APPENDIX B
Construction Health Risk Assessment

Milligan Parking Lot Project

MILLIGAN PARKING LOT CONSTRUCTION HEALTH RISK ASSESSMENT

San José, California

March 2, 2023

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Introduction

The purpose of this report is to address the potential health risk impacts associated with the construction of the proposed parking lot located on West St. John Street and North Autumn Street in San José, California. The air quality impacts from this project would be associated with demolition of the existing land uses and construction of the surface parking lot. Air pollutant emissions associated with construction of the project were predicted using appropriate computer models. In addition, the potential project construction health risk impacts 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] BAAQMD recommends using a 1,000-foot screening radius around the project site for purposes of identifying community health risk from existing sources of TACs.

Project Description

The approximately 2.5-acre project site consists of five parcels that are occupied by an automobile repair shop with an attached warehouse, a vacant commercial building and additions, a vacant single-family residential structure and garage, and 118 surface parking spaces used for SAP Center events. The project proposes to demolish all existing buildings and construct an approximately 306-space surface parking lot. Vehicles would access the site via two new full-access driveways, located on West St. John Street and North Autumn Street. Construction is expected to begin in January 2024 to be completed by May 2024.

Setting

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

Air Pollutants of Concern

High ozone levels are caused by the cumulative emissions of reactive organic gases (ROG) and nitrogen oxides (NO_X). These precursor pollutants react under certain meteorological conditions to form high ozone levels. Controlling the emissions of these precursor pollutants is the focus of the Bay Area's attempts to reduce ozone levels. The highest ozone levels in the Bay Area occur in the eastern and southern inland valleys 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

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

region-wide (or cumulative) emissions and localized emissions. High particulate matter levels aggravate respiratory and cardiovascular diseases, reduce lung function, increase mortality (e.g., lung cancer), and result in reduced lung function growth in children.

Toxic Air Contaminants

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

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

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.[2] 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

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

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 has identified six communities as impacted: Concord, Richmond/San Pablo, Western Alameda County, San José, Redwood City/East Palo Alto, and Eastern San Francisco. The project site is located within a CARE area but not located within a BAAQMD overburdened area as identified by CalEnviroScreen since the Project site is scored at the 51st percentile.[3]

The BAAQMD California Environmental Quality Act (*CEQA) Air Quality Guidelines*[4] were prepared to assist in the evaluation of air quality impacts of projects and plans proposed within the Bay Area. The guidelines provide recommended procedures for evaluating potential air impacts during the environmental review process consistent with CEQA requirements including thresholds of significance, mitigation measures, and background air quality information. They also include assessment methodologies for air toxics, odors, and greenhouse gas emissions. *Attachment 1* includes detailed 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.

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

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.

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 in the single-family residences to the north, northeast, and northwest of the project site. This project would not introduce new sensitive receptors (i.e., residents) to the area.

Significance Thresholds

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

Table 1. BAAQMD CEQA Significance Thresholds

Criteria Air Pollutant	**Construction Thresholds**	**Operational Thresholds**	
	Average Daily Emissions (lbs./day)	**Average Daily Emissions (lbs./day)**	**Annual Average Emissions (tons/year)**
ROG	54	54	10
NO_x	54	54	10
PM_{10}	82 (Exhaust)	82	15
$PM_{2.5}$	54 (Exhaust)	54	10
CO	Not Applicable	9.0 ppm (8-hour average) or 20.0 ppm (1-hour average)	
Fugitive Dust	Construction Dust Ordinance or other Best Management Practices	Not Applicable	
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 $\mu g/m^3$	0.8 $\mu g/m^3$	

Construction Health Risk Impacts and Mitigation Measures

Project impacts related to increased health risk can occur either by generating emissions of TACs and air pollutants and by introducing a new sensitive receptor in proximity to an existing source of TACs. Temporary project construction activity would generate emissions of DPM from equipment and trucks and also generate dust on a temporary basis that could affect nearby sensitive receptors. A construction community health risk assessment was prepared to address project construction 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 emissions are cancer risk and exposure to $PM_{2.5}$. A health risk assessment of the project construction activities was conducted that evaluated potential health effects to nearby sensitive receptors from construction emissions of DPM and $PM_{2.5}$.[5] This assessment included dispersion modeling to predict the offsite and onsite concentrations resulting from project construction, so that lifetime cancer risks and non-cancer health effects could be evaluated. The methodology for computing health risks impacts is contained in *Attachment 1.*

Construction Period Emissions

The California Emissions Estimator Model (CalEEMod) Online Version 2022.1 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*.

<u>CalEEMod Modeling</u>

Land Use Inputs

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

Table 2. Summary of Project Land Use Inputs

Project Land Uses	Size	Units	Square Feet (sf)	Acreage
Parking Lot	306	Parking Spaces	-	3.00

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

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 equipment was based on information generated using CalEEMod defaults for a project of this type and size while the construction schedule, demolition volume, soil hauling volumes, and cement trips were provided by the applicant.

Within each phase, the quantity of equipment to be used along with the average hours per day and total number of workdays were based on CalEEMod default information. Since different equipment would have different estimates of the working days per phase, the hours per day for each phase was computed by dividing the total number of hours that the equipment would be used by the total number of days in that phase. The construction schedule assumed that the earliest possible start date would be January 2024 and would be built out over a period of approximately 4 months, or 80 construction workdays. The earliest year of full operation was assumed to be 2025.

Construction Truck Traffic Emissions

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

Summary of Computed Construction Period Emissions

Average daily emissions were annualized for each year of construction by dividing the annual construction emissions and dividing those emissions by the number of active workdays during that year. Table 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)				
2024	0.03	0.50	0.01	0.01
Average Daily Construction Emissions Per Year (pounds/day)				
2024 (80 construction workdays)	0.75	12.50	0.25	0.25
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 development in conformance with the BAAQMD CEQA Guidelines, relative to state and federal standards and identify and implement feasible air emission reduction measures. Thus, San Jose General Policy MS-10.1 requires construction projects implement BAAQMD-Recommended Standard Measures to control PM_{10} and $PM_{2.5}$ emissions. *Mitigation Measure AQ-1 would implement BAAQMD-recommended standard measures best management practices*.

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

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

1. All exposed surfaces (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 achieve greater than a 50 percent reduction in on-site fugitive $PM_{2.5}$ emissions. The measures above are consistent with BAAQMD-recommended "best management practices" for reducing fugitive particulate matter that are contained in the BAAQMD CEQA Air Quality Guidelines.

Health Risk from Project Construction

<u>Construction Emissions</u>

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 grading activities, worker travel, and vendor deliveries during construction. Total uncontrolled DPM emissions from on-site construction activities were estimated to be 0.01 tons (26 pounds). Uncontrolled fugitive dust ($PM_{2.5}$) emissions were estimated to be as less than 0.03 tons (58 pounds) for the overall construction period.

<u>Dispersion Modeling</u>

The U.S. EPA AERMOD dispersion model was used to predict concentrations of DPM and $PM_{2.5}$ concentrations at sensitive receptors in the vicinity of the project construction area. The AERMOD dispersion model is a BAAQMD-recommended model for use in modeling analysis of these types of emission activities for CEQA projects.[6] Emission sources for the construction site were grouped into two categories: exhaust emissions of DPM and fugitive $PM_{2.5}$ dust emissions.

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[6] Bay Area Air Quality Management District (BAAQMD), 2012, *Recommended Methods for Screening and Modeling Local Risks and Hazards, Version 3.0.* May.

Construction Sources

To represent the construction equipment exhaust emissions, an area source emission release height of 20 feet (6 meters) was used for the area source.[7] 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 do 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.

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

AERMOD Inputs and Meteorological Data

The modeling used a five-year data set (2013 - 2017) of hourly meteorological data from the San Jose Airport prepared for use with the AERMOD model by BAAQMD. Construction emissions were modeled as occurring daily between 7:00 a.m. to 5:00 p.m., when the majority of construction activity is expected to occur. Annual DPM and $PM_{2.5}$ concentrations from construction activities during the 2024 period were calculated using the model. DPM and $PM_{2.5}$ concentrations were calculated at nearby sensitive receptors. Receptor heights of 5 feet (1.5 meters) and 15 feet (4.5 meters) were used to represent the breathing height on the first and second floor of nearby single-family residences.[8]

<u>Summary of Construction Health Risk Impacts</u>

The maximum increased cancer risks were calculated using the modeled TAC concentrations combined with the Office of Environmental Health Hazard Assessment (OEHHA) guidance for age sensitivity factors and exposure parameters as recommended by BAAQMD (see *Attachment 1)*. Non-cancer health hazards and maximum $PM_{2.5}$ concentrations were also calculated and identified. Age-sensitivity factors reflect the greater sensitivity of infants and small children to

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[7] 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
[8] 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

cancer causing TACs. Infant, child, and adult exposures were assumed to occur at all residences during the entire construction period.

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

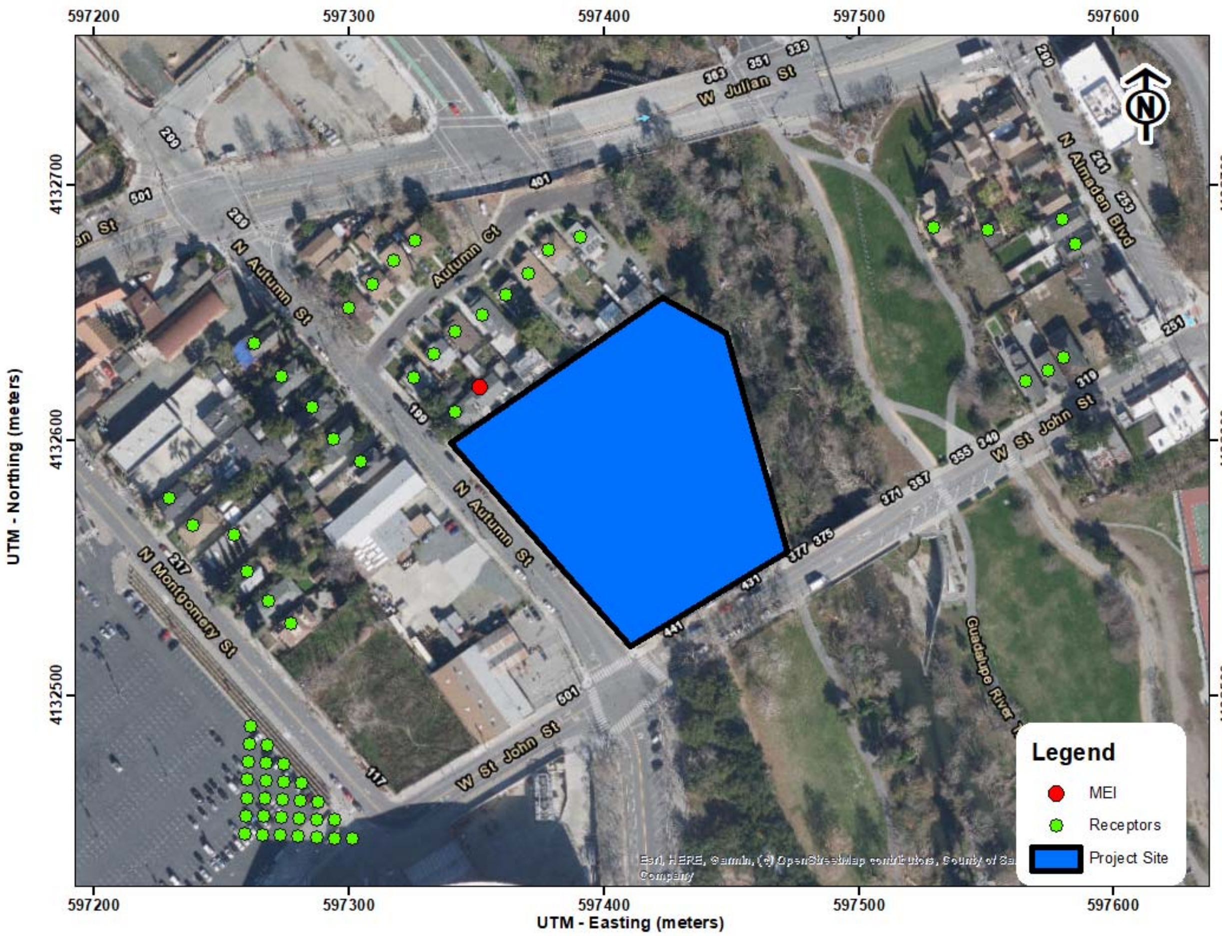
The maximum-modeled annual DPM and $PM_{2.5}$ concentrations, which includes both the DPM and fugitive $PM_{2.5}$ concentrations, were identified at nearby sensitive receptors (as shown in Figure 1) to find the maximally exposed individuals (MEI). Results of this assessment indicated that the construction residential MEI was located on the first floor of an adjacent single-family home north of the project site. Table 4 summarizes the maximum cancer risks, $PM_{2.5}$ concentrations, and health hazard indexes for project related construction activities affecting the construction MEI. *Attachment 3* to this report includes the emission calculations used for the construction area source modeling and the cancer risk calculations.

As shown in Table 4, the maximum cancer risk, annual $PM_{2.5}$ concentration and HI from uncontrolled (i.e., unmitigated) construction activities at the MEI location would not exceed the BAAQMD single-source thresholds.

