health risk analysis of the project's stationary equipment was not conducted.

Operational Truck Traffic Emissions

Th project's traffic consultant estimates that there would be 135 daily truck trips generated from operating the proposed project. These truck trips are assumed to be heavy-duty diesel-powered trucks and a source of long-term DPM emissions. These trucks would travel to and from the site and are anticipated to idle at loading dock for 5 minutes for each trip.

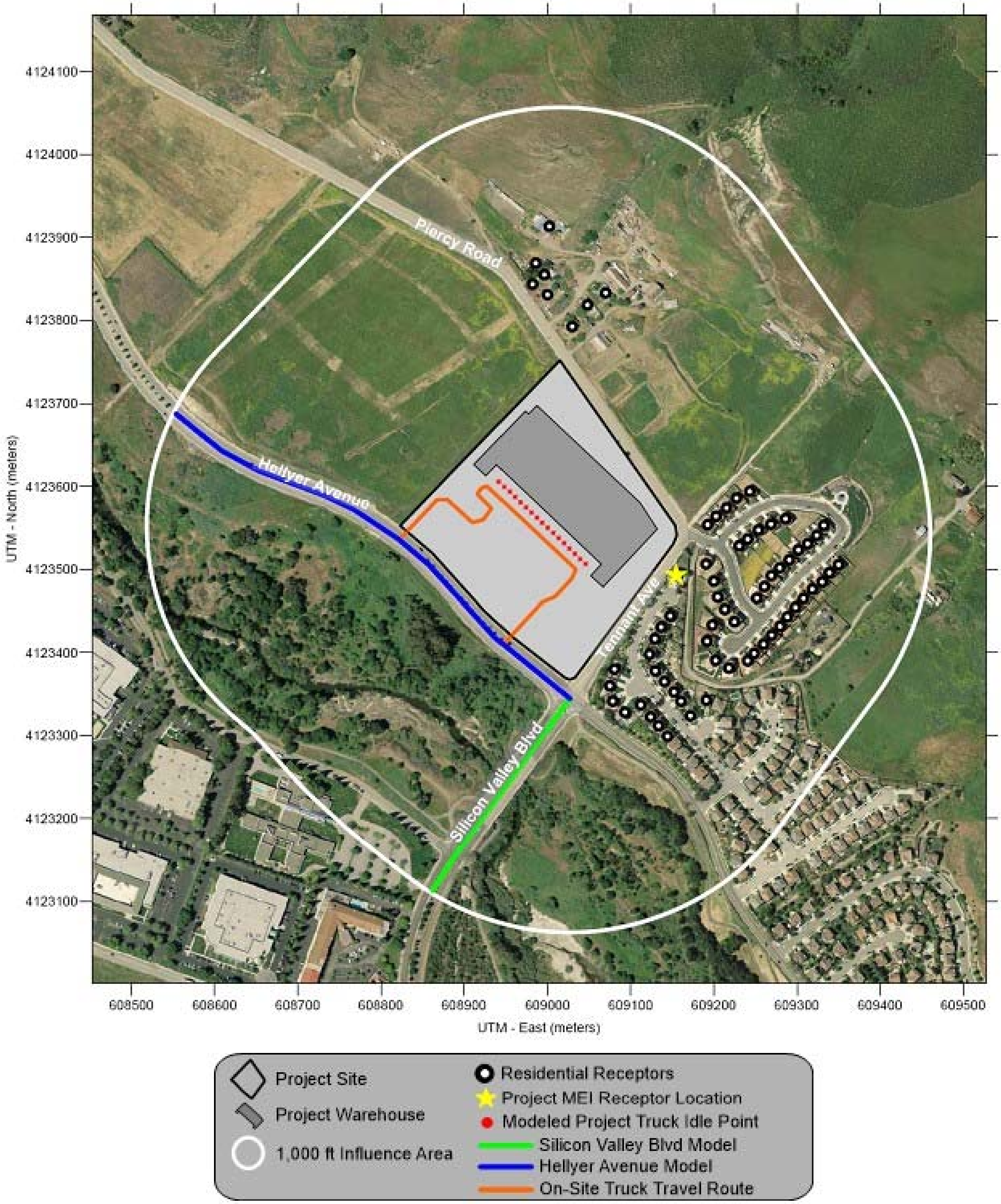
DPM and $PM_{2.5}$ emissions were calculated assuming they would operate year-round, 24 hours per day. Emissions of DPM (assumed to be PM_{10} exhaust) from these activities were computed using the CARB EMFAC2021 model assuming trucks would travel along on Hellyer Avenue at an average speed of 40 mph and Silicon Valley Boulevard at 35 mph, 5 mph below the posted speed limits to account for roadway congestion. While on-site, the trucks were assumed to travel at a speed of 5 miles per hour and each truck would idle at the warehouse site for 5 minutes per trip. Idling emissions were computed based on EMFAC2021 emission rates for 5-mph travel and converted to hourly emissions. Fugitive $PM_{2.5}$ emissions from truck travel would occur due to tire and brake wear and from road dust generated by the trucks. The fugitive $PM_{2.5}$ emissions were computed using the Caltrans CT-EMFAC2017 model.

Dispersion Modeling

To estimate potential increased cancer risks and $PM_{2.5}$ impacts from project truck traffic, the AERMOD dispersion model was used to calculate the maximum annual DPM concentration at nearby sensitive receptors (i.e., residences). The same receptors, breathing heights, and BAAQMD San José International Airport meteorological data used in the construction dispersion modeling were used for the truck traffic modeling. The project truck travel and idle emissions were modeled year-round, 24 hours per day. Operation with truck traffic was assumed to begin in 2025. Line-volume sources were used for the on- and off-site truck travel and 17 point sources were used for modeling the idle emissions while at the loading docks. Building downwash was used in modeling the idle emissions. Truck idling emission source information was based on San Joaquin Valley Air Pollution Control District (SJVAPCD) information for these types of sources.[15] Figure 2 shows the project site, truck travel routes modeled, and truck idle locations.

[15] SJVAPCD, Guidance for Air Dispersion Modeling, Draft 01/07 Rev 2.0.

Figure 2. Locations of Project Site, Off-Site Sensitive Receptors, Road Segments Evaluated, and Maximum TAC Impact (Project MEI)



Health Risks of all Project TAC Sources at Project MEI

The maximum increased cancer risks were calculated using the modeled TAC concentrations combined with the OEHHA guidance for age sensitivity factors and exposure parameters as recommended by BAAQMD (see *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.

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

The maximum modeled annual TAC and $PM_{2.5}$ concentrations were identified at nearby sensitive receptors (as shown in Figures 1 and 2) to find the maximally exposed individuals (MEI). The total project health risk impacts are from the combination of construction and operation sources. These sources include on-site construction activity and truck traffic generated during operation of the project. The maximum project cancer risk impact is computed by adding the construction cancer risk for an infant/child (1 year exposure duration) to the increased cancer risk for the project operational conditions from the truck traffic (29 years exposure duration) at the MEI. Residential sensitive receptors were assumed to be present near the site for up to 30 years. 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 cumulative but based on an annual maximum risk for the entirety of the project.

The project MEI was located at a single-family residence southeast of the project site across Tennant Avenue (See Figures 1 and 2). Table 4 summarizes the maximum cancer risks, $PM_{2.5}$ concentrations, and HI for project related construction and operational activities affecting the MEI. *Attachment 3* to this report includes the emission calculations used for the construction and truck traffic modeling and the cancer risk calculations.

The unmitigated maximum cancer risks from construction activities at the project MEI location would exceed the single-source significance threshold. However, with the incorporation of the *Mitigation Measure AQ-1 and AQ-2*, the mitigated risk would no longer exceed the significance threshold. The unmitigated annual $PM_{2.5}$ concentration and non-cancer hazards from construction and operation activities at the MEI would be below the single-source significance thresholds.

Table 4. Maximum Construction and Operation Risk Impacts at Off-Site Receptor

Source		Cancer Risk (per million)	Annual $PM_{2.5}$ ($\mu g/m^3$)	Hazard Index
Project Construction - Residential Exposure (Years 0-1)				
	Unmitigated	**12.62 (infant)**	0.24	0.02
	Mitigated*	2.70 (infant)	0.08	<0.01
Project Trucks, (Years 2-30)		3.90	<0.01	<0.01
Total/Maximum Project Impacts	Unmitigated	**16.52**	0.24	0.02
	Mitigated	6.60	0.08	<0.01
	BAAQMD Single-Source Threshold	***10***	***0.3***	***1.0***
Exceed Threshold?	Unmitigated	***Yes***	*No*	*No*
	Mitigated*	*No*	*No*	*No*

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

Cumulative Health 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 using provided traffic data indicated that Hellyer Avenue and Silicon Valley Boulevard would have traffic exceeding 10,000 vehicles per day. Other nearby streets would have less than 10,000 vehicles per day. A review of BAAQMD's stationary source map website identified one stationary source within the influence area with the potential to affect the project MEI. In addition, there is one development project whose project impacts would contribute to the cumulative risk. The risk impacts from this nearby development are included within the analysis. Figure 3 shows the project area, TAC sources within the influence area, and the location of the MEI. Details of the modeling and health risk calculations are included in *Attachment 4.*

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

<u>Local Roadways – Hellyer Avenue and Silicon Valley Boulevard</u>

A refined analysis of potential health impacts from vehicle traffic on Hellyer Avenue and Silicon Valley Boulevard was conducted since the roadways were 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 roadways 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 health risk impacts, including cancer risk are computed.

Traffic Emissions Modeling

This analysis involved the development of DPM, organic TACs, and $PM_{2.5}$ emissions for traffic on Hellyer Avenue and Silicon Valley Boulevard using the Caltrans version of the CARB EMFAC2017 emissions model, known as CT-EMFAC2017. CT-EMFAC2017 provides emission factors for mobile source criteria pollutants and TACs, including DPM.[16] Emission processes

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

modeled include running exhaust for DPM, $PM_{2.5}$ and total organic compounds (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 from re-entrained roadway dust were included in these emissions. DPM emissions are projected to decrease in the future and are reflected in the CT-EMFAC2017 emissions data. Inputs to the model include region (Santa Clara County), type of road (major/collector), traffic mix assigned by CT-EMFAC2017 for the county, truck percentage for non-state highways in Santa Clara County (3.51 percent),[17] year of analysis (2025 operational year), and season (annual).

To estimate TAC and $PM_{2.5}$ emissions over the 30-year exposure period used for calculating the increased cancer risks for sensitive receptors at the MEI, the CT-EMFAC2017 model was used to develop vehicle emission factors for the year 2025 (operational 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 2025 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.

The ADT for Hellyer Avenue and Silicon Valley Boulevard was based on AM and PM peak-hour cumulative plus project traffic volumes for the nearby roadway provided by the project's traffic data.[18] The calculated ADT on Hellyer Avenue was 18,555 vehicles and on Silicon Valley Boulevard was 26,582 vehicles. Average hourly traffic distributions for Santa Clara County roadways were developed using the EMFAC model,[19] 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 an average speed of 40 mph on Hellyer Avenue and of 35 mph on Silicon Valley Boulevard was assumed for all vehicles, 5 mph below the posted speed limit on the roadways to account for commute congestion and the amount of access in the area.

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

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

[18] Hexagon Transportation Consultants, Inc., *644 & 675 Piercy Road Industrial Building Draft Transportation Analysis,* March 20,2023.

[19] The Burden output from EMFAC2007, a previous version of CARB's EMFAC model, was used for this since the current web-based version of EMFAC2021 does not include Burden type output with hour by hour traffic volume information.

Dispersion Modeling

Dispersion modeling of TAC and $PM_{2.5}$ emissions was conducted using the AERMOD dispersion model, which is recommended by the BAAQMD for this type of analysis.[20] TAC and $PM_{2.5}$ emissions from traffic on the roadways within about 1,000 feet of the project site were evaluated with the model. Emissions from vehicle traffic were modeled in AERMOD using a series of volume sources along a line (line volume sources), with line segments used to represent the travel lanes on the roadways. The same meteorological data and off-site sensitive receptors used in the previous project dispersion modeling were used in the roadway modeling. Other inputs to the model included road geometry and elevations, hourly traffic emissions, and receptor locations and heights. Annual TAC and $PM_{2.5}$ concentrations for 2025 from traffic on the roadways were calculated using the model. Concentrations were calculated at the project MEI with receptor height of 5 feet (1.5 meters) to represent the breathing heights on the first floor of the nearby single-family residence.

Figure 3 shows the roadway segments modeled and MEI receptor location used in the modeling. Table 5 lists the risks and hazards from the roadways. The emission rates and roadway calculations used in the analysis are shown in *Attachment 4*.

BAAQMD Permitted Stationary Sources

Permitted stationary sources of air pollution near the project site were identified using BAAQMD's *Permitted Stationary Sources 2021* GIS website,[21] which identifies the location of nearby stationary sources and their estimated risk and hazard impacts, based on emissions and adjustments to account for OEHHA's risk guidance. One source, a generator, was identified using this tool. The BAAQMD GIS website provided screening risks and hazards for these sources. Therefore, a stationary source information request was not required to be submitted to BAAQMD.

The screening level risks and hazards provided by BAAQMD for this source were adjusted for distance using BAAQMD's *Distance Adjustment Multiplier Tool for Diesel Internal Combustion Engines*. Health risk impacts from stationary sources upon the MEI are reported in Table 5.

Construction Risk Impacts from Nearby Developments

Based on the City's request, the following planned project is located within 1,000 feet of the proposed project:

- **550 Piercy Road** – this industrial warehouse project site is located at 550 Piercy Road and is adjacent to the northwest of the proposed project site. The project consists of two industrial warehouse buildings totaling 430,000-sf with 322 standard parking spaces, 12 accessible parking spaces, and 88 truck trailer parking spaces. Construction for the 550 Piercy Road project was proposed to occur between 2023-2024, which means there could

[20] BAAQMD. *Recommended Methods for Screening and Modeling Local Risks and Hazards*. May 2012
[21] BAAQMD, https://baaqmd.maps.arcgis.com/apps/webappviewer/index.html?id=845658c19eae4594b9f4b805fb9d89a3

be overlapping periods with the proposed project. While the construction schedules may change for both projects, construction could occur simultaneously.

The construction risks and hazard impact values for this development were available from the project's air quality technical report conducted by *Illingworth & Rodin, Inc*. For the purpose of this analysis, it was conservatively assumed the entire construction period from the proposed project would overlap with the nearby development's construction schedule. This approach likely provides an overestimate of the health risk and hazard levels because it assumes that maximum impacts from the nearby development occurs concurrently with the proposed project at the proposed project's MEI. The construction risks reported in that air quality assessment were included in the cumulative risks Table 5.

Summary of Cumulative Health Risk Impact at Construction MEI

Table 5 reports both the project and cumulative health risk impacts at the project MEI. The project would have an exceedance with respect to community risk caused by project construction and operation activities, since the maximum unmitigated cancer risk exceeds the BAAQMD single-source threshold. With the implementation of *Mitigation Measure AQ-1 and AQ-2*, the project's cancer risk would be lowered to a level below the single-source threshold. The annual $PM_{2.5}$ concentrations and HI risk values, which include unmitigated and mitigated, do not exceed the single-source thresholds. In addition, the combined unmitigated cancer risk, $PM_{2.5}$ concentration, and HI values would not exceed their respective cumulative thresholds.

Table 5. Cumulative Health Risk Impacts at the Location of the Project MEI

Source		Cancer Risk (per million)	Annual $PM_{2.5}$ ($\mu g/m^3$)	Hazard Index
Project Impacts				
Total/Maximum Project Impacts	Unmitigated	**16.52**	0.24	0.02
	Mitigated	6.60	0.08	<0.01
BAAQMD Single-Source Threshold		***10***	***0.3***	***1.0***
Exceed Threshold?	Unmitigated	***Yes***	*No*	*No*
	Mitigated	*No*	*No*	*No*
Cumulative Sources				
Hellyer Avenue, ADT 18,555		0.27	0.03	<0.01
Silicon Valley Blvd, ADT 26,582		0.13	0.01	<0.01
San Jose Behavioral Health (Facility ID #23158, Generator), MEI at +1,000 feet		0.04	<0.01	<0.01
550 Piercy Road Unmitigated Construction Emissions – MEI at 900 feet		7.11	0.06	<0.01
Combined Sources	Unmitigated	24.07	<0.35	<0.06
	Mitigated	14.15	<0.19	<0.05
BAAQMD Cumulative Source Threshold		***100***	***0.8***	***10.0***
Exceed Threshold?	Unmitigated	*No*	*No*	*No*
	Mitigated	*No*	*No*	*No*

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

Implement a feasible plan to reduce diesel particulate matter emissions by 40 percent such that increased cancer risk and annual $PM_{2.5}$ concentrations from construction would be reduced below TAC significance levels. Feasible plans are as follows:

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

    a. If use of Tier 4 equipment is not available, alternatively use equipment that meets U.S. EPA emission standards for Tier 2 or 3 engines and include particulate matter emissions control equivalent to CARB Level 3 verifiable diesel emission control devices that altogether achieve a 40 percent reduction in particulate matter exhaust in comparison to uncontrolled equipment; alternatively (or in combination), or

    b. Use of electrical or non-diesel fueled equipment.

2. Alternatively, the applicant may develop another construction operations plan demonstrating that the construction equipment used on-site would achieve a reduction in construction diesel particulate matter emissions by 40 percent or greater. Elements of the plan could include a combination of some of the following measures:
    - Implementation of No. 1 above to use Tier 4 or alternatively fueled equipment,
    - Installation of electric power lines during early construction phases to avoid use of diesel generators and compressors,
    - Use of electrically-powered equipment,
    - Forklifts and aerial lifts used for exterior and interior building construction shall be electric or propane/natural gas powered,
    - Change in construction build-out plans to lengthen phases, and
    - Implementation of different building techniques that result in less diesel equipment usage.

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

Effectiveness of Mitigation Measure AQ-2

CalEEMod was used to compute emissions associated with this mitigation measure assuming that all equipment met U.S. EPA Tier 4 interim engines standards and BAAQMD best management practices for construction were included. With these measures implemented, the project’s cancer risk levels (assuming infant exposure) would be reduced by approximately 60 percent to 6.60 chances per million. As a result, the project’s cancer risk impact would be reduced to levels below the BAAQMD single-source threshold.

Supporting Documentation

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

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

Attachment 3 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 4 includes the cumulative health risk calculations and modeling results from sources affecting the project MEI.

Attachment 1: Health Risk Calculation Methodology

A health risk assessment (HRA) for exposure to Toxic Air Contaminates (TACs) requires the application of a risk characterization model to the results from the air dispersion model to estimate potential health risk at each sensitive receptor location. The State of California Office of Environmental Health Hazard Assessment (OEHHA) and California Air Resources Board (CARB) develop recommended methods for conducting health risk assessments. The most recent OEHHA risk assessment guidelines were published in February of 2015.[22] 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.[23] 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.[24] Exposure parameters from the OEHHA guidelines and the recent BAAQMD HRA Guidelines were used in this evaluation.

<u>Cancer Risk</u>

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

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

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[22] 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.

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

[24] BAAQMD, *BAAQMD Air Toxics Control Programs Health Risk Assessment Guidelines*, December 2021.

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

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

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

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

Where:

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

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

Where:

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

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

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

Parameter	Exposure Type →	Infant		Child	Adult
	Age Range →	3rd Trimester	0<2	2 < 16	16 - 30
DPM Cancer Potency Factor $(mg/kg\text{-}day)^{-1}$		1.10E+00	1.10E+00	1.10E+00	1.10E+00
Vehicle TOG Exhaust		6.28E-03	6.28E-03	6.28E-03	6.28E-03
Vehicle TOG Evaporative		3.70E-04	3.70E-04	3.70E-04	3.70E-04
Daily Breathing Rate (L/kg-day) 95th Percentile Rate		361	1,090	745	335
8-hour Breathing Rate (L/kg-8 hours) 95th Percentile Rate		-	1,200	520	240
Inhalation Absorption Factor		1	1	1	1
Averaging Time (years)		70	70	70	70
Exposure Duration (years)		0.25	2	14	14*
Exposure Frequency (days/year)		350	350	350	350*
Age Sensitivity Factor		10	10	3	1
Fraction of Time at Home (FAH)		0.85-1.0	0.85-1.0	0.72-1.0	0.73*
* An 8-hour breathing rate (8HrBR) is used for worker and school child exposures.					

Non-Cancer Hazards

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

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

Annual $PM_{2.5}$ Concentrations

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

Attachment 2: CalEEMod Modeling Inputs and Outputs

Construction Criteria Air Pollutants							
Unmitigated	ROG	NOX	PM10 Exhaust	PM2.5 Exhaust	PM2.5 Fugitive	**CO2e**	
Year	Tons					MT	
Construction Equipment							
2023-2024	1.36	1.71	0.07	0.07	0.115	301	
	Total Construction Emissions						
Tons	1.36	1.71	0.07	0.07		301.00	
Pounds/Workdays	*Average Daily Emissions*					Workdays	
2023-2024	10.30	12.95	0.53	0.53			**264**
Threshold - lbs/day	**54.0**	**54.0**	**82.0**	**54.0**			
	Total Construction Emissions						
Pounds	10.30	12.95	0.53	0.53		0.00	
Average	10.30	12.95	0.53	0.53		0.00	264.00
Threshold - lbs/day	**54.0**	**54.0**	**82.0**	**54.0**			

Number of Days Per Year					
2023-2024	10/1/23	8/2/24	307	264	
			307	**264**	***Total Workdays***

Phase	**Start Date**	**End Date**	**Days/Week**	**Workdays**
Site Preparation	10/1/2023	10/12/2023	6	10
Grading	10/1/2023	11/4/2023	6	30
Trenching	11/1/2023	11/23/2023	6	20
Building Construction	11/21/2023	8/2/2024	6	220
Architectural Coating	6/28/2024	7/9/2024	6	10
Paving	7/8/2024	7/30/2024	6	20

Air Quality/Noise Construction Information Data Request

Project Name: 644/675 Piercy

Complete ALL Portions in Yellow

See Equipment Type TAB for type, horsepower and load factor

Project Size		**Dwelling Units**	**15.9 total project acres disturbed**
		s.f. residential	
		s.f. retail	
		s.f. office/commercial	
	225,000	**s.f. Industrial**	
		s.f. parking garage	**spaces**
		s.f. parking lot	**152 spaces**
Construction Day	Monday	to	Friday
Construction Hours	8 am	to	5 pm

Pile Driving? Y/N?

