1957 PRUNERIDGE AVENUE RESIDENTIAL PROJECT CONSTRUCTION HEALTH RISK ASSESSMENT

Santa Clara, California

January 11, 2023

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Introduction

The purpose of this report is to address the potential health risk impacts associated with the construction of a proposed residential development located at 1957 Pruneridge Avenue in Santa Clara, California. The air quality impacts from this project would be associated with demolition of the existing land uses and construction of the residential buildings. Air pollutant emissions associated with construction of the project were predicted using appropriate computer models. In addition, the potential health risk impacts from existing toxic air contaminant (TAC) sources affecting the nearby and proposed sensitive receptors were evaluated. The analysis was conducted following guidance provided by the Bay Area Air Quality Management District (BAAQMD).[1]

Project Description

The existing 2.29-acre site is occupied by two non-operational buildings that comprised the Saint Marks Episcopal Church. The project proposes to demolish the existing use of the site to construct a 22-townhome residential community. Each unit would have an attached two- to three- car garage. Construction is expected to begin in January of 2023 to be completed by July of 2023.

Setting

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

Air Pollutants of Concern

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

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

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

Toxic Air Contaminants

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

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

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.[3] 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

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

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

community involvement and input. The technical analysis portion of the CARE program is being implemented in three phases that includes an assessment of the sources of TAC emissions, modeling and measurement programs to estimate concentrations of TAC, and an assessment of exposures and health risks. Throughout the program, information derived from the technical analyses will be used to focus emission reduction measures in areas with high TAC exposures and high density of sensitive populations. Risk reduction activities associated with the CARE program are focused on the most at-risk communities in the Bay Area. The BAAQMD 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 not located within a BAAQMD overburdened area or within a CARE area.

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.

City of Santa Clara 2010 – 2035 General Plan.

On November 16, 2010, the City of Santa Clara adopted the *City of Santa Clara 2010 – 2035 General Plan.*[5] The general plan includes goals, policies, and actions to reduce air pollutants and exposure to toxic air containments.

The following goals, policies, and actions are applicable to the proposed project and this assessment:

5.10.2 Air Quality Goals

5.10.2-G1 Improved air quality in Santa Clara and the region.

5.10.2-G2 Reduced greenhouse gas emissions that meet the State and regional goals and requirements to combat climate change.

5.10.2 Air Quality Policies

5.10.2-P3 Encourage implementation of technological advances that minimize public health hazards and reduce the generation of air pollutants.

5.10.2-P4 Encourage measures to reduce greenhouse gas emissions to reach 30 percent below 1990 levels by 2020.

5.10.2-P6 Require "Best Management Practices" for construction dust abatement.

[4] Bay Area Air Quality Management District, 2017. *CEQA Air Quality Guidelines*. May.
[5] City of Santa Clara, 2010. *City of Santa Clara 2010 – 2035 General Plan*. November. Web: https://www.santaclaraca.gov/home/showdocument?id=56139

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 adjacent single-family homes north of the project site. Other receptors are found at further distances surrounding the project site. Additionally, children are located at the Action Day Schools – Pruneridge, Stratford School, and Pacific Autism Center for Education. This project would 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**	
	Average Daily Emissions (lbs./day)	
ROG	54	
NO_x	54	
PM_{10}	82 (Exhaust)	
$PM_{2.5}$	54 (Exhaust)	
CO	Not Applicable	
Fugitive Dust	Construction Dust Ordinance or other Best Management Practices	
Health Risks and Hazards	**Single Sources Within 1,000-foot Zone of Influence**	**Combined Sources (Cumulative from all sources within 1000-foot zone of influence)**
Excess Cancer Risk	10 per one million	100 per one million
Hazard Index	1.0	10.0
Incremental annual $PM_{2.5}$	0.3 µg/m^3	0.8 µg/m^3

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

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.

Additionally, the project could 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. Therefore, the impact of the existing sources of TAC upon the existing sensitive receptors and new incoming sensitive receptors was assessed.