Table 4. Construction Risk Impacts at the Off-Site Receptors

Source		**Cancer Risk (per million)**	**Annual $PM_{2.5}$ ($\mu g/m^3$)**	**Hazard Index**
Project Construction	Unmitigated	4.09 (infant)	0.12	<0.01
	BAAQMD Single-Source Threshold	***10***	***0.3***	***1.0***
Exceed Threshold?	Unmitigated	*No*	*No*	*No*

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

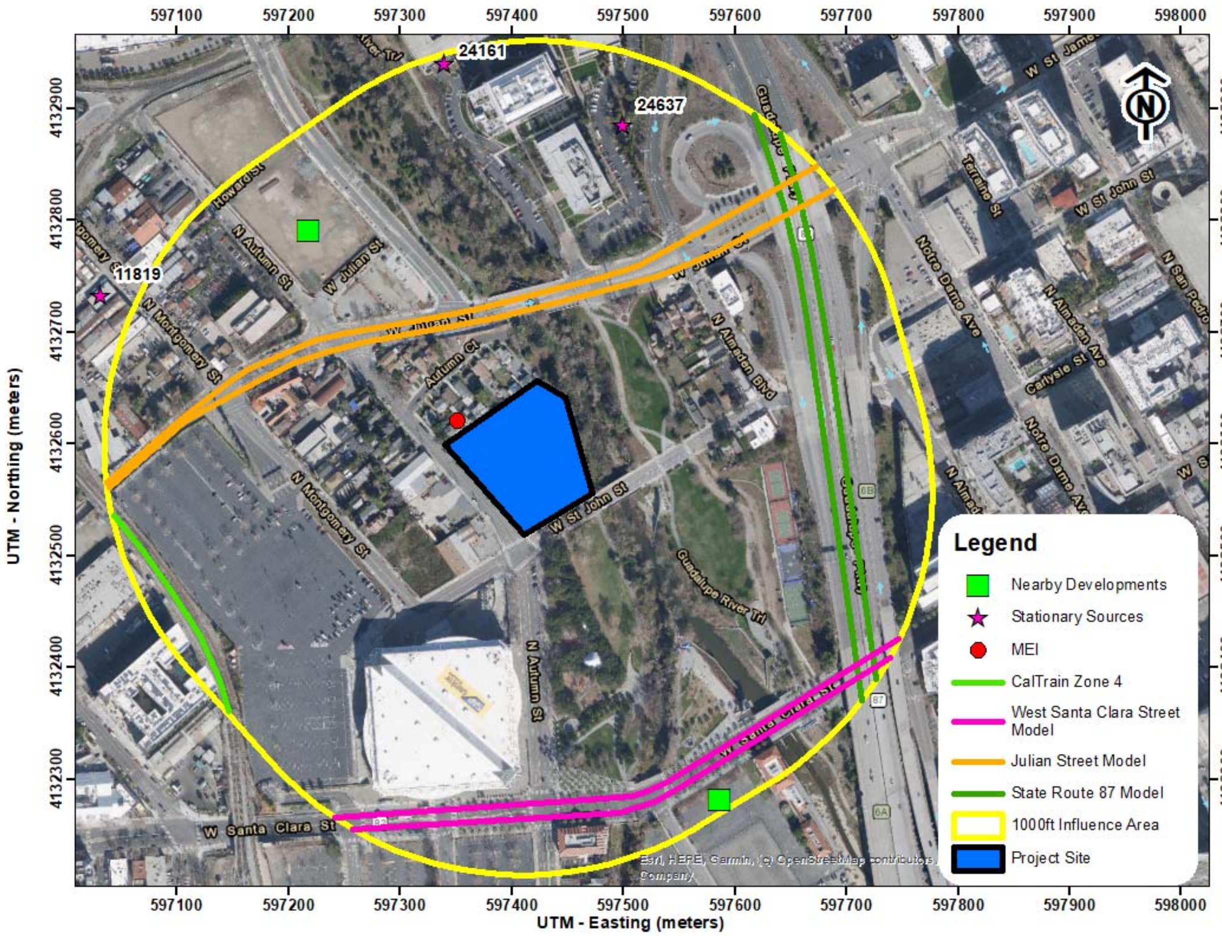


Cumulative Health Risks of all TAC Sources at the Off-Site Project MEI

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

A review of the project area using traffic data collected by the city of San Jose indicates traffic on West Santa Clara Street and Julian Street exceeds 10,000 vehicles per day. Other nearby streets would have less than 10,000 vehicles per day and are considered negligible sources of TACs. Figure 2 shows the location of the sources affecting the MEI. A review of the project area indicates that Zone 4 of the CalTrain line passes through the influence area. A review of BAAQMD's stationary source geographic information systems (GIS) map tool identified three existing stationary sources of TACs with the potential to affect the project MEI. In addition, there are several development projects whose construction would contribute to the cumulative risk. The risk impacts from these developments are included within the analysis. Health risk impacts from these sources upon the MEIs are reported in Table 5. Details of the modeling and community risk calculations are included in *Attachment 4.*

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



Railways – CalTrain Zone 4

The project MEI is approximately 940 feet northeast of Zone 4 of the CalTrain railway. Screening data reported by BAAQMD for railways were incorporated into this analysis. BAAQMD provided raster files with cancer risk and $PM_{2.5}$ values for all highways/freeways, roadways (ADT > 30,000), and rail lines within the Bay Area. The risk values shown in the raster files were modeled in AERMOD in 20x20-meter grid cells. The files incorporate AADT for the highway using EMFAC2014 data for fleet mix and include the OEHHA 2015 factor. These raster files were used to screen Zone 4 of the CalTrain railway risks and hazards upon the MEI. The railway screening level impacts are listed in Table 5 and included in *Attachment 4*. Note that the cancer risk value is not adjusted for age sensitivity or exposure duration. It is conservatively higher than adjusted cancer risk values. Refined modeling of the railway would have resulted in even lower risk values. Note that BAAQMD has found that non-cancer hazards were found to be minimal, so an HI value is not included.

Highways – State Route 87 (S.R. 87)

The project MEI is located near State Route 87 (S.R. 87). A refined analysis of the impacts of TACs and $PM_{2.5}$ to the MEI receptor is necessary to evaluate potential cancer risks and $PM_{2.5}$ concentrations from S.R. 87. A review of the traffic information reported by Caltrans indicates that S.R. 87 traffic includes 97,000 vehicles per day (based on an annual average)[9] that are about 3.7 percent trucks, of which 1.0 percent are considered diesel heavy duty trucks and 2.7 percent are medium duty trucks.[10]

Local Roadways – Julian Street and West Santa Clara Street

A refined analysis of potential health impacts from vehicle traffic on Julian Street and West Santa Clara Street was conducted. 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 community risk impacts, including cancer risk are computed.

Emission Rates

This analysis involved the development of DPM, organic TACs, and $PM_{2.5}$ emissions for traffic on both roadways and S.R. 87 using the Caltrans version of the EMFAC2017 emissions model, known as CT-EMFAC2017. CT-EMFAC2017 provides emission factors for mobile source criteria pollutants and TACs, including DPM. Emission processes modeled include running exhaust for DPM, $PM_{2.5}$ and total organic compounds (e.g., TOG), running evaporative losses for TOG, and tire and brake wear and fugitive road dust for $PM_{2.5}$. All $PM_{2.5}$ emissions from all vehicles were used, rather than just the $PM_{2.5}$ fraction from diesel powered vehicles, because all vehicle types (i.e., gasoline and diesel powered) produce $PM_{2.5}$. Additionally, $PM_{2.5}$ emissions from vehicle tire and brake wear and from re-entrained roadway dust were included in these emissions. DPM emissions are projected to decrease in the future and are reflected in the CT-EMFAC2017 emissions data. Inputs to the model include region (Santa Clara County), type of road (freeway, major/collector), local truck mix on S.R. 87 and truck percentage for non-state highways in Santa Clara County (3.51 percent) for both local roadways,[11] year of analysis (2024 – construction start year), and season (annual).

In order to estimate TAC and $PM_{2.5}$ emissions over the 30-year exposure period used for calculating the increased cancer risks for sensitive receptors at the MEI and project site, the CT-EMFAC2017 model was used to develop vehicle emission factors for the year 2024 (project construction start 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

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[9] Caltrans. 2023. *2020 Traffic Volumes California State Highways.*

[10] Caltrans. 2023. *2020 Annual Average Daily Truck Traffic on the California State Highway System.*

[11] 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

2024 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 average daily traffic (ADT) for Julian Street and West Santa Clara Street was calculated based on traffic data provided by the City of San Jose.[12] The estimated ADT on West Santa Clara Street was 19,935 vehicles and 16,939 vehicles on Julian Street. Average hourly traffic distributions for Santa Clara County roadways were developed using the EMFAC model,[13] which were then applied to the ADT volumes to obtain estimated hourly traffic volumes and emissions for the roadway. An average travel speed of 30 miles per hour (mph) on both streets was used for all hours of the day based on posted speed limit signs on each roadway.

The ADT volumes and truck percentages for S.R. 87 were based on Caltrans data. Traffic volumes were assumed to increase 1 percent per year for a total of 100,880 vehicles. Hourly traffic distributions specific to these segments of S.R. 87 were obtained from Caltrans Performance Measurement System (PeMS). PeMS data is collected in real-time from nearly 40,000 individual detectors spanning the freeway system across all major metropolitan areas of California.[14] The fraction of traffic volume each hour was calculated and applied to the 2024 average daily traffic volumes estimate to estimate hourly traffic emission rates for S.R. 87.

Based on traffic data from the Caltrans PeMS, traffic speeds during the daytime and nighttime periods were identified. For northbound traffic, an average speed of 65 miles per hour (mph) was assumed for all vehicles. For southbound traffic from 2:00 p.m. until 5:00 p.m. and 6:00 p.m. until 7:00 p.m., an average speed of 60 miles per hour (mph) was assumed for all vehicles. From 5:00 p.m. until 6:00 p.m., an average speed of 55 mph was assumed for all vehicles. For all other hours of the day for southbound traffic, an average speed of 65 mph was assumed for all vehicles.

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

Dispersion Modeling

Dispersion modeling of TAC and $PM_{2.5}$ emissions was conducted using the EPA AERMOD air quality dispersion model, which is recommended by the BAAQMD for this type of analysis.[15] TAC and $PM_{2.5}$ emissions from traffic on S.R. 87, Julian Street, and West Santa Clara Street within 1,000 feet of the project site were evaluated. Vehicle traffic on the roadways were modeled using

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[12] City of San Jose Traffic Volume Map, web: https://csj.maps.arcgis.com/apps/webappviewer/index.html?id=067fbd3db8dd44f8a60f48148331b3d7

[13] 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.

[14] https://dot.ca.gov/programs/traffic-operations/mpr/pems-source

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

a series of adjacent volume sources along a line (line volume sources); with line segments used for each travel direction on all streets. The same meteorological data and off-site sensitive receptors used in the previous dispersion modeling were used in the roadway modeling. Other inputs to the model included road geometry, hourly traffic emissions, and receptor locations. Annual TAC and $PM_{2.5}$ concentrations for 2024 from traffic on all three roadways were calculated using the model. Concentrations were calculated at the project MEI with receptor heights of 5 feet (1.5 meters) to represent the breathing heights of residents in the home.

Figure 2 shows the roadway segments modeled and residential receptor locations used in the modeling. Table 5 lists the risks and hazards from the roadway. 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 2020* GIS map website.[16] This mapping tool identifies the location of nearby stationary sources and their estimated risk and hazard impacts, including emissions and adjustments to account for new OEHHA guidance. Three sources were identified using this tool, two diesel generators and one auto body coating operation source. 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 risk and hazard levels provided by BAAQMD for the stationary sources were adjusted for distance using BAAQMD's *Distance Adjustment Multiplier Tool for Diesel Internal Combustion Engines* and *Generic Equipment.* Health risk impacts from the stationary source upon the MEIs are reported in Table 5.

Construction Risk Impacts from Nearby Developments

Based on the City of San Jose's website,[17] the following planned or approved projects are located within 1,000 feet of the proposed project:

- **Destination Diridon** – this project is located at 87 West Santa Clara Street, which is approximately 950 feet southeast of the project site. This project would include construction of two office buildings (12 and 13-stories), a 10-story residential building with 325 apartments, and 30,892 square feet of retail space. This project has been approved by the City. Therefore, there is potential for this project to be constructed simultaneously or consecutively with the proposed project.

- **Platform 16** – this project is located approximately 600 feet northwest of the project site. This project proposes the construction of one million square footage of office space. The project is currently under construction and is unlikely to overlap with, or be consecutive

[16] BAAQMD, Web:
https://baaqmd.maps.arcgis.com/apps/webappviewer/index.html?id=845658c19eae4594b9f4b805fb9d89a3
[17] City of San Jose, Private / Key Economic Development Projects Map, Web:
https://gis.sanjoseca.gov/maps/devprojects/

to, the construction of Milligan Parking Lot. Therefore, the construction impacts from Platform 16 are not included in the cumulative analysis.

The mitigated construction risks and hazard impact values for certain developments were available from their air quality technical reports either conducted by *Illingworth & Rodin, Inc*. or on the City of San José Environmental Review website for Active EIRs,[18] Completed EIRs,[19] or Negative Declaration / Initial Studies.[20] For developments that did not have available construction impact results at the time of this study, it was assumed the maximum construction risks at sensitive receptors would be less than the BAAQMD single-source thresholds for community risks and hazards. If the nearby developments were more than 500 feet from the project site, the construction risks were assumed to be half of the BAAQMD single-source thresholds due to the distance and dispersion between the source and receptors. For the purpose of this analysis, it was conservatively assumed the entire construction period from the proposed project would overlap with the nearby developments' construction schedule. This approach likely provides an overestimate of the community risk and hazard levels because it assumes that maximum impacts from the nearby development occurs concurrently with the proposed project at the proposed project's MEI. The mitigated construction risks reported in that air quality assessment were included in the cumulative risks Table 5.

Summary of Cumulative Risks at the Project MEI

Table 5 reports both the project and cumulative health risk impacts at the sensitive receptors most affected by project construction (i.e., the MEI). The unmitigated cancer risk, annual $PM_{2.5}$ concentration, and HI do not exceed the single-source or cumulative-source thresholds.

[18] City of San José, *Active EIRs*, https://www.sanjoseca.gov/your-government/departments/planning-building-code-enforcement/planning-division/environmental-planning/environmental-review/active-eirs

[19] City of San José, *Completed EIRs*, https://www.sanjoseca.gov/your-government/departments/planning-building-code-enforcement/planning-division/environmental-planning/environmental-review/completed-eirs

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

Table 5. Cumulative Health Risk Impacts at the Project MEI

Source		Cancer Risk (per million)	Annual $PM_{2.5}$ ($\mu g/m^3$)	Hazard Index
Project Impacts				
Project Construction	Unmitigated	4.09 (infant)	0.12	<0.01
BAAQMD Single-Source Threshold		***10***	***0.3***	***1.0***
Exceed Threshold?	Unmitigated	*No*	*No*	*No*
Cumulative Impacts				
S.R. 87, ADT 100,880		0.87	0.04	<0.01
CalTrain Zone 4 BAAQMD Raster Data, MEI at 960 feet northeast		22.63	0.04	-
Julian St., ADT 16,939		0.95	0.08	<0.01
W Santa Clara St., ADT 19,935		0.18	0.01	<0.01
Fleet Body Worx, Inc. (Facility ID #11819, Auto Body Coating Operation), MEI 1000+ feet		-	-	<0.01
The Sobrato Organization (Facility ID #24161, Generator), MEI at 1000+ feet		0.02	<0.01	<0.01
The Sobrato Organization (Facility ID #24637, Generator), MEI at 990 feet		0.06	<0.01	<0.01
Cumulative Temporary Construction Sources				
Destination Diridon Mitigated Construction Emissions – 950 feet southeast		<5.00	<0.15	<0.5
Combined Sources	Unmitigated	33.80	<0.46	<0.57
BAAQMD Cumulative Source Threshold		***100***	***0.8***	***10.0***
Exceed Threshold?	Unmitigated	*No*	*No*	*No*

Supporting Documentation

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

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

Attachment 3 is the construction health risk assessment. AERMOD dispersion modeling files for these assessments, which are quite voluminous, are available upon request and would be provided in digital format.

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

Attachment 1: Health Risk Calculation Methodology

A health risk assessment (HRA) for exposure to Toxic Air Contaminates (TACs) requires the application of a risk characterization model to the results from the air dispersion model to estimate potential health risk at each sensitive receptor location. The State of California Office of Environmental Health Hazard Assessment (OEHHA) and California Air Resources Board (CARB) develop recommended methods for conducting health risk assessments. The most recent OEHHA risk assessment guidelines were published in February of 2015.[21] 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.[22] 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.[23] 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, 95th percentile breathing rates are used for the third trimester and infant exposures, and 80th percentile breathing rates for child and adult exposures. For children at schools and daycare facilities, BAAQMD recommends using the 95th percentile 8-hour breathing rates. Additionally, CARB and the BAAQMD recommend the use of a residential exposure duration of 30 years for sources with long-term emissions (e.g., roadways). For workers, assumed to be adults,

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[21] 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.