Project include on-site GENERATOR OR FIRE PUMP during project OPERATION? Y/N? ELECTRIC FIRE PUMP for ESFR SPRINKLER IN EACH BUILDING.

IF YES (if BOTH separate values) -->

Kilowatts/Horsepower: 150 hp (electric fire pump)

Fuel Type: Electric

Location in project (Plans Desired if Available):

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

Quantity	Description	HP	Load Factor	Hours/day	Total Work Days	Avg. Hours per day	HP Annual Hours	Comments
	Demolition	**Start Date:**	**10/1/2023**	**Total phase:**	**0**			**Overall Import/Export Volumes**
		End Date:						
0	Concrete/Industrial Saws	81	0.73	8	0	#DIV/0!	0	**Demolition Volume**
0	Excavators	158	0.38	8	0	#DIV/0!	0	Square footage of buildings to be demolished
0	Rubber-Tired Dozers	247	0.4	8	0	#DIV/0!	0	(*or* total tons to be hauled)
	Tractors/Loaders/Backhoes	97	0.37			#DIV/0!	0	0 square feet *or*
	Other Equipment?							0 Hauling volume (tons)
								Any pavement demolished and hauled? 0 tons
	Site Preparation	**Start Date:**	**10/1/2023**	**Total phase:**	**10**			
		End Date:	**10/11/2023**					
	Graders	187	0.41			0	0	
3	Rubber Tired Dozers	247	0.4	8	10	8	23712	
4	Tractors/Loaders/Backhoes	97	0.37	8	10	8	11485	
	Other Equipment?							
	Grading / Excavation	**Start Date:**	**10/1/2023**	**Total phase:**	**30**			
		End Date:	**10/31/2023**					**Soil Hauling Volume**
2	Excavators	158	0.38	8	30	8	28819	Export volume = 111,000 cubic yards?
1	Graders	187	0.41	8	30	8	18401	Import volume = 42,000 cubic yards?
1	Rubber Tired Dozers	247	0.4	8	30	8	23712	
2	Scrapers	367	0.48	8	30	8	84557	
2	Tractors/Loaders/Backhoes	97	0.37	8	30	8	17227	
	Other Equipment?							
	Trenching/Foundation	**Start Date:**	**11/1/2023**	**Total phase:**	**20**			
		End Date:	**11/21/2023**					
1	Tractor/Loader/Backhoe	97	0.37	8	20	8	5742	
1	Excavators	158	0.38	8	20	8	9606	
	Other Equipment?							
	Building - Exterior	**Start Date:**	**11/21/2023**	**Total phase:**	**220**			**Cement Trucks? 863 Total Round-Trips**
		End Date:	**6/28/2024**					
1	Cranes	231	0.29	7	30	0.95454545	14068	Electric? (Y/N) ___ Otherwise assumed diesel
3	Forklifts	89	0.2	8	200	7.27272727	85440	Liquid Propane (LPG)? (Y/N) ___ Otherwise Assumed diesel
1	Generator Sets	84	0.74	8	150	5.45454545	74592	Or temporary line power? (Y/N) ___
3	Tractors/Loaders/Backhoes	97	0.37	7	150	4.77272727	113054	
1	Welders	46	0.45	8	30	1.09090909	4968	
	Other Equipment?							
Building - Interior/Architectural Coating		**Start Date:**	**6/28/2024**	**Total phase:**	**10**			
		End Date:	**7/8/2024**					
1	Air Compressors	78	0.48	6	10	6	2246	
	Aerial Lift	62	0.31			0	0	
	Other Equipment?							
	Paving	**Start Date:**	**7/8/2024**	**Total phase:**	**20**			
		Start Date:	**7/28/2024**					
	Cement and Mortar Mixers	9	0.56			0	0	
2	Pavers	130	0.42	8	20	8	17472	**Asphalt? ___ cubic yards or __560__ round trips?**
2	Paving Equipment	132	0.36	8	20	8	15206	
2	Rollers	80	0.38	8	20	8	9728	
	Tractors/Loaders/Backhoes	97	0.37			0	0	
	Other Equipment?							
	Additional Phases	**Start Date:**		**Total phase:**				
		Start Date:						

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

644 and 675 Piercy Road, San Jose Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	644 and 675 Piercy Road, San Jose
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.40
Precipitation (days)	12.4
Location	644 Piercy Rd, San Jose, CA 95138, USA
County	Santa Clara
City	San Jose
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	6702
EDFZ	1
Electric Utility	San Jose Clean Energy
Gas Utility	Pacific Gas & Electric

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Unrefrigerated Warehouse-No Rail	225	1000sqft	15.9	225,000	0.00	0.00	—	—
Parking Lot	152	Space	0.00	0.00	0.00	0.00	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-5	Use Advanced Engine Tiers
Construction	C-10-A	Water Exposed Surfaces
Construction	C-11	Limit Vehicle Speeds on Unpaved Roads

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Unmit.	237	15.8	0.69	0.09	0.78	0.64	0.02	0.66	3,221
Mit.	236	14.7	0.17	0.09	0.26	0.16	0.02	0.18	3,221
% Reduced	< 0.5%	7%	76%	—	67%	75%	—	72%	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Unmit.	8.16	88.0	3.42	29.6	33.0	3.14	13.9	17.0	14,339
Mit.	1.94	45.1	0.30	11.7	12.0	0.29	5.47	5.76	14,339
% Reduced	76%	49%	91%	60%	64%	91%	61%	66%	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—
Unmit.	6.93	5.78	0.22	1.36	1.57	0.20	0.59	0.79	1,040
Mit.	6.71	3.54	0.03	0.55	0.57	0.03	0.24	0.26	1,040
% Reduced	3%	39%	86%	60%	64%	85%	60%	67%	—
Annual (Max)	—	—	—	—	—	—	—	—	—
Unmit.	1.26	1.05	0.04	0.25	0.29	0.04	0.11	0.14	172

Mit.	1.22	0.65	0.01	0.10	0.10	0.01	0.04	0.05	172
% Reduced	3%	39%	86%	60%	64%	85%	60%	67%	—

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—
2024	237	15.8	0.69	0.09	0.78	0.64	0.02	0.66	3,221
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—
2023	8.16	88.0	3.42	29.6	33.0	3.14	13.9	17.0	14,339
2024	0.88	6.22	0.27	0.05	0.32	0.25	0.01	0.26	1,346
Average Daily	—	—	—	—	—	—	—	—	—
2023	0.56	5.78	0.22	1.36	1.57	0.20	0.59	0.79	1,040
2024	6.93	3.63	0.16	0.03	0.19	0.15	0.01	0.15	778
Annual	—	—	—	—	—	—	—	—	—
2023	0.10	1.05	0.04	0.25	0.29	0.04	0.11	0.14	172
2024	1.26	0.66	0.03	0.01	0.03	0.03	< 0.005	0.03	129

2.3. Construction Emissions by Year, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—
2024	236	14.7	0.17	0.09	0.26	0.16	0.02	0.18	3,221
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—

2023	1.94	45.1	0.30	11.7	12.0	0.29	5.47	5.76	14,339
2024	0.52	5.55	0.05	0.05	0.10	0.05	0.01	0.06	1,346
Average Daily	—	—	—	—	—	—	—	—	—
2023	0.18	3.54	0.03	0.55	0.57	0.02	0.24	0.26	1,040
2024	6.71	3.27	0.03	0.03	0.06	0.03	0.01	0.04	778
Annual	—	—	—	—	—	—	—	—	—
2023	0.03	0.65	< 0.005	0.10	0.10	< 0.005	0.04	0.05	172
2024	1.22	0.60	0.01	0.01	0.01	0.01	< 0.005	0.01	129

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Unmit.	8.42	1.15	0.03	1.03	1.06	0.03	0.18	0.22	11,213
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Unmit.	6.75	1.26	0.02	1.03	1.05	0.02	0.18	0.20	10,990
Average Daily (Max)	—	—	—	—	—	—	—	—	—
Unmit.	7.53	1.22	0.02	1.03	1.05	0.03	0.18	0.21	11,037
Annual (Max)	—	—	—	—	—	—	—	—	—
Unmit.	1.37	0.22	< 0.005	0.19	0.19	< 0.005	0.03	0.04	1,827

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—

Mobile	1.36	1.07	0.02	1.03	1.05	0.02	0.18	0.20	2,953
Area	7.06	0.08	0.01	—	0.01	0.02	—	0.02	40.4
Energy	0.00	0.00	0.00	—	0.00	0.00	—	0.00	1,425
Water	—	—	—	—	—	—	—	—	399
Waste	—	—	—	—	—	—	—	—	399
Refrig.	—	—	—	—	—	—	—	—	5,996
Total	8.42	1.15	0.03	1.03	1.06	0.03	0.18	0.22	11,213
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Mobile	1.29	1.26	0.02	1.03	1.05	0.02	0.18	0.20	2,771
Area	5.46	—	—	—	—	—	—	—	—
Energy	0.00	0.00	0.00	—	0.00	0.00	—	0.00	1,425
Water	—	—	—	—	—	—	—	—	399
Waste	—	—	—	—	—	—	—	—	399
Refrig.	—	—	—	—	—	—	—	—	5,996
Total	6.75	1.26	0.02	1.03	1.05	0.02	0.18	0.20	10,990
Average Daily	—	—	—	—	—	—	—	—	—
Mobile	1.28	1.18	0.02	1.03	1.05	0.02	0.18	0.20	2,798
Area	6.25	0.04	0.01	—	0.01	0.01	—	0.01	19.9
Energy	0.00	0.00	0.00	—	0.00	0.00	—	0.00	1,425
Water	—	—	—	—	—	—	—	—	399
Waste	—	—	—	—	—	—	—	—	399
Refrig.	—	—	—	—	—	—	—	—	5,996
Total	7.53	1.22	0.02	1.03	1.05	0.03	0.18	0.21	11,037
Annual	—	—	—	—	—	—	—	—	—
Mobile	0.23	0.22	< 0.005	0.19	0.19	< 0.005	0.03	0.04	463
Area	1.14	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	3.30
Energy	0.00	0.00	0.00	—	0.00	0.00	—	0.00	236

Water	—	—	—	—	—	—	—	—	66.1
Waste	—	—	—	—	—	—	—	—	66.0
Refrig.	—	—	—	—	—	—	—	—	993
Total	1.37	0.22	< 0.005	0.19	0.19	< 0.005	0.03	0.04	1,827

2.6. Operations Emissions by Sector, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Mobile	1.36	1.07	0.02	1.03	1.05	0.02	0.18	0.20	2,953
Area	7.06	0.08	0.01	—	0.01	0.02	—	0.02	40.4
Energy	0.00	0.00	0.00	—	0.00	0.00	—	0.00	1,425
Water	—	—	—	—	—	—	—	—	399
Waste	—	—	—	—	—	—	—	—	399
Refrig.	—	—	—	—	—	—	—	—	5,996
Total	8.42	1.15	0.03	1.03	1.06	0.03	0.18	0.22	11,213
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Mobile	1.29	1.26	0.02	1.03	1.05	0.02	0.18	0.20	2,771
Area	5.46	—	—	—	—	—	—	—	—
Energy	0.00	0.00	0.00	—	0.00	0.00	—	0.00	1,425
Water	—	—	—	—	—	—	—	—	399
Waste	—	—	—	—	—	—	—	—	399
Refrig.	—	—	—	—	—	—	—	—	5,996
Total	6.75	1.26	0.02	1.03	1.05	0.02	0.18	0.20	10,990
Average Daily	—	—	—	—	—	—	—	—	—
Mobile	1.28	1.18	0.02	1.03	1.05	0.02	0.18	0.20	2,798

Area	6.25	0.04	0.01	—	0.01	0.01	—	0.01	19.9
Energy	0.00	0.00	0.00	—	0.00	0.00	—	0.00	1,425
Water	—	—	—	—	—	—	—	—	399
Waste	—	—	—	—	—	—	—	—	399
Refrig.	—	—	—	—	—	—	—	—	5,996
Total	7.53	1.22	0.02	1.03	1.05	0.03	0.18	0.21	11,037
Annual	—	—	—	—	—	—	—	—	—
Mobile	0.23	0.22	< 0.005	0.19	0.19	< 0.005	0.03	0.04	463
Area	1.14	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	3.30
Energy	0.00	0.00	0.00	—	0.00	0.00	—	0.00	236
Water	—	—	—	—	—	—	—	—	66.1
Waste	—	—	—	—	—	—	—	—	66.0
Refrig.	—	—	—	—	—	—	—	—	993
Total	1.37	0.22	< 0.005	0.19	0.19	< 0.005	0.03	0.04	1,827

3. Construction Emissions Details

3.1. Site Preparation (2023) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.95	39.7	1.81	—	1.81	1.66	—	1.66	5,314
Dust From Material Movement	—	—	—	19.7	19.7	—	10.1	10.1	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	1.09	0.05	—	0.05	0.05	—	0.05	146
Dust From Material Movement	—	—	—	0.54	0.54	—	0.28	0.28	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.20	0.01	—	0.01	0.01	—	0.01	24.1
Dust From Material Movement	—	—	—	0.10	0.10	—	0.05	0.05	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.05	0.02	0.00	0.01	0.01	0.00	< 0.005	< 0.005	9.91
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.27
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.04
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.2. Site Preparation (2023) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.64	14.7	0.10	—	0.10	0.10	—	0.10	5,314
Dust From Material Movement	—	—	—	7.67	7.67	—	3.94	3.94	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.40	< 0.005	—	< 0.005	< 0.005	—	< 0.005	146
Dust From Material Movement	—	—	—	0.21	0.21	—	0.11	0.11	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.07	< 0.005	—	< 0.005	< 0.005	—	< 0.005	24.1
Dust From Material Movement	—	—	—	0.04	0.04	—	0.02	0.02	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.05	0.02	0.00	0.01	0.01	0.00	< 0.005	< 0.005	9.91
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.27
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.04
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.3. Grading (2023) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.72	37.3	1.59	—	1.59	1.47	—	1.47	6,621
Dust From Material Movement	—	—	—	9.60	9.60	—	3.71	3.71	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.31	3.07	0.13	—	0.13	0.12	—	0.12	544
Dust From Material Movement	—	—	—	0.79	0.79	—	0.31	0.31	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.06	0.56	0.02	—	0.02	0.02	—	0.02	90.1
Dust From Material Movement	—	—	—	0.14	0.14	—	0.06	0.06	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.06	0.02	0.00	0.01	0.01	0.00	< 0.005	< 0.005	11.3
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.38	10.9	0.02	0.30	0.32	0.01	0.08	0.09	2,384
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.93
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.03	0.88	< 0.005	0.02	0.03	< 0.005	0.01	0.01	195
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.15
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	0.16	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	32.3

3.4. Grading (2023) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.80	19.4	0.18	—	0.18	0.18	—	0.18	6,621
Dust From Material Movement	—	—	—	3.75	3.75	—	1.45	1.45	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	1.60	0.01	—	0.01	0.01	—	0.01	544
Dust From Material Movement	—	—	—	0.31	0.31	—	0.12	0.12	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.29	< 0.005	—	< 0.005	< 0.005	—	< 0.005	90.1
Dust From Material Movement	—	—	—	0.06	0.06	—	0.02	0.02	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.06	0.02	0.00	0.01	0.01	0.00	< 0.005	< 0.005	11.3
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.38	10.9	0.02	0.30	0.32	0.01	0.08	0.09	2,384
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.93
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.03	0.88	< 0.005	0.02	0.03	< 0.005	0.01	0.01	195
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.15

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	0.16	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	32.3

3.5. Building Construction (2023) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.62	5.89	0.30	—	0.30	0.28	—	0.28	1,162
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.57	0.03	—	0.03	0.03	—	0.03	112
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.10	0.01	—	0.01	< 0.005	—	< 0.005	18.5
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.29	0.09	0.00	0.03	0.03	0.00	0.01	0.01	53.5
Vendor	0.02	0.45	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	104
Hauling	< 0.005	0.13	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	29.4
Average Daily	—	—	—	—	—	—	—	—	—

Worker	0.03	0.01	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	5.15
Vendor	< 0.005	0.04	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	9.98
Hauling	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	2.82
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.85
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	1.65
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.47

3.6. Building Construction (2023) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	4.89	0.05	—	0.05	0.05	—	0.05	1,162
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.47	< 0.005	—	< 0.005	< 0.005	—	< 0.005	112
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.09	< 0.005	—	< 0.005	< 0.005	—	< 0.005	18.5
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.29	0.09	0.00	0.03	0.03	0.00	0.01	0.01	53.5
Vendor	0.02	0.45	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	104
Hauling	< 0.005	0.13	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	29.4
Average Daily	—	—	—	—	—	—	—	—	—
Worker	0.03	0.01	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	5.15
Vendor	< 0.005	0.04	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	9.98
Hauling	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	2.82
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.85
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	1.65
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.47

3.7. Building Construction (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.59	5.55	0.27	—	0.27	0.25	—	0.25	1,162
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.59	5.55	0.27	—	0.27	0.25	—	0.25	1,162
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.30	2.80	0.14	—	0.14	0.12	—	0.12	587

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.51	0.02	—	0.02	0.02	—	0.02	97.1
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Worker	0.28	0.07	0.00	0.03	0.03	0.00	0.01	0.01	53.8
Vendor	0.02	0.43	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	102
Hauling	0.01	0.13	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	28.7
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.27	0.09	0.00	0.03	0.03	0.00	0.01	0.01	52.4
Vendor	0.02	0.44	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	103
Hauling	< 0.005	0.13	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	28.9
Average Daily	—	—	—	—	—	—	—	—	—
Worker	0.13	0.04	0.00	0.02	0.02	0.00	< 0.005	< 0.005	26.5
Vendor	0.01	0.22	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	51.7
Hauling	< 0.005	0.07	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	14.5
Annual	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	4.39
Vendor	< 0.005	0.04	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	8.55
Hauling	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	2.41

3.8. Building Construction (2024) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	4.89	0.05	—	0.05	0.05	—	0.05	1,162
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	4.89	0.05	—	0.05	0.05	—	0.05	1,162
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	2.47	0.02	—	0.02	0.02	—	0.02	587
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.45	< 0.005	—	< 0.005	< 0.005	—	< 0.005	97.1
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Worker	0.28	0.07	0.00	0.03	0.03	0.00	0.01	0.01	53.8
Vendor	0.02	0.43	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	102
Hauling	0.01	0.13	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	28.7
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.27	0.09	0.00	0.03	0.03	0.00	0.01	0.01	52.4
Vendor	0.02	0.44	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	103
Hauling	< 0.005	0.13	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	28.9
Average Daily	—	—	—	—	—	—	—	—	—
Worker	0.13	0.04	0.00	0.02	0.02	0.00	< 0.005	< 0.005	26.5
Vendor	0.01	0.22	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	51.7

Hauling	< 0.005	0.07	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	14.5
Annual	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	4.39
Vendor	< 0.005	0.04	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	8.55
Hauling	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	2.41

3.9. Paving (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.85	7.81	0.39	—	0.39	0.36	—	0.36	1,517
Paving	0.00	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.43	0.02	—	0.02	0.02	—	0.02	83.1
Paving	0.00	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.08	< 0.005	—	< 0.005	< 0.005	—	< 0.005	13.8
Paving	0.00	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Worker	0.04	0.01	0.00	0.01	0.01	0.00	< 0.005	< 0.005	8.54
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.04	0.91	< 0.005	0.03	0.03	< 0.005	0.01	0.01	205
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.46
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.05	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	11.3
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.08
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	1.86

3.10. Paving (2024) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	7.21	0.09	—	0.09	0.08	—	0.08	1,517
Paving	0.00	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.39	< 0.005	—	< 0.005	< 0.005	—	< 0.005	83.1

Paving	0.00	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.07	< 0.005	—	< 0.005	< 0.005	—	< 0.005	13.8
Paving	0.00	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Worker	0.04	0.01	0.00	0.01	0.01	0.00	< 0.005	< 0.005	8.54
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.04	0.91	< 0.005	0.03	0.03	< 0.005	0.01	0.01	205
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.46
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.05	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	11.3
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.08
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	1.86

3.11. Architectural Coating (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.91	0.03	—	0.03	0.03	—	0.03	134
Architectural Coatings	235	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	< 0.005	—	< 0.005	< 0.005	—	< 0.005	3.67
Architectural Coatings	6.43	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.61
Architectural Coatings	1.17	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Worker	0.06	0.01	0.00	0.01	0.01	0.00	< 0.005	< 0.005	10.8
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.29
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.05
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.12. Architectural Coating (2024) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	1.07	0.03	—	0.03	0.03	—	0.03	134
Architectural Coatings	235	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.03	< 0.005	—	< 0.005	< 0.005	—	< 0.005	3.67
Architectural Coatings	6.43	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.61
Architectural Coatings	1.17	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Worker	0.06	0.01	0.00	0.01	0.01	0.00	< 0.005	< 0.005	10.8
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.29
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.05
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.13. Trenching (2023) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	2.14	0.09	—	0.09	0.09	—	0.09	433
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.12	0.01	—	0.01	< 0.005	—	< 0.005	23.8

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	< 0.005	—	< 0.005	< 0.005	—	< 0.005	3.93
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.02	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	2.83
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.16
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.03
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.14. Trenching (2023) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.07	2.28	0.04	—	0.04	0.03	—	0.03	433
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.12	< 0.005	—	< 0.005	< 0.005	—	< 0.005	23.8
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	< 0.005	—	< 0.005	< 0.005	—	< 0.005	3.93
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.02	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	2.83
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.16
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.03
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	1.36	1.07	0.02	1.03	1.05	0.02	0.18	0.20	2,953
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	1.36	1.07	0.02	1.03	1.05	0.02	0.18	0.20	2,953
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	1.29	1.26	0.02	1.03	1.05	0.02	0.18	0.20	2,771
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	1.29	1.26	0.02	1.03	1.05	0.02	0.18	0.20	2,771
Annual	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	0.23	0.22	< 0.005	0.19	0.19	< 0.005	0.03	0.04	463
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.23	0.22	< 0.005	0.19	0.19	< 0.005	0.03	0.04	463