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 $PM_{2.5}$.[6] 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) Version 2020.4.0 was used to estimate emissions from on-site construction activity, construction vehicle trips, and evaporative emissions. The project land use types and size, and anticipated construction schedule were input to CalEEMod. The CARB EMission FACtors 2021 (EMFAC2021) model was used to predict emissions from construction traffic, which includes worker travel, vendor trucks, and haul trucks.[7] The CalEEMod model output along with construction inputs are included in *Attachment 2* and EMFAC2021 vehicle emissions modeling outputs are included in *Attachment 3*.

CalEEMod Modeling

Land Use Inputs

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

[6] DPM is identified by California as a toxic air contaminant due to the potential to cause cancer.
[7] See CARB's EMFAC2021 Emissions Inventory at https://arb.ca.gov/emfac/emissions-inventory.

Table 2. Summary of Project Land Use Inputs

Project Land Uses	Size	Units	Square Feet (sf)	Acreage
Condo/Townhouse	22	Dwelling Unit	44,333*	2.29
Enclosed Parking Structure[8]	63	Parking Space	25,200*	
Parking Lot[9]	63	Parking Space	25,200*	
*CalEEMod defaults square footage used				

Construction Inputs

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

Within each of the CalEEMod construct phases, the quantity of equipment to be used along with the average hours per day and total number of workdays were provided by the project applicant. 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 2023 and would be completed over a period of approximately 7 months, or 157 construction workdays.

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 concrete and asphalt truck trips. CalEEMod provides daily estimates of worker and vendor trips for each applicable phase. The total trips for worker and vendor trips were computed by multiplying the daily trip rate by the number of days in that phase. Haul trips for demolition and soil import/export were estimated by CalEEMod using the provided demolition and grading volumes provided.[10] The number of concrete and asphalt deliveries were estimated for the project by the client and converted to total one-way trips, assuming two trips per delivery.

The latest version of the CalEEMod model is based on the older version of the CARB EMFAC2017 motor vehicle emission factor model. This model has been superseded by the EMFAC2021 model. However, CalEEMod has not been updated to include EMFAC2021. Therefore, the construction traffic information was combined with EMFAC2021 motor vehicle emissions factors. EMFAC2021 provides aggregate emission rates in grams per mile for each vehicle type. The vehicle mix for this study was based on CalEEMod default assumptions, where

[8] Represents two- or three- car garages attached to each dwelling unit.
[9] Represents drive-way (guest) parking.
[10] CalEEMod assumes each truck can carry 10 tons per load or 10 cubic yards of material.

worker trips are assumed to be comprised of light-duty autos (EMFAC category LDA) and light duty trucks (EMFAC category LDT1 and LDT2). Vendor trips are comprised of delivery and large trucks (EMFAC category MHDT and HHDT) and haul trips, including concrete trucks, are comprised of large trucks (EMFAC category HHDT). Travel distances are based on CalEEMod default lengths, which are 10.8 miles for worker travel, 7.3 miles for vendor trips and 20 miles for hauling (demolition and soil import/export). Since CalEEMod does not specifically address concrete/asphalt deliveries to the site, they were assumed to travel the same distance as vendors (7.3 miles). Each trip was assumed to include an idle time of 5 minutes. Emissions associated with vehicle starts were also included. On road emissions in Santa Clara County for the year 2023 were used in these calculations. Table 3 provides the traffic inputs that were combined with the EMFAC2021 emission database to compute vehicle emissions.