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

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

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) = $CPF \times \text{Inhalation Dose} \times ASF \times ED/AT \times FAH \times 10^6$

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 →* / *Age Range →*	Infant 3rd Trimester	Infant 0<2	Child 2 < 16	Adult 16 - 30
DPM CPF $(mg/kg\text{-}day)^{-1}$	1.10E+00	1.10E+00	1.10E+00	1.10E+00
Vehicle TOG Exhaust CPF $(mg/kg\text{-}day)^{-1}$	6.28E-03	6.28E-03	6.28E-03	6.28E-03
Vehicle TOG Evaporative CPF $(mg/kg\text{-}day)^{-1}$	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

Air Quality/Noise Construction Information Data Request

Project Name: **8820 - Milligan Parking Lot**

Complete ALL Portions in Yellow

See Equipment Type TAB for type, horsepower and load factor

Project Size	**N/A**	**Dwelling Units**	**3**	**total project acres disturbed**
		s.f. residential		
		s.f. retail		
		s.f. office/commercial		
		s.f. other, specify:		
		s.f. parking garage		**spaces**
	94,300 SF	**s.f. parking lot**	**306**	**spaces**
Construction Days	**1/25/2024**	**to**	**6/13/2024**	
Construction Hours	**7:00 am**	**to**	**5:00 pm**	

Pile Driving? Y/N? _N_ .

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

IF YES (if BOTH separate values) -->

Kilowatts/Horsepower: ________

Fuel Type: ___________

Location in project (Plans Desired if Available):

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

Quantity	Description	HP	Load Factor	Hours/day	Total Work Days	Avg. Hours per day	HP Annual Hours	Comments
	Demolition	**Start Date:**	**1/25/2024**	**Total phase:**	**14**			**Overall Import/Export Volumes**
		End Date:	**2/13/2024**					
1	Concrete/Industrial Saws	81	0.73	8	6	3.42857143	2838	**Demolition Volume**
1	Excavators	158	0.38	8	6	3.42857143	2882	Square footage of buildings to be demolished
1	Rubber-Tired Dozers	247	0.4	8	4	2.28571429	3162	(*or* total tons to be hauled)
3	Tractors/Loaders/Backhoes	97	0.37	4	12	3.42857143	5168	_48700_ square feet *or*
	Other Equipment?							___ Hauling volume (tons)
								Any pavement demolished and hauled? _1250 tons_
	Site Preparation	**Start Date:**	**2/8/2024**	**Total phase:**	**14**			
		End Date:	**2/27/2024**					
1	Graders	187	0.41	8	14	8	8587	
	Rubber Tired Dozers	247	0.4			0	0	
1	Tractors/Loaders/Backhoes	97	0.37	7	14	7	3517	
1	*Other Equipment?* Scrapers	423	0.48	8	14	8	22740	
	Grading / Excavation	**Start Date:**	**2/22/2024**	**Total phase:**	**21**			
		End Date:	**3/21/2024**					**Soil Hauling Volume**
1	Excavators	158	0.38	4	4	0.76190476	961	Export volume = _3400_ cubic yards?
1	Graders	187	0.41	8	6	2.28571429	3680	Import volume = _5000_ cubic yards?
1	Rubber Tired Dozers	247	0.4	6	6	1.71428571	3557	
	Concrete/Industrial Saws	81	0.73	0	0	0	0	
2	Tractors/Loaders/Backhoes	97	0.37	4	4	0.76190476	1148	
	Other Equipment?							
	Trenching/Foundation	**Start Date:**	**3/14/2024**	**Total phase:**	**21**			
		End Date:	**4/11/2024**					
1	Tractor/Loader/Backhoe	97	0.37	4	8	1.52380952	1148	
1	Excavators	158	0.38	4	4	0.76190476	961	
	Other Equipment?							
	Building - Exterior	**Start Date:**		**Total phase:**				**Cement Trucks? _6_ Total Round-Trips**
		End Date:						
	Cranes	231	0.29			#DIV/0!	0	Electric? (Y/N) _Y_ Otherwise assumed diesel
	Forklifts	89	0.2			#DIV/0!	0	Liquid Propane (LPG)? (Y/N) _N_ Otherwise Assumed diesel
	Generator Sets	84	0.74			#DIV/0!	0	Or temporary line power? (Y/N) _N_
	Tractors/Loaders/Backhoes	97	0.37			#DIV/0!	0	
	Welders	46	0.45			#DIV/0!	0	
	Other Equipment?							
Building - Interior/Architectural Coating		**Start Date:**		**Total phase:**				
		End Date:						
	Air Compressors	78	0.48			#DIV/0!	0	
	Aerial Lift	62	0.31			#DIV/0!	0	
	Other Equipment?							
	Paving	**Start Date:**	**4/4/2024**	**Total phase:**	**28**			
		Start Date:	**5/13/2024**					
1	Cement and Mortar Mixers	9	0.56	8	14	4	564	
	Pavers	130	0.42	0	0	0	0	**cement?5500 cubic yards or _22_ round trips?**
1	Paving Equipment	132	0.36	8	6	1.71428571	2281	
2	Rollers	80	0.38	8	14	4	6810	
	Tractors/Loaders/Backhoes	97	0.37			0	0	
	Other Equipment?							
	Additional Phases	**Start Date:**		**Total phase:**				
		Start Date:						
						#DIV/0!	0	
						#DIV/0!	0	
						#DIV/0!	0	
						#DIV/0!	0	
						#DIV/0!	0	

Equipment types listed in "Equipment Types" worksheet tab.

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

Complete one sheet for each project component

It is assumed that water trucks would be used during grading

Add or subtract phases and equipment, as appropriate

Modify horsepower or load factor, as appropriate

Construction Criteria Air Pollutants							
Unmitigated	ROG	NOX	PM10 Exhaust	PM2.5 Exhaust	PM2.5 Fugitive	**CO2e**	
Year	Tons					MT	
Construction Equipment							
2024	0.03	0.50	0.01	0.01	0.03	262.00	
	Total Construction Emissions						
Tons	0.03	0.50	0.01	0.01		262.00	
Pounds/Workdays	*Average Daily Emissions*					Workdays	
2024	0.75	12.50	0.25	0.25			**80**
Threshold - lbs/day	**54.0**	**54.0**	**82.0**	**54.0**			
	Total Construction Emissions						
Pounds	0.75	12.50	0.25	0.25		0.00	
Average	0.75	12.50	0.25	0.25		0.00	80.00
Threshold - lbs/day	**54.0**	**54.0**	**82.0**	**54.0**			

Milligan Parking Lot, San Jose Detailed Report

Table of Contents

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Milligan Parking Lot, San Jose
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.00
Precipitation (days)	1.60
Location	525 W Santa Clara St, San Jose, CA 95113, USA
County	Santa Clara
City	San Jose
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	1800
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
Parking Lot	306	Space	3.00	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-C	Water Unpaved Construction Roads
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.	0.64	5.85	0.14	0.94	1.08	0.11	0.25	0.37	3,815
Mit.	0.47	6.01	0.10	0.94	1.04	0.08	0.25	0.33	3,815
% Reduced	26%	-3%	26%	—	3%	29%	—	9%	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Unmit.	2.40	47.8	1.19	10.9	12.1	0.99	2.28	3.27	26,997
Mit.	1.13	44.7	0.53	10.9	11.4	0.39	2.28	2.67	28,380
% Reduced	53%	7%	55%	—	5%	60%	—	18%	-5%
Average Daily (Max)	—	—	—	—	—	—	—	—	—
Unmit.	0.17	2.75	0.07	0.64	0.71	0.06	0.16	0.22	1,583
Mit.	0.09	2.54	0.03	0.64	0.67	0.02	0.16	0.19	1,636
% Reduced	47%	8%	53%	—	5%	58%	—	15%	-3%
Annual (Max)	—	—	—	—	—	—	—	—	—
Unmit.	0.03	0.50	0.01	0.12	0.13	0.01	0.03	0.04	262
Mit.	0.02	0.46	0.01	0.12	0.12	< 0.005	0.03	0.03	271
% Reduced	47%	8%	53%	—	5%	58%	—	15%	-3%

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	0.64	5.85	0.14	0.94	1.08	0.11	0.25	0.37	3,815
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—
2024	2.40	47.8	1.19	10.9	12.1	0.99	2.28	3.27	26,997
Average Daily	—	—	—	—	—	—	—	—	—
2024	0.17	2.75	0.07	0.64	0.71	0.06	0.16	0.22	1,583
Annual	—	—	—	—	—	—	—	—	—
2024	0.03	0.50	0.01	0.12	0.13	0.01	0.03	0.04	262

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	0.47	6.01	0.10	0.94	1.04	0.08	0.25	0.33	3,815
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—
2024	1.13	44.7	0.53	10.9	11.4	0.39	2.28	2.67	28,380
Average Daily	—	—	—	—	—	—	—	—	—
2024	0.09	2.54	0.03	0.64	0.67	0.02	0.16	0.19	1,636
Annual	—	—	—	—	—	—	—	—	—
2024	0.02	0.46	0.01	0.12	0.12	< 0.005	0.03	0.03	271

3. Construction Emissions Details

3.1. Demolition (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)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.58	5.55	0.23	—	0.23	0.22	—	0.22	934
Demolition	—	—	—	3.51	3.51	—	0.53	0.53	—
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	0.21	0.01	—	0.01	0.01	—	0.01	35.8
Demolition	—	—	—	0.13	0.13	—	0.02	0.02	—
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	0.04	< 0.005	—	< 0.005	< 0.005	—	< 0.005	5.93
Demolition	—	—	—	0.02	0.02	—	< 0.005	< 0.005	—
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	0.05	0.00	0.12	0.12	0.00	0.03	0.03	123
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.42	28.4	0.38	5.38	5.76	0.26	1.47	1.73	22,234
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	4.78
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.02	1.07	0.01	0.21	0.22	0.01	0.06	0.07	853
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.79
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.20	< 0.005	0.04	0.04	< 0.005	0.01	0.01	141

3.2. Demolition (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)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.28	7.09	0.08	—	0.08	0.07	—	0.07	2,316
Demolition	—	—	—	3.51	3.51	—	0.53	0.53	—
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	0.27	< 0.005	—	< 0.005	< 0.005	—	< 0.005	88.8
Demolition	—	—	—	0.13	0.13	—	0.02	0.02	—
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	0.05	< 0.005	—	< 0.005	< 0.005	—	< 0.005	14.7

Demolition	—	—	—	0.02	0.02	—	< 0.005	< 0.005	—
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	0.05	0.00	0.12	0.12	0.00	0.03	0.03	123
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.42	28.4	0.38	5.38	5.76	0.26	1.47	1.73	22,234
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	4.78
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.02	1.07	0.01	0.21	0.22	0.01	0.06	0.07	853
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.79
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.20	< 0.005	0.04	0.04	< 0.005	0.01	0.01	141

3.3. Site Preparation (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)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.31	12.7	0.55	—	0.55	0.51	—	0.51	2,725
Dust From Material Movement	—	—	—	1.59	1.59	—	0.17	0.17	—

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	0.05	0.49	0.02	—	0.02	0.02	—	0.02	105
Dust From Material Movement	—	—	—	0.06	0.06	—	0.01	0.01	—
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	0.09	< 0.005	—	< 0.005	< 0.005	—	< 0.005	17.3
Dust From Material Movement	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—
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	0.03	0.03	0.00	0.06	0.06	0.00	0.01	0.01	61.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.02	1.17	0.02	0.22	0.24	0.01	0.06	0.07	920
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	2.39
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.04	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	35.3
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.40
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	5.85

3.4. Site Preparation (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)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.34	7.95	0.05	—	0.05	0.05	—	0.05	2,725
Dust From Material Movement	—	—	—	1.59	1.59	—	0.17	0.17	—
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	0.30	< 0.005	—	< 0.005	< 0.005	—	< 0.005	105
Dust From Material Movement	—	—	—	0.06	0.06	—	0.01	0.01	—
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	0.06	< 0.005	—	< 0.005	< 0.005	—	< 0.005	17.3
Dust From Material Movement	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—
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	0.03	0.03	0.00	0.06	0.06	0.00	0.01	0.01	61.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.02	1.17	0.02	0.22	0.24	0.01	0.06	0.07	920
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	2.39
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.04	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	35.3
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.40
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	5.85

3.5. Grading (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)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.37	3.51	0.17	—	0.17	0.15	—	0.15	530
Dust From Material Movement	—	—	—	1.57	1.57	—	0.74	0.74	—
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	0.20	0.01	—	0.01	0.01	—	0.01	30.5
Dust From Material Movement	—	—	—	0.09	0.09	—	0.04	0.04	—
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	0.04	< 0.005	—	< 0.005	< 0.005	—	< 0.005	5.05
Dust From Material Movement	—	—	—	0.02	0.02	—	0.01	0.01	—
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	0.04	0.04	0.00	0.10	0.10	0.00	0.02	0.02	103
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.07	4.89	0.07	0.93	0.99	0.04	0.25	0.30	3,833
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.01	0.01	0.00	< 0.005	< 0.005	5.98
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.28	< 0.005	0.05	0.06	< 0.005	0.01	0.02	221
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.99
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	0.01	0.01	< 0.005	< 0.005	< 0.005	36.5

3.6. Grading (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)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.07	1.72	0.01	—	0.01	0.01	—	0.01	530
Dust From Material Movement	—	—	—	1.57	1.57	—	0.74	0.74	—
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	0.10	< 0.005	—	< 0.005	< 0.005	—	< 0.005	30.5
Dust From Material Movement	—	—	—	0.09	0.09	—	0.04	0.04	—
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	5.05
Dust From Material Movement	—	—	—	0.02	0.02	—	0.01	0.01	—
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	0.04	0.04	0.00	0.10	0.10	0.00	0.02	0.02	103
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.07	4.89	0.07	0.93	0.99	0.04	0.25	0.30	3,833
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.01	0.01	0.00	< 0.005	< 0.005	5.98
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.28	< 0.005	0.05	0.06	< 0.005	0.01	0.02	221
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.99

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	0.01	0.01	< 0.005	< 0.005	< 0.005	36.5

3.7. 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	0.20	1.42	0.07	—	0.07	0.06	—	0.06	234
Paving	0.28	—	—	—	—	—	—	—	—
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	0.02	0.11	0.01	—	0.01	< 0.005	—	< 0.005	17.9
Paving	0.02	—	—	—	—	—	—	—	—
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	2.97
Paving	< 0.005	—	—	—	—	—	—	—	—
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	0.03	0.03	0.00	0.08	0.08	0.00	0.02	0.02	88.8
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.07	4.08	0.06	0.82	0.87	0.04	0.22	0.26	3,379
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.01	0.01	0.00	< 0.005	< 0.005	6.37
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	0.32	< 0.005	0.06	0.07	< 0.005	0.02	0.02	259
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	1.06
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.06	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	42.9

3.8. 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	0.06	1.56	0.04	—	0.04	0.04	—	0.04	234
Paving	0.28	—	—	—	—	—	—	—	—
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	0.12	< 0.005	—	< 0.005	< 0.005	—	< 0.005	17.9
Paving	0.02	—	—	—	—	—	—	—	—
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	2.97
Paving	< 0.005	—	—	—	—	—	—	—	—
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	0.03	0.03	0.00	0.08	0.08	0.00	0.02	0.02	88.8
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.07	4.08	0.06	0.82	0.87	0.04	0.22	0.26	3,379
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.01	0.01	0.00	< 0.005	< 0.005	6.37
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	0.32	< 0.005	0.06	0.07	< 0.005	0.02	0.02	259
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	1.06
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.06	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	42.9