4.1.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—

Unrefrigerated Warehouse-No Rail	1.36	1.07	0.02	1.03	1.05	0.02	0.18	0.20	2,953
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	1.36	1.07	0.02	1.03	1.05	0.02	0.18	0.20	2,953
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	1.29	1.26	0.02	1.03	1.05	0.02	0.18	0.20	2,771
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	1.29	1.26	0.02	1.03	1.05	0.02	0.18	0.20	2,771
Annual	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	0.23	0.22	< 0.005	0.19	0.19	< 0.005	0.03	0.04	463
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.23	0.22	< 0.005	0.19	0.19	< 0.005	0.03	0.04	463

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	1,425
Parking Lot	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	1,425
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—

Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	1,425
Parking Lot	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	1,425
Annual	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	236
Parking Lot	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	236

4.2.2. Electricity Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	1,425
Parking Lot	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	1,425
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	1,425
Parking Lot	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	1,425
Annual	—	—	—	—	—	—	—	—	—

Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	236
Parking Lot	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	236

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Parking Lot	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Total	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Parking Lot	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Total	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Parking Lot	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Total	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00

4.2.4. Natural Gas Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Parking Lot	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Total	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Parking Lot	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Total	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Parking Lot	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Total	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00

4.3. Area Emissions by Source

4.3.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Consumer Products	4.81	—	—	—	—	—	—	—	—

Architectural Coatings	0.64	—	—	—	—	—	—	—	—
Landscape Equipment	1.61	0.08	0.01	—	0.01	0.02	—	0.02	40.4
Total	7.06	0.08	0.01	—	0.01	0.02	—	0.02	40.4
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Consumer Products	4.81	—	—	—	—	—	—	—	—
Architectural Coatings	0.64	—	—	—	—	—	—	—	—
Total	5.46	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—
Consumer Products	0.88	—	—	—	—	—	—	—	—
Architectural Coatings	0.12	—	—	—	—	—	—	—	—
Landscape Equipment	0.14	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	3.30
Total	1.14	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	3.30

4.3.1. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Consumer Products	4.81	—	—	—	—	—	—	—	—
Architectural Coatings	0.64	—	—	—	—	—	—	—	—
Landscape Equipment	1.61	0.08	0.01	—	0.01	0.02	—	0.02	40.4

Total	7.06	0.08	0.01	—	0.01	0.02	—	0.02	40.4
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Consumer Products	4.81	—	—	—	—	—	—	—	—
Architectural Coatings	0.64	—	—	—	—	—	—	—	—
Total	5.46	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—
Consumer Products	0.88	—	—	—	—	—	—	—	—
Architectural Coatings	0.12	—	—	—	—	—	—	—	—
Landscape Equipment	0.14	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	3.30
Total	1.14	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	3.30

4.4. Water Emissions by Land Use

4.4.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	399
Parking Lot	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	399
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—

Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	399
Parking Lot	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	399
Annual	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	66.1
Parking Lot	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	66.1

4.4.1. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	399
Parking Lot	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	399
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	399
Parking Lot	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	399
Annual	—	—	—	—	—	—	—	—	—

Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	66.1
Parking Lot	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	66.1

4.5. Waste Emissions by Land Use

4.5.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	399
Parking Lot	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	399
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	399
Parking Lot	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	399
Annual	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	66.0
Parking Lot	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	66.0

4.5.1. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	399
Parking Lot	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	399
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	399
Parking Lot	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	399
Annual	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	66.0
Parking Lot	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	66.0

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—

Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	5,996
Total	—	—	—	—	—	—	—	—	5,996
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	5,996
Total	—	—	—	—	—	—	—	—	5,996
Annual	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	993
Total	—	—	—	—	—	—	—	—	993

4.6.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	5,996
Total	—	—	—	—	—	—	—	—	5,996
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	5,996
Total	—	—	—	—	—	—	—	—	5,996
Annual	—	—	—	—	—	—	—	—	—

Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	993
Total	—	—	—	—	—	—	—	—	993

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—

4.7.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—

4.8.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—

4.9.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—

Subtotal	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Preparation	Site Preparation	10/1/2023	10/12/2023	6.00	10.0	—
Grading	Grading	10/1/2023	11/4/2023	6.00	30.0	—
Building Construction	Building Construction	11/21/2023	8/2/2024	6.00	220	—
Paving	Paving	7/8/2024	7/30/2024	6.00	20.0	—
Architectural Coating	Architectural Coating	6/28/2024	7/9/2024	6.00	10.0	—
Trenching	Trenching	11/1/2023	11/23/2023	6.00	20.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Grading	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Building Construction	Cranes	Diesel	Average	1.00	0.95	367	0.29
Building Construction	Forklifts	Diesel	Average	3.00	7.30	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	5.50	14.0	0.74
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.00	4.80	84.0	0.37
Building Construction	Welders	Diesel	Average	1.00	1.10	46.0	0.45
Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48
Trenching	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Trenching	Excavators	Diesel	Average	1.00	8.00	36.0	0.38

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Rubber Tired Dozers	Diesel	Tier 4 Interim	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	4.00	8.00	84.0	0.37

Grading	Excavators	Diesel	Tier 4 Interim	2.00	8.00	36.0	0.38
Grading	Graders	Diesel	Tier 4 Interim	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Tier 4 Interim	1.00	8.00	367	0.40
Grading	Scrapers	Diesel	Tier 4 Interim	2.00	8.00	423	0.48
Grading	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	2.00	8.00	84.0	0.37
Building Construction	Cranes	Diesel	Tier 4 Interim	1.00	0.95	367	0.29
Building Construction	Forklifts	Diesel	Tier 4 Interim	3.00	7.30	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	5.50	14.0	0.74
Building Construction	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	3.00	4.80	84.0	0.37
Building Construction	Welders	Diesel	Tier 4 Interim	1.00	1.10	46.0	0.45
Paving	Pavers	Diesel	Tier 4 Interim	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Tier 4 Interim	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Tier 4 Interim	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Tier 4 Interim	1.00	6.00	37.0	0.48
Trenching	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	1.00	8.00	84.0	0.37
Trenching	Excavators	Diesel	Tier 4 Interim	1.00	8.00	36.0	0.38

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	0.50	LDA,LDT1,LDT2
Site Preparation	Vendor	—	0.50	HHDT,MHDT
Site Preparation	Hauling	0.00	0.50	HHDT

Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	0.50	LDA,LDT1,LDT2
Grading	Vendor	—	0.50	HHDT,MHDT
Grading	Hauling	638	0.50	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	94.5	0.50	LDA,LDT1,LDT2
Building Construction	Vendor	36.9	0.50	HHDT,MHDT
Building Construction	Hauling	7.85	0.50	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	0.50	LDA,LDT1,LDT2
Paving	Vendor	—	0.50	HHDT,MHDT
Paving	Hauling	56.0	0.50	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	18.9	0.50	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	0.50	HHDT,MHDT
Architectural Coating	Hauling	0.00	0.50	HHDT
Architectural Coating	Onsite truck	—	—	HHDT
Trenching	—	—	—	—
Trenching	Worker	5.00	0.50	LDA,LDT1,LDT2
Trenching	Vendor	—	0.50	HHDT,MHDT
Trenching	Hauling	0.00	0.50	HHDT
Trenching	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	0.50	LDA,LDT1,LDT2
Site Preparation	Vendor	—	0.50	HHDT,MHDT
Site Preparation	Hauling	0.00	0.50	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	0.50	LDA,LDT1,LDT2
Grading	Vendor	—	0.50	HHDT,MHDT
Grading	Hauling	638	0.50	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	94.5	0.50	LDA,LDT1,LDT2
Building Construction	Vendor	36.9	0.50	HHDT,MHDT
Building Construction	Hauling	7.85	0.50	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	0.50	LDA,LDT1,LDT2
Paving	Vendor	—	0.50	HHDT,MHDT
Paving	Hauling	56.0	0.50	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	18.9	0.50	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	0.50	HHDT,MHDT
Architectural Coating	Hauling	0.00	0.50	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

Trenching	—	—	—	—
Trenching	Worker	5.00	0.50	LDA,LDT1,LDT2
Trenching	Vendor	—	0.50	HHDT,MHDT
Trenching	Hauling	0.00	0.50	HHDT
Trenching	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	0.00	0.00	337,500	112,500	—

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Site Preparation	—	—	15.0	0.00	—
Grading	42,000	111,000	90.0	0.00	—
Paving	0.00	0.00	0.00	0.00	0.00

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Unrefrigerated Warehouse-No Rail	0.00	0%
Parking Lot	0.00	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2023	0.00	809	0.03	< 0.005
2024	0.00	809	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Unrefrigerated Warehouse-No Rail	392	392	392	142,898	3,749	3,749	3,749	1,368,406
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.9.2. Mitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Unrefrigerated Warehouse-No Rail	392	392	392	142,898	3,749	3,749	3,749	1,368,406
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.1.2. Mitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	337,500	112,500	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.10.4. Landscape Equipment - Mitigated

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Unrefrigerated Warehouse-No Rail	2,889,422	178	0.0330	0.0040	0.00
Parking Lot	0.00	178	0.0330	0.0040	0.00

5.11.2. Mitigated

Electricity (kWh/yr) and CO_2 and CH_4 and N_2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Unrefrigerated Warehouse-No Rail	2,889,422	178	0.0330	0.0040	0.00
Parking Lot	0.00	178	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Unrefrigerated Warehouse-No Rail	57,812,500	0.00
Parking Lot	0.00	0.00

5.12.2. Mitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Unrefrigerated Warehouse-No Rail	57,812,500	0.00
Parking Lot	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Unrefrigerated Warehouse-No Rail	212	0.00
Parking Lot	0.00	0.00

5.13.2. Mitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Unrefrigerated Warehouse-No Rail	212	0.00
Parking Lot	0.00	0.00

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Unrefrigerated Warehouse-No Rail	Cold storage	R-404A	3,922	7.50	7.50	7.50	25.0

5.14.2. Mitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Unrefrigerated Warehouse-No Rail	Cold storage	R-404A	3,922	7.50	7.50	7.50	25.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.15.2. Mitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type
—	—

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	14.7	annual days of extreme heat
Extreme Precipitation	3.45	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	9.61	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.

Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A

Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	26.7
AQ-PM	11.9
AQ-DPM	32.8
Drinking Water	43.3
Lead Risk Housing	7.99
Pesticides	59.6
Toxic Releases	21.6
Traffic	84.5
Effect Indicators	—
CleanUp Sites	84.3
Groundwater	0.00
Haz Waste Facilities/Generators	97.2
Impaired Water Bodies	33.2
Solid Waste	0.00

Sensitive Population	—
Asthma	37.0
Cardio-vascular	30.9
Low Birth Weights	33.4
Socioeconomic Factor Indicators	—
Education	25.5
Housing	2.26
Linguistic	30.7
Poverty	2.91
Unemployment	11.9

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	93.09636854
Employed	76.78686
Median HI	96.39419992
Education	—
Bachelor's or higher	87.43744386
High school enrollment	12.44706788
Preschool enrollment	64.22430386
Transportation	—
Auto Access	92.6344155
Active commuting	50.48120108
Social	—
2-parent households	90.73527525

Voting	74.00230977
Neighborhood	—
Alcohol availability	97.0101373
Park access	47.64532273
Retail density	23.54677274
Supermarket access	16.16835622
Tree canopy	54.9980752
Housing	—
Homeownership	81.26523803
Housing habitability	87.21929937
Low-inc homeowner severe housing cost burden	60.50301553
Low-inc renter severe housing cost burden	87.9892211
Uncrowded housing	43.53907353
Health Outcomes	—
Insured adults	74.11779802
Arthritis	93.6
Asthma ER Admissions	86.4
High Blood Pressure	85.1
Cancer (excluding skin)	68.9
Asthma	95.7
Coronary Heart Disease	95.4
Chronic Obstructive Pulmonary Disease	97.2
Diagnosed Diabetes	86.4
Life Expectancy at Birth	73.4
Cognitively Disabled	94.6
Physically Disabled	97.9
Heart Attack ER Admissions	86.7

Mental Health Not Good	93.4
Chronic Kidney Disease	90.3
Obesity	91.3
Pedestrian Injuries	82.7
Physical Health Not Good	95.1
Stroke	95.7
Health Risk Behaviors	—
Binge Drinking	72.5
Current Smoker	93.7
No Leisure Time for Physical Activity	82.1
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	48.8
Elderly	81.3
English Speaking	55.0
Foreign-born	72.2
Outdoor Workers	84.0
Climate Change Adaptive Capacity	—
Impervious Surface Cover	73.1
Traffic Density	92.6
Traffic Access	47.2
Other Indices	—
Hardship	19.5
Other Decision Support	—
2016 Voting	72.1

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	17.0
Healthy Places Index Score for Project Location (b)	91.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Characteristics: Utility Information	San Jose Clean Energy 2020 rate= 178 lb/MWh.
Land Use	Total lot acreage, parking spot amount, and square footage provided by project applicant.
Construction: Construction Phases	Provided start dates and total construction workdays. CalEEMod scheduled end dates.
Construction: Off-Road Equipment	Provided by applicant. Modified defaults.
Construction: Trips and VMT	Building const = Estimated 863 total concrete truck round trips, divided by 220 days. Paving = Estimated 560 asphalt truck round trips divided by 20 days. HRA 0.5 mile trips for location emissions.
Operations: Energy Use	San Jose Reach Code - no natural gas. Convert to electricity.
Operations: Water and Waste Water	Wastewater = 100% aerobic, no septic tanks or lagoons.

Attachment 3: Project Construction and Operation Health Risk Calculations

Attachment 3: Project Construction and Operation Emissions and Health Risk Calculations

644 & 675 Piercy Road, San Jose, CA
Construction Emissions

HRA Unmitigated Construction Pollutants		
Unmitigated	PM10 Exhaust	PM2.5 Fugitive
Year		
Construction Equipment		
2023-2024	0.07	0.115

HRA Mitigated Construction Pollutants		
Mitigated	PM10 Exhaust	PM2.5 Fugitive
Year		
Construction Equipment		
2023-2024	0.015	0.045

644 & 675 Piercy Road, San Jose, CA

DPM Emissions and Modeling Emission Rates - Uncontrolled

Emissions Model Year	Activity	DPM (ton/year)	Area Source	DPM Emissions (lb/yr)	(lb/hr)	(g/s)	Modeled Area (m^2)	DPM Emission Rate ($g/s/m^2$)
2023-2024	Construction	0.070	DPM	140.0	0.05983	7.54E-03	65,716	**1.15E-07**

Modeled Operation Hours
hr/day = 9 (8am - 5pm Mon-Fri)
days/yr = 260
hours/year = 2340

PM2.5 Fugitive Dust Emissions for Modeling - Uncontrolled

Construction Year	Activity	Area Source	PM2.5 Emissions (ton/year)	(lb/yr)	(lb/hr)	(g/s)	Modeled Area (m^2)	PM2.5 Emission Rate $g/s/m^2$
2023-2024	Construction	FUG	0.115	230.0	0.09829	1.24E-02	65,716	**1.88E-07**

DPM Construction Emissions and Modeling Emission Rates - With Controls

Emissions Model Year	Activity	DPM (ton/year)	Area Source	DPM Emissions (lb/yr)	(lb/hr)	(g/s)	Modeled Area (m^2)	DPM Emission Rate ($g/s/m^2$)
2023-2024	Construction	0.015	DPM	30.0	0.01282	1.62E-03	65,716	**2.46E-08**

Modeled Operation Hours
hr/day = 9 (8am - 5pm Mon-Fri)
days/yr = 260
hours/year = 2340

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

Construction Year	Activity	Area Source	PM2.5 Emissions (ton/year)	(lb/yr)	(lb/hr)	(g/s)	Modeled Area (m^2)	PM2.5 Emission Rate $g/s/m^2$
2023-2024	Construction	FUG	0.045	90.0	0.03846	4.85E-03	65,716	**7.37E-08**

644 & 675 Piercy Road, San Jose, CA - Uncontrolled Emissions
Maximum DPM Cancer Risk Calculations From Construction
Impacts at Off-Site Receptors-1.5 meter receptor height

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

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

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

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

Values

	Infant/Child				Adult
Age -->	**3rd Trimester**	**0 - 2**	**2 - 9**	**2 - 16**	**16 - 30**
Parameter					
ASF =	10	10	3	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	631	572	261
A =	1	1	1	1	1
EF =	350	350	350	350	350
AT =	70	70	70	70	70
FAH =	1.00	1.00	1.00	1.00	0.73

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

			Infant/Child - Exposure Information			Infant/Child	Adult - Exposure Information			Adult	Maximum	
	Exposure				Age	Cancer	Modeled		Age	Cancer		
Exposure	Duration		DPM Conc (ug/m3)		Sensitivity	Risk	DPM Conc (ug/m3)		Sensitivity	Risk	Fugitive	Total
Year	(years)	Age	Year	Annual	Factor	(per million)	Year	Annual	Factor	(per million)	PM2.5	PM2.5
0	0.25	-0.25 - 0*	-	-	10	-	-	-	-	-		
1	1	0 - 1	2023-2024	0.0768	10	12.62	2023-2024	0.0768	1	0.22	0.1604	0.237
2	1	1 - 2	2025	0.0000	10	0.00	2025	0.0000	1	0.00		
3	1	2 - 3	2026	0.0000	3	0.00	2026	0.0000	1	0.00		
4	1	3 - 4	2027	0.0000	3	0.00	2027	0.0000	1	0.00		
5	1	4 - 5	2028	0.0000	3	0.00	2028	0.0000	1	0.00		
6	1	5 - 6	2029	0.0000	3	0.00	2029	0.0000	1	0.00		
7	1	6 - 7	2030	0.0000	3	0.00	2030	0.0000	1	0.00		
8	1	7 - 8	2031	0.0000	3	0.00	2031	0.0000	1	0.00		
9	1	8 - 9	2032	0.0000	3	0.00	2032	0.0000	1	0.00		
10	1	9 - 10	2033	0.0000	3	0.00	2033	0.0000	1	0.00		
11	1	10 - 11	2034	0.0000	3	0.00	2034	0.0000	1	0.00		
12	1	11 - 12	2035	0.0000	3	0.00	2035	0.0000	1	0.00		
13	1	12 - 13	2036	0.0000	3	0.00	2036	0.0000	1	0.00		
14	1	13 - 14	2037	0.0000	3	0.00	2037	0.0000	1	0.00		
15	1	14 - 15	2038	0.0000	3	0.00	2038	0.0000	1	0.00		
16	1	15 - 16	2039	0.0000	3	0.00	2039	0.0000	1	0.00		
17	1	16-17	2040	0.0000	1	0.00	2040	0.0000	1	0.00		
18	1	17-18	2041	0.0000	1	0.00	2041	0.0000	1	0.00		
19	1	18-19	2042	0.0000	1	0.00	2042	0.0000	1	0.00		
20	1	19-20	2043	0.0000	1	0.00	2043	0.0000	1	0.00		
21	1	20-21	2044	0.0000	1	0.00	2044	0.0000	1	0.00		
22	1	21-22	2045	0.0000	1	0.00	2045	0.0000	1	0.00		
23	1	22-23	2046	0.0000	1	0.00	2046	0.0000	1	0.00		
24	1	23-24	2047	0.0000	1	0.00	2047	0.0000	1	0.00		
25	1	24-25	2048	0.0000	1	0.00	2048	0.0000	1	0.00		
26	1	25-26	2049	0.0000	1	0.00	2049	0.0000	1	0.00		
27	1	26-27	2050	0.0000	1	0.00	2050	0.0000	1	0.00		
28	1	27-28	2051	0.0000	1	0.00	2051	0.0000	1	0.00		
29	1	28-29	2052	0.0000	1	0.00	2052	0.0000	1	0.00		
30	1	29-30	2053	0.0000	1	0.00	2053	0.0000	1	0.00		
Total Increased Cancer Risk						**12.62**				**0.22**		

* Third trimester of pregnancy

644 & 675 Piercy Road, San Jose, CA - Controlled Emissions
Maximum DPM Cancer Risk Calculations From Construction
Impacts at Off-Site Receptors-1.5 meter receptor height

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

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

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

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

Values

	Infant/Child				**Adult**
Age -->	**3rd Trimester**	**0 - 2**	**2 - 9**	**2 - 16**	**16 - 30**
Parameter					
ASF =	10	10	3	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	631	572	261
A =	1	1	1	1	1
EF =	350	350	350	350	350
AT =	70	70	70	70	70
FAH =	1.00	1.00	1.00	1.00	0.73

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

			Infant/Child - Exposure Information			**Infant/Child**	**Adult - Exposure Information**			**Adult**		
	Exposure				**Age**	**Cancer**	**Modeled**		**Age**	**Cancer**	**Maximum**	
Exposure	**Duration**		**DPM Conc (ug/m3)**		**Sensitivity**	**Risk**	**DPM Conc (ug/m3)**		**Sensitivity**	**Risk**	**Fugitive**	**Total**
Year	**(years)**	**Age**	**Year**	**Annual**	**Factor**	**(per million)**	**Year**	**Annual**	**Factor**	**(per million)**	**PM2.5**	**PM2.5**
0	0.25	-0.25 - 0*	-	-	10	-	-	-	-	-		
1	1	0 - 1	2023-2024	0.0164	10	2.70	2023-2024	0.0164	1	0.05	0.0629	0.079
2	1	1 - 2	2025	0.0000	10	0.00	2025	0.0000	1	0.00		
3	1	2 - 3	2026	0.0000	3	0.00	2026	0.0000	1	0.00		
4	1	3 - 4	2027	0.0000	3	0.00	2027	0.0000	1	0.00		
5	1	4 - 5	2028	0.0000	3	0.00	2028	0.0000	1	0.00		
6	1	5 - 6	2029	0.0000	3	0.00	2029	0.0000	1	0.00		
7	1	6 - 7	2030	0.0000	3	0.00	2030	0.0000	1	0.00		
8	1	7 - 8	2031	0.0000	3	0.00	2031	0.0000	1	0.00		
9	1	8 - 9	2032	0.0000	3	0.00	2032	0.0000	1	0.00		
10	1	9 - 10	2033	0.0000	3	0.00	2033	0.0000	1	0.00		
11	1	10 - 11	2034	0.0000	3	0.00	2034	0.0000	1	0.00		
12	1	11 - 12	2035	0.0000	3	0.00	2035	0.0000	1	0.00		
13	1	12 - 13	2036	0.0000	3	0.00	2036	0.0000	1	0.00		
14	1	13 - 14	2037	0.0000	3	0.00	2037	0.0000	1	0.00		
15	1	14 - 15	2038	0.0000	3	0.00	2038	0.0000	1	0.00		
16	1	15 - 16	2039	0.0000	3	0.00	2039	0.0000	1	0.00		
17	1	16-17	2040	0.0000	1	0.00	2040	0.0000	1	0.00		
18	1	17-18	2041	0.0000	1	0.00	2041	0.0000	1	0.00		
19	1	18-19	2042	0.0000	1	0.00	2042	0.0000	1	0.00		
20	1	19-20	2043	0.0000	1	0.00	2043	0.0000	1	0.00		
21	1	20-21	2044	0.0000	1	0.00	2044	0.0000	1	0.00		
22	1	21-22	2045	0.0000	1	0.00	2045	0.0000	1	0.00		
23	1	22-23	2046	0.0000	1	0.00	2046	0.0000	1	0.00		
24	1	23-24	2047	0.0000	1	0.00	2047	0.0000	1	0.00		
25	1	24-25	2048	0.0000	1	0.00	2048	0.0000	1	0.00		
26	1	25-26	2049	0.0000	1	0.00	2049	0.0000	1	0.00		
27	1	26-27	2050	0.0000	1	0.00	2050	0.0000	1	0.00		
28	1	27-28	2051	0.0000	1	0.00	2051	0.0000	1	0.00		
29	1	28-29	2052	0.0000	1	0.00	2052	0.0000	1	0.00		
30	1	29-30	2053	0.0000	1	0.00	2053	0.0000	1	0.00		
Total Increased Cancer Risk						**2.70**				**0.05**		