Table 3. Construction Traffic Data Used for EMFAC2021 Model Runs

CalEEMod Run/Land Uses and Construction Phase	Trips by Trip Type			Notes
	Total Worker[1]	Total Vendor[1]	Total Haul[2]	
Vehicle mix[1]	50% LDA 25% LDT1 25% LDT2	50% MHDT 50% HHDT	100% HHDT	
Trip Length (miles)	10.8	7.3	20.0 (Demo/Soil) 7.3 (Concrete/Asphalt)	CalEEMod default distance with 5-min truck idle time.
Demolition	130	-	199	13,940-sf of existing building demolition and 500 tons of pavement demolition. CalEEMod default worker trips
Site Preparation	40	-	-	CalEEMod default worker trips.
Grading	170	-	781	6,000-cy soil export and 250-cy soil import. CalEEMod default worker trips.
Trenching	300	-	-	CalEEMod default worker trips.
Building Construction	3,330	990	600	300 concrete-truck round trips. CalEEMod default worker and vendor trips.
Architectural Coating	315	-	-	CalEEMod default worker trips.
Paving	8	-	34	140-cy asphalt. CalEEMod default worker trips.

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

Summary of Computed Construction Period Emissions

Average daily construction emissions were estimated for the total duration of the project (157 days). Table 4 shows the annualized average daily construction emissions and average daily project emissions of ROG, NO_X, PM_{10} exhaust, and $PM_{2.5}$ exhaust during construction. As

indicated in Table 4, predicted daily project construction emissions would not exceed the BAAQMD significance thresholds during any year of construction.

Table 4. Construction Period Emissions

Year	ROG	NOx	PM_{10} Exhaust	$PM_{2.5}$ Exhaust
Construction Emissions (Tons)				
2023	0.36	0.39	0.02	0.02
Average Daily Construction Emissions (pounds/day)				
2023 (157 construction workdays)	4.60	4.91	0.26	0.20
BAAQMD Thresholds (pounds per day)	*54* lbs./day	*54* lbs./day	*82* lbs./day	*54* lbs./day
Exceed Threshold?	No	No	No	No

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

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

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

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

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

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

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

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

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

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

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

Effectiveness of Mitigation Measure AQ-1

Mitigation Measure AQ-1 represents standard mitigation measures that would achieve greater than a 50 percent reduction in on-site fugitive $PM_{2.5}$ emissions. These measures are consistent with recommendations in the BAAMQD CEQA Guidance for providing "best management practices" to control construction emissions.

Health Risk from Project Construction

A project can have health risk impacts by either generating TAC emissions and/or by introducing a new sensitive receptor in proximity to an existing source of TACs. A community health risk assessment was prepared to address project construction impacts on the existing off-site sensitive receptors near the project site (CEQA Heath Risk Assessment) and impacts from existing sources of TACs on the new project residents (Non-CEQA Heath Risk Assessment).

Project construction activity is temporary but would generate emissions of DPM from equipment and trucks and generate dust that could affect nearby sensitive receptors. Additionally, the project would introduce new residents (i.e., sensitive receptors) who would be exposed to existing sources of TACs in the vicinity of the project. Therefore, the impact of existing sources of TAC upon the new incoming sensitive receptors was assessed.

Construction Health Risk Impacts Analysis

Construction Period Emissions

The CalEEMod model emissions provided total annual PM_{10} exhaust emissions (assumed to be DPM) for the off-road construction equipment and EMFAC2021 provided exhaust emission rates 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. A trip length of half a mile was used to represent vehicle travel while at or near the construction site. It was assumed that these emissions from on-road vehicles traveling at or near the site would occur at the

construction site. Total uncontrolled DPM emissions from onsite construction activities was estimated to be 0.02 tons (30 pounds). Uncontrolled fugitive dust ($PM_{2.5}$) emissions were calculated by CalEEMod as less than 0.01 tons (22 pounds) for the project.

Dispersion Modeling

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

Construction Sources

To represent the construction equipment exhaust emissions, an area source emission release height of 20 feet (6 meters) was used for the area source.[13] The release height incorporates both the physical release height from the construction equipment (i.e., the height of the exhaust pipe) and plume rise after it leaves the exhaust pipe. Plume rise is due to both the high temperature of the exhaust and the high velocity of the exhaust gas. It should be noted that when modeling an area source, plume rise is not calculated by the AERMOD dispersion model as it would 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.