3.9. Trenching (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	0.03	0.31	0.01	—	0.01	0.01	—	0.01	68.9
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	0.03	0.31	0.01	—	0.01	0.01	—	0.01	68.9
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	0.02	< 0.005	—	< 0.005	< 0.005	—	< 0.005	3.96
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	0.66
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	0.02	0.01	0.00	0.04	0.04	0.00	0.01	0.01	44.4
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)	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.00	0.04	0.04	0.00	0.01	0.01	41.0
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	2.39
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	0.40
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

3.10. Trenching (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	0.01	0.33	< 0.005	—	< 0.005	< 0.005	—	< 0.005	68.9
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	0.01	0.33	< 0.005	—	< 0.005	< 0.005	—	< 0.005	68.9
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	0.02	< 0.005	—	< 0.005	< 0.005	—	< 0.005	3.96
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	0.66
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	0.02	0.01	0.00	0.04	0.04	0.00	0.01	0.01	44.4
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)	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.00	0.04	0.04	0.00	0.01	0.01	41.0
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	2.39
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	0.40
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

4.10. 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
Demolition	Demolition	1/25/2024	2/13/2024	5.00	14.0	—
Site Preparation	Site Preparation	2/8/2024	2/27/2024	5.00	14.0	—
Grading	Grading	2/22/2024	3/21/2024	5.00	21.0	—
Paving	Paving	4/4/2024	5/13/2024	5.00	28.0	—
Trenching	Trenching	3/14/2024	4/11/2024	5.00	21.0	—

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
Demolition	Tractors/Loaders/Backhoes	Diesel	Average	3.00	3.40	84.0	0.37
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	3.40	33.0	0.73

Site Preparation	Graders	Diesel	Average	1.00	8.00	148	0.41
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	7.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	2.30	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	1.70	367	0.40
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	0.80	84.0	0.37
Paving	Cement and Mortar Mixers	Diesel	Average	1.00	4.00	10.0	0.56
Paving	Rollers	Diesel	Average	2.00	4.00	36.0	0.38
Site Preparation	Scrapers	Diesel	Average	1.00	8.00	423	0.48
Paving	Paving Equipment	Diesel	Average	1.00	1.70	89.0	0.36
Demolition	Rubber Tired Dozers	Diesel	Average	1.00	2.30	367	0.40
Demolition	Excavators	Diesel	Average	1.00	3.40	36.0	0.38
Grading	Excavators	Diesel	Average	1.00	0.80	36.0	0.38
Trenching	Tractors/Loaders/Backhoes	Diesel	Average	1.00	1.50	84.0	0.37
Trenching	Excavators	Diesel	Average	1.00	0.80	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
Demolition	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	3.00	3.40	84.0	0.37
Demolition	Rubber Tired Dozers	Diesel	Tier 4 Interim	1.00	8.00	367	0.40
Demolition	Concrete/Industrial Saws	Diesel	Tier 4 Interim	1.00	3.40	33.0	0.73
Site Preparation	Graders	Diesel	Tier 4 Interim	1.00	8.00	148	0.41
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	1.00	7.00	84.0	0.37
Grading	Graders	Diesel	Tier 4 Interim	1.00	2.30	148	0.41

Grading	Rubber Tired Dozers	Diesel	Tier 4 Interim	1.00	1.70	367	0.40
Grading	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	2.00	0.80	84.0	0.37
Paving	Cement and Mortar Mixers	Diesel	Average	1.00	4.00	10.0	0.56
Paving	Rollers	Diesel	Tier 4 Interim	2.00	4.00	36.0	0.38
Site Preparation	Scrapers	Diesel	Tier 4 Interim	1.00	8.00	423	0.48
Paving	Paving Equipment	Diesel	Tier 4 Interim	1.00	1.70	89.0	0.36
Demolition	Rubber Tired Dozers	Diesel	Tier 4 Interim	1.00	2.30	367	0.40
Demolition	Excavators	Diesel	Tier 4 Interim	1.00	3.40	36.0	0.38
Grading	Excavators	Diesel	Tier 4 Interim	1.00	0.80	36.0	0.38
Trenching	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	1.00	1.50	84.0	0.37
Trenching	Excavators	Diesel	Tier 4 Interim	1.00	0.80	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
Demolition	—	—	—	—
Demolition	Worker	15.0	11.7	LDA,LDT1,LDT2
Demolition	Vendor	—	8.40	HHDT,MHDT
Demolition	Hauling	290	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	7.50	11.7	LDA,LDT1,LDT2
Site Preparation	Vendor	—	8.40	HHDT,MHDT
Site Preparation	Hauling	12.0	20.0	HHDT

Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	12.5	11.7	LDA,LDT1,LDT2
Grading	Vendor	—	8.40	HHDT,MHDT
Grading	Hauling	50.0	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	10.0	11.7	LDA,LDT1,LDT2
Paving	Vendor	—	8.40	HHDT,MHDT
Paving	Hauling	44.0	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Trenching	—	—	—	—
Trenching	Worker	5.00	11.7	LDA,LDT1,LDT2
Trenching	Vendor	—	8.40	HHDT,MHDT
Trenching	Hauling	0.00	20.0	HHDT
Trenching	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	15.0	11.7	LDA,LDT1,LDT2
Demolition	Vendor	—	8.40	HHDT,MHDT
Demolition	Hauling	290	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	7.50	11.7	LDA,LDT1,LDT2
Site Preparation	Vendor	—	8.40	HHDT,MHDT

Site Preparation	Hauling	12.0	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	12.5	11.7	LDA,LDT1,LDT2
Grading	Vendor	—	8.40	HHDT,MHDT
Grading	Hauling	50.0	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	10.0	11.7	LDA,LDT1,LDT2
Paving	Vendor	—	8.40	HHDT,MHDT
Paving	Hauling	44.0	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Trenching	—	—	—	—
Trenching	Worker	5.00	11.7	LDA,LDT1,LDT2
Trenching	Vendor	—	8.40	HHDT,MHDT
Trenching	Hauling	0.00	20.0	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)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (Building Square Footage)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	48,700	—
Site Preparation	—	—	21.0	0.00	—
Grading	5,000	3,400	5.25	0.00	—
Paving	0.00	0.00	0.00	0.00	3.00

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
Parking Lot	3.00	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

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

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	11.6	annual days of extreme heat

Extreme Precipitation	2.55	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	0.00	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	20.8
AQ-PM	34.6
AQ-DPM	90.0
Drinking Water	22.7
Lead Risk Housing	44.6
Pesticides	11.9

Toxic Releases	34.1
Traffic	76.0
Effect Indicators	—
CleanUp Sites	94.5
Groundwater	99.3
Haz Waste Facilities/Generators	96.7
Impaired Water Bodies	43.8
Solid Waste	0.00
Sensitive Population	—
Asthma	49.9
Cardio-vascular	36.5
Low Birth Weights	54.6
Socioeconomic Factor Indicators	—
Education	46.8
Housing	11.6
Linguistic	21.4
Poverty	43.7
Unemployment	51.3

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	55.19055563
Employed	58.62953933
Median HI	81.39355832
Education	—

Bachelor's or higher	73.95098165
High school enrollment	100
Preschool enrollment	95.7141024
Transportation	—
Auto Access	47.37585012
Active commuting	90.4914667
Social	—
2-parent households	11.45900167
Voting	75.23418452
Neighborhood	—
Alcohol availability	18.09316053
Park access	81.35506224
Retail density	91.00474785
Supermarket access	81.04709355
Tree canopy	65.73848325
Housing	—
Homeownership	37.76466059
Housing habitability	66.9190299
Low-inc homeowner severe housing cost burden	86.48787373
Low-inc renter severe housing cost burden	61.86321057
Uncrowded housing	85.268831
Health Outcomes	—
Insured adults	60.5800077
Arthritis	94.2
Asthma ER Admissions	43.5
High Blood Pressure	93.3
Cancer (excluding skin)	80.0

Asthma	61.7
Coronary Heart Disease	91.8
Chronic Obstructive Pulmonary Disease	88.0
Diagnosed Diabetes	89.0
Life Expectancy at Birth	93.2
Cognitively Disabled	25.4
Physically Disabled	86.7
Heart Attack ER Admissions	64.5
Mental Health Not Good	62.3
Chronic Kidney Disease	90.3
Obesity	55.2
Pedestrian Injuries	58.7
Physical Health Not Good	77.4
Stroke	91.3
Health Risk Behaviors	—
Binge Drinking	13.6
Current Smoker	63.1
No Leisure Time for Physical Activity	76.1
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	88.7
Elderly	98.6
English Speaking	91.1
Foreign-born	40.7
Outdoor Workers	37.6
Climate Change Adaptive Capacity	—

Impervious Surface Cover	10.3
Traffic Density	68.6
Traffic Access	87.4
Other Indices	—
Hardship	28.6
Other Decision Support	—
2016 Voting	71.3

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	51.0
Healthy Places Index Score for Project Location (b)	78.0
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 and number of parking spaces taken from construction worksheet provided by applicant.
Construction: Construction Phases	Construction worksheet from provided construction worksheet filled out by applicant.
Construction: Off-Road Equipment	Default equipment numbers used. Total hours per day from const worksheet provided by project applicant.
Construction: Trips and VMT	Demolition = 1,250 tons of pavement demo, site preparation = 6 concrete truck round trips, paving = 22 concrete truck round trips.

Attachment 3: Project Construction Emissions and Health Risk Calculations

Milligan Parking Lot, San Jose, CA

DPM Emissions and Modeling Emission Rates - Unmitigated

Construction Year	Activity	DPM (ton/year)	Area Source	DPM Emissions (lb/yr)	DPM Emissions (lb/hr)	DPM Emissions (g/s)	Modeled Area (m^2)	DPM Emission Rate ($g/s/m^2$)
2024	Construction	0.0128	CON_DPM	25.6	0.00700	8.82E-04	10,196	8.65E-08
Total		***0.0128***		***25.6***	***0.0070***	***0.0009***		

Construction Hours

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

Milligan Parking Lot, San Jose, CA

PM2.5 Fugitive Dust Emissions for Modeling - Unmitigated

Construction Year	Activity	Area Source	PM2.5 Emissions (ton/year)	PM2.5 Emissions (lb/yr)	PM2.5 Emissions (lb/hr)	PM2.5 Emissions (g/s)	Modeled Area (m^2)	PM2.5 Emission Rate $g/s/m^2$
2024	Construction	CON_FUG	0.0292	58.4	0.01600	2.02E-03	10,196	1.98E-07
Total			***0.0292***	***58.4***	***0.0160***	***0.0020***		

Construction Hours

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

Milligan Parking Lot, San Jose, CA
Construction Health Impact Summary

Maximum Impacts at MEI Location - Without Mitigation

Emissions Year	Maximum Concentrations Exhaust PM10/DPM ($\mu g/m^3$)	Fugitive PM2.5 ($\mu g/m^3$)	Cancer Risk (per million) Infant/Child	Hazard Index (-)	Maximum Annual PM2.5 Concentration ($\mu g/m^3$)
2024	0.0230	0.0986	4.09	0.00	0.12
Total	-	-	**4.09**		-
Maximum	0.0230	0.0986	**-**	**0.00**	**0.12**

Milligan Parking Lot, San Jose, CA - Construction Impacts - Without Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at Off-Site MEI Location - 4.5 meter receptor height

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

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

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

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

Values

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

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Exposure Year	Exposure Duration (years)	Age	Infant/Child - Exposure Information: DPM Conc (ug/m3) Year	Annual	Age Sensitivity Factor	Infant/Child Cancer Risk (per million)	Adult - Exposure Information: Modeled DPM Conc (ug/m3) Year	Annual	Age Sensitivity Factor	Adult Cancer Risk (per million)
0	0.25	-0.25 - 0*	2024	0.0065	10	0.09	2024	0.0065	-	-
1	1	0 - 1	2024	0.0065	10	1.07	2024	0.0065	1	0.02
2	1	1 - 2		0.0000	10	0.00		0.0000	1	0.00
3	1	2 - 3		0.0000	3	0.00		0.0000	1	0.00
4	1	3 - 4		0.0000	3	0.00		0.0000	1	0.00
5	1	4 - 5		0.0000	3	0.00		0.0000	1	0.00
6	1	5 - 6		0.0000	3	0.00		0.0000	1	0.00
7	1	6 - 7		0.0000	3	0.00		0.0000	1	0.00
8	1	7 - 8		0.0000	3	0.00		0.0000	1	0.00
9	1	8 - 9		0.0000	3	0.00		0.0000	1	0.00
10	1	9 - 10		0.0000	3	0.00		0.0000	1	0.00
11	1	10 - 11		0.0000	3	0.00		0.0000	1	0.00
12	1	11 - 12		0.0000	3	0.00		0.0000	1	0.00
13	1	12 - 13		0.0000	3	0.00		0.0000	1	0.00
14	1	13 - 14		0.0000	3	0.00		0.0000	1	0.00
15	1	14 - 15		0.0000	3	0.00		0.0000	1	0.00
16	1	15 - 16		0.0000	3	0.00		0.0000	1	0.00
17	1	16-17		0.0000	1	0.00		0.0000	1	0.00
18	1	17-18		0.0000	1	0.00		0.0000	1	0.00
19	1	18-19		0.0000	1	0.00		0.0000	1	0.00
20	1	19-20		0.0000	1	0.00		0.0000	1	0.00
21	1	20-21		0.0000	1	0.00		0.0000	1	0.00
22	1	21-22		0.0000	1	0.00		0.0000	1	0.00
23	1	22-23		0.0000	1	0.00		0.0000	1	0.00
24	1	23-24		0.0000	1	0.00		0.0000	1	0.00
25	1	24-25		0.0000	1	0.00		0.0000	1	0.00
26	1	25-26		0.0000	1	0.00		0.0000	1	0.00
27	1	26-27		0.0000	1	0.00		0.0000	1	0.00
28	1	27-28		0.0000	1	0.00		0.0000	1	0.00
29	1	28-29		0.0000	1	0.00		0.0000	1	0.00
30	1	29-30		0.0000	1	0.00		0.0000	1	0.00
Total Increased Cancer Risk						**1.16**				**0.02**

* Third trimester of pregnancy

	Maximum	
Hazard Index	**Fugitive PM2.5**	**Total PM2.5**
0.00	0.017	0.02

Milligan Parking Lot, San Jose, CA - Construction Impacts - Without Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at Off-Site MEI Location - 1.5 meter receptor height