* Third trimester of pregnancy

Project Operation

644 & 675 Piercy Road, San Jose: Off-Site DPM & PM2.5 Emissions

Off-Site Truck Travel Exhaust Emissions

Emissions Source	Emission* Factor (g/mi)	Truck Trips per Day	Of-Site Truck Route (feet)	DPM/PM2.5 Emissions Daily (lb/day)	DPM/PM2.5 Emissions Annual (lb/year)
Hellyer Avenue**	0.01105	135	1939	0.0012	0.44
Silicon Valley Blvd**	0.00981	135	932	0.0005	0.19

* EMFAC2021 HHDT Truck PM10 emission factor for travel at 40 mph on Hellyer & 35 mph on Silicon Valley Blvd.
DPM and PM2.5 assumed to be the same as PM10.
** 50% of the trucks assumed to travel on Hellyer Ave and 50% on Silicon Valley Blvd

Off-Site Truck Travel Fugitive PM2.5 Emissions

Emissions Source	Emission Factor (g/mi)	Trucks per Day	Off-Site Truck Route (feet)	PM2.5 Emissions Daily (lb/day)	PM2.5 Emissions Annual (lb/year)
Hellyer Avenue**	0.03374	135	1939	0.0037	1.35
Silicon Valley Blvd**	0.03374	135	932	0.0018	0.65

* CT-EMFAC2017 PM2.5 emission factors used for fugitive emissions for off-site travel.
** 50% of the trucks assumed to travel on Hellyer Ave and 50% on Silicon Valley Blvd

Truck Information

Truck Trips per day =	270
Total Trucks per day =	135
Operation Days =	365
Delivery Hours per Day=	24

Truck Fugitive PM2.5 Dust Emission Information (2025)

Tire Wear Emission Factor (g/veh-mi)[a] =	0.00211
Brake Wear Emission Factor (g/veh-mi)[a] =	0.01680
Fugitive Road Dust Emission Factor (g/veh-mi)[a] =	0.01483
Total PM2.5 Fugitive PM2.5 Emission Factor (g/veh-mi) =	0.03374

[a] Emission factors from CT-EMFAC2017

References

EPA 2015 - *Transportation Conformity Guidance for Quantitative Hot-spot Analyses in PM2.5 and PM10 nonattainment and maintenance Areas* , November 2015

644 & 675 Piercy Road, San Jose: Off-Site Modeling Emission Rates and Source Parameters

Off-SiteTruck Travel DPM/PM2.5 Exhaust Emissions Modeling Information*

Emissions Period	Source Type	Average Hourly[a] DPM/PM2.5 Emissions (g/s)	Line Source Length (feet)	No. Lanes	Plume Width (feet)	Plume Height (meters)	Release Height (meters)
Hellyer Avenue**	Line-Volume	6.34E-06	1939	4	67.7	6.8	3.4
Silicon Valley Blvd**	Line-Volume	2.70E-06	932	4	67.7	6.8	3.4

* Emission source parameters based on EPA 2015.
** 50% of the trucks assumed to travel on Hellyer Ave and 50% on Silicon Valley Blvd
a Average hourly emissions for modeling calculated based on annual emissions divided by 365 days per year, 24 hours per day.

Off-SiteTruck Travel Fugitive PM2.5 Emissions Modeling Information*

Emissions Period	Source Type	Average Hourly[a] PM2.5 Emissions (g/s)	Line Source Length (feet)	No. Lanes	Plume Width (feet)	Plume Height (meters)	Release Height (meters)
Hellyer Avenue**	Line-Volume	1.94E-05	1939	4	67.7	2.6	1.3
Silicon Valley Blvd**	Line-Volume	9.30E-06	932	4	67.7	2.6	1.3

* Emission source parameters based on EPA 2015.
** 50% of the trucks assumed to travel on Hellyer Ave and 50% on Silicon Valley Blvd
a Average hourly emissions for modeling calculated based on annual emissions divided by 365 days per year, 24 hours per day.

644 & 675 Piercy Road, San Jose: On-Site DPM & PM2.5 Emissions

On-Site Truck Travel Emissions

Emissions Source	Emission[a] Factor (g/mi)	On-Site Truck Trips per Day	On-Site Truck Route (feet)	DPM/PM2.5 Emissions Daily (lb/day)	Annual[b] (lb/year)
All Project Trucks	0.10994	135	1519	0.0094	3.44

a EMFAC2021 HHDT Truck emission factor for travel at 5 mph. DPM and PM2.5 assumed to be the same as PM10.
b Based on 365 days per year operation.

On-Site Truck Travel Fugitive PM2.5 Emissions

Emissions Source	Emission Factor (g/mi)	Truck Trips per Day	On-Site Truck Route (feet)	PM2.5 Emissions Daily (lb/day)	Annual (lb/year)
All Project Trucks	0.03374	135	1519	0.0029	1.05

[a] Emission factors from CT-EMFAC2017

Project Truck Information

Truck Trips per day =	270
Total Trucks per day =	135
Operation Days =	365
Delivery Hours per Day=	24

Truck Fugitive PM2.5 Dust Emission Information (2025)

Tire Wear Emission Factor (g/veh-mi)[a] =	0.00211
Brake Wear Emission Factor (g/veh-mi)[a] =	0.01680
Fugitive Road Dust Emission Factor (g/veh-mi)[a] =	0.01483
Total PM2.5 Fugitive PM2.5 Emission Factor (g/veh-mi) =	0.03374

[a] Emission factors from CT-EMFAC2017

Truck Idle Emissions

Emissions Source	Idle[a] Emission Factor (g/hr)	On-Site Trucks per Day	Idle Time per Truck (min)	DPM/PM2.5 Emissions Daily (lb/day)	Annual[b] (lb/year)
All Trucks	0.54968	135	10	0.0273	8.21

a Idle emission factor based on EMFAC2021 HHDT Truck emission factor for travel at 5 mph. DPM and PM2.5 assumed to be the same as PM10.
b Based on 365 days per year operation.

Truck Idle DPM (PM10) Emission Information (2025)

EMFAC2021 Emission Factor @ 5 mph (g	0.10994
Truck Idle Emission Rate (g/hr) =	0.54968
Idle Time per Trip (min)	5
Idle Time per Truck (min)	10

Idle emission factor (g/hr) = EF @5 mph (g/mi) * 5 mph

References

EPA 2015 - *Transportation Conformity Guidance for Quantitative Hot-spot Analyses in PM2.5 and PM10 nonattainment and maintenance Areas*, November 2015

644 & 675 Piercy Road, San Jose: On-Site Modeling Emission Rates and Source Parameters

On-SiteTruck Travel DPM/PM2.5 Exhaust Emissions Modeling Information*

Emissions Period	Source Type	Average Hourly[a] DPM/PM2.5 Emissions (g/s)	Line Source Length (feet)	Plume Width (feet)	Plume Height (meters)	Release Height (meters)
All Project Trucks	Line-Volume	4.94E-05	1519	12	6.8	3.4

a Average hourly emissions calculated based on annual emissions divided by 365 days per year, 24 hours per day.
* Emission source parameters based on EPA 2015.

On-SiteTruck Travel Fugitive PM2.5 Emissions Modeling Information*

Emissions Period	Source Type	Average Hourly[a] PM2.5 Emissions (g/s)	Line Source Length (feet)	Plume Width (feet)	Plume Height (meters)	Release Height (meters)
All Project Trucks	Line-Volume	1.52E-05	1519	12	2.6	1.3

a Average hourly emissions calculated based on annual emissions divided by 365 days per year, 24 hours per day.
* Emission source parameters based on EPA 2015.

Truck Idle Modeling Information[a]

Emissions Source	Number of Emission Points	Average Hourly[b] DPM/PM2.5 Emissions (g/s)	Emissions per Source (g/s)	Height (m)	Diameter (m)	Exit Velocity (m/s)	Temp (K)
Truck Idle	17	1.18E-04	6.94E-06	3.84	0.1	51.71	366

a Point source parameters from SJVAPCD, Guidance for Air Dispersion Modeling, Draft 01/07 Rev 2.0.
b Average hourly emissions for modeling calculated based on annual emissions divided by 365 days per year, 24 hours per day.

644 and 675 Piercy Road, San Jose - Project Construction & Operation Sources - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations- Unmitigated
Maximum Cancer Risk Calculations for Project Construction and Operation
Off-Site Residential MEI Receptor - First Floor Level Receptor (1.5 meters)

Receptor Information

Number of Receptors	67
Receptor Level =	1st floor level - 1.5 meters
Receptor distances =	at sensitive residential receptor locations

Meteorological Conditions

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

Off-Site MEI Maximum Concentrations from Construction & Operation

Emission Years	Concentration (μg/m³) DPM	Exhaust TOG	Evaporative TOG
2023-2024 - Construction	0.07682	0.0000	0.0000
2025-2053 - Project Diesel Trucks	0.00689	0.0000	0.0000
Emission Year	**Maximum Total PM2.5 Concentration (μg/m3)***		
2025-2054	0.24		

* Maximum PM2.5 concetration due to project construction

644 and 675 Piercy Road, San Jose - Project Impacts Unmitigated
Maximum Cancer Risk Calculations for Project Construction and Operation
Off-Site Residential MEI Receptor - First Floor Level Receptor (1.5 meters)
Residential Exposure (30-year)

Cancer Risk Calculation Method

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

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

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

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

Values

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

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

	Infant/Child			Adult
Age --> Parameter	3rd Trimester	0 - <2	2 - <16	16 - 30
ASF	10	10	3	1
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
ED =	0.25	2	14	14
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 Cancer Risk by Year - Maximum Impact Receptor Location - Construction & Operation

				Maximum - Exposure Information				Cancer Risk (per million)			
				Age	Annual TAC Conc (ug/m3)						
Exposure Year	Year	Exposure Duration (years)	Age	Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	Total
3rd Trimester	-	0.25	-0.25 - 0*	10	-	-	-	-	-	-	-
1	2025**	1	1	10	0.07682	0.0000	0.0000	12.62	0.0000	0.0000	12.62
2	2026	1	2	10	0.00689	0.0000	0.0000	1.13	0.0000	0.0000	1.132
3	2027	1	3	3	0.00689	0.0000	0.0000	0.18	0.0000	0.0000	0.178
4	2028	1	4	3	0.00689	0.0000	0.0000	0.18	0.0000	0.0000	0.178
5	2029	1	5	3	0.00689	0.0000	0.0000	0.18	0.0000	0.0000	0.178
6	2030	1	6	3	0.00689	0.0000	0.0000	0.18	0.0000	0.0000	0.178
7	2031	1	7	3	0.00689	0.0000	0.0000	0.18	0.0000	0.0000	0.178
8	2032	1	8	3	0.00689	0.0000	0.0000	0.18	0.0000	0.0000	0.178
9	2033	1	9	3	0.00689	0.0000	0.0000	0.18	0.0000	0.0000	0.178
10	2034	1	10	3	0.00689	0.0000	0.0000	0.18	0.0000	0.0000	0.178
11	2035	1	11	3	0.00689	0.0000	0.0000	0.18	0.0000	0.0000	0.178
12	2036	1	12	3	0.00689	0.0000	0.0000	0.18	0.0000	0.0000	0.178
13	2037	1	13	3	0.00689	0.0000	0.0000	0.18	0.0000	0.0000	0.178
14	2038	1	14	3	0.00689	0.0000	0.0000	0.18	0.0000	0.0000	0.178
15	2039	1	15	3	0.00689	0.0000	0.0000	0.18	0.0000	0.0000	0.178
16	2040	1	16	3	0.00689	0.0000	0.0000	0.18	0.0000	0.0000	0.178
17	2041	1	17	1	0.00689	0.0000	0.0000	0.020	0.0000	0.0000	0.020
18	2042	1	18	1	0.00689	0.0000	0.0000	0.020	0.0000	0.0000	0.020
19	2043	1	19	1	0.00689	0.0000	0.0000	0.020	0.0000	0.0000	0.020
20	2044	1	20	1	0.00689	0.0000	0.0000	0.020	0.0000	0.0000	0.020
21	2045	1	21	1	0.00689	0.0000	0.0000	0.020	0.0000	0.0000	0.020
22	2046	1	22	1	0.00689	0.0000	0.0000	0.020	0.0000	0.0000	0.020
23	2047	1	23	1	0.00689	0.0000	0.0000	0.020	0.0000	0.0000	0.020
24	2048	1	24	1	0.00689	0.0000	0.0000	0.020	0.0000	0.0000	0.020
25	2049	1	25	1	0.00689	0.0000	0.0000	0.020	0.0000	0.0000	0.020
26	2050	1	26	1	0.00689	0.0000	0.0000	0.020	0.0000	0.0000	0.020
27	2051	1	27	1	0.00689	0.0000	0.0000	0.020	0.0000	0.0000	0.020
28	2052	1	28	1	0.00689	0.0000	0.0000	0.020	0.0000	0.0000	0.020
29	2053	1	29	1	0.00689	0.0000	0.0000	0.020	0.0000	0.0000	0.020
30	2054	1	30	1	0.00689	0.0000	0.0000	0.020	0.0000	0.0000	0.020
Total Increased Cancer Risk								16.52	0.0000	0.0000	**16.52**

* Third trimester of pregnancy

** Construction occurs over an 10-month period during 2023 and 2024.

644 and 675 Piercy Road, San Jose - Project Impacts
Cancer Risk Calculations for Project Construction and Operation- Unmitigated
at Off-Site Residential Receptors - First Floor Receptors

Exposure Types and Durations (years) for Cancer Risk Calculations - Project Impacts

Year(s) ->	2023-2024	2025-2053
Duration ->	1	29
Activity ->	Construction	Operation - Project Trucks
Exposure Type		
3rd Trimester (10)	0	0
Infant (10)	1	1
Child (3)	0	14
Adult (1)	0	14

Receptor No.	Receptor Coordinates UTM-X (m)	UTM-Y (m)	Description	2023-2024 Construction Concentrations DPM	2025 Project Truck Traffic - On-Site and Local Roads Truck Travel Concentration DPM	Exh TOG	Evap TOG	2023-2024 Construction Cancer Risk (per million)	2025 Project Truck Traffic Cancer Risk (per million) DPM	Exh TOG	Evap TOG	Project Truck Traffic Cancer Risk	Total - Cancer Risk: Cancer Risk (per million) Construction	Trucks	TOTAL
1	609093.07	4123328.13	Offsite-1st Floor	0.027610	0.002650	0.00000	0.00000	4.535	1.50108	0.00000	0.00000	1.50108	4.535	1.501	6.036
2	609078.56	4123341.64	Offsite-1st Floor	0.034350	0.002860	0.00000	0.00000	5.642	1.62004	0.00000	0.00000	1.62004	5.642	1.620	7.262
3	609075.05	4123360.16	Offsite-1st Floor	0.048560	0.003340	0.00000	0.00000	7.976	1.89193	0.00000	0.00000	1.89193	7.976	1.892	9.868
4	609080.56	4123380.18	Offsite-1st Floor	0.061700	0.004130	0.00000	0.00000	10.134	2.33942	0.00000	0.00000	2.33942	10.134	2.339	12.473
5	609124.10	4123322.62	Offsite-1st Floor	0.024870	0.002360	0.00000	0.00000	4.085	1.33681	0.00000	0.00000	1.33681	4.085	1.337	5.422
6	609112.09	4123337.14	Offsite-1st Floor	0.031070	0.002660	0.00000	0.00000	5.103	1.50675	0.00000	0.00000	1.50675	5.103	1.507	6.610
7	609152.12	4123352.65	Offsite-1st Floor	0.033670	0.002990	0.00000	0.00000	5.530	1.69367	0.00000	0.00000	1.69367	5.530	1.694	7.224
8	609140.61	4123365.16	Offsite-1st Floor	0.039710	0.003370	0.00000	0.00000	6.522	1.90892	0.00000	0.00000	1.90892	6.522	1.909	8.431
9	609129.60	4123378.17	Offsite-1st Floor	0.047460	0.003850	0.00000	0.00000	7.795	2.18082	0.00000	0.00000	2.18082	7.795	2.181	9.976
10	609122.60	4123398.19	Offsite-1st Floor	0.059350	0.004700	0.00000	0.00000	9.748	2.66230	0.00000	0.00000	2.66230	9.748	2.662	12.410
11	609129.10	4123416.71	Offsite-1st Floor	0.064890	0.005400	0.00000	0.00000	10.658	3.05881	0.00000	0.00000	3.05881	10.658	3.059	13.717
12	609136.61	4123430.72	Offsite-1st Floor	0.067090	0.005920	0.00000	0.00000	11.019	3.35336	0.00000	0.00000	3.35336	11.019	3.353	14.373
13	609147.62	4123444.24	Offsite-1st Floor	0.066140	0.006030	0.00000	0.00000	10.863	3.41567	0.00000	0.00000	3.41567	10.863	3.416	14.279
14	609155.13	4123493.28	Offsite-1st Floor	0.076820	0.006890	0.00000	0.00000	12.617	3.90281	0.00000	0.00000	3.90281	12.617	3.903	16.520
15	609202.17	4123390.69	Offsite-1st Floor	0.028820	0.002790	0.00000	0.00000	4.734	1.58038	0.00000	0.00000	1.58038	4.734	1.580	6.314
16	609191.66	4123413.71	Offsite-1st Floor	0.033000	0.003190	0.00000	0.00000	5.420	1.80696	0.00000	0.00000	1.80696	5.420	1.807	7.227
17	609198.17	4123433.23	Offsite-1st Floor	0.034300	0.003250	0.00000	0.00000	5.634	1.84095	0.00000	0.00000	1.84095	5.634	1.841	7.475
18	609224.69	4123437.23	Offsite-1st Floor	0.030680	0.002820	0.00000	0.00000	5.039	1.59738	0.00000	0.00000	1.59738	5.039	1.597	6.636
19	609213.18	4123452.24	Offsite-1st Floor	0.034060	0.002970	0.00000	0.00000	5.594	1.68234	0.00000	0.00000	1.68234	5.594	1.682	7.277
20	609204.67	4123466.76	Offsite-1st Floor	0.037580	0.003060	0.00000	0.00000	6.172	1.73332	0.00000	0.00000	1.73332	6.172	1.733	7.906
21	609200.17	4123485.77	Offsite-1st Floor	0.041560	0.002990	0.00000	0.00000	6.826	1.69367	0.00000	0.00000	1.69367	6.826	1.694	8.520
22	609190.66	4123506.29	Offsite-1st Floor	0.052270	0.003250	0.00000	0.00000	8.585	1.84095	0.00000	0.00000	1.84095	8.585	1.841	10.426
23	609192.66	4123553.84	Offsite-1st Floor	0.037740	0.002400	0.00000	0.00000	6.199	1.35947	0.00000	0.00000	1.35947	6.199	1.359	7.558
24	609202.67	4123563.84	Offsite-1st Floor	0.028760	0.001800	0.00000	0.00000	4.724	1.01960	0.00000	0.00000	1.01960	4.724	1.020	5.743
25	609215.18	4123573.85	Offsite-1st Floor	0.021140	0.001460	0.00000	0.00000	3.472	0.82701	0.00000	0.00000	0.82701	3.472	0.827	4.299
26	609227.19	4123585.87	Offsite-1st Floor	0.015370	0.001200	0.00000	0.00000	2.524	0.67974	0.00000	0.00000	0.67974	2.524	0.680	3.204
27	609243.21	4123593.87	Offsite-1st Floor	0.011400	0.001010	0.00000	0.00000	1.872	0.57211	0.00000	0.00000	0.57211	1.872	0.572	2.445
28	609286.25	4123560.84	Offsite-1st Floor	0.010420	0.000910	0.00000	0.00000	1.711	0.51547	0.00000	0.00000	0.51547	1.711	0.515	2.227
29	609268.73	4123554.34	Offsite-1st Floor	0.013630	0.001090	0.00000	0.00000	2.239	0.61743	0.00000	0.00000	0.61743	2.239	0.617	2.856
30	609253.72	4123547.33	Offsite-1st Floor	0.017630	0.001310	0.00000	0.00000	2.896	0.74204	0.00000	0.00000	0.74204	2.896	0.742	3.638
31	609240.71	4123536.32	Offsite-1st Floor	0.023290	0.001600	0.00000	0.00000	3.825	0.90631	0.00000	0.00000	0.90631	3.825	0.906	4.732
32	609230.70	4123528.31	Offsite-1st Floor	0.028830	0.001890	0.00000	0.00000	4.735	1.07058	0.00000	0.00000	1.07058	4.735	1.071	5.806
33	609251.72	4123465.25	Offsite-1st Floor	0.026060	0.002130	0.00000	0.00000	4.280	1.20653	0.00000	0.00000	1.20653	4.280	1.207	5.487
34	609260.72	4123479.27	Offsite-1st Floor	0.023120	0.001810	0.00000	0.00000	3.797	1.02527	0.00000	0.00000	1.02527	3.797	1.025	4.823
35	609269.23	4123492.28	Offsite-1st Floor	0.020100	0.001540	0.00000	0.00000	3.301	0.87233	0.00000	0.00000	0.87233	3.301	0.872	4.174
36	609279.24	4123501.79	Offsite-1st Floor	0.017210	0.001330	0.00000	0.00000	2.827	0.75337	0.00000	0.00000	0.75337	2.827	0.753	3.580
37	609290.75	4123511.30	Offsite-1st Floor	0.014370	0.001140	0.00000	0.00000	2.360	0.64575	0.00000	0.00000	0.64575	2.360	0.646	3.006
38	609301.76	4123523.31	Offsite-1st Floor	0.011740	0.000960	0.00000	0.00000	1.928	0.54379	0.00000	0.00000	0.54379	1.928	0.544	2.472
39	609312.77	4123530.81	Offsite-1st Floor	0.009920	0.000850	0.00000	0.00000	1.629	0.48148	0.00000	0.00000	0.48148	1.629	0.481	2.111
40	609323.78	4123540.82	Offsite-1st Floor	0.008220	0.000740	0.00000	0.00000	1.350	0.41917	0.00000	0.00000	0.41917	1.350	0.419	1.769
41	609332.29	4123552.83	Offsite-1st Floor	0.006860	0.000670	0.00000	0.00000	1.127	0.37952	0.00000	0.00000	0.37952	1.127	0.380	1.506
42	609133.68	4123311.98	Offsite-1st Floor	0.021620	0.002220	0.00000	0.00000	3.551	1.25751	0.00000	0.00000	1.25751	3.551	1.258	4.809
43	609144.23	4123299.22	Offsite-1st Floor	0.018610	0.002100	0.00000	0.00000	3.057	1.18954	0.00000	0.00000	1.18954	3.057	1.190	4.246
44	609171.94	4123323.85	Offsite-1st Floor	0.024790	0.002490	0.00000	0.00000	4.072	1.41045	0.00000	0.00000	1.41045	4.072	1.410	5.482
45	609160.51	4123341.45	Offsite-1st Floor	0.029760	0.002770	0.00000	0.00000	4.888	1.56906	0.00000	0.00000	1.56906	4.888	1.569	6.457
46	609218.13	4123381.47	Offsite-1st Floor	0.026290	0.002580	0.00000	0.00000	4.318	1.46143	0.00000	0.00000	1.46143	4.318	1.461	5.779
47	609240.56	4123390.27	Offsite-1st Floor	0.024880	0.002490	0.00000	0.00000	4.086	1.41045	0.00000	0.00000	1.41045	4.086	1.410	5.497
48	609248.48	4123399.07	Offsite-1st Floor	0.024720	0.002470	0.00000	0.00000	4.060	1.39912	0.00000	0.00000	1.39912	4.060	1.399	5.459
49	609259.92	4123410.07	Offsite-1st Floor	0.024100	0.002370	0.00000	0.00000	3.958	1.34248	0.00000	0.00000	1.34248	3.958	1.342	5.301
50	609269.59	4123421.06	Offsite-1st Floor	0.023280	0.002230	0.00000	0.00000	3.824	1.26317	0.00000	0.00000	1.26317	3.824	1.263	5.087
51	609279.71	4123431.62	Offsite-1st Floor	0.021930	0.002040	0.00000	0.00000	3.602	1.15555	0.00000	0.00000	1.15555	3.602	1.156	4.757
52	609288.51	4123443.05	Offsite-1st Floor	0.020430	0.001840	0.00000	0.00000	3.356	1.04226	0.00000	0.00000	1.04226	3.356	1.042	4.398
53	609298.18	4123454.49	Offsite-1st Floor	0.018490	0.001620	0.00000	0.00000	3.037	0.91764	0.00000	0.00000	0.91764	3.037	0.918	3.955
54	609307.86	4123465.05	Offsite-1st Floor	0.016400	0.001410	0.00000	0.00000	2.694	0.79869	0.00000	0.00000	0.79869	2.694	0.799	3.492
55	609318.42	4123476.04	Offsite-1st Floor	0.014210	0.001220	0.00000	0.00000	2.334	0.69106	0.00000	0.00000	0.69106	2.334	0.691	3.025
56	609330.29	4123484.84	Offsite-1st Floor	0.012200	0.001060	0.00000	0.00000	2.004	0.60043	0.00000	0.00000	0.60043	2.004	0.600	2.604
57	609339.09	4123495.84	Offsite-1st Floor	0.010520	0.000930	0.00000	0.00000	1.728	0.52679	0.00000	0.00000	0.52679	1.728	0.527	2.255
58	609350.09	4123505.51	Offsite-1st Floor	0.008930	0.000810	0.00000	0.00000	1.467	0.45882	0.00000	0.00000	0.45882	1.467	0.459	1.926
59	609190.86	4123342.77	Offsite-1st Floor	0.026800	0.002580	0.00000	0.00000	4.402	1.46143	0.00000	0.00000	1.46143	4.402	1.461	5.863
60	609029.76	4123792.55	Offsite-1st Floor	0.005150	0.000880	0.00000	0.00000	0.846	0.49847	0.00000	0.00000	0.49847	0.846	0.498	1.344
61	609048.03	4123818.58	Offsite-1st Floor	0.003450	0.000690	0.00000	0.00000	0.567	0.39085	0.00000	0.00000	0.39085	0.567	0.391	0.957
62	609069.80	4123833.09	Offsite-1st Floor	0.002580	0.000570	0.00000	0.00000	0.424	0.32287	0.00000	0.00000	0.32287	0.424	0.323	0.747
63	608999.99	4123830.84	Offsite-1st Floor	0.004540	0.000890	0.00000	0.00000	0.746	0.50414	0.00000	0.00000	0.50414	0.746	0.504	1.250
64	608981.97	4123843.60	Offsite-1st Floor	0.004470	0.000940	0.00000	0.00000	0.734	0.53246	0.00000	0.00000	0.53246	0.734	0.532	1.267
65	608996.23	4123855.11	Offsite-1st Floor	0.003740	0.000800	0.00000	0.00000	0.614	0.45316	0.00000	0.00000	0.45316	0.614	0.453	1.067
66	608985.72	4123868.87	Offsite-1st Floor	0.003460	0.000770	0.00000	0.00000	0.568	0.43616	0.00000	0.00000	0.43616	0.568	0.436	1.004
67	609002.16	4123913.26	Offsite-1st Floor	0.002210	0.000510	0.00000	0.00000	0.363	0.28889	0.00000	0.00000	0.28889	0.363	0.289	0.652
		Max		**0.07682**	**0.00689**	**0.00000**	**0.00000**	**12.62**	**3.903**	**0.000**	**0.000**	**3.903**	**12.617**	**3.903**	**16.520**