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

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

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

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 6:00 p.m., when the majority of construction activity is expected to occur. Annual DPM and $PM_{2.5}$ concentrations from construction activities during the 2023 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 floors of nearby residences.[14] A receptor height of 3 feet (1 meter) was used to represent the breathing height of children at the Action Day Schools – Pruneridge and Pacific Autism Center for Education. A receptor height of 5 feet (1.5 meters) was used to represent the breathing height of the older high school students at the Stratford School.

Summary of Construction Health Risk Impacts at the Off-Site MEI

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

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

The maximum modeled annual DPM and $PM_{2.5}$ 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 MEI was located on the first floor of the multi-family residential building located to the south of the project site opposite Pruneridge Avenue. Table 5 summarizes the maximum cancer risks, $PM_{2.5}$ concentrations, and HI for project's construction activities at the MEI. *Attachment 4* to this report includes the emission calculations used for the construction area source modeling and the cancer risk calculations.

Additionally, modeling was conducted to predict the cancer risks, non-cancer health hazards, and maximum $PM_{2.5}$ concentrations associated with construction activities at the nearby schools. The maximum increased cancer risks were adjusted using child exposure parameters. The uncontrolled cancer risk, $PM_{2.5}$ concentration, and HI at the nearby schools would not exceed their respective BAAQMD single-source significance thresholds, as shown in Table 5.

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

As shown in Table 5, the maximum cancer risks, annual $PM_{2.5}$ concentration, and Hazard Index from uncontrolled (i.e., unmitigated) construction activities at the MEI location and maximum school receptor would not exceed the BAAQMD single-source significance thresholds.

Table 5. Construction Risk Impacts at the Off-Site MEI

Source		Cancer Risk (per million)	Annual $PM_{2.5}$ ($\mu g/m^3$)	Hazard Index
Project Construction	Unmitigated	7.04 (infant)	0.08	0.01
BAAQMD Single-Source Threshold		***10***	***0.3***	***1.0***
Exceed Threshold?	Unmitigated	*No*	*No*	*No*
Most Impacted School – Pacific Autism Center for Education				
Project Construction	Unmitigated	2.37 (child)	0.07	0.01
BAAQMD Single-Source Threshold		***10***	***0.3***	***1.0***
Exceed Threshold?	Unmitigated	*No*	*No*	*No*