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

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

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

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

Values

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

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

			Infant/Child - Exposure Information			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	Hazard	Fugitive	Total
Year	(years)	Age	Year	Annual	Factor	(per million)	Year	Annual	Factor	(per million)	Index	PM2.5	PM2.5
0	0.25	-0.25 - 0*	2024	0.0230	10	0.31	2024	0.0230	-	-			
1	1	0 - 1	2024	0.0230	10	3.78	2024	0.0230	1	0.07	0.00	0.099	0.12
2	1	1 - 2		0.0000	10	0.00		0.0000	1	0.00			
3	1	2 - 3		0.0000	3	0.00		0.0000	1	0.00			
4	1	3 - 4		0.0000	3	0.00		0.0000	1	0.00			
5	1	4 - 5		0.0000	3	0.00		0.0000	1	0.00			
6	1	5 - 6		0.0000	3	0.00		0.0000	1	0.00			
7	1	6 - 7		0.0000	3	0.00		0.0000	1	0.00			
8	1	7 - 8		0.0000	3	0.00		0.0000	1	0.00			
9	1	8 - 9		0.0000	3	0.00		0.0000	1	0.00			
10	1	9 - 10		0.0000	3	0.00		0.0000	1	0.00			
11	1	10 - 11		0.0000	3	0.00		0.0000	1	0.00			
12	1	11 - 12		0.0000	3	0.00		0.0000	1	0.00			
13	1	12 - 13		0.0000	3	0.00		0.0000	1	0.00			
14	1	13 - 14		0.0000	3	0.00		0.0000	1	0.00			
15	1	14 - 15		0.0000	3	0.00		0.0000	1	0.00			
16	1	15 - 16		0.0000	3	0.00		0.0000	1	0.00			
17	1	16-17		0.0000	1	0.00		0.0000	1	0.00			
18	1	17-18		0.0000	1	0.00		0.0000	1	0.00			
19	1	18-19		0.0000	1	0.00		0.0000	1	0.00			
20	1	19-20		0.0000	1	0.00		0.0000	1	0.00			
21	1	20-21		0.0000	1	0.00		0.0000	1	0.00			
22	1	21-22		0.0000	1	0.00		0.0000	1	0.00			
23	1	22-23		0.0000	1	0.00		0.0000	1	0.00			
24	1	23-24		0.0000	1	0.00		0.0000	1	0.00			
25	1	24-25		0.0000	1	0.00		0.0000	1	0.00			
26	1	25-26		0.0000	1	0.00		0.0000	1	0.00			
27	1	26-27		0.0000	1	0.00		0.0000	1	0.00			
28	1	27-28		0.0000	1	0.00		0.0000	1	0.00			
29	1	28-29		0.0000	1	0.00		0.0000	1	0.00			
30	1	29-30		0.0000	1	0.00		0.0000	1	0.00			
Total Increased Cancer Risk						**4.09**				**0.07**			

* Third trimester of pregnancy

Attachment 4: Community Risk Screening and Calculations

```
          File Name:   Local Roadways 2024.EF
CT-EMFAC2017 Version:   1.0.2.27401
           Run Date:   2/17/2023 11:21:12 AM
               Area:   Santa Clara (SF)
      Analysis Year:   2024
             Season:   Annual

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

Vehicle Category        VMT Fraction          Diesel VMT Fraction      Gas VMT Fraction
                        Across Category       Within Category          Within Category
         Truck 1            0.015                0.495                     0.505
         Truck 2            0.020                0.937                     0.048
       Non-Truck            0.965                0.014                     0.955

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

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

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

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

       Pollutant Name        30 mph
                PM2.5      0.001693
                  TOG      0.034349
            Diesel PM      0.000339

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

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

       Pollutant Name   Emission Factor
                  TOG          1.303551

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

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          0.016805

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

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

       Pollutant Name   Emission Factor
                PM2.5          0.014840

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

```
          File Name:   Highways 2024.EF
CT-EMFAC2017 Version:  1.0.2.27401
           Run Date:   2/17/2023 11:29:49 AM
               Area:   Santa Clara (SF)
      Analysis Year:   2024
             Season:   Annual

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

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

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

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

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

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

       Pollutant Name        55 mph          60 mph          65 mph
                PM2.5      0.001308        0.001432        0.001631
                  TOG      0.023225        0.024828        0.027897
            Diesel PM      0.000445        0.000501        0.000564

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

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

       Pollutant Name   Emission Factor
                  TOG          1.346234

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

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

       Pollutant Name   Emission Factor
                PM2.5          0.002067

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

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

       Pollutant Name   Emission Factor
                PM2.5          0.016803

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

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

       Pollutant Name   Emission Factor
                PM2.5          0.007011

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

Milligan Parking Lot, San Jose, CA - Off-Site Residential
Cumulative Operation - W Santa Clara St
DPM Modeling - Roadway Links, Traffic Volumes, and DPM Emissions
Year = 2024

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
DPM_EB_WSC	W Santa Clara Eastbound	EB	2	519.4	0.32	13.3	43.7	3.4	30	9,967
DPM_WB_WSC	W Santa Clara Westbound	WB	2	544.7	0.34	13.3	43.7	3.4	30	9,967
									Total	19,935

Emission Factors

Speed Category	1	2	3	4
Travel Speed (mph)	30			
Emissions per Vehicle (g/VMT)	0.00034			

Emisson Factors from CT-EMFAC2017

2024 Hourly Traffic Volumes and DPM Emissions - DPM_EB_WSC

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	3.90%	388	1.18E-05	9	6.42%	640	1.94E-05	17	5.62%	560	1.70E-05
2	2.58%	257	7.81E-06	10	7.34%	731	2.22E-05	18	3.27%	326	9.89E-06
3	2.87%	286	8.68E-06	11	6.42%	640	1.94E-05	19	2.35%	234	7.12E-06
4	3.32%	331	1.01E-05	12	6.88%	685	2.08E-05	20	0.86%	86	2.60E-06
5	2.18%	217	6.60E-06	13	6.25%	623	1.89E-05	21	3.09%	308	9.37E-06
6	3.38%	337	1.02E-05	14	6.19%	617	1.87E-05	22	4.13%	411	1.25E-05
7	6.02%	600	1.82E-05	15	5.10%	508	1.54E-05	23	2.52%	251	7.64E-06
8	4.64%	463	1.41E-05	16	3.78%	377	1.15E-05	24	0.92%	91	2.78E-06
								Total		9,967	

2024 Hourly Traffic Volumes Per Direction and DPM Emissions - DPM_WB_WSC

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	3.90%	388	1.24E-05	9	6.42%	640	2.04E-05	17	5.62%	560	1.78E-05
2	2.58%	257	8.19E-06	10	7.34%	731	2.33E-05	18	3.27%	326	1.04E-05
3	2.87%	286	9.10E-06	11	6.42%	640	2.04E-05	19	2.35%	234	7.46E-06
4	3.32%	331	1.06E-05	12	6.88%	685	2.18E-05	20	0.86%	86	2.73E-06
5	2.18%	217	6.92E-06	13	6.25%	623	1.98E-05	21	3.09%	308	9.83E-06
6	3.38%	337	1.07E-05	14	6.19%	617	1.97E-05	22	4.13%	411	1.31E-05
7	6.02%	600	1.91E-05	15	5.10%	508	1.62E-05	23	2.52%	251	8.01E-06
8	4.64%	463	1.47E-05	16	3.78%	377	1.20E-05	24	0.92%	91	2.91E-06
								Total		9,967	

Milligan Parking Lot, San Jose, CA - Off-Site Residential
Cumulative Operation - W Santa Clara St
PM2.5 Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions
Year = 2024

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
PM2.5_EB_WSC	W Santa Clara Eastbound	EB	2	519.4	0.32	13.3	44	1.3	30	9,967
PM2.5_WB_WSC	W Santa Clara Westbound	WB	2	544.7	0.34	13.3	44	1.3	30	9,967
									Total	19,935

Emission Factors - PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	30			
Emissions per Vehicle (g/VMT)	0.001693			

Emisson Factors from CT-EMFAC2017

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

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	115	1.74E-05	9	7.11%	709	1.08E-04	17	7.39%	736	1.12E-04
2	0.42%	42	6.32E-06	10	4.39%	437	6.63E-05	18	8.18%	815	1.24E-04
3	0.41%	40	6.14E-06	11	4.66%	465	7.06E-05	19	5.70%	568	8.62E-05
4	0.26%	26	3.96E-06	12	5.89%	587	8.91E-05	20	4.27%	426	6.47E-05
5	0.50%	50	7.56E-06	13	6.15%	613	9.31E-05	21	3.26%	325	4.93E-05
6	0.90%	90	1.37E-05	14	6.04%	602	9.13E-05	22	3.30%	329	4.99E-05
7	3.79%	378	5.73E-05	15	7.01%	699	1.06E-04	23	2.46%	245	3.72E-05
8	7.76%	774	1.17E-04	16	7.14%	711	1.08E-04	24	1.87%	186	2.82E-05
								Total		9,967	

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

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	115	1.83E-05	9	7.11%	709	1.13E-04	17	7.39%	736	1.17E-04
2	0.42%	42	6.63E-06	10	4.39%	437	6.96E-05	18	8.18%	815	1.30E-04
3	0.41%	40	6.44E-06	11	4.66%	465	7.40E-05	19	5.70%	568	9.04E-05
4	0.26%	26	4.15E-06	12	5.89%	587	9.34E-05	20	4.27%	426	6.78E-05
5	0.50%	50	7.93E-06	13	6.15%	613	9.76E-05	21	3.26%	325	5.17E-05
6	0.90%	90	1.43E-05	14	6.04%	602	9.58E-05	22	3.30%	329	5.23E-05
7	3.79%	378	6.01E-05	15	7.01%	699	1.11E-04	23	2.46%	245	3.90E-05
8	7.76%	774	1.23E-04	16	7.14%	711	1.13E-04	24	1.87%	186	2.96E-05
								Total		9,967	

Milligan Parking Lot, San Jose, CA - Off-Site Residential
Cumulative Operation - W Santa Clara St
TOG Exhaust Modeling - Roadway Links, Traffic Volumes, and TOG Exhaust Emissions
Year = 2024

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
TEXH_EB_WSC	W Santa Clara Eastbound	EB	2	519.4	0.32	13.3	44	1.3	30	9,967
TEXH_WB_WSC	W Santa Clara Westbound	WB	2	544.7	0.34	13.3	44	1.3	30	9,967
									Total	19,935

Emission Factors - TOG Exhaust

Speed Category	1	2	3	4
Travel Speed (mph)	30			
Emissions per Vehicle (g/VMT)	0.03435			

Emisson Factors from CT-EMFAC2017

2024 Hourly Traffic Volumes and TOG Exhaust Emissions - TEXH_EB_WSC

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	115	3.53E-04	9	7.11%	709	2.18E-03	17	7.39%	736	2.27E-03
2	0.42%	42	1.28E-04	10	4.39%	437	1.35E-03	18	8.18%	815	2.51E-03
3	0.41%	40	1.25E-04	11	4.66%	465	1.43E-03	19	5.70%	568	1.75E-03
4	0.26%	26	8.03E-05	12	5.89%	587	1.81E-03	20	4.27%	426	1.31E-03
5	0.50%	50	1.53E-04	13	6.15%	613	1.89E-03	21	3.26%	325	1.00E-03
6	0.90%	90	2.77E-04	14	6.04%	602	1.85E-03	22	3.30%	329	1.01E-03
7	3.79%	378	1.16E-03	15	7.01%	699	2.15E-03	23	2.46%	245	7.55E-04
8	7.76%	774	2.38E-03	16	7.14%	711	2.19E-03	24	1.87%	186	5.73E-04
								Total		9,967	

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

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	115	3.71E-04	9	7.11%	709	2.29E-03	17	7.39%	736	2.38E-03
2	0.42%	42	1.34E-04	10	4.39%	437	1.41E-03	18	8.18%	815	2.63E-03
3	0.41%	40	1.31E-04	11	4.66%	465	1.50E-03	19	5.70%	568	1.83E-03
4	0.26%	26	8.42E-05	12	5.89%	587	1.90E-03	20	4.27%	426	1.38E-03
5	0.50%	50	1.61E-04	13	6.15%	613	1.98E-03	21	3.26%	325	1.05E-03
6	0.90%	90	2.91E-04	14	6.04%	602	1.94E-03	22	3.30%	329	1.06E-03
7	3.79%	378	1.22E-03	15	7.01%	699	2.26E-03	23	2.46%	245	7.92E-04
8	7.76%	774	2.50E-03	16	7.14%	711	2.30E-03	24	1.87%	186	6.01E-04
								Total		9,967	

Milligan Parking Lot, San Jose, CA - Off-Site Residential
Cumulative Operation - W Santa Clara St
TOG Evaporative Emissions Modeling - Roadway Links, Traffic Volumes, and TOG Evaporative Emissions
Year = 2024

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
TEVAP_EB_WSC	W Santa Clara Eastbound	EB	2	519.4	0.32	13.3	44	1.3	30	9,967
TEVAP_WB_WSC	W Santa Clara Westbound	WB	2	544.7	0.34	13.3	44	1.3	30	9,967
									Total	19,935

Emission Factors - PM2.5 - Evaporative TOG

Speed Category	1	2	3	4
Travel Speed (mph)	30			
Emissions per Vehicle per Hour (g/hour)	1.30355			
Emissions per Vehicle per Mile (g/VMT)	0.04345			

Emisson Factors from CT-EMFAC2017

2024 Hourly Traffic Volumes and TOG Evaporative Emissions - TEVAP_EB_WSC

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	115	4.47E-04	9	7.11%	709	2.76E-03	17	7.39%	736	2.87E-03
2	0.42%	42	1.62E-04	10	4.39%	437	1.70E-03	18	8.18%	815	3.17E-03
3	0.41%	40	1.58E-04	11	4.66%	465	1.81E-03	19	5.70%	568	2.21E-03
4	0.26%	26	1.02E-04	12	5.89%	587	2.29E-03	20	4.27%	426	1.66E-03
5	0.50%	50	1.94E-04	13	6.15%	613	2.39E-03	21	3.26%	325	1.26E-03
6	0.90%	90	3.51E-04	14	6.04%	602	2.34E-03	22	3.30%	329	1.28E-03
7	3.79%	378	1.47E-03	15	7.01%	699	2.72E-03	23	2.46%	245	9.56E-04
8	7.76%	774	3.01E-03	16	7.14%	711	2.77E-03	24	1.87%	186	7.24E-04
								Total		9,967	

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

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	115	4.69E-04	9	7.11%	709	2.90E-03	17	7.39%	736	3.01E-03
2	0.42%	42	1.70E-04	10	4.39%	437	1.79E-03	18	8.18%	815	3.33E-03
3	0.41%	40	1.65E-04	11	4.66%	465	1.90E-03	19	5.70%	568	2.32E-03
4	0.26%	26	1.06E-04	12	5.89%	587	2.40E-03	20	4.27%	426	1.74E-03
5	0.50%	50	2.03E-04	13	6.15%	613	2.51E-03	21	3.26%	325	1.33E-03
6	0.90%	90	3.68E-04	14	6.04%	602	2.46E-03	22	3.30%	329	1.34E-03
7	3.79%	378	1.54E-03	15	7.01%	699	2.86E-03	23	2.46%	245	1.00E-03
8	7.76%	774	3.16E-03	16	7.14%	711	2.91E-03	24	1.87%	186	7.60E-04
								Total		9,967	

Milligan Parking Lot, San Jose, CA - Off-Site Residential
Cumulative Operation - W Santa Clara St
Fugitive Road PM2.5 Modeling - Roadway Links, Traffic Volumes, and Fugitive Road PM2.5 Emissions
Year = 2024

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
FUG_EB_WSC	W Santa Clara Eastbound	EB	2	519.4	0.32	13.3	44	1.3	30	9,967
FUG_WB_WSC	W Santa Clara Westbound	WB	2	544.7	0.34	13.3	44	1.3	30	9,967
									Total	19,935