644 and 675 Piercy Road, San Jose - Project Impacts
Total PM2.5 Concentrations From Construction and Operation - Unmitigated
Off-Site Residential Receptors - First Floor Level Receptor (1.5 meters)

				Total PM2.5 Concentrations	
Receptor No.	UTM-X	UTM-Y	Description	Construction 2023-2024	Operation Roads 2025-2053
1	609093.07	4123328.13	Offsite-1st Floor	0.075210	0.004330
2	609078.56	4123341.64	Offsite-1st Floor	0.096620	0.004720
3	609075.05	4123360.16	Offsite-1st Floor	0.144900	0.005210
4	609080.56	4123380.18	Offsite-1st Floor	0.192170	0.006020
5	609124.10	4123322.62	Offsite-1st Floor	0.067580	0.003470
6	609112.09	4123337.14	Offsite-1st Floor	0.085330	0.003900
7	609152.12	4123352.65	Offsite-1st Floor	0.091990	0.003970
8	609140.61	4123365.16	Offsite-1st Floor	0.109040	0.004470
9	609129.60	4123378.17	Offsite-1st Floor	0.131450	0.005100
10	609122.60	4123398.19	Offsite-1st Floor	0.167210	0.006150
11	609129.10	4123416.71	Offsite-1st Floor	0.184330	0.006830
12	609136.61	4123430.72	Offsite-1st Floor	0.191280	0.007280
13	609147.62	4123444.24	Offsite-1st Floor	0.188030	0.007240
14	609155.13	4123493.28	Offsite-1st Floor	0.237190	0.007780
15	609202.17	4123390.69	Offsite-1st Floor	0.078460	0.003270
16	609191.66	4123413.71	Offsite-1st Floor	0.090000	0.003680
17	609198.17	4123433.23	Offsite-1st Floor	0.093600	0.003700
18	609224.69	4123437.23	Offsite-1st Floor	0.083520	0.003210
19	609213.18	4123452.24	Offsite-1st Floor	0.092930	0.003360
20	609204.67	4123466.76	Offsite-1st Floor	0.102830	0.003450
21	609200.17	4123485.77	Offsite-1st Floor	0.114210	0.003370
22	609190.66	4123506.29	Offsite-1st Floor	0.146010	0.003720
23	609192.66	4123553.84	Offsite-1st Floor	0.104180	0.002740
24	609202.67	4123563.84	Offsite-1st Floor	0.078290	0.002090
25	609215.18	4123573.85	Offsite-1st Floor	0.056960	0.001690
26	609227.19	4123585.87	Offsite-1st Floor	0.041070	0.001390
27	609243.21	4123593.87	Offsite-1st Floor	0.030200	0.001160
28	609286.25	4123560.84	Offsite-1st Floor	0.027530	0.001050
29	609268.73	4123554.34	Offsite-1st Floor	0.036230	0.001260
30	609253.72	4123547.33	Offsite-1st Floor	0.047170	0.001510
31	609240.71	4123536.32	Offsite-1st Floor	0.062780	0.001850
32	609230.70	4123528.31	Offsite-1st Floor	0.078240	0.002190
33	609251.72	4123465.25	Offsite-1st Floor	0.070910	0.002400
34	609260.72	4123479.27	Offsite-1st Floor	0.062860	0.002030
35	609269.23	4123492.28	Offsite-1st Floor	0.054480	0.001730
36	609279.24	4123501.79	Offsite-1st Floor	0.046470	0.001490
37	609290.75	4123511.30	Offsite-1st Floor	0.038620	0.001270
38	609301.76	4123523.31	Offsite-1st Floor	0.031360	0.001080
39	609312.77	4123530.81	Offsite-1st Floor	0.026350	0.000950
40	609323.78	4123540.82	Offsite-1st Floor	0.021700	0.000840
41	609332.29	4123552.83	Offsite-1st Floor	0.017990	0.000750
42	609133.68	4123311.98	Offsite-1st Floor	0.058410	0.003270
43	609144.23	4123299.22	Offsite-1st Floor	0.049990	0.003090
44	609171.94	4123323.85	Offsite-1st Floor	0.067280	0.003380
45	609160.51	4123341.45	Offsite-1st Floor	0.081070	0.003700
46	609218.13	4123381.47	Offsite-1st Floor	0.071440	0.003030
47	609240.56	4123390.27	Offsite-1st Floor	0.067580	0.002900
48	609248.48	4123399.07	Offsite-1st Floor	0.067120	0.002860
49	609259.92	4123410.07	Offsite-1st Floor	0.065420	0.002730
50	609269.59	4123421.06	Offsite-1st Floor	0.063200	0.002560
51	609279.71	4123431.62	Offsite-1st Floor	0.059510	0.002320
52	609288.51	4123443.05	Offsite-1st Floor	0.055430	0.002090
53	609298.18	4123454.49	Offsite-1st Floor	0.050120	0.001830
54	609307.86	4123465.05	Offsite-1st Floor	0.044360	0.001590
55	609318.42	4123476.04	Offsite-1st Floor	0.038290	0.001370
56	609330.29	4123484.84	Offsite-1st Floor	0.032740	0.001190
57	609339.09	4123495.84	Offsite-1st Floor	0.028080	0.001040
58	609350.09	4123505.51	Offsite-1st Floor	0.023720	0.000910
59	609190.86	4123342.77	Offsite-1st Floor	0.072720	0.003310
60	609029.76	4123792.55	Offsite-1st Floor	0.013850	0.000990
61	609048.03	4123818.58	Offsite-1st Floor	0.009180	0.000770
62	609069.80	4123833.09	Offsite-1st Floor	0.006820	0.000630
63	608999.99	4123830.84	Offsite-1st Floor	0.012170	0.001020
64	608981.97	4123843.60	Offsite-1st Floor	0.011950	0.001080
65	608996.23	4123855.11	Offsite-1st Floor	0.010010	0.000910
66	608985.72	4123868.87	Offsite-1st Floor	0.009250	0.000870
67	609002.16	4123913.26	Offsite-1st Floor	0.005870	0.000560
		Max		**0.23719**	**0.00778**

644 and 675 Piercy Road, San Jose - Project Construction & Operation Sources - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations- Mitigated
Maximum Cancer Risk Calculations for Project Construction and Operation
Off-Site Residential Receptors - First Floor Level Receptor (1.5 meters)

Receptor Information

Number of Receptors	67
Receptor Level =	1st floor level - 1.5 meters
Receptor distances =	at sensitive residential receptor locations

Meteorological Conditions

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

Off-Site MEI Maximum Concentrations from Construction & Operation

Emission Years	Concentration ($\mu g/m^3$)		
	DPM	Exhaust TOG	Evaporative TOG
2023-2024 - Construction	0.01643	0.0000	0.0000
2025-2053 - Project Diesel Trucks	0.00689	0.0000	0.0000
Emission Year	**Maximum Total PM2.5 Concentration (µg/m3)***		
2025-2054	0.079		

* Maximum PM2.5 concetration due to project construction

644 and 675 Piercy Road, San Jose - Project Impacts - Mitigated
Maximum Cancer Risk Calculations for Project Construction and Operation
Off-Site Residential Receptors - First Floor Level Receptor (1.5 meters)
Residential Exposure (30-year)

Cancer Risk Calculation Method

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

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

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

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

Values

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

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

	Infant/Child			Adult
Age --> Parameter	3rd Trimester	0 - <2	2 - <16	16 - 30
ASF	10	10	3	1
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
ED =	0.25	2	14	14
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

Road Traffic Cancer Risk by Year - Maximum Impact Receptor Location - Construction & Operation

				Maximum - Exposure Information							
					Annual TAC Conc (ug/m3)			Cancer Risk (per million)			
Exposure Year	Year	Exposure Duration (years)	Age	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	Total
3rd Trimester	-	0.25	-0.25 - 0*	10	-	-	-	-	-	-	-
1	2025**	1	1	10	0.0164	0.0000	0.0000	2.699	0.0000	0.0000	2.70
2	2026	1	2	10	0.0069	0.0000	0.0000	1.132	0.0000	0.0000	1.132
3	2027	1	3	3	0.0069	0.0000	0.0000	0.178	0.0000	0.0000	0.178
4	2028	1	4	3	0.0069	0.0000	0.0000	0.178	0.0000	0.0000	0.178
5	2029	1	5	3	0.0069	0.0000	0.0000	0.178	0.0000	0.0000	0.178
6	2030	1	6	3	0.0069	0.0000	0.0000	0.178	0.0000	0.0000	0.178
7	2031	1	7	3	0.0069	0.0000	0.0000	0.178	0.0000	0.0000	0.178
8	2032	1	8	3	0.0069	0.0000	0.0000	0.178	0.0000	0.0000	0.178
9	2033	1	9	3	0.0069	0.0000	0.0000	0.178	0.0000	0.0000	0.178
10	2034	1	10	3	0.0069	0.0000	0.0000	0.178	0.0000	0.0000	0.178
11	2035	1	11	3	0.0069	0.0000	0.0000	0.178	0.0000	0.0000	0.178
12	2036	1	12	3	0.0069	0.0000	0.0000	0.178	0.0000	0.0000	0.178
13	2037	1	13	3	0.0069	0.0000	0.0000	0.178	0.0000	0.0000	0.178
14	2038	1	14	3	0.0069	0.0000	0.0000	0.178	0.0000	0.0000	0.178
15	2039	1	15	3	0.0069	0.0000	0.0000	0.178	0.0000	0.0000	0.178
16	2040	1	16	3	0.0069	0.0000	0.0000	0.178	0.0000	0.0000	0.178
17	2041	1	17	1	0.0069	0.0000	0.0000	0.020	0.0000	0.0000	0.020
18	2042	1	18	1	0.0069	0.0000	0.0000	0.020	0.0000	0.0000	0.020
19	2043	1	19	1	0.0069	0.0000	0.0000	0.020	0.0000	0.0000	0.020
20	2044	1	20	1	0.0069	0.0000	0.0000	0.020	0.0000	0.0000	0.020
21	2045	1	21	1	0.0069	0.0000	0.0000	0.020	0.0000	0.0000	0.020
22	2046	1	22	1	0.0069	0.0000	0.0000	0.020	0.0000	0.0000	0.020
23	2047	1	23	1	0.0069	0.0000	0.0000	0.020	0.0000	0.0000	0.020
24	2048	1	24	1	0.0069	0.0000	0.0000	0.020	0.0000	0.0000	0.020
25	2049	1	25	1	0.0069	0.0000	0.0000	0.020	0.0000	0.0000	0.020
26	2050	1	26	1	0.0069	0.0000	0.0000	0.020	0.0000	0.0000	0.020
27	2051	1	27	1	0.0069	0.0000	0.0000	0.020	0.0000	0.0000	0.020
28	2052	1	28	1	0.0069	0.0000	0.0000	0.020	0.0000	0.0000	0.020
29	2053	1	29	1	0.0069	0.0000	0.0000	0.020	0.0000	0.0000	0.020
30	2054	1	30	1	0.0069	0.0000	0.0000	0.020	0.0000	0.0000	0.020
Total Increased Cancer Risk								6.60	0.00	0.00	**6.60**

* Third trimester of pregnancy
** Construction occurs over an 10-month period during 2023 and 2024.

644 and 675 Piercy Road, San Jose - Project Impacts
Cancer Risk Calculations for Project Construction and Operation- Mitigated
at Off-Site Residential Receptors - First Floor Receptors

Exposure Types and Durations (years) for Cancer Risk Calculations - Project Impacts

Year(s) ->	2023-2024	2025-2053
Duration ->	1	29
Activity ->	Construction	Operation - Project Trucks
Exposure Type		
3rd Trimester (10)	0	0
Infant (10)	1	1
Child (3)	0	14
Adult (1)	0	14