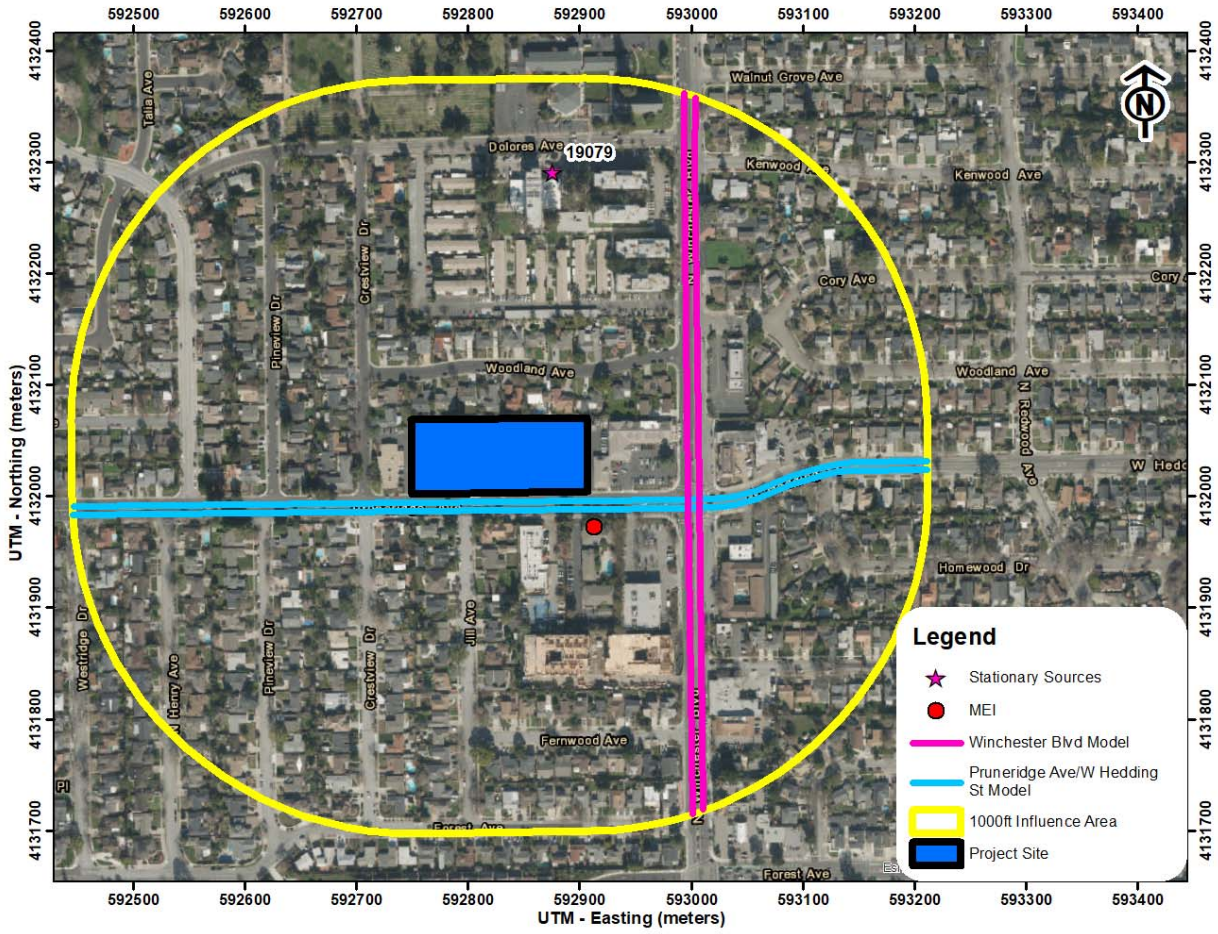
Figure 1. Locations of Project Construction Site, Off-Site Sensitive Receptors, and Maximum TAC Impact

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

Community health risk assessments typically look at all substantial sources of TACs that can affect sensitive receptors that are located within 1,000 feet of a project site (i.e., influence area). These sources include rail lines, highways, busy surface streets, and existing stationary sources identified by BAAQMD.

A review of the project area using traffic data collected by the City of Santa Clara indicated that three roadways within the influence area, N. Winchester Boulevard, W. Hedding Street, and Pruneridge Avenue, would have traffic exceeding 10,000 vehicles per day.[15] Other nearby streets would have less than 10,000 vehicles per day. A review of BAAQMD's stationary source geographic information systems (GIS) map tool identified one stationary source with the potential to affect the project site and MEI. Figure 2 shows the region included within the influence area and the location of the existing TAC sources and the off-site MEI. Health risk impacts from these sources upon the MEIs reported in Table 6. Details of the modeling and health risk calculations are included in *Attachment 5.*

Figure 2. Project Site, Project MEI, and Nearby TAC Sources



[15] Santa Clara County Traffic Counts, 2019. Web: https://www.arcgis.com/home/item.html?id=709ef12897bc42aa8e3d87f4505641c0

Local Roadways – N. Winchester Boulevard, W. Hedding Street, and Pruneridge Avenue