Emission Factors - Fugitive PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	30			
Tire Wear - Emissions per Vehicle (g/VMT)	0.00211			
Brake Wear - Emissions per Vehicle (g/VMT)	0.01681			
Road Dust - Emissions per Vehicle (g/VMT)	0.01484			
otal Fugitive PM2.5 - Emissions per Vehicle (g/VMT)	0.03375			

Emisson Factors from CT-EMFAC2017

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

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	115	3.47E-04	9	7.11%	709	2.15E-03	17	7.39%	736	2.23E-03
2	0.42%	42	1.26E-04	10	4.39%	437	1.32E-03	18	8.18%	815	2.47E-03
3	0.41%	40	1.22E-04	11	4.66%	465	1.41E-03	19	5.70%	568	1.72E-03
4	0.26%	26	7.89E-05	12	5.89%	587	1.78E-03	20	4.27%	426	1.29E-03
5	0.50%	50	1.51E-04	13	6.15%	613	1.86E-03	21	3.26%	325	9.82E-04
6	0.90%	90	2.73E-04	14	6.04%	602	1.82E-03	22	3.30%	329	9.94E-04
7	3.79%	378	1.14E-03	15	7.01%	699	2.12E-03	23	2.46%	245	7.42E-04
8	7.76%	774	2.34E-03	16	7.14%	711	2.15E-03	24	1.87%	186	5.63E-04
								Total		9,967	

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

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	115	3.64E-04	9	7.11%	709	2.25E-03	17	7.39%	736	2.34E-03
2	0.42%	42	1.32E-04	10	4.39%	437	1.39E-03	18	8.18%	815	2.59E-03
3	0.41%	40	1.28E-04	11	4.66%	465	1.48E-03	19	5.70%	568	1.80E-03
4	0.26%	26	8.27E-05	12	5.89%	587	1.86E-03	20	4.27%	426	1.35E-03
5	0.50%	50	1.58E-04	13	6.15%	613	1.95E-03	21	3.26%	325	1.03E-03
6	0.90%	90	2.86E-04	14	6.04%	602	1.91E-03	22	3.30%	329	1.04E-03
7	3.79%	378	1.20E-03	15	7.01%	699	2.22E-03	23	2.46%	245	7.78E-04
8	7.76%	774	2.46E-03	16	7.14%	711	2.26E-03	24	1.87%	186	5.90E-04
								Total		9,967	

Milligan Parking Lot, San Jose, CA - Off-Site Residential
Cumulative Operation - Julian Street
DPM Modeling - Roadway Links, Traffic Volumes, and DPM Emissions
Year = 2024

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
DPM_EB_JUL	Julian Street Eastbound	EB	2	713.1	0.44	13.3	43.7	3.4	30	8,469
DPM_WB_JUL	Julian Street Westbound	WB	2	706.4	0.44	13.3	43.7	3.4	30	8,469
									Total	16,939

Emission Factors

Speed Category	1	2	3	4
Travel Speed (mph)	30			
Emissions per Vehicle (g/VMT)	0.00034			

Emisson Factors from CT-EMFAC2017

2024 Hourly Traffic Volumes and DPM Emissions - DPM_EB_JUL

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	3.90%	330	1.38E-05	9	6.42%	544	2.27E-05	17	5.62%	476	1.98E-05
2	2.58%	218	9.11E-06	10	7.34%	621	2.59E-05	18	3.27%	277	1.15E-05
3	2.87%	243	1.01E-05	11	6.42%	544	2.27E-05	19	2.35%	199	8.30E-06
4	3.32%	282	1.17E-05	12	6.88%	582	2.43E-05	20	0.86%	73	3.04E-06
5	2.18%	184	7.70E-06	13	6.25%	529	2.21E-05	21	3.09%	262	1.09E-05
6	3.38%	286	1.19E-05	14	6.19%	524	2.19E-05	22	4.13%	349	1.46E-05
7	6.02%	510	2.13E-05	15	5.10%	432	1.80E-05	23	2.52%	214	8.91E-06
8	4.64%	393	1.64E-05	16	3.78%	320	1.34E-05	24	0.92%	78	3.24E-06
								Total		8,469	

2024 Hourly Traffic Volumes Per Direction and DPM Emissions - DPM_WB_JUL

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	3.90%	330	1.36E-05	9	6.42%	544	2.25E-05	17	5.62%	476	1.97E-05
2	2.58%	218	9.03E-06	10	7.34%	621	2.57E-05	18	3.27%	277	1.14E-05
3	2.87%	243	1.00E-05	11	6.42%	544	2.25E-05	19	2.35%	199	8.23E-06
4	3.32%	282	1.16E-05	12	6.88%	582	2.41E-05	20	0.86%	73	3.01E-06
5	2.18%	184	7.62E-06	13	6.25%	529	2.19E-05	21	3.09%	262	1.08E-05
6	3.38%	286	1.18E-05	14	6.19%	524	2.17E-05	22	4.13%	349	1.44E-05
7	6.02%	510	2.11E-05	15	5.10%	432	1.79E-05	23	2.52%	214	8.83E-06
8	4.64%	393	1.62E-05	16	3.78%	320	1.32E-05	24	0.92%	78	3.21E-06
								Total		8,469	

Milligan Parking Lot, San Jose, CA - Off-Site Residential
Cumulative Operation - Julian Street
PM2.5 Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions
Year = 2024

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
PM2.5_EB_JUL	Julian Street Eastbound	EB	2	713.1	0.44	13.3	44	1.3	30	8,469
PM2.5_WB_JUL	Julian Street Westbound	WB	2	706.4	0.44	13.3	44	1.3	30	8,469
									Total	16,939

Emission Factors - PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	30			
Emissions per Vehicle (g/VMT)	0.001693			

Emisson Factors from CT-EMFAC2017

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

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	98	2.03E-05	9	7.11%	602	1.26E-04	17	7.39%	626	1.30E-04
2	0.42%	35	7.37E-06	10	4.39%	371	7.74E-05	18	8.18%	692	1.44E-04
3	0.41%	34	7.16E-06	11	4.66%	395	8.23E-05	19	5.70%	482	1.01E-04
4	0.26%	22	4.62E-06	12	5.89%	499	1.04E-04	20	4.27%	362	7.54E-05
5	0.50%	42	8.82E-06	13	6.15%	521	1.09E-04	21	3.26%	276	5.75E-05
6	0.90%	77	1.59E-05	14	6.04%	511	1.07E-04	22	3.30%	279	5.82E-05
7	3.79%	321	6.69E-05	15	7.01%	594	1.24E-04	23	2.46%	208	4.34E-05
8	7.76%	658	1.37E-04	16	7.14%	605	1.26E-04	24	1.87%	158	3.29E-05
								Total		8,469	

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

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	98	2.01E-05	9	7.11%	602	1.24E-04	17	7.39%	626	1.29E-04
2	0.42%	35	7.30E-06	10	4.39%	371	7.67E-05	18	8.18%	692	1.43E-04
3	0.41%	34	7.10E-06	11	4.66%	395	8.16E-05	19	5.70%	482	9.96E-05
4	0.26%	22	4.57E-06	12	5.89%	499	1.03E-04	20	4.27%	362	7.47E-05
5	0.50%	42	8.74E-06	13	6.15%	521	1.08E-04	21	3.26%	276	5.70E-05
6	0.90%	77	1.58E-05	14	6.04%	511	1.06E-04	22	3.30%	279	5.76E-05
7	3.79%	321	6.63E-05	15	7.01%	594	1.23E-04	23	2.46%	208	4.30E-05
8	7.76%	658	1.36E-04	16	7.14%	605	1.25E-04	24	1.87%	158	3.26E-05
								Total		8,469	

Milligan Parking Lot, San Jose, CA - Off-Site Residential
Cumulative Operation - Julian Street
TOG Exhaust Modeling - Roadway Links, Traffic Volumes, and TOG Exhaust Emissions
Year = 2024

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
TEXH_EB_JUL	Julian Street Eastbound	EB	2	713.1	0.44	13.3	44	1.3	30	8,469
TEXH_WB_JUL	Julian Street Westbound	WB	2	706.4	0.44	13.3	44	1.3	30	8,469
									Total	16,939

Emission Factors - TOG Exhaust

Speed Category	1	2	3	4
Travel Speed (mph)	30			
Emissions per Vehicle (g/VMT)	0.03435			

Emisson Factors from CT-EMFAC2017

2024 Hourly Traffic Volumes and TOG Exhaust Emissions - TEXH_EB_JUL

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	98	4.12E-04	9	7.11%	602	2.55E-03	17	7.39%	626	2.64E-03
2	0.42%	35	1.50E-04	10	4.39%	371	1.57E-03	18	8.18%	692	2.93E-03
3	0.41%	34	1.45E-04	11	4.66%	395	1.67E-03	19	5.70%	482	2.04E-03
4	0.26%	22	9.36E-05	12	5.89%	499	2.11E-03	20	4.27%	362	1.53E-03
5	0.50%	42	1.79E-04	13	6.15%	521	2.20E-03	21	3.26%	276	1.17E-03
6	0.90%	77	3.24E-04	14	6.04%	511	2.16E-03	22	3.30%	279	1.18E-03
7	3.79%	321	1.36E-03	15	7.01%	594	2.51E-03	23	2.46%	208	8.81E-04
8	7.76%	658	2.78E-03	16	7.14%	605	2.56E-03	24	1.87%	158	6.68E-04
								Total		8,469	

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

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	98	4.08E-04	9	7.11%	602	2.52E-03	17	7.39%	626	2.62E-03
2	0.42%	35	1.48E-04	10	4.39%	371	1.56E-03	18	8.18%	692	2.90E-03
3	0.41%	34	1.44E-04	11	4.66%	395	1.65E-03	19	5.70%	482	2.02E-03
4	0.26%	22	9.28E-05	12	5.89%	499	2.09E-03	20	4.27%	362	1.52E-03
5	0.50%	42	1.77E-04	13	6.15%	521	2.18E-03	21	3.26%	276	1.16E-03
6	0.90%	77	3.21E-04	14	6.04%	511	2.14E-03	22	3.30%	279	1.17E-03
7	3.79%	321	1.34E-03	15	7.01%	594	2.49E-03	23	2.46%	208	8.73E-04
8	7.76%	658	2.75E-03	16	7.14%	605	2.53E-03	24	1.87%	158	6.62E-04
								Total		8,469	

Milligan Parking Lot, San Jose, CA - Off-Site Residential
Cumulative Operation - Julian Street
TOG Evaporative Emissions Modeling - Roadway Links, Traffic Volumes, and TOG Evaporative Emissions
Year = 2024

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
TEVAP_EB_JUL	Julian Street Eastbound	EB	2	713.1	0.44	13.3	44	1.3	30	8,469
TEVAP_WB_JUL	Julian Street Westbound	WB	2	706.4	0.44	13.3	44	1.3	30	8,469
									Total	16,939

Emission Factors - PM2.5 - Evaporative TOG

Speed Category	1	2	3	4
Travel Speed (mph)	30			
Emissions per Vehicle per Hour (g/hour)	1.30355			
Emissions per Vehicle per Mile (g/VMT)	0.04345			

Emisson Factors from CT-EMFAC2017

2024 Hourly Traffic Volumes and TOG Evaporative Emissions - TEVAP_EB_JUL

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	98	5.22E-04	9	7.11%	602	3.22E-03	17	7.39%	626	3.35E-03
2	0.42%	35	1.89E-04	10	4.39%	371	1.99E-03	18	8.18%	692	3.70E-03
3	0.41%	34	1.84E-04	11	4.66%	395	2.11E-03	19	5.70%	482	2.58E-03
4	0.26%	22	1.18E-04	12	5.89%	499	2.67E-03	20	4.27%	362	1.94E-03
5	0.50%	42	2.26E-04	13	6.15%	521	2.79E-03	21	3.26%	276	1.48E-03
6	0.90%	77	4.09E-04	14	6.04%	511	2.73E-03	22	3.30%	279	1.49E-03
7	3.79%	321	1.72E-03	15	7.01%	594	3.18E-03	23	2.46%	208	1.11E-03
8	7.76%	658	3.52E-03	16	7.14%	605	3.23E-03	24	1.87%	158	8.45E-04
								Total		8,469	

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

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	98	5.17E-04	9	7.11%	602	3.19E-03	17	7.39%	626	3.31E-03
2	0.42%	35	1.87E-04	10	4.39%	371	1.97E-03	18	8.18%	692	3.67E-03
3	0.41%	34	1.82E-04	11	4.66%	395	2.09E-03	19	5.70%	482	2.56E-03
4	0.26%	22	1.17E-04	12	5.89%	499	2.64E-03	20	4.27%	362	1.92E-03
5	0.50%	42	2.24E-04	13	6.15%	521	2.76E-03	21	3.26%	276	1.46E-03
6	0.90%	77	4.05E-04	14	6.04%	511	2.71E-03	22	3.30%	279	1.48E-03
7	3.79%	321	1.70E-03	15	7.01%	594	3.15E-03	23	2.46%	208	1.10E-03
8	7.76%	658	3.48E-03	16	7.14%	605	3.20E-03	24	1.87%	158	8.37E-04
								Total		8,469	

Milligan Parking Lot, San Jose, CA - Off-Site Residential
Cumulative Operation - Julian Street
Fugitive Road PM2.5 Modeling - Roadway Links, Traffic Volumes, and Fugitive Road PM2.5 Emissions
Year = 2024

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
FUG_EB_JUL	Julian Street Eastbound	EB	2	713.1	0.44	13.3	44	1.3	30	8,469
FUG_WB_JUL	Julian Street Westbound	WB	2	706.4	0.44	13.3	44	1.3	30	8,469
									Total	16,939

Emission Factors - Fugitive PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	30			
Tire Wear - Emissions per Vehicle (g/VMT)	0.00211			
Brake Wear - Emissions per Vehicle (g/VMT)	0.01681			
Road Dust - Emissions per Vehicle (g/VMT)	0.01484			
otal Fugitive PM2.5 - Emissions per Vehicle (g/VMT)	0.03375			

Emisson Factors from CT-EMFAC2017

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

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	98	4.05E-04	9	7.11%	602	2.50E-03	17	7.39%	626	2.60E-03
2	0.42%	35	1.47E-04	10	4.39%	371	1.54E-03	18	8.18%	692	2.88E-03
3	0.41%	34	1.43E-04	11	4.66%	395	1.64E-03	19	5.70%	482	2.00E-03
4	0.26%	22	9.20E-05	12	5.89%	499	2.07E-03	20	4.27%	362	1.50E-03
5	0.50%	42	1.76E-04	13	6.15%	521	2.16E-03	21	3.26%	276	1.15E-03
6	0.90%	77	3.18E-04	14	6.04%	511	2.12E-03	22	3.30%	279	1.16E-03
7	3.79%	321	1.33E-03	15	7.01%	594	2.47E-03	23	2.46%	208	8.66E-04
8	7.76%	658	2.73E-03	16	7.14%	605	2.51E-03	24	1.87%	158	6.57E-04
								Total		8,469	