	Receptor Coordinates			2024-2025 Construction Concentrations	2024-2025 Project Truck Traffic - On-Site and Local Roads Truck Travel Concentration			2024-2025 Construction Cancer Risk (per million)	2024-2025 Project Truck Traffic Cancer Risk (per million)			Project Truck Traffic Cancer Risk	Total - Cancer Risk Cancer Risk (per million)		
Receptor No.	**UTM-X (m)**	**UTM-Y (m)**	**Description**	**DPM**	**DPM**	**Exh TOG**	**Evap TOG**		**DPM**	**Exh TOG**	**Evap TOG**		**Construction**	**Trucks**	**TOTAL**
1	609093.07	4123328.13	Offsite-1st Floor	0.005910	0.002650	0.00000	0.00000	0.971	1.50108	0.00000	0.00000	1.50108	0.971	1.501	2.47
2	609078.56	4123341.64	Offsite-1st Floor	0.007350	0.002860	0.00000	0.00000	1.207	1.62004	0.00000	0.00000	1.62004	1.207	1.620	2.83
3	609075.05	4123360.16	Offsite-1st Floor	0.010390	0.003340	0.00000	0.00000	1.707	1.89193	0.00000	0.00000	1.89193	1.707	1.892	3.60
4	609080.56	4123380.18	Offsite-1st Floor	0.013200	0.004130	0.00000	0.00000	2.168	2.33942	0.00000	0.00000	2.33942	2.168	2.339	4.51
5	609124.10	4123322.62	Offsite-1st Floor	0.005320	0.002360	0.00000	0.00000	0.874	1.33681	0.00000	0.00000	1.33681	0.874	1.337	2.21
6	609112.09	4123337.14	Offsite-1st Floor	0.006650	0.002660	0.00000	0.00000	1.092	1.50675	0.00000	0.00000	1.50675	1.092	1.507	2.60
7	609152.12	4123352.65	Offsite-1st Floor	0.007200	0.002990	0.00000	0.00000	1.183	1.69367	0.00000	0.00000	1.69367	1.183	1.694	2.88
8	609140.61	4123365.16	Offsite-1st Floor	0.008490	0.003370	0.00000	0.00000	1.394	1.90892	0.00000	0.00000	1.90892	1.394	1.909	3.30
9	609129.60	4123378.17	Offsite-1st Floor	0.010150	0.003850	0.00000	0.00000	1.667	2.18082	0.00000	0.00000	2.18082	1.667	2.181	3.85
10	609122.60	4123398.19	Offsite-1st Floor	0.012700	0.004700	0.00000	0.00000	2.086	2.66230	0.00000	0.00000	2.66230	2.086	2.662	4.75
11	609129.10	4123416.71	Offsite-1st Floor	0.013880	0.005400	0.00000	0.00000	2.280	3.05881	0.00000	0.00000	3.05881	2.280	3.059	5.34
12	609136.61	4123430.72	Offsite-1st Floor	0.014350	0.005920	0.00000	0.00000	2.357	3.35336	0.00000	0.00000	3.35336	2.357	3.353	5.71
13	609147.62	4123444.24	Offsite-1st Floor	0.014150	0.006030	0.00000	0.00000	2.324	3.41567	0.00000	0.00000	3.41567	2.324	3.416	5.74
14	609155.13	4123493.28	Offsite-1st Floor	0.016430	0.006890	0.00000	0.00000	2.699	3.90281	0.00000	0.00000	3.90281	2.699	3.903	6.60
15	609202.17	4123390.69	Offsite-1st Floor	0.006170	0.002790	0.00000	0.00000	1.013	1.58038	0.00000	0.00000	1.58038	1.013	1.580	2.59
16	609191.66	4123413.71	Offsite-1st Floor	0.007060	0.003190	0.00000	0.00000	1.160	1.80696	0.00000	0.00000	1.80696	1.160	1.807	2.97
17	609198.17	4123433.23	Offsite-1st Floor	0.007340	0.003250	0.00000	0.00000	1.206	1.84095	0.00000	0.00000	1.84095	1.206	1.841	3.05
18	609224.69	4123437.23	Offsite-1st Floor	0.006560	0.002820	0.00000	0.00000	1.077	1.59738	0.00000	0.00000	1.59738	1.077	1.597	2.67
19	609213.18	4123452.24	Offsite-1st Floor	0.007280	0.002970	0.00000	0.00000	1.196	1.68234	0.00000	0.00000	1.68234	1.196	1.682	2.88
20	609204.67	4123466.76	Offsite-1st Floor	0.008040	0.003060	0.00000	0.00000	1.321	1.73332	0.00000	0.00000	1.73332	1.321	1.733	3.05
21	609200.17	4123485.77	Offsite-1st Floor	0.008890	0.002990	0.00000	0.00000	1.460	1.69367	0.00000	0.00000	1.69367	1.460	1.694	3.15
22	609190.66	4123506.29	Offsite-1st Floor	0.011180	0.003250	0.00000	0.00000	1.836	1.84095	0.00000	0.00000	1.84095	1.836	1.841	3.68
23	609192.66	4123553.84	Offsite-1st Floor	0.008070	0.002400	0.00000	0.00000	1.325	1.35947	0.00000	0.00000	1.35947	1.325	1.359	2.68
24	609202.67	4123563.84	Offsite-1st Floor	0.006150	0.001800	0.00000	0.00000	1.010	1.01960	0.00000	0.00000	1.01960	1.010	1.020	2.03
25	609215.18	4123573.85	Offsite-1st Floor	0.004520	0.001460	0.00000	0.00000	0.742	0.82701	0.00000	0.00000	0.82701	0.742	0.827	1.57
26	609227.19	4123585.87	Offsite-1st Floor	0.003290	0.001200	0.00000	0.00000	0.540	0.67974	0.00000	0.00000	0.67974	0.540	0.680	1.22
27	609243.21	4123593.87	Offsite-1st Floor	0.002440	0.001010	0.00000	0.00000	0.401	0.57211	0.00000	0.00000	0.57211	0.401	0.572	0.97
28	609286.25	4123560.84	Offsite-1st Floor	0.002230	0.000910	0.00000	0.00000	0.366	0.51547	0.00000	0.00000	0.51547	0.366	0.515	0.88
29	609268.73	4123554.34	Offsite-1st Floor	0.002910	0.001090	0.00000	0.00000	0.478	0.61743	0.00000	0.00000	0.61743	0.478	0.617	1.10
30	609253.72	4123547.33	Offsite-1st Floor	0.003770	0.001310	0.00000	0.00000	0.619	0.74204	0.00000	0.00000	0.74204	0.619	0.742	1.36
31	609240.71	4123536.32	Offsite-1st Floor	0.004980	0.001600	0.00000	0.00000	0.818	0.90631	0.00000	0.00000	0.90631	0.818	0.906	1.72
32	609230.70	4123528.31	Offsite-1st Floor	0.006170	0.001890	0.00000	0.00000	1.013	1.07058	0.00000	0.00000	1.07058	1.013	1.071	2.08
33	609251.72	4123465.25	Offsite-1st Floor	0.005570	0.002130	0.00000	0.00000	0.915	1.20653	0.00000	0.00000	1.20653	0.915	1.207	2.12
34	609260.72	4123479.27	Offsite-1st Floor	0.004950	0.001810	0.00000	0.00000	0.813	1.02527	0.00000	0.00000	1.02527	0.813	1.025	1.84
35	609269.23	4123492.28	Offsite-1st Floor	0.004300	0.001540	0.00000	0.00000	0.706	0.87233	0.00000	0.00000	0.87233	0.706	0.872	1.58
36	609279.24	4123501.79	Offsite-1st Floor	0.003680	0.001330	0.00000	0.00000	0.604	0.75337	0.00000	0.00000	0.75337	0.604	0.753	1.36
37	609290.75	4123511.30	Offsite-1st Floor	0.003070	0.001140	0.00000	0.00000	0.504	0.64575	0.00000	0.00000	0.64575	0.504	0.646	1.15
38	609301.76	4123523.31	Offsite-1st Floor	0.002510	0.000960	0.00000	0.00000	0.412	0.54379	0.00000	0.00000	0.54379	0.412	0.544	0.96
39	609312.77	4123530.81	Offsite-1st Floor	0.002120	0.000850	0.00000	0.00000	0.348	0.48148	0.00000	0.00000	0.48148	0.348	0.481	0.83
40	609323.78	4123540.82	Offsite-1st Floor	0.001760	0.000740	0.00000	0.00000	0.289	0.41917	0.00000	0.00000	0.41917	0.289	0.419	0.71
41	609332.29	4123552.83	Offsite-1st Floor	0.001470	0.000670	0.00000	0.00000	0.241	0.37952	0.00000	0.00000	0.37952	0.241	0.380	0.62
42	609133.68	4123311.98	Offsite-1st Floor	0.004620	0.002220	0.00000	0.00000	0.759	1.25751	0.00000	0.00000	1.25751	0.759	1.258	2.02
43	609144.23	4123299.22	Offsite-1st Floor	0.003980	0.002100	0.00000	0.00000	0.654	1.18954	0.00000	0.00000	1.18954	0.654	1.190	1.84
44	609171.94	4123323.85	Offsite-1st Floor	0.005300	0.002490	0.00000	0.00000	0.871	1.41045	0.00000	0.00000	1.41045	0.871	1.410	2.28
45	609160.51	4123341.45	Offsite-1st Floor	0.006370	0.002770	0.00000	0.00000	1.046	1.56906	0.00000	0.00000	1.56906	1.046	1.569	2.62
46	609218.13	4123381.47	Offsite-1st Floor	0.005620	0.002580	0.00000	0.00000	0.923	1.46143	0.00000	0.00000	1.46143	0.923	1.461	2.38
47	609240.56	4123390.27	Offsite-1st Floor	0.005320	0.002490	0.00000	0.00000	0.874	1.41045	0.00000	0.00000	1.41045	0.874	1.410	2.28
48	609248.48	4123399.07	Offsite-1st Floor	0.005290	0.002470	0.00000	0.00000	0.869	1.39912	0.00000	0.00000	1.39912	0.869	1.399	2.27
49	609259.92	4123410.07	Offsite-1st Floor	0.005160	0.002370	0.00000	0.00000	0.848	1.34248	0.00000	0.00000	1.34248	0.848	1.342	2.19
50	609269.59	4123421.06	Offsite-1st Floor	0.004980	0.002230	0.00000	0.00000	0.818	1.26317	0.00000	0.00000	1.26317	0.818	1.263	2.08
51	609279.71	4123431.62	Offsite-1st Floor	0.004690	0.002040	0.00000	0.00000	0.770	1.15555	0.00000	0.00000	1.15555	0.770	1.156	1.93
52	609288.51	4123443.05	Offsite-1st Floor	0.004370	0.001840	0.00000	0.00000	0.718	1.04226	0.00000	0.00000	1.04226	0.718	1.042	1.76
53	609298.18	4123454.49	Offsite-1st Floor	0.003960	0.001620	0.00000	0.00000	0.650	0.91764	0.00000	0.00000	0.91764	0.650	0.918	1.57
54	609307.86	4123465.05	Offsite-1st Floor	0.003510	0.001410	0.00000	0.00000	0.577	0.79869	0.00000	0.00000	0.79869	0.577	0.799	1.38
55	609318.42	4123476.04	Offsite-1st Floor	0.003040	0.001220	0.00000	0.00000	0.499	0.69106	0.00000	0.00000	0.69106	0.499	0.691	1.19
56	609330.29	4123484.84	Offsite-1st Floor	0.002610	0.001060	0.00000	0.00000	0.429	0.60043	0.00000	0.00000	0.60043	0.429	0.600	1.03
57	609339.09	4123495.84	Offsite-1st Floor	0.002250	0.000930	0.00000	0.00000	0.370	0.52679	0.00000	0.00000	0.52679	0.370	0.527	0.90
58	609350.09	4123505.51	Offsite-1st Floor	0.001910	0.000810	0.00000	0.00000	0.314	0.45882	0.00000	0.00000	0.45882	0.314	0.459	0.77
59	609190.86	4123342.77	Offsite-1st Floor	0.005730	0.002580	0.00000	0.00000	0.941	1.46143	0.00000	0.00000	1.46143	0.941	1.461	2.40
60	609029.76	4123792.55	Offsite-1st Floor	0.001100	0.000880	0.00000	0.00000	0.181	0.49847	0.00000	0.00000	0.49847	0.181	0.498	0.68
61	609048.03	4123818.58	Offsite-1st Floor	0.000740	0.000690	0.00000	0.00000	0.122	0.39085	0.00000	0.00000	0.39085	0.122	0.391	0.51
62	609069.80	4123833.09	Offsite-1st Floor	0.000550	0.000570	0.00000	0.00000	0.090	0.32287	0.00000	0.00000	0.32287	0.090	0.323	0.41
63	608999.99	4123830.84	Offsite-1st Floor	0.000970	0.000890	0.00000	0.00000	0.159	0.50414	0.00000	0.00000	0.50414	0.159	0.504	0.66
64	608981.97	4123843.60	Offsite-1st Floor	0.000960	0.000940	0.00000	0.00000	0.158	0.53246	0.00000	0.00000	0.53246	0.158	0.532	0.69
65	608996.23	4123855.11	Offsite-1st Floor	0.000800	0.000800	0.00000	0.00000	0.131	0.45316	0.00000	0.00000	0.45316	0.131	0.453	0.58
66	608985.72	4123868.87	Offsite-1st Floor	0.000740	0.000770	0.00000	0.00000	0.122	0.43616	0.00000	0.00000	0.43616	0.122	0.436	0.56
67	609002.16	4123913.26	Offsite-1st Floor	0.000470	0.000510	0.00000	0.00000	0.077	0.28889	0.00000	0.00000	0.28889	0.077	0.289	0.37
		Max		**0.01643**	**0.00689**	**0.00000**	**0.00000**	**2.699**	**3.903**	**0.000**	**0.000**	**3.903**	**2.699**	**3.903**	**6.60**

644 and 675 Piercy Road, San Jose - Project Impacts
Total PM2.5 Concentrations From Construction and Operation - Mitigated
Off-Site Residential Receptors - First Floor Level Receptor (1.5 meters)

Receptor No.	UTM-X	UTM-Y	Description	Total PM2.5 Concentrations Construction 2023-2024	Total PM2.5 Concentrations Operation Roads 2025-2053
1	609093.07	4123328.13	Offsite-1st Floor	0.024570	0.004330
2	609078.56	4123341.64	Offsite-1st Floor	0.031760	0.004720
3	609075.05	4123360.16	Offsite-1st Floor	0.048150	0.005210
4	609080.56	4123380.18	Offsite-1st Floor	0.064340	0.006020
5	609124.10	4123322.62	Offsite-1st Floor	0.022060	0.003470
6	609112.09	4123337.14	Offsite-1st Floor	0.027920	0.003900
7	609152.12	4123352.65	Offsite-1st Floor	0.030070	0.003970
8	609140.61	4123365.16	Offsite-1st Floor	0.035670	0.004470
9	609129.60	4123378.17	Offsite-1st Floor	0.043080	0.005100
10	609122.60	4123398.19	Offsite-1st Floor	0.054980	0.006150
11	609129.10	4123416.71	Offsite-1st Floor	0.060700	0.006830
12	609136.61	4123430.72	Offsite-1st Floor	0.063040	0.007280
13	609147.62	4123444.24	Offsite-1st Floor	0.061930	0.007240
14	609155.13	4123493.28	Offsite-1st Floor	0.079300	0.007780
15	609202.17	4123390.69	Offsite-1st Floor	0.025620	0.003270
16	609191.66	4123413.71	Offsite-1st Floor	0.029410	0.003680
17	609198.17	4123433.23	Offsite-1st Floor	0.030590	0.003700
18	609224.69	4123437.23	Offsite-1st Floor	0.027280	0.003210
19	609213.18	4123452.24	Offsite-1st Floor	0.030360	0.003360
20	609204.67	4123466.76	Offsite-1st Floor	0.033620	0.003450
21	609200.17	4123485.77	Offsite-1st Floor	0.037370	0.003370
22	609190.66	4123506.29	Offsite-1st Floor	0.047930	0.003720
23	609192.66	4123553.84	Offsite-1st Floor	0.034120	0.002740
24	609202.67	4123563.84	Offsite-1st Floor	0.025570	0.002090
25	609215.18	4123573.85	Offsite-1st Floor	0.018560	0.001690
26	609227.19	4123585.87	Offsite-1st Floor	0.013360	0.001390
27	609243.21	4123593.87	Offsite-1st Floor	0.009810	0.001160
28	609286.25	4123560.84	Offsite-1st Floor	0.008940	0.001050
29	609268.73	4123554.34	Offsite-1st Floor	0.011770	0.001260
30	609253.72	4123547.33	Offsite-1st Floor	0.015350	0.001510
31	609240.71	4123536.32	Offsite-1st Floor	0.020460	0.001850
32	609230.70	4123528.31	Offsite-1st Floor	0.025540	0.002190
33	609251.72	4123465.25	Offsite-1st Floor	0.023160	0.002400
34	609260.72	4123479.27	Offsite-1st Floor	0.020520	0.002030
35	609269.23	4123492.28	Offsite-1st Floor	0.017780	0.001730
36	609279.24	4123501.79	Offsite-1st Floor	0.015150	0.001490
37	609290.75	4123511.30	Offsite-1st Floor	0.012580	0.001270
38	609301.76	4123523.31	Offsite-1st Floor	0.010200	0.001080
39	609312.77	4123530.81	Offsite-1st Floor	0.008560	0.000950
40	609323.78	4123540.82	Offsite-1st Floor	0.007040	0.000840
41	609332.29	4123552.83	Offsite-1st Floor	0.005830	0.000750
42	609133.68	4123311.98	Offsite-1st Floor	0.019050	0.003270
43	609144.23	4123299.22	Offsite-1st Floor	0.016280	0.003090
44	609171.94	4123323.85	Offsite-1st Floor	0.021960	0.003380
45	609160.51	4123341.45	Offsite-1st Floor	0.026480	0.003700
46	609218.13	4123381.47	Offsite-1st Floor	0.023330	0.003030
47	609240.56	4123390.27	Offsite-1st Floor	0.022060	0.002900
48	609248.48	4123399.07	Offsite-1st Floor	0.021910	0.002860
49	609259.92	4123410.07	Offsite-1st Floor	0.021350	0.002730
50	609269.59	4123421.06	Offsite-1st Floor	0.020630	0.002560
51	609279.71	4123431.62	Offsite-1st Floor	0.019420	0.002320
52	609288.51	4123443.05	Offsite-1st Floor	0.018090	0.002090
53	609298.18	4123454.49	Offsite-1st Floor	0.016350	0.001830
54	609307.86	4123465.05	Offsite-1st Floor	0.014470	0.001590
55	609318.42	4123476.04	Offsite-1st Floor	0.012480	0.001370
56	609330.29	4123484.84	Offsite-1st Floor	0.010660	0.001190
57	609339.09	4123495.84	Offsite-1st Floor	0.009130	0.001040
58	609350.09	4123505.51	Offsite-1st Floor	0.007710	0.000910
59	609190.86	4123342.77	Offsite-1st Floor	0.023740	0.003310
60	609029.76	4123792.55	Offsite-1st Floor	0.004510	0.000990
61	609048.03	4123818.58	Offsite-1st Floor	0.002980	0.000770
62	609069.80	4123833.09	Offsite-1st Floor	0.002210	0.000630
63	608999.99	4123830.84	Offsite-1st Floor	0.003960	0.001020
64	608981.97	4123843.60	Offsite-1st Floor	0.003890	0.001080
65	608996.23	4123855.11	Offsite-1st Floor	0.003260	0.000910
66	608985.72	4123868.87	Offsite-1st Floor	0.003010	0.000870
67	609002.16	4123913.26	Offsite-1st Floor	0.001910	0.000560
		Max		**0.0793**	**0.00778**

Attachment 4: Cumulative Risk Information and Calculations

Attachment 4: Cumulative Risk Information and Calculations

File Name:	Santa Clara (SF) - 2025 - Annual-BAAQMD Trucks.EF
CT-EMFAC2017 Version:	1.0.2.27401
Run Date:	4/19/2023 18:25
Area:	Santa Clara (SF)
Analysis Year:	2025
Season:	Annual

===

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

===

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

===

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

Pollutant Name	<= 5 mph	10 mph	15 mph	20 mph	25 mph	30 mph	35 mph	40 mph	45 mph	50 mph
PM2.5	0.008489	0.005501	0.00373	0.002665	0.00202	0.001628	0.001397	0.001277	0.00124	0.001271
TOG	0.172619	0.113109	0.076066	0.0539	0.040836	0.03264	0.027389	0.02411	0.022258	0.021553
Diesel PM	0.000788	0.00065	0.000505	0.000405	0.00035	0.000326	0.000328	0.000351	0.000395	0.000458
DEOG	0.011815	0.008534	0.004522	0.002284	0.001598	0.001271	0.001051	0.000904	0.000813	0.000771

===

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

Pollutant Name	Emission Factor
TOG	1.255395

===

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

Pollutant Name	Emission Factor
PM2.5	0.002108

===

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

Pollutant Name	Emission Factor
PM2.5	0.016801

===

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

Pollutant Name	Emission Factor
PM2.5	0.014826

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

644 & 675 Piercy Road, San Jose CA - Roadway Modeling

Hellyer Avenue - Cumulative plus Project Traffic

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

Year = 2025

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
DPM_HEL	Hellyer Avenue	SW-NE	4	591	0.37	20.6	67.7	3.4	40	18,555

Emission Factors - DPM

Speed Category	1	2	3	4
Travel Speed (mph)	40			
Emissions per Vehicle (g/VMT)	0.00035			

Emisson Factors from CT-EMFAC2017

2025 Hourly Traffic Volumes and DPM Emissions - DPM_HEL

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	3.93%	730	2.61E-05	9	6.41%	1189	4.26E-05	17	5.55%	1030	3.69E-05
2	2.62%	487	1.74E-05	10	7.36%	1367	4.89E-05	18	3.16%	586	2.10E-05
3	2.85%	529	1.89E-05	11	6.34%	1176	4.21E-05	19	2.36%	438	1.57E-05
4	3.31%	614	2.20E-05	12	6.92%	1284	4.60E-05	20	0.87%	161	5.75E-06
5	2.17%	402	1.44E-05	13	6.29%	1167	4.18E-05	21	3.09%	573	2.05E-05
6	3.36%	624	2.23E-05	14	6.23%	1157	4.14E-05	22	4.12%	764	2.73E-05
7	6.00%	1113	3.98E-05	15	5.15%	956	3.42E-05	23	2.58%	478	1.71E-05
8	4.58%	850	3.04E-05	16	3.84%	713	2.55E-05	24	0.92%	171	6.13E-06
								Total		18,555	

Analysis Year = ***2025***

Vehicle Type	2022 Caltrans Vehicles (veh/day)	2025 Vehicles (veh/day)
Truck 1 (MDT)	270	278
Truck 2 (HDT)	360	371
Non-Truck	17,384	17,906
All	**18,015**	**18,555**

Increase From 2022	1.03
Vehicles/Direction	**9,278**
Avg Vehicles/Hour/Direction	387

Traffic Data Year = ***2022***

Project Traffic Report	AADT Total	Total Truck
Hellyer Avenue	18,015	631
	Percent of Total Vehicles	3.50%

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

644 & 675 Piercy Road, San Jose CA - Roadway Modeling
Hellyer Avenue - Cumulative plus Project Traffic
PM2.5 Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions
Year = 2025

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
PM25_HEL	Hellyer Avenue	SW-NE	4	591	0.37	20.6	67.7	1.3	40	18,555

Emission Factors - PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	40			
Emissions per Vehicle (g/VMT)	0.001277			

Emisson Factors from CT-EMFAC2017

2025 Hourly Traffic Volumes and PM2.5 Emissions - PM25_HEL

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	213	2.78E-05	9	7.11%	1320	1.72E-04	17	7.39%	1371	1.79E-04
2	0.42%	78	1.02E-05	10	4.39%	814	1.06E-04	18	8.18%	1517	1.98E-04
3	0.41%	76	9.87E-06	11	4.66%	865	1.13E-04	19	5.69%	1057	1.38E-04
4	0.26%	48	6.28E-06	12	5.89%	1092	1.42E-04	20	4.28%	793	1.03E-04
5	0.50%	92	1.20E-05	13	6.15%	1141	1.49E-04	21	3.25%	604	7.87E-05
6	0.91%	168	2.19E-05	14	6.04%	1121	1.46E-04	22	3.30%	612	7.97E-05
7	3.79%	703	9.16E-05	15	7.01%	1301	1.69E-04	23	2.46%	457	5.95E-05
8	7.77%	1441	1.88E-04	16	7.14%	1325	1.73E-04	24	1.86%	346	4.51E-05
								Total		18,555	

644 & 675 Piercy Road, San Jose CA - Roadway Modeling
Hellyer Avenue - Cumulative plus Project Traffic
TOG Exhaust Modeling - Roadway Links, Traffic Volumes, and TOG Exhaust Emissions
Year = 2025

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
TEXH_HEL	Hellyer Avenue	SW-NE	4	591	0.37	20.6	67.7	1.3	40	18,555

Emission Factors - TOG Exhaust

Speed Category	1	2	3	4
Travel Speed (mph)	40			
All Vehicles TOG Emissions per Vehicle (g/VMT)	0.02411			
Diesel Vehicles TOG Emissions per Vehicle (g/VMT)	0.00090			
Gasoline Vehicles Emissions per Vehicle (g/VMT)	0.02321			

Emisson Factors from CT-EMFAC2017

2025 Hourly Traffic Volumes and TOG Exhaust Emissions - TEXH_HEL

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	213	5.05E-04	9	7.11%	1320	3.12E-03	17	7.39%	1371	3.25E-03
2	0.42%	78	1.85E-04	10	4.39%	814	1.93E-03	18	8.18%	1517	3.59E-03
3	0.41%	76	1.79E-04	11	4.66%	865	2.05E-03	19	5.69%	1057	2.50E-03
4	0.26%	48	1.14E-04	12	5.89%	1092	2.59E-03	20	4.28%	793	1.88E-03
5	0.50%	92	2.18E-04	13	6.15%	1141	2.70E-03	21	3.25%	604	1.43E-03
6	0.91%	168	3.98E-04	14	6.04%	1121	2.65E-03	22	3.30%	612	1.45E-03
7	3.79%	703	1.66E-03	15	7.01%	1301	3.08E-03	23	2.46%	457	1.08E-03
8	7.77%	1441	3.41E-03	16	7.14%	1325	3.14E-03	24	1.86%	346	8.19E-04
								Total		18,555	