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

Traffic Emissions Modeling

This analysis involved the development of DPM, organic TACs, and $PM_{2.5}$ emissions for traffic on each roadway using the Caltrans version of the CARB EMFAC2017 emissions model, known as CT-EMFAC2017. CT-EMFAC2017 provides emission factors for mobile source criteria pollutants and TACs, including DPM. Emission processes modeled include running exhaust for DPM, $PM_{2.5}$ and total organic compounds (TOG), running evaporative losses for TOG, and tire and brake wear and fugitive road dust for $PM_{2.5}$. $PM_{2.5}$ 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 the emissions estimate. DPM emissions are projected to decrease in the future as reflected in the CT-EMFAC2017 emissions data. Inputs to the model include region (Santa Clara County), type of road (major/collector), truck percentage for non-state highways in Santa Clara County (3.51 percent),[16] traffic mix assigned by CT-EMFAC2017 for the county, year of analysis (2023 – construction start year), and season (annual).

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

Average hourly traffic distributions for Santa Clara County roadways were developed using the EMFAC model,[17] which were then applied to the average daily traffic (ADT) volumes to obtain estimated hourly traffic volumes and emissions for the roadway. The estimated ADT for Pruneridge Avenue/W. Hedding Street was 13,756 vehicles based on a 1% increase per year

[16] 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

[17] 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.

from a measured ADT of 12,856 vehicles in 2016. This ADT value was applied to both roadways since Pruneridge Avenue and W. Hedding Street are the same roadway but with a different name after crossing N. Winchester Boulevard. The estimated ADT for N. Winchester Boulevard was 25,957 vehicles based on a 1% increase per year from a measured ADT of 23,176 in 2011. An average travel speed of 35 miles per hour (mph) on each roadway was used for all hours of the day based on posted speed limit signs.

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.[18] TAC and $PM_{2.5}$ emissions from traffic on each roadway within 1,000 feet of the project site were evaluated. Vehicle traffic on the roadways was modeled using a series of adjacent volume sources along a line (line volume sources); with line segments used for each travel direction on the roadway. 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 2023 from traffic on the roadway was 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 on the first floor of residents in the nearby residences.

Figure 2 shows the roadway segments modeled and residential receptor locations used in the modeling. Table 6 lists the risks and hazards from the roadway. The emission rates and roadway calculations used in the analysis are shown in *Attachment 5*.

Computed Cancer and Non-Cancer Health Impacts

The cancer risk, $PM_{2.5}$ concentration, and HI impacts from each roadway on the off-site MEI are shown in Table 6. Figure 2 shows the roadway links modeled and receptor locations where concentrations were calculated. Details of the emission calculations, dispersion modeling, and cancer risk calculations for the receptors with the maximum cancer risk from roadway traffic are provided in *Attachment 5*.

BAAQMD Permitted Stationary Sources

Permitted stationary sources of air pollution near the project site were identified using BAAQMD's *Permitted Stationary Sources 2020* geographic information system (GIS) map website.[19] This mapping tool identifies the location of nearby stationary sources and their estimated risk and hazard impacts. One source was identified using this tool, a diesel generator. A stationary source information request was not required as the BAAQMD GIS website provided screening risks and hazards for this source.

[18] BAAQMD. *Recommended Methods for Screening and Modeling Local Risks and Hazards*. May 2012
[19] BAAQMD, *Stationary Source Screening Map*, 2022. Web: https://baaqmd.maps.arcgis.com/apps/webappviewer/index.html?id=845658c19eae4594b9f4b805fb9d89a3

The screening level risks and hazards provided by BAAQMD for the generator were adjusted for distance using BAAQMD's *Distance Adjustment Multiplier Tool for Diesel Internal Combustion Engines*. Health risk impacts from the stationary sources upon the off-site MEI are reported in Table 6.

Summary of Cumulative Health Risk Impact at Off-Site MEI

Table 6 reports the cumulative health risk impacts at the off-site sensitive receptors most affected by construction (i.e., the off-site MEI). The unmitigated cancer risk, annual $PM_{2.5}$ concentration, and hazard index do not exceed the BAAQMD single-source thresholds nor the cumulative-source thresholds.

Table 6. Impacts from Combined Sources at Off-Site MEI