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

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	98	4.01E-04	9	7.11%	602	2.48E-03	17	7.39%	626	2.57E-03
2	0.42%	35	1.46E-04	10	4.39%	371	1.53E-03	18	8.18%	692	2.85E-03
3	0.41%	34	1.42E-04	11	4.66%	395	1.63E-03	19	5.70%	482	1.99E-03
4	0.26%	22	9.12E-05	12	5.89%	499	2.05E-03	20	4.27%	362	1.49E-03
5	0.50%	42	1.74E-04	13	6.15%	521	2.14E-03	21	3.26%	276	1.14E-03
6	0.90%	77	3.15E-04	14	6.04%	511	2.10E-03	22	3.30%	279	1.15E-03
7	3.79%	321	1.32E-03	15	7.01%	594	2.45E-03	23	2.46%	208	8.58E-04
8	7.76%	658	2.71E-03	16	7.14%	605	2.49E-03	24	1.87%	158	6.50E-04
								Total		8,469	

Milligan Parking Lot, San Jose, CA - Off-Site Residential
Cumulative Operation - Highway 87
DPM Modeling - Roadway Links, Traffic Volumes, and DPM Emissions
Year = 2024

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
DPM_NB_87	Highway 87 Northbound	NB	3	495.5	0.31	17.0	55.7	3.4	65	50,440
DPM_SB_87	Highway 87 Southbound	SB	4	533.3	0.33	20.6	67.7	3.4	64	50,440
									Total	100,880

Emission Factors

Speed Category	1	2	3	4
Travel Speed (mph)	65	60	55	
Emissions per Vehicle (g/VMT)	0.00056	0.000501	0.000445	

Emisson Factors from CT-EMFAC2017

2024 Hourly Traffic Volumes and DPM Emissions - DPM_NB_87

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	0.67%	336	1.62E-05	9	7.77%	3921	1.89E-04	17	5.15%	2599	1.25E-04
2	0.43%	216	1.04E-05	10	7.11%	3587	1.73E-04	18	5.16%	2601	1.25E-04
3	0.44%	221	1.07E-05	11	6.08%	3067	1.48E-04	19	4.21%	2126	1.03E-04
4	0.79%	400	1.93E-05	12	5.59%	2819	1.36E-04	20	3.48%	1753	8.46E-05
5	2.27%	1146	5.53E-05	13	5.38%	2714	1.31E-04	21	3.00%	1513	7.30E-05
6	6.22%	3140	1.51E-04	14	5.39%	2720	1.31E-04	22	2.56%	1290	6.22E-05
7	7.25%	3657	1.76E-04	15	5.19%	2620	1.26E-04	23	1.86%	939	4.53E-05
8	7.78%	3924	1.89E-04	16	5.09%	2569	1.24E-04	24	1.11%	561	2.71E-05
								Total		50,440	

2024 Hourly Traffic Volumes Per Direction and DPM Emissions - DPM_SB_87

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.94%	980	5.09E-05	9	4.61%	2328	1.21E-04	17	7.46%	3762	1.54E-04
2	1.56%	786	4.08E-05	10	4.26%	2149	1.12E-04	18	7.07%	3564	1.64E-04
3	1.44%	727	3.77E-05	11	4.56%	2301	1.19E-04	19	6.48%	3270	1.70E-04
4	1.26%	636	3.30E-05	12	5.00%	2521	1.31E-04	20	4.90%	2473	1.28E-04
5	1.41%	711	3.69E-05	13	5.45%	2747	1.43E-04	21	4.13%	2083	1.08E-04
6	1.98%	1000	5.19E-05	14	5.73%	2893	1.33E-04	22	3.75%	1892	9.82E-05
7	2.79%	1408	7.31E-05	15	6.66%	3358	1.55E-04	23	3.34%	1685	8.75E-05
8	3.97%	2002	1.04E-04	16	7.62%	3843	1.77E-04	24	2.62%	1324	6.87E-05
								Total		50,440	

Milligan Parking Lot, San Jose, CA - Off-Site Residential
Cumulative Operation - Highway 87
PM2.5 Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions
Year = 2024

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
PM2.5_NB_87	Highway 87 Northbound	NB	3	495.5	0.31	17.0	56	1.3	65	50,440
PM2.5_SB_87	Highway 87 Southbound	SB	4	533.3	0.33	20.6	68	1.3	63.75	50,440
									Total	100,880

Emission Factors - PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	65	60	55	
Emissions per Vehicle (g/VMT)	0.001631	0.00143	0.001308	

Emisson Factors from CT-EMFAC2017

2024 Hourly Traffic Volumes and PM2.5 Emissions - PM2.5_NB_87

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	0.67%	336	4.69E-05	9	7.77%	3921	5.47E-04	17	5.15%	2599	3.63E-04
2	0.43%	216	3.02E-05	10	7.11%	3587	5.00E-04	18	5.16%	2601	3.63E-04
3	0.44%	221	3.08E-05	11	6.08%	3067	4.28E-04	19	4.21%	2126	2.97E-04
4	0.79%	400	5.58E-05	12	5.59%	2819	3.93E-04	20	3.48%	1753	2.45E-04
5	2.27%	1146	1.60E-04	13	5.38%	2714	3.79E-04	21	3.00%	1513	2.11E-04
6	6.22%	3140	4.38E-04	14	5.39%	2720	3.79E-04	22	2.56%	1290	1.80E-04
7	7.25%	3657	5.10E-04	15	5.19%	2620	3.66E-04	23	1.86%	939	1.31E-04
8	7.78%	3924	5.47E-04	16	5.09%	2569	3.58E-04	24	1.11%	561	7.83E-05
								Total		50,440	

2024 Hourly Traffic Volumes Per Direction and PM2.5 Emissions - PM2.5_SB_87

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.94%	980	1.47E-04	9	4.61%	2328	3.49E-04	17	7.46%	3762	4.53E-04
2	1.56%	786	1.18E-04	10	4.26%	2149	3.23E-04	18	7.07%	3564	4.70E-04
3	1.44%	727	1.09E-04	11	4.56%	2301	3.46E-04	19	6.48%	3270	4.91E-04
4	1.26%	636	9.55E-05	12	5.00%	2521	3.78E-04	20	4.90%	2473	3.71E-04
5	1.41%	711	1.07E-04	13	5.45%	2747	4.12E-04	21	4.13%	2083	3.13E-04
6	1.98%	1000	1.50E-04	14	5.73%	2893	3.81E-04	22	3.75%	1892	2.84E-04
7	2.79%	1408	2.11E-04	15	6.66%	3358	4.43E-04	23	3.34%	1685	2.53E-04
8	3.97%	2002	3.01E-04	16	7.62%	3843	5.07E-04	24	2.62%	1324	1.99E-04
								Total		50,440	

Milligan Parking Lot, San Jose, CA - Off-Site Residential
Cumulative Operation - Highway 87
TOG Exhaust Modeling - Roadway Links, Traffic Volumes, and TOG Exhaust Emissions
Year = 2024

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
TEXH_NB_87	Highway 87 Northbound	NB	3	495.5	0.31	17.0	56	1.3	65	50,440
TEXH_SB_87	Highway 87 Southbound	SB	4	533.3	0.33	20.6	68	1.3	63.75	50,440
									Total	100,880

Emission Factors - TOG Exhaust

Speed Category	1	2	3	4
Travel Speed (mph)	65	60	55	
Emissions per Vehicle (g/VMT)	0.02790	0.02483	0.02323	

Emisson Factors from CT-EMFAC2017

2024 Hourly Traffic Volumes and TOG Exhaust Emissions - TEXH_NB_87

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	0.67%	336	8.02E-04	9	7.77%	3921	9.36E-03	17	5.15%	2599	6.20E-03
2	0.43%	216	5.16E-04	10	7.11%	3587	8.56E-03	18	5.16%	2601	6.21E-03
3	0.44%	221	5.28E-04	11	6.08%	3067	7.32E-03	19	4.21%	2126	5.07E-03
4	0.79%	400	9.55E-04	12	5.59%	2819	6.73E-03	20	3.48%	1753	4.18E-03
5	2.27%	1146	2.73E-03	13	5.38%	2714	6.47E-03	21	3.00%	1513	3.61E-03
6	6.22%	3140	7.49E-03	14	5.39%	2720	6.49E-03	22	2.56%	1290	3.08E-03
7	7.25%	3657	8.72E-03	15	5.19%	2620	6.25E-03	23	1.86%	939	2.24E-03
8	7.78%	3924	9.36E-03	16	5.09%	2569	6.13E-03	24	1.11%	561	1.34E-03
								Total		50,440	

2024 Hourly Traffic Volumes Per Direction and TOG Exhaust Emissions - TEXH_SB_87

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.95%	982	2.52E-03	9	4.17%	2104	5.40E-03	17	8.02%	4046	8.65E-03
2	1.64%	829	2.13E-03	10	4.18%	2109	5.41E-03	18	7.33%	3696	8.45E-03
3	1.54%	774	1.99E-03	11	4.52%	2282	5.86E-03	19	5.98%	3017	7.75E-03
4	1.43%	720	1.85E-03	12	5.05%	2545	6.53E-03	20	4.71%	2375	6.10E-03
5	1.55%	784	2.01E-03	13	5.60%	2826	7.26E-03	21	3.87%	1953	5.01E-03
6	1.99%	1006	2.58E-03	14	5.84%	2948	6.74E-03	22	3.36%	1693	4.35E-03
7	2.89%	1457	3.74E-03	15	6.94%	3499	8.00E-03	23	2.95%	1489	3.82E-03
8	3.80%	1915	4.92E-03	16	8.24%	4155	9.50E-03	24	2.45%	1236	3.17E-03
								Total		50,440	

Milligan Parking Lot, San Jose, CA - Off-Site Residential
Cumulative Operation - Highway 87
TOG Evaporative Emissions Modeling - Roadway Links, Traffic Volumes, and TOG Evaporative Emissions
Year = 2024

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
TEVAP_NB_87	Highway 87 Northbound	NB	3	495.5	0.31	17.0	56	1.3	65	50,440
TEVAP_SB_87	Highway 87 Southbound	SB	4	533.3	0.33	20.6	68	1.3	63.75	50,440
									Total	100,880

Emission Factors - PM2.5 - Evaporative TOG

Speed Category	1	2	3	4
Travel Speed (mph)	65	60	55	
Emissions per Vehicle per Hour (g/hour)	1.34623	1.34623	1.34623	
Emissions per Vehicle per Mile (g/VMT)	0.02071	0.02244	0.02448	

Emisson Factors from CT-EMFAC2017

2024 Hourly Traffic Volumes and TOG Evaporative Emissions - TEVAP_NB_87

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	0.67%	336	5.96E-04	9	7.77%	3921	6.95E-03	17	5.15%	2599	4.60E-03
2	0.43%	216	3.83E-04	10	7.11%	3587	6.35E-03	18	5.16%	2601	4.61E-03
3	0.44%	221	3.92E-04	11	6.08%	3067	5.43E-03	19	4.21%	2126	3.77E-03
4	0.79%	400	7.09E-04	12	5.59%	2819	4.99E-03	20	3.48%	1753	3.11E-03
5	2.27%	1146	2.03E-03	13	5.38%	2714	4.81E-03	21	3.00%	1513	2.68E-03
6	6.22%	3140	5.56E-03	14	5.39%	2720	4.82E-03	22	2.56%	1290	2.28E-03
7	7.25%	3657	6.48E-03	15	5.19%	2620	4.64E-03	23	1.86%	939	1.66E-03
8	7.78%	3924	6.95E-03	16	5.09%	2569	4.55E-03	24	1.11%	561	9.94E-04
								Total		50,440	

2024 Hourly Traffic Volumes Per Direction and TOG Evaporative Emissions - TEVAP_SB_87

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.95%	982	1.87E-03	9	4.17%	2104	4.01E-03	17	8.02%	4046	9.12E-03
2	1.64%	829	1.58E-03	10	4.18%	2109	4.02E-03	18	7.33%	3696	7.63E-03
3	1.54%	774	1.48E-03	11	4.52%	2282	4.35E-03	19	5.98%	3017	5.75E-03
4	1.43%	720	1.37E-03	12	5.05%	2545	4.85E-03	20	4.71%	2375	4.53E-03
5	1.55%	784	1.49E-03	13	5.60%	2826	5.39E-03	21	3.87%	1953	3.72E-03
6	1.99%	1006	1.92E-03	14	5.84%	2948	6.09E-03	22	3.36%	1693	3.23E-03
7	2.89%	1457	2.78E-03	15	6.94%	3499	7.23E-03	23	2.95%	1489	2.84E-03
8	3.80%	1915	3.65E-03	16	8.24%	4155	8.58E-03	24	2.45%	1236	2.36E-03
								Total		50,440	

Milligan Parking Lot, San Jose, CA - Off-Site Residential
Cumulative Operation - Highway 87
Fugitive Road PM2.5 Modeling - Roadway Links, Traffic Volumes, and Fugitive Road PM2.5 Emissions
Year = 2024

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
FUG_NB_87	Highway 87 Northbound	NB	3	495.5	0.31	17.0	56	1.3	65	50,440
FUG_SB_87	Highway 87 Southbound	SB	4	533.3	0.33	20.6	68	1.3	63.75	50,440
									Total	100,880

Emission Factors - Fugitive PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	65	60	55	
Tire Wear - Emissions per Vehicle (g/VMT)	0.00207	0.00207	0.00207	
Brake Wear - Emissions per Vehicle (g/VMT)	0.01680	0.01680	0.01680	
Road Dust - Emissions per Vehicle (g/VMT)	0.00701	0.00701	0.00701	
tal Fugitive PM2.5 - Emissions per Vehicle (g/VMT)	0.02588	0.02588	0.02588	

Emisson Factors from CT-EMFAC2017

2024 Hourly Traffic Volumes and Fugitive PM2.5 Emissions - FUG_NB_87

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	0.67%	336	7.44E-04	9	7.77%	3921	8.68E-03	17	5.15%	2599	5.75E-03
2	0.43%	216	4.79E-04	10	7.11%	3587	7.94E-03	18	5.16%	2601	5.76E-03
3	0.44%	221	4.89E-04	11	6.08%	3067	6.79E-03	19	4.21%	2126	4.71E-03
4	0.79%	400	8.86E-04	12	5.59%	2819	6.24E-03	20	3.48%	1753	3.88E-03
5	2.27%	1146	2.54E-03	13	5.38%	2714	6.01E-03	21	3.00%	1513	3.35E-03
6	6.22%	3140	6.95E-03	14	5.39%	2720	6.02E-03	22	2.56%	1290	2.85E-03
7	7.25%	3657	8.09E-03	15	5.19%	2620	5.80E-03	23	1.86%	939	2.08E-03
8	7.78%	3924	8.69E-03	16	5.09%	2569	5.69E-03	24	1.11%	561	1.24E-03
								Total		50,440	

2024 Hourly Traffic Volumes Per Direction and Fugitive PM2.5 Emissions - FUG_SB_87

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.95%	982	2.34E-03	9	4.17%	2104	5.01E-03	17	8.02%	4046	9.64E-03
2	1.64%	829	1.97E-03	10	4.18%	2109	5.02E-03	18	7.33%	3696	8.81E-03
3	1.54%	774	1.84E-03	11	4.52%	2282	5.44E-03	19	5.98%	3017	7.19E-03
4	1.43%	720	1.72E-03	12	5.05%	2545	6.06E-03	20	4.71%	2375	5.66E-03
5	1.55%	784	1.87E-03	13	5.60%	2826	6.73E-03	21	3.87%	1953	4.65E-03
6	1.99%	1006	2.40E-03	14	5.84%	2948	7.02E-03	22	3.36%	1693	4.03E-03
7	2.89%	1457	3.47E-03	15	6.94%	3499	8.34E-03	23	2.95%	1489	3.55E-03
8	3.80%	1915	4.56E-03	16	8.24%	4155	9.90E-03	24	2.45%	1236	2.94E-03
								Total		50,440	