644 & 675 Piercy Road, San Jose CA - Roadway Modeling
Hellyer Avenue - Cumulative plus Project Traffic
TOG Evaporative Emissions Modeling - Roadway Links, Traffic Volumes, and TOG Evaporative Emissions
Year = 2025

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
TEVAP_HEL	Hellyer Avenue	SW-NE	4	591	0.37	20.6	67.7	1.3	40	18,555

Emission Factors - PM2.5 - Evaporative TOG

Speed Category	1	2	3	4
Travel Speed (mph)	40			
Emissions per Vehicle per Hour (g/hour)	1.25540			
Emissions per Vehicle per Mile (g/VMT)	0.03138			

Emisson Factors from CT-EMFAC2017

2025 Hourly Traffic Volumes and TOG Evaporative Emissions - TEVAP_HEL

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	213	6.83E-04	9	7.11%	1320	4.23E-03	17	7.39%	1371	4.39E-03
2	0.42%	78	2.51E-04	10	4.39%	814	2.61E-03	18	8.18%	1517	4.86E-03
3	0.41%	76	2.43E-04	11	4.66%	865	2.77E-03	19	5.69%	1057	3.38E-03
4	0.26%	48	1.54E-04	12	5.89%	1092	3.50E-03	20	4.28%	793	2.54E-03
5	0.50%	92	2.95E-04	13	6.15%	1141	3.65E-03	21	3.25%	604	1.93E-03
6	0.91%	168	5.39E-04	14	6.04%	1121	3.59E-03	22	3.30%	612	1.96E-03
7	3.79%	703	2.25E-03	15	7.01%	1301	4.17E-03	23	2.46%	457	1.46E-03
8	7.77%	1441	4.61E-03	16	7.14%	1325	4.24E-03	24	1.86%	346	1.11E-03
								Total		18,555	

644 & 675 Piercy Road, San Jose CA - Roadway Modeling
Hellyer Avenue - Cumulative plus Project Traffic
Fugitive Road PM2.5 Modeling - Roadway Links, Traffic Volumes, and Fugitive Road PM2.5 Emissions
Year = 2025

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
FUG_HEL	Hellyer Avenue	SW-NE	4	591	0.37	20.6	67.7	1.3	40	18,555

Emission Factors - Fugitive PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	40			
Tire Wear - Emissions per Vehicle (g/VMT)	0.00211			
Brake Wear - Emissions per Vehicle (g/VMT)	0.01680			
Road Dust - Emissions per Vehicle (g/VMT)	0.01483			
Total Fugitive PM2.5 - Emissions per Vehicle (g/VMT)	0.03374			

Emisson Factors from CT-EMFAC2017

2025 Hourly Traffic Volumes and Fugitive PM2.5 Emissions - FUG_HEL

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	213	7.34E-04	9	7.11%	1320	4.54E-03	17	7.39%	1371	4.72E-03
2	0.42%	78	2.69E-04	10	4.39%	814	2.80E-03	18	8.18%	1517	5.22E-03
3	0.41%	76	2.61E-04	11	4.66%	865	2.98E-03	19	5.69%	1057	3.64E-03
4	0.26%	48	1.66E-04	12	5.89%	1092	3.76E-03	20	4.28%	793	2.73E-03
5	0.50%	92	3.17E-04	13	6.15%	1141	3.93E-03	21	3.25%	604	2.08E-03
6	0.91%	168	5.79E-04	14	6.04%	1121	3.86E-03	22	3.30%	612	2.11E-03
7	3.79%	703	2.42E-03	15	7.01%	1301	4.48E-03	23	2.46%	457	1.57E-03
8	7.77%	1441	4.96E-03	16	7.14%	1325	4.56E-03	24	1.86%	346	1.19E-03
								Total		18,555	

644 and 675 Piercy Road, San Jose - Hellyer Ave Cumulative Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
Off-Site Maximum Exposed Individual (MEI) Cancer Risk Receptor (1st Residential Floor Level)

Emissions Year	2025
Receptor Information	
Number of Receptors	1
Receptor Height =	1st floor level - 1.5 meters
Receptor distances =	1st residential floor level at residential project MEI location
Meteorological Conditions	
BAAQMDSan Jose Airport Met Data	2013-2017
Land Use Classification	rural
Wind speed =	variable
Wind direction =	variable

Project MEI Maximum Concentrations

	Concentration (μg/m^3)		
Emission Years	**DPM**	**Exhaust TOG**	**Evaporative TOG**
2025	0.00026	0.01864	0.02526

	PM2.5 Concentrations (μg/m^3)
Emission Years	**Total PM2.5**
2025	0.0281

644 and 675 Piercy Road, San Jose - Hellyer Ave - Cumulative Traffic Maximum Cancer Risks
Off-Site Maximum Exposed Individual (MEI) Cancer Risk Receptor (1st Residential Floor Level)
30-Year Residential Exposure

Cancer Risk Calculation Method

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

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

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

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

Values

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

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

	Infant/Child			Adult
Age -->	3rd Trimester	0 - <2	2 - <16	16 - 30
Parameter				
ASF	10	10	3	1
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
ED =	0.25	2	14	14
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates

Road Traffic Cancer Risk by Year - Project MEI Receptor Location

				Maximum - Exposure Information				Cancer Risk (per million)			
		Exposure		Age	Annual TAC Conc (ug/m3)						
Exposure		Duration		Sensitivity		Exhaust	Evaporative		Exhaust	Evaporative	
Year	Year	(years)	Age	Factor	DPM	TOG	TOG	DPM	TOG	TOG	Total
0	-	0.25	-0.25 - 0*	10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.000
1	2025**	1	1	10	0.0003	0.0186	0.0253	0.0427	0.0175	0.0014	0.062
2	2026	1	2	10	0.0003	0.0186	0.0253	0.0427	0.0175	0.0014	0.062
3	2027	1	3	3	0.0003	0.0186	0.0253	0.0067	0.0028	0.0002	0.010
4	2028	1	4	3	0.0003	0.0186	0.0253	0.0067	0.0028	0.0002	0.010
5	2029	1	5	3	0.0003	0.0186	0.0253	0.0067	0.0028	0.0002	0.010
6	2030	1	6	3	0.0003	0.0186	0.0253	0.0067	0.0028	0.0002	0.010
7	2031	1	7	3	0.0003	0.0186	0.0253	0.0067	0.0028	0.0002	0.010
8	2032	1	8	3	0.0003	0.0186	0.0253	0.0067	0.0028	0.0002	0.010
9	2033	1	9	3	0.0003	0.0186	0.0253	0.0067	0.0028	0.0002	0.010
10	2034	1	10	3	0.0003	0.0186	0.0253	0.0067	0.0028	0.0002	0.010
11	2035	1	11	3	0.0003	0.0186	0.0253	0.0067	0.0028	0.0002	0.010
12	2036	1	12	3	0.0003	0.0186	0.0253	0.0067	0.0028	0.0002	0.010
13	2037	1	13	3	0.0003	0.0186	0.0253	0.0067	0.0028	0.0002	0.010
14	2038	1	14	3	0.0003	0.0186	0.0253	0.0067	0.0028	0.0002	0.010
15	2039	1	15	3	0.0003	0.0186	0.0253	0.0067	0.0028	0.0002	0.010
16	2040	1	16	3	0.0003	0.0186	0.0253	0.0067	0.0028	0.0002	0.010
17	2041	1	17	1	0.0003	0.0186	0.0253	0.0007	0.0003	0.0000	0.001
18	2042	1	18	1	0.0003	0.0186	0.0253	0.0007	0.0003	0.0000	0.001
19	2043	1	19	1	0.0003	0.0186	0.0253	0.0007	0.0003	0.0000	0.001
20	2044	1	20	1	0.0003	0.0186	0.0253	0.0007	0.0003	0.0000	0.001
21	2045	1	21	1	0.0003	0.0186	0.0253	0.0007	0.0003	0.0000	0.001
22	2046	1	22	1	0.0003	0.0186	0.0253	0.0007	0.0003	0.0000	0.001
23	2047	1	23	1	0.0003	0.0186	0.0253	0.0007	0.0003	0.0000	0.001
24	2048	1	24	1	0.0003	0.0186	0.0253	0.0007	0.0003	0.0000	0.001
25	2049	1	25	1	0.0003	0.0186	0.0253	0.0007	0.0003	0.0000	0.001
26	2050	1	26	1	0.0003	0.0186	0.0253	0.0007	0.0003	0.0000	0.001
27	2051	1	27	1	0.0003	0.0186	0.0253	0.0007	0.0003	0.0000	0.001
28	2052	1	28	1	0.0003	0.0186	0.0253	0.0007	0.0003	0.0000	0.001
29	2053	1	29	1	0.0003	0.0186	0.0253	0.0007	0.0003	0.0000	0.001
30	2054	1	30	1	0.0003	0.0186	0.0253	0.0007	0.0003	0.0000	0.001
Total Increased Cancer Risk			**Total**					0.19	0.078	0.006	**0.27**

* Third trimester of pregnancy

** Construction occurs over an 10-month period during 2023 and 2024.

644 & 675 Piercy Road, San Jose CA - Roadway Modeling

Silicon Valley Blvd - Cumulative plus Project Traffic

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

Year = 2025

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
DPM_SIL	Silicon Valley Blvd	NW-SE	4	284	0.18	20.6	67.7	3.4	35	26,582

Emission Factors - DPM

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Emissions per Vehicle (g/VMT)	0.00033			

Emisson Factors from CT-EMFAC2017

2025 Hourly Traffic Volumes and DPM Emissions - DPM_SIL

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	3.93%	1046	1.68E-05	9	6.41%	1703	2.74E-05	17	5.55%	1475	2.37E-05
2	2.62%	697	1.12E-05	10	7.36%	1958	3.15E-05	18	3.16%	839	1.35E-05
3	2.85%	758	1.22E-05	11	6.34%	1685	2.71E-05	19	2.36%	627	1.01E-05
4	3.31%	879	1.41E-05	12	6.92%	1839	2.96E-05	20	0.87%	230	3.70E-06
5	2.17%	576	9.26E-06	13	6.29%	1672	2.69E-05	21	3.09%	821	1.32E-05
6	3.36%	894	1.44E-05	14	6.23%	1657	2.67E-05	22	4.12%	1094	1.76E-05
7	6.00%	1594	2.56E-05	15	5.15%	1369	2.20E-05	23	2.58%	685	1.10E-05
8	4.58%	1218	1.96E-05	16	3.84%	1021	1.64E-05	24	0.92%	245	3.94E-06
								Total		26,582	

Analysis Year = ***2025***

Vehicle Type	2022 Caltrans Vehicles (veh/day)	2025 Vehicles (veh/day)
Truck 1 (MDT)	387	399
Truck 2 (HDT)	516	532
Non-Truck	24,905	25,652
All	**25,808**	**26,582**

Increase From 2022	1.03
Vehicles/Direction	**13,291**
Avg Vehicles/Hour/Direction	554

Traffic Data Year = ***2022***

Project Traffic Report	AADT Total	Total Truck
Silicon Valley Boulevard	25,808	903
	Percent of Total Vehicles	3.50%

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

644 & 675 Piercy Road, San Jose CA - Roadway Modeling
Silicon Valley Blvd - Cumulative plus Project Traffic
PM2.5 Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions
Year = 2025

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
PM25_SIL	Silicon Valley Blvd	NW-SE	4	284	0.18	20.6	67.7	1.3	35	26,582

Emission Factors - PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Emissions per Vehicle (g/VMT)	0.001397			

Emisson Factors from CT-EMFAC2017

2025 Hourly Traffic Volumes and PM2.5 Emissions - PM25_SIL

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	306	2.09E-05	9	7.11%	1891	1.30E-04	17	7.39%	1964	1.35E-04
2	0.42%	112	7.68E-06	10	4.39%	1166	7.99E-05	18	8.18%	2174	1.49E-04
3	0.41%	109	7.43E-06	11	4.66%	1239	8.49E-05	19	5.69%	1514	1.04E-04
4	0.26%	69	4.73E-06	12	5.89%	1565	1.07E-04	20	4.28%	1136	7.78E-05
5	0.50%	132	9.05E-06	13	6.15%	1635	1.12E-04	21	3.25%	865	5.93E-05
6	0.91%	241	1.65E-05	14	6.04%	1605	1.10E-04	22	3.30%	876	6.00E-05
7	3.79%	1007	6.90E-05	15	7.01%	1864	1.28E-04	23	2.46%	654	4.48E-05
8	7.77%	2064	1.41E-04	16	7.14%	1898	1.30E-04	24	1.86%	496	3.39E-05
								Total		26,582	

644 & 675 Piercy Road, San Jose CA - Roadway Modeling
Silicon Valley Blvd - Cumulative plus Project Traffic
TOG Exhaust Modeling - Roadway Links, Traffic Volumes, and TOG Exhaust Emissions
Year = 2025

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
TEXH_SIL	Silicon Valley Blvd	NW-SE	4	284	0.18	20.6	67.7	1.3	35	26,582

Emission Factors - TOG Exhaust

Speed Category	1	2	3	4
Travel Speed (mph)	35			
All Vehicles TOG Emissions per Vehicle (g/VMT)	0.02739			
Diesel Vehicles TOG Emissions per Vehicle (g/VMT)	0.00105			
Gasoline Vehicles Emissions per Vehicle (g/VMT)	0.02634			

Emisson Factors from CT-EMFAC2017

2025 Hourly Traffic Volumes and TOG Exhaust Emissions - TEXH_SIL

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	306	3.95E-04	9	7.11%	1891	2.44E-03	17	7.39%	1964	2.54E-03
2	0.42%	112	1.45E-04	10	4.39%	1166	1.51E-03	18	8.18%	2174	2.81E-03
3	0.41%	109	1.40E-04	11	4.66%	1239	1.60E-03	19	5.69%	1514	1.95E-03
4	0.26%	69	8.92E-05	12	5.89%	1565	2.02E-03	20	4.28%	1136	1.47E-03
5	0.50%	132	1.71E-04	13	6.15%	1635	2.11E-03	21	3.25%	865	1.12E-03
6	0.91%	241	3.11E-04	14	6.04%	1605	2.07E-03	22	3.30%	876	1.13E-03
7	3.79%	1007	1.30E-03	15	7.01%	1864	2.41E-03	23	2.46%	654	8.45E-04
8	7.77%	2064	2.67E-03	16	7.14%	1898	2.45E-03	24	1.86%	496	6.40E-04
								Total		26,582	

644 & 675 Piercy Road, San Jose CA - Roadway Modeling
Silicon Valley Blvd - Cumulative plus Project Traffic
TOG Evaporative Emissions Modeling - Roadway Links, Traffic Volumes, and TOG Evaporative Emissions
Year = 2025

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
TEVAP_SIL	Silicon Valley Blvd	NW-SE	4	284	0.18	20.6	67.7	1.3	35	26,582

Emission Factors - PM2.5 - Evaporative TOG

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Emissions per Vehicle per Hour (g/hour)	1.25540			
Emissions per Vehicle per Mile (g/VMT)	0.03587			

Emisson Factors from CT-EMFAC2017

2025 Hourly Traffic Volumes and TOG Evaporative Emissions - TEVAP_SIL

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	306	5.37E-04	9	7.11%	1891	3.33E-03	17	7.39%	1964	3.45E-03
2	0.42%	112	1.97E-04	10	4.39%	1166	2.05E-03	18	8.18%	2174	3.82E-03
3	0.41%	109	1.91E-04	11	4.66%	1239	2.18E-03	19	5.69%	1514	2.66E-03
4	0.26%	69	1.22E-04	12	5.89%	1565	2.75E-03	20	4.28%	1136	2.00E-03
5	0.50%	132	2.32E-04	13	6.15%	1635	2.88E-03	21	3.25%	865	1.52E-03
6	0.91%	241	4.24E-04	14	6.04%	1605	2.82E-03	22	3.30%	876	1.54E-03
7	3.79%	1007	1.77E-03	15	7.01%	1864	3.28E-03	23	2.46%	654	1.15E-03
8	7.77%	2064	3.63E-03	16	7.14%	1898	3.34E-03	24	1.86%	496	8.71E-04
								Total		26,582	

644 & 675 Piercy Road, San Jose CA - Roadway Modeling
Silicon Valley Blvd - Cumulative plus Project Traffic
Fugitive Road PM2.5 Modeling - Roadway Links, Traffic Volumes, and Fugitive Road PM2.5 Emissions
Year = 2025

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
FUG_SIL	Silicon Valley Blvd	NW-SE	4	284	0.18	20.6	67.7	1.3	35	26,582

Emission Factors - Fugitive PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Tire Wear - Emissions per Vehicle (g/VMT)	0.00211			
Brake Wear - Emissions per Vehicle (g/VMT)	0.01680			
Road Dust - Emissions per Vehicle (g/VMT)	0.01483			
Total Fugitive PM2.5 - Emissions per Vehicle (g/VMT)	0.03374			

Emisson Factors from CT-EMFAC2017

2025 Hourly Traffic Volumes and Fugitive PM2.5 Emissions - FUG_SIL

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	306	5.05E-04	9	7.11%	1891	3.13E-03	17	7.39%	1964	3.25E-03
2	0.42%	112	1.85E-04	10	4.39%	1166	1.93E-03	18	8.18%	2174	3.59E-03
3	0.41%	109	1.79E-04	11	4.66%	1239	2.05E-03	19	5.69%	1514	2.50E-03
4	0.26%	69	1.14E-04	12	5.89%	1565	2.59E-03	20	4.28%	1136	1.88E-03
5	0.50%	132	2.18E-04	13	6.15%	1635	2.70E-03	21	3.25%	865	1.43E-03
6	0.91%	241	3.99E-04	14	6.04%	1605	2.66E-03	22	3.30%	876	1.45E-03
7	3.79%	1007	1.67E-03	15	7.01%	1864	3.08E-03	23	2.46%	654	1.08E-03
8	7.77%	2064	3.41E-03	16	7.14%	1898	3.14E-03	24	1.86%	496	8.20E-04
								Total		26,582	

644 and 675 Piercy Road, San Jose - Silicon Valley Blvd Cumulative Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
Off-Site Maximum Exposed Individual (MEI) Cancer Risk Receptor (1st Floor 1.5 meters)

Emissions Year	2025
Receptor Information	
Number of Receptors	1
Receptor Height =	1st floor level - 1.5 meters
Receptor distances =	1st residential floor level at residential project MEI location

Meteorological Conditions	
BAAQMDSan Jose Airport Met Data	2013-2017
Land Use Classification	rural
Wind speed =	variable
Wind direction =	variable

Project MEI Maximum Concentrations

Emission Years	Concentration (µg/m³)		
	DPM	**Exhaust TOG**	**Evaporative TOG**
2025	0.00011	0.00998	0.01361

Emission Years	PM2.5 Concentrations (µg/m³)
	Total PM2.5
2025	0.0133

644 and 675 Piercy Road, San Jose - Silicon Valley Blvd - Cumulative Traffic Maximum Cancer Risks
Off-Site Maximum Exposed Individual (MEI) Cancer Risk Receptor (1st Floor 1.5 meters)
30-Year Residential Exposure

Cancer Risk Calculation Method

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

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

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

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

Values

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

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

	Infant/Child			Adult
Age --> Parameter	3rd Trimester	0 - <2	2 - <16	16 - 30
ASF	10	10	3	1
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
ED =	0.25	2	14	14
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates

Road Traffic Cancer Risk by Year - Project MEI Receptor Location

				Maximum - Exposure Information				Cancer Risk (per million)			
		Exposure		Age	Annual TAC Conc (ug/m3)						
Exposure Year	Year	Duration (years)	Age	Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	Total
0	-	0.25	-0.25 - 0*	10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.000
1	2025**	1	1	10	0.0001	0.0100	0.0136	0.0181	0.0094	0.0008	0.028
2	2026	1	2	10	0.0001	0.0100	0.0136	0.0181	0.0094	0.0008	0.028
3	2027	1	3	3	0.0001	0.0100	0.0136	0.0028	0.0015	0.0001	0.004
4	2028	1	4	3	0.0001	0.0100	0.0136	0.0028	0.0015	0.0001	0.004
5	2029	1	5	3	0.0001	0.0100	0.0136	0.0028	0.0015	0.0001	0.004
6	2030	1	6	3	0.0001	0.0100	0.0136	0.0028	0.0015	0.0001	0.004
7	2031	1	7	3	0.0001	0.0100	0.0136	0.0028	0.0015	0.0001	0.004
8	2032	1	8	3	0.0001	0.0100	0.0136	0.0028	0.0015	0.0001	0.004
9	2033	1	9	3	0.0001	0.0100	0.0136	0.0028	0.0015	0.0001	0.004
10	2034	1	10	3	0.0001	0.0100	0.0136	0.0028	0.0015	0.0001	0.004
11	2035	1	11	3	0.0001	0.0100	0.0136	0.0028	0.0015	0.0001	0.004
12	2036	1	12	3	0.0001	0.0100	0.0136	0.0028	0.0015	0.0001	0.004
13	2037	1	13	3	0.0001	0.0100	0.0136	0.0028	0.0015	0.0001	0.004
14	2038	1	14	3	0.0001	0.0100	0.0136	0.0028	0.0015	0.0001	0.004
15	2039	1	15	3	0.0001	0.0100	0.0136	0.0028	0.0015	0.0001	0.004
16	2040	1	16	3	0.0001	0.0100	0.0136	0.0028	0.0015	0.0001	0.004
17	2041	1	17	1	0.0001	0.0100	0.0136	0.0003	0.0002	0.0000	0.000
18	2042	1	18	1	0.0001	0.0100	0.0136	0.0003	0.0002	0.0000	0.000
19	2043	1	19	1	0.0001	0.0100	0.0136	0.0003	0.0002	0.0000	0.000
20	2044	1	20	1	0.0001	0.0100	0.0136	0.0003	0.0002	0.0000	0.000
21	2045	1	21	1	0.0001	0.0100	0.0136	0.0003	0.0002	0.0000	0.000
22	2046	1	22	1	0.0001	0.0100	0.0136	0.0003	0.0002	0.0000	0.000
23	2047	1	23	1	0.0001	0.0100	0.0136	0.0003	0.0002	0.0000	0.000
24	2048	1	24	1	0.0001	0.0100	0.0136	0.0003	0.0002	0.0000	0.000
25	2049	1	25	1	0.0001	0.0100	0.0136	0.0003	0.0002	0.0000	0.000
26	2050	1	26	1	0.0001	0.0100	0.0136	0.0003	0.0002	0.0000	0.000
27	2051	1	27	1	0.0001	0.0100	0.0136	0.0003	0.0002	0.0000	0.000
28	2052	1	28	1	0.0001	0.0100	0.0136	0.0003	0.0002	0.0000	0.000
29	2053	1	29	1	0.0001	0.0100	0.0136	0.0003	0.0002	0.0000	0.000
30	2054	1	30	1	0.0001	0.0100	0.0136	0.0003	0.0002	0.0000	0.000
Total Increased Cancer Risk			**Total**					0.08	0.042	0.003	**0.13**

* Third trimester of pregnancy
** Construction occurs over an 10-month period during 2023 and 2024.

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Risk & Hazard Stationary Source Inquiry Form

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

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

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

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

Table A: Requester Contact Information	
Date of Request	**4/14/2023**
Contact Name	Jordyn Bauer
Affiliation	Illingworth & Rodkin, Inc.
Phone	707-794-0400 x103
Email	jbauer@illingworthrodkin.com
Project Name	644 and 675 Piercy Rd
Address	644,675 Piercy Rd
City	San Jose
County	Santa Clara
Type (residential, commercial, mixed use, industrial, etc.)	Industrial
Project Size (# of units or building square feet)	225-ksf
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 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

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	Project MEI: Distance Adjustment Multiplier to MEI	Adjusted Cancer Risk Estimate	Adjusted Hazard Risk	Adjusted PM2.5
+1000	23158	San Jose Behavioral Health	455 Silicon Valley Blvd	0.903	0.002	0.001		Generator		2021 Dataset	0.04	0.04	0.0001	0.00004

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 less. To be
   c. BAAQMD Reg 11 Rule 16 required that all co-residential (sharing a wall, floor, ceiling or is in the same building as a residential unit) dry cleaners cease use of perc on July 1, 2010.
   Therefore, there is no cancer risk, hazard or PM2.5 concentrations from co-residential dry cleaning businesses in the BAAQMD.
   d. Non co-residential dry cleaners must phase out use of perc by Jan. 1, 2023. Therefore, the risk from these dry cleaners does not need to be factored in over a 70-year period, but instead should reflect the number of
   e. Gas stations can be adjusted using BAAQMD's Gas Station Distance Mulitplier worksheet.
   f. Unless otherwise noted, exempt sources are considered insignificant. See BAAQMD Reg 2 Rule 1 for a list of exempt sources.
   g. This spray booth is considered to be insignificant.

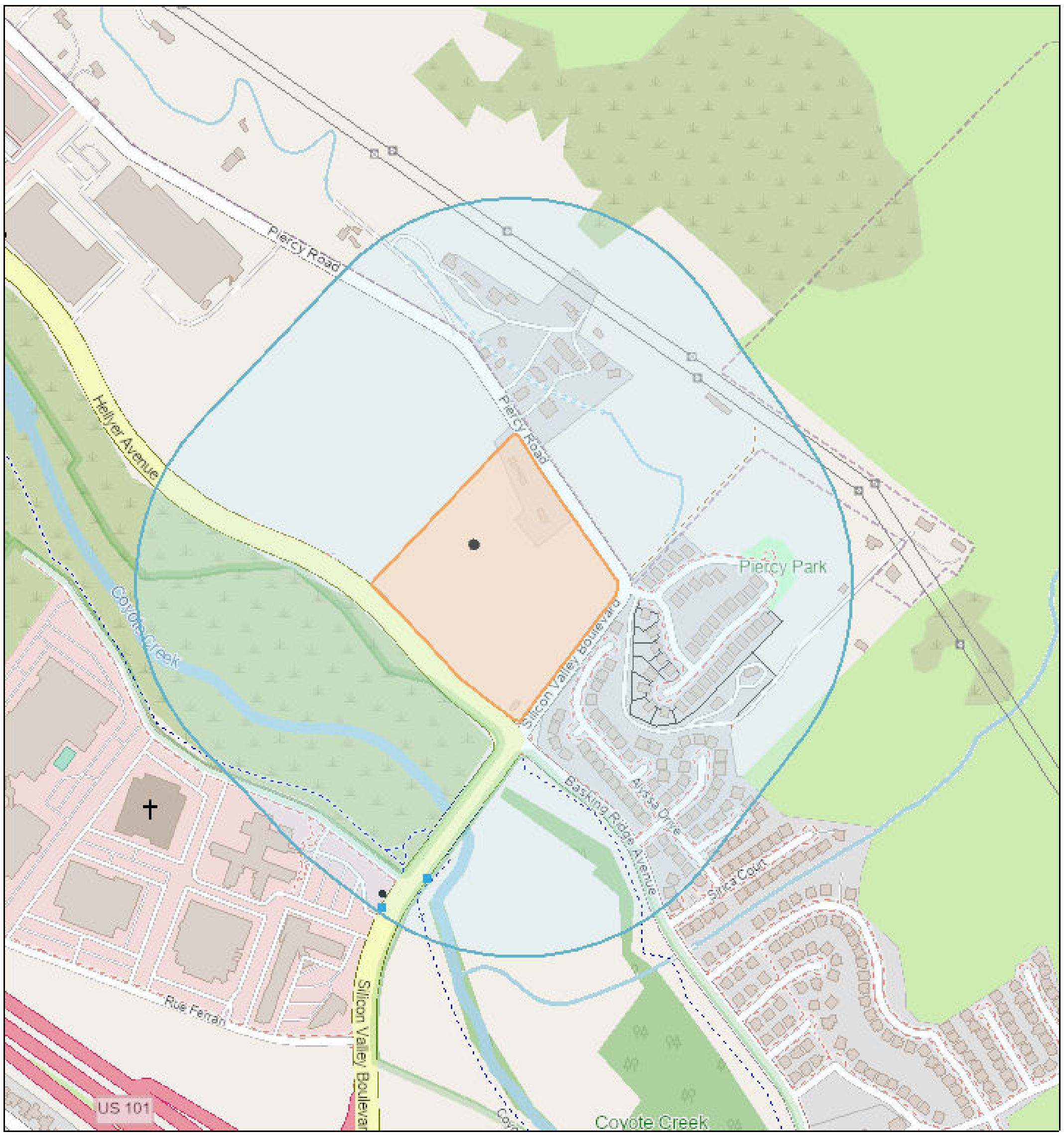
Date last updated:
03/13/2018

Screening Report

Area of Interest (AOI) Information

Area : 7,063,899.21 ft²

Apr 14 2023 17:04:36 Pacific Daylight Time



• Permitted Stationary Sources

1:9,028

0 0.05 0.1 0.2 mi

0 0.07 0.15 0.3 km

Map data © OpenStreetMap contributors, Microsoft, Facebook, Inc. and its affiliates, Esri Community Maps contributors, Map layer by Esri

Summary

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

Permitted Stationary Sources

#	Facility_I	Facility_N	Address	City	State
1	23158	San Jose Behavioral Health	455 Silicon Valley Blvd	San Jose	CA

#	Zip	County	Latitude	Longitude	Details
1	95138	Santa Clara	37.248480	-121.772597	Generator

#	NAICS	NAICS_Sect	NAICS_Subs	NAICS_Indu	Cancer_Ris
1	622210	Health Care and Social Assistance	Hospitals	Psychiatric and Substance Abuse Hospitals	0.903000

#	Chronic_Ha	PM25	Count
1	0.002000	0.001000	1

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

550 Piercy Project Impacts at 644 Piercy MEI

550 Piercy Road Industrial Project, San Jose, CA - Truck Impacts to 644 Piercy's MEI
DPM Cancer Risk and PM2.5 Calculations
644 Piercy's MEI Receptor

Emissions Years	2025 Efs, Project Traffic Volumes
Receptor Information	
Receptor Height (in m) =	1.5 (1st Floor)
Receptor Distances =	644 Piercy's MEI Location
Meteorological Conditions	
BAAQMD San Jose Airport Meterological Data	2013 - 2017
Land Use Classification	urban
Wind Speed =	variable
Wind Direction =	variable

Onsite Trucks - Offsite MEI Maximum Concentrations - Floor 1

Meteorological Data Years	TAC Concentrations (μg/m³)		
	DPM	Exhaust TOG	Evaporative TOG
2013 - 2017	0.00404	0.00753	0

Meteorological Data Years	PM2.5 Concentrations (μg/m³)		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013 - 2017	0.00622	0.00218	0.00404

Piercy Rd - Offsite MEI Maximum Concentrations - Floor 1

Meteorological Data Years	TAC Concentrations (μg/m³)		
	DPM	Exhaust TOG	Evaporative TOG
2013 - 2017	0.00007	0.00014	0

Meteorological Data Years	PM2.5 Concentrations (μg/m³)		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013 - 2017	0.00064	0.00057	0.00007

Hellyer Ave. - Offsite MEI Maximum Concentrations - Floor 1

Meteorological Data Years	TAC Concentrations (μg/m³)		
	DPM	Exhaust TOG	Evaporative TOG
2013 - 2017	0.00005	0.00004	0

Meteorological Data Years	PM2.5 Concentrations (μg/m³)		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013 - 2017	0.00033	0.00028	0.00005

550 Piercy Road Industrial Project, San Jose, CA - Constrcution and Onsite Truck Impacts to 644 Piercy's MEI
DPM Cancer Risk and PM2.5 Calculations
1st Floor 644 Piercy's MEI Receptor

Cancer Risk Calculation Method

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

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

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

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

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

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

Values

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

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

Cancer Risk by Year - Construction MEI Receptor Location

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)					Maximum	
Exposure Year	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	TOTAL		Fugitive	Total
0	0.25	-0.25 - 0*	2023	10	0.0194	0.0000	0.0000	0.264	0.0000	0.00	0.26	**HI**	**PM2.5**	**PM2.5**
1	1	0 - 1	2023	10	0.0194	0.0000	0.0000	3.186	0.000	0.00	3.19	0.004	0.0364	0.056
2	1	1 - 2	2024	10	0.0120	0.0000	0.0000	1.971	0.000	0.00	1.97	0.002	0.0014	0.013
3	1	2 - 3	2025	3	0.0040	0.0075	0.0000	0.104	0.001	0.00	0.11	0.001	0.0022	0.006
4	1	3 - 4	2026	3	0.0040	0.0075	0.0000	0.104	0.001	0.00	0.11			
5	1	4 - 5	2027	3	0.0040	0.0075	0.0000	0.104	0.001	0.00	0.11			
6	1	5 - 6	2028	3	0.0040	0.0075	0.0000	0.104	0.001	0.00	0.11			
7	1	6 - 7	2029	3	0.0040	0.0075	0.0000	0.104	0.001	0.00	0.11			
8	1	7 - 8	2030	3	0.0040	0.0075	0.0000	0.104	0.001	0.00	0.11			
9	1	8 - 9	2031	3	0.0040	0.0075	0.0000	0.104	0.001	0.00	0.11			
10	1	9 - 10	2032	3	0.0040	0.0075	0.0000	0.104	0.001	0.00	0.11			
11	1	10 - 11	2033	3	0.0040	0.0075	0.0000	0.104	0.001	0.00	0.11			
12	1	11 - 12	2034	3	0.0040	0.0075	0.0000	0.104	0.001	0.00	0.11			
13	1	12 - 13	2035	3	0.0040	0.0075	0.0000	0.104	0.001	0.00	0.11			
14	1	13 - 14	2036	3	0.0040	0.0075	0.0000	0.104	0.001	0.00	0.11			
15	1	14 - 15	2037	3	0.0040	0.0075	0.0000	0.104	0.001	0.00	0.11			
16	1	15 - 16	2038	3	0.0040	0.0075	0.0000	0.104	0.001	0.00	0.11			
17	1	16-17	2039	1	0.0040	0.0075	0.0000	0.012	0.000	0.00	0.012			
18	1	17-18	2040	1	0.0040	0.0075	0.0000	0.012	0.000	0.00	0.012			
19	1	18-19	2041	1	0.0040	0.0075	0.0000	0.012	0.000	0.00	0.012			
20	1	19-20	2042	1	0.0040	0.0075	0.0000	0.012	0.000	0.00	0.012			
21	1	20-21	2043	1	0.0040	0.0075	0.0000	0.012	0.000	0.00	0.012			
22	1	21-22	2044	1	0.0040	0.0075	0.0000	0.012	0.000	0.00	0.012			
23	1	22-23	2045	1	0.0040	0.0075	0.0000	0.012	0.000	0.00	0.012			
24	1	23-24	2046	1	0.0040	0.0075	0.0000	0.012	0.000	0.00	0.012			
25	1	24-25	2047	1	0.0040	0.0075	0.0000	0.012	0.000	0.00	0.012			
26	1	25-26	2048	1	0.0040	0.0075	0.0000	0.012	0.000	0.00	0.012			
27	1	26-27	2049	1	0.0040	0.0075	0.0000	0.012	0.000	0.00	0.012			
28	1	27-28	2050	1	0.0040	0.0075	0.0000	0.012	0.000	0.00	0.012			
29	1	28-29	2051	1	0.0040	0.0075	0.0000	0.012	0.000	0.00	0.012			
30	1	29-30	2052	1	0.0040	0.0075	0.0000	0.012	0.000	0.00	0.012			
Total Increased Cancer Risk								7.05	0.017	0.000	**7.06**			

* Third trimester of pregnancy

550 Piercy Road Industrial Project, San Jose, CA - Offsite Piercy Rd Truck Impacts to 644 Piercy's MEI
DPM Cancer Risk and PM2.5 Calculations
1st Floor 644 Piercy's MEI Receptor

Cancer Risk Calculation Method

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

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

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

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

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

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

Values

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

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

Cancer Risk by Year - Construction MEI Receptor Location

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)				Maximum	
Exposure Year	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	TOTAL	Hazard Index	Total PM2.5 (µ
0	0.25	-0.25 - 0*	2023	10	0.0000	0.0000	0.0000	0.000	0.00000	0.000000	0.00000		
1	1	0 - 1	2023	10	0.0000	0.0000	0.0000	0.000	0.0000	0.00000	0.0000		
2	1	1 - 2	2024	10	0.0000	0.0000	0.0000	0.000	0.0000	0.00000	0.0000		
3	1	2 - 3	2025	3	0.0001	0.0001	0.0000	0.002	0.0000	0.00000	0.0018	0.0000	0.0006
4	1	3 - 4	2026	3	0.0001	0.0001	0.0000	0.002	0.0000	0.00000	0.0018		
5	1	4 - 5	2027	3	0.0001	0.0001	0.0000	0.002	0.0000	0.00000	0.0018		
6	1	5 - 6	2028	3	0.0001	0.0001	0.0000	0.002	0.0000	0.00000	0.0018		
7	1	6 - 7	2029	3	0.0001	0.0001	0.0000	0.002	0.0000	0.00000	0.0018		
8	1	7 - 8	2030	3	0.0001	0.0001	0.0000	0.002	0.0000	0.00000	0.0018		
9	1	8 - 9	2031	3	0.0001	0.0001	0.0000	0.002	0.0000	0.00000	0.0018		
10	1	9 - 10	2032	3	0.0001	0.0001	0.0000	0.002	0.0000	0.00000	0.0018		
11	1	10 - 11	2033	3	0.0001	0.0001	0.0000	0.002	0.0000	0.00000	0.0018		
12	1	11 - 12	2034	3	0.0001	0.0001	0.0000	0.002	0.0000	0.00000	0.0018		
13	1	12 - 13	2035	3	0.0001	0.0001	0.0000	0.002	0.0000	0.00000	0.0018		
14	1	13 - 14	2036	3	0.0001	0.0001	0.0000	0.002	0.0000	0.00000	0.0018		
15	1	14 - 15	2037	3	0.0001	0.0001	0.0000	0.002	0.0000	0.00000	0.0018		
16	1	15 - 16	2038	3	0.0001	0.0001	0.0000	0.002	0.0000	0.00000	0.0018		
17	1	16-17	2039	1	0.0001	0.0001	0.0000	0.000	0.00000	0.000000	0.00020		
18	1	17-18	2040	1	0.0001	0.0001	0.0000	0.000	0.00000	0.000000	0.00020		
19	1	18-19	2041	1	0.0001	0.0001	0.0000	0.000	0.00000	0.000000	0.00020		
20	1	19-20	2042	1	0.0001	0.0001	0.0000	0.000	0.00000	0.000000	0.00020		
21	1	20-21	2043	1	0.0001	0.0001	0.0000	0.000	0.00000	0.000000	0.00020		
22	1	21-22	2044	1	0.0001	0.0001	0.0000	0.000	0.00000	0.000000	0.00020		
23	1	22-23	2045	1	0.0001	0.0001	0.0000	0.000	0.00000	0.000000	0.00020		
24	1	23-24	2046	1	0.0001	0.0001	0.0000	0.000	0.00000	0.000000	0.00020		
25	1	24-25	2047	1	0.0001	0.0001	0.0000	0.000	0.00000	0.000000	0.00020		
26	1	25-26	2048	1	0.0001	0.0001	0.0000	0.000	0.00000	0.000000	0.00020		
27	1	26-27	2049	1	0.0001	0.0001	0.0000	0.000	0.00000	0.000000	0.00020		
28	1	27-28	2050	1	0.0001	0.0001	0.0000	0.000	0.00000	0.000000	0.00020		
29	1	28-29	2051	1	0.0001	0.0001	0.0000	0.000	0.00000	0.000000	0.00020		
30	1	29-30	2052	1	0.0001	0.0001	0.0000	0.000	0.00000	0.000000	0.00020		
Total Increased Cancer Risk								0.028	0.0003	0.00000	**0.028**		

* Third trimester of pregnancy

550 Piercy Road Industrial Project, San Jose, CA - Offsite Hellyer Ave Truck Impacts to 644 Piercy's MEI
DPM Cancer Risk and PM2.5 Calculations
1st Floor 644 Piercy's MEI Receptor

Cancer Risk Calculation Method

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

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

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

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

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

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

Values

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

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

Cancer Risk by Year - Construction MEI Receptor Location

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)				Maximum	
Exposure Year	**Exposure Duration (years)**	**Age**	**Year**	**Age Sensitivity Factor**	**DPM**	**Exhaust TOG**	**Evaporative TOG**	**DPM**	**Exhaust TOG**	**Evaporative TOG**	**TOTAL**	**Hazard Index**	**Total PM2.5 (µ**
0	0.25	-0.25 - 0*	2023	10	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
1	1	0 - 1	2023	10	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2	1	1 - 2	2024	10	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
3	1	2 - 3	2025	3	0.00005	0.00004	0.0000	0.001	0.000006	0.00	0.0013	0.000010	0.0003
4	1	3 - 4	2026	3	0.00005	0.00004	0.0000	0.001	0.000006	0.00	0.0013		
5	1	4 - 5	2027	3	0.00005	0.00004	0.0000	0.001	0.000006	0.00	0.0013		
6	1	5 - 6	2028	3	0.00005	0.00004	0.0000	0.001	0.000006	0.00	0.0013		
7	1	6 - 7	2029	3	0.00005	0.00004	0.0000	0.001	0.000006	0.00	0.0013		
8	1	7 - 8	2030	3	0.00005	0.00004	0.0000	0.001	0.000006	0.00	0.0013		
9	1	8 - 9	2031	3	0.00005	0.00004	0.0000	0.001	0.000006	0.00	0.0013		
10	1	9 - 10	2032	3	0.00005	0.00004	0.0000	0.001	0.000006	0.00	0.0013		
11	1	10 - 11	2033	3	0.00005	0.00004	0.0000	0.001	0.000006	0.00	0.0013		
12	1	11 - 12	2034	3	0.00005	0.00004	0.0000	0.001	0.000006	0.00	0.0013		
13	1	12 - 13	2035	3	0.00005	0.00004	0.0000	0.001	0.000006	0.00	0.0013		
14	1	13 - 14	2036	3	0.00005	0.00004	0.0000	0.001	0.000006	0.00	0.0013		
15	1	14 - 15	2037	3	0.00005	0.00004	0.0000	0.001	0.000006	0.00	0.0013		
16	1	15 - 16	2038	3	0.00005	0.00004	0.0000	0.001	0.000006	0.00	0.0013		
17	1	16-17	2039	1	0.00005	0.00004	0.0000	0.00014	0.0000007	0.00	0.00014		
18	1	17-18	2040	1	0.00005	0.00004	0.0000	0.00014	0.0000007	0.00	0.00014		
19	1	18-19	2041	1	0.00005	0.00004	0.0000	0.00014	0.0000007	0.00	0.00014		
20	1	19-20	2042	1	0.00005	0.00004	0.0000	0.00014	0.0000007	0.00	0.00014		
21	1	20-21	2043	1	0.00005	0.00004	0.0000	0.00014	0.0000007	0.00	0.00014		
22	1	21-22	2044	1	0.00005	0.00004	0.0000	0.00014	0.0000007	0.00	0.00014		
23	1	22-23	2045	1	0.00005	0.00004	0.0000	0.00014	0.0000007	0.00	0.00014		
24	1	23-24	2046	1	0.00005	0.00004	0.0000	0.00014	0.0000007	0.00	0.00014		
25	1	24-25	2047	1	0.00005	0.00004	0.0000	0.00014	0.0000007	0.00	0.00014		
26	1	25-26	2048	1	0.00005	0.00004	0.0000	0.00014	0.0000007	0.00	0.00014		
27	1	26-27	2049	1	0.00005	0.00004	0.0000	0.00014	0.0000007	0.00	0.00014		
28	1	27-28	2050	1	0.00005	0.00004	0.0000	0.00014	0.0000007	0.00	0.00014		
29	1	28-29	2051	1	0.00005	0.00004	0.0000	0.00014	0.0000007	0.00	0.00014		
30	1	29-30	2052	1	0.00005	0.00004	0.0000	0.00014	0.0000007	0.00	0.00014		
Total Increased Cancer Risk								0.020	0.000092	0.00000	**0.020**		

* Third trimester of pregnancy