Milligan Parking Lot, San Jose, CA - W Santa Clara St Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
at Construction Residential MEI Receptor (1.5 meter receptor height)

Emission Year	2024
Receptor Information	Construction Residential MEI receptor
Number of Receptors	1
Receptor Height	1.5 meters
Receptor Distances	At Construction Residential MEI location

Meteorological Conditions	
BAAQMD San Jose International Met D	2013-2017
Land Use Classification	Urban
Wind Speed	Variable
Wind Direction	Variable

Construction Residential MEI Cancer Risk Maximum Concentrations

Meteorological	Concentration (µg/m3)*		
Data Years	DPM	Exhaust TOG	Evaporative TOG
2013-2017	0.0002	0.0120	0.0153

Construction Residential MEI PM2.5 Maximum Concentrations

Meteorological	PM2.5 Concentration (µg/m3)*		
Data Years	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013-2017	0.0125	0.0119	0.0006

Milligan Parking Lot, San Jose, CA - Julian St Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
at Construction Residential MEI Receptor (1.5 meter receptor height)

Emission Year	2024
Receptor Information	Construction Residential MEI receptor
Number of Receptors	1
Receptor Height	1.5 meters
Receptor Distances	At Construction Residential MEI location
Meteorological Conditions	
BAAQMD San Jose International Met D	2013-2017
Land Use Classification	Urban
Wind Speed	Variable
Wind Direction	Variable

Construction Residential MEI Cancer Risk Maximum Concentrations

Meteorological	Concentration (µg/m3)*		
Data Years	DPM	Exhaust TOG	Evaporative TOG
2013-2017	0.0008	0.0816	0.1033

Construction Residential MEI PM2.5 Maximum Concentrations

Meteorological	PM2.5 Concentration (µg/m3)*		
Data Years	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013-2017	0.0843	0.0802	0.0040

Milligan Parking Lot, San Jose, CA - Highway 87 Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
at Construction Residential MEI Receptor (1.5 meter receptor height)

Emission Year	2024
Receptor Information	Construction Residential MEI receptor
Number of Receptors	1
Receptor Height	1.5 meters
Receptor Distances	At Construction Residential MEI location
Meteorological Conditions	
BAAQMD San Jose International Met D	2013-2017
Land Use Classification	Urban
Wind Speed	Variable
Wind Direction	Variable

Construction Residential MEI Cancer Risk Maximum Concentrations

Meteorological	Concentration (µg/m3)*		
Data Years	DPM	Exhaust TOG	Evaporative TOG
2013-2017	0.0009	0.0436	0.0324

Construction Residential MEI PM2.5 Maximum Concentrations

Meteorological	PM2.5 Concentration (µg/m3)*		
Data Years	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013-2017	0.0430	0.0404	0.0026

Milligan Parking Lot, San Jose, CA - W Santa Clara St Traffic Cancer Risk
Impacts at Construction Residential MEI - 1.5 meter receptor height
30 Year Residential Exposure

Cancer Risk Calculation Method

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

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

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

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

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

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

Values

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

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)			
Exposure Year	**Exposure Duration (years)**	**Age**	**Year**	**Age Sensitivity Factor**	**DPM**	**Exhaust TOG**	**Evaporative TOG**	**DPM**	**Exhaust TOG**	**Evaporative TOG**	**TOTAL**
0	0.25	-0.25 - 0*	2024	10	0.0002	0.0120	0.0153	0.002	0.001	0.0001	0.00
1	1	0 - 1	2024	10	0.0002	0.0120	0.0153	0.028	0.011	0.0008	0.04
2	1	1 - 2	2025	10	0.0002	0.0120	0.0153	0.028	0.011	0.0008	0.04
3	1	2 - 3	2026	3	0.0002	0.0120	0.0153	0.004	0.002	0.0001	0.01
4	1	3 - 4	2027	3	0.0002	0.0120	0.0153	0.004	0.002	0.0001	0.01
5	1	4 - 5	2028	3	0.0002	0.0120	0.0153	0.004	0.002	0.0001	0.01
6	1	5 - 6	2029	3	0.0002	0.0120	0.0153	0.004	0.002	0.0001	0.01
7	1	6 - 7	2030	3	0.0002	0.0120	0.0153	0.004	0.002	0.0001	0.01
8	1	7 - 8	2031	3	0.0002	0.0120	0.0153	0.004	0.002	0.0001	0.01
9	1	8 - 9	2032	3	0.0002	0.0120	0.0153	0.004	0.002	0.0001	0.01
10	1	9 - 10	2033	3	0.0002	0.0120	0.0153	0.004	0.002	0.0001	0.01
11	1	10 - 11	2034	3	0.0002	0.0120	0.0153	0.004	0.002	0.0001	0.01
12	1	11 - 12	2035	3	0.0002	0.0120	0.0153	0.004	0.002	0.0001	0.01
13	1	12 - 13	2036	3	0.0002	0.0120	0.0153	0.004	0.002	0.0001	0.01
14	1	13 - 14	2037	3	0.0002	0.0120	0.0153	0.004	0.002	0.0001	0.01
15	1	14 - 15	2038	3	0.0002	0.0120	0.0153	0.004	0.002	0.0001	0.01
16	1	15 - 16	2039	3	0.0002	0.0120	0.0153	0.004	0.002	0.0001	0.01
17	1	16-17	2040	1	0.0002	0.0120	0.0153	0.000	0.000	0.0000	0.00
18	1	17-18	2041	1	0.0002	0.0120	0.0153	0.000	0.000	0.0000	0.00
19	1	18-19	2042	1	0.0002	0.0120	0.0153	0.000	0.000	0.0000	0.00
20	1	19-20	2043	1	0.0002	0.0120	0.0153	0.000	0.000	0.0000	0.00
21	1	20-21	2044	1	0.0002	0.0120	0.0153	0.000	0.000	0.0000	0.00
22	1	21-22	2045	1	0.0002	0.0120	0.0153	0.000	0.000	0.0000	0.00
23	1	22-23	2046	1	0.0002	0.0120	0.0153	0.000	0.000	0.0000	0.00
24	1	23-24	2047	1	0.0002	0.0120	0.0153	0.000	0.000	0.0000	0.00
25	1	24-25	2048	1	0.0002	0.0120	0.0153	0.000	0.000	0.0000	0.00
26	1	25-26	2049	1	0.0002	0.0120	0.0153	0.000	0.000	0.0000	0.00
27	1	26-27	2050	1	0.0002	0.0120	0.0153	0.000	0.000	0.0000	0.00
28	1	27-28	2051	1	0.0002	0.0120	0.0153	0.000	0.000	0.0000	0.00
29	1	28-29	2052	1	0.0002	0.0120	0.0153	0.000	0.000	0.0000	0.00
30	1	29-30	2053	1	0.0002	0.0120	0.0153	0.000	0.000	0.0000	0.00
Total Increased Cancer Risk								0.13	0.051	0.004	**0.18**

* Third trimester of pregnancy

Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.00003	0.01	0.01

Milligan Parking Lot, San Jose, CA - Julian St Traffic Cancer Risk
Impacts at Construction Residential MEI - 1.5 meter receptor height
30 Year Residential Exposure

Cancer Risk Calculation Method

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

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

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

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

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

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

Values

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

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)			
Exposure Year	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	TOTAL
0	0.25	-0.25 - 0*	2024	10	0.0008	0.0816	0.1033	0.011	0.006	0.0005	0.02
1	1	0 - 1	2024	10	0.0008	0.0816	0.1033	0.128	0.077	0.0057	0.21
2	1	1 - 2	2025	10	0.0008	0.0816	0.1033	0.128	0.077	0.0057	0.21
3	1	2 - 3	2026	3	0.0008	0.0816	0.1033	0.020	0.012	0.0009	0.03
4	1	3 - 4	2027	3	0.0008	0.0816	0.1033	0.020	0.012	0.0009	0.03
5	1	4 - 5	2028	3	0.0008	0.0816	0.1033	0.020	0.012	0.0009	0.03
6	1	5 - 6	2029	3	0.0008	0.0816	0.1033	0.020	0.012	0.0009	0.03
7	1	6 - 7	2030	3	0.0008	0.0816	0.1033	0.020	0.012	0.0009	0.03
8	1	7 - 8	2031	3	0.0008	0.0816	0.1033	0.020	0.012	0.0009	0.03
9	1	8 - 9	2032	3	0.0008	0.0816	0.1033	0.020	0.012	0.0009	0.03
10	1	9 - 10	2033	3	0.0008	0.0816	0.1033	0.020	0.012	0.0009	0.03
11	1	10 - 11	2034	3	0.0008	0.0816	0.1033	0.020	0.012	0.0009	0.03
12	1	11 - 12	2035	3	0.0008	0.0816	0.1033	0.020	0.012	0.0009	0.03
13	1	12 - 13	2036	3	0.0008	0.0816	0.1033	0.020	0.012	0.0009	0.03
14	1	13 - 14	2037	3	0.0008	0.0816	0.1033	0.020	0.012	0.0009	0.03
15	1	14 - 15	2038	3	0.0008	0.0816	0.1033	0.020	0.012	0.0009	0.03
16	1	15 - 16	2039	3	0.0008	0.0816	0.1033	0.020	0.012	0.0009	0.03
17	1	16-17	2040	1	0.0008	0.0816	0.1033	0.002	0.001	0.0001	0.00
18	1	17-18	2041	1	0.0008	0.0816	0.1033	0.002	0.001	0.0001	0.00
19	1	18-19	2042	1	0.0008	0.0816	0.1033	0.002	0.001	0.0001	0.00
20	1	19-20	2043	1	0.0008	0.0816	0.1033	0.002	0.001	0.0001	0.00
21	1	20-21	2044	1	0.0008	0.0816	0.1033	0.002	0.001	0.0001	0.00
22	1	21-22	2045	1	0.0008	0.0816	0.1033	0.002	0.001	0.0001	0.00
23	1	22-23	2046	1	0.0008	0.0816	0.1033	0.002	0.001	0.0001	0.00
24	1	23-24	2047	1	0.0008	0.0816	0.1033	0.002	0.001	0.0001	0.00
25	1	24-25	2048	1	0.0008	0.0816	0.1033	0.002	0.001	0.0001	0.00
26	1	25-26	2049	1	0.0008	0.0816	0.1033	0.002	0.001	0.0001	0.00
27	1	26-27	2050	1	0.0008	0.0816	0.1033	0.002	0.001	0.0001	0.00
28	1	27-28	2051	1	0.0008	0.0816	0.1033	0.002	0.001	0.0001	0.00
29	1	28-29	2052	1	0.0008	0.0816	0.1033	0.002	0.001	0.0001	0.00
30	1	29-30	2053	1	0.0008	0.0816	0.1033	0.002	0.001	0.0001	0.00
Total Increased Cancer Risk								0.58	0.347	0.026	**0.95**

* Third trimester of pregnancy

Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.00016	0.08	0.08

Milligan Parking Lot, San Jose, CA - Highway 87 Traffic Cancer Risk
Impacts at Construction Residential MEI - 1.5 meter receptor height
30 Year Residential Exposure

Cancer Risk Calculation Method

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

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

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

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

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

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

Values

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

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)			
Exposure Year	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	TOTAL
0	0.25	-0.25 - 0*	2024	10	0.0009	0.0436	0.0324	0.012	0.003	0.0001	0.02
1	1	0 - 1	2024	10	0.0009	0.0436	0.0324	0.143	0.041	0.0018	0.19
2	1	1 - 2	2025	10	0.0009	0.0436	0.0324	0.143	0.041	0.0018	0.19
3	1	2 - 3	2026	3	0.0009	0.0436	0.0324	0.022	0.006	0.0003	0.03
4	1	3 - 4	2027	3	0.0009	0.0436	0.0324	0.022	0.006	0.0003	0.03
5	1	4 - 5	2028	3	0.0009	0.0436	0.0324	0.022	0.006	0.0003	0.03
6	1	5 - 6	2029	3	0.0009	0.0436	0.0324	0.022	0.006	0.0003	0.03
7	1	6 - 7	2030	3	0.0009	0.0436	0.0324	0.022	0.006	0.0003	0.03
8	1	7 - 8	2031	3	0.0009	0.0436	0.0324	0.022	0.006	0.0003	0.03
9	1	8 - 9	2032	3	0.0009	0.0436	0.0324	0.022	0.006	0.0003	0.03
10	1	9 - 10	2033	3	0.0009	0.0436	0.0324	0.022	0.006	0.0003	0.03
11	1	10 - 11	2034	3	0.0009	0.0436	0.0324	0.022	0.006	0.0003	0.03
12	1	11 - 12	2035	3	0.0009	0.0436	0.0324	0.022	0.006	0.0003	0.03
13	1	12 - 13	2036	3	0.0009	0.0436	0.0324	0.022	0.006	0.0003	0.03
14	1	13 - 14	2037	3	0.0009	0.0436	0.0324	0.022	0.006	0.0003	0.03
15	1	14 - 15	2038	3	0.0009	0.0436	0.0324	0.022	0.006	0.0003	0.03
16	1	15 - 16	2039	3	0.0009	0.0436	0.0324	0.022	0.006	0.0003	0.03
17	1	16-17	2040	1	0.0009	0.0436	0.0324	0.002	0.001	0.0000	0.00
18	1	17-18	2041	1	0.0009	0.0436	0.0324	0.002	0.001	0.0000	0.00
19	1	18-19	2042	1	0.0009	0.0436	0.0324	0.002	0.001	0.0000	0.00
20	1	19-20	2043	1	0.0009	0.0436	0.0324	0.002	0.001	0.0000	0.00
21	1	20-21	2044	1	0.0009	0.0436	0.0324	0.002	0.001	0.0000	0.00
22	1	21-22	2045	1	0.0009	0.0436	0.0324	0.002	0.001	0.0000	0.00
23	1	22-23	2046	1	0.0009	0.0436	0.0324	0.002	0.001	0.0000	0.00
24	1	23-24	2047	1	0.0009	0.0436	0.0324	0.002	0.001	0.0000	0.00
25	1	24-25	2048	1	0.0009	0.0436	0.0324	0.002	0.001	0.0000	0.00
26	1	25-26	2049	1	0.0009	0.0436	0.0324	0.002	0.001	0.0000	0.00
27	1	26-27	2050	1	0.0009	0.0436	0.0324	0.002	0.001	0.0000	0.00
28	1	27-28	2051	1	0.0009	0.0436	0.0324	0.002	0.001	0.0000	0.00
29	1	28-29	2052	1	0.0009	0.0436	0.0324	0.002	0.001	0.0000	0.00
30	1	29-30	2053	1	0.0009	0.0436	0.0324	0.002	0.001	0.0000	0.00
Total Increased Cancer Risk								0.65	0.185	0.008	**0.84**

* Third trimester of pregnancy

	Maximum	
Hazard Index	**Fugitive PM2.5**	**Total PM2.5**
0.00017	0.04	0.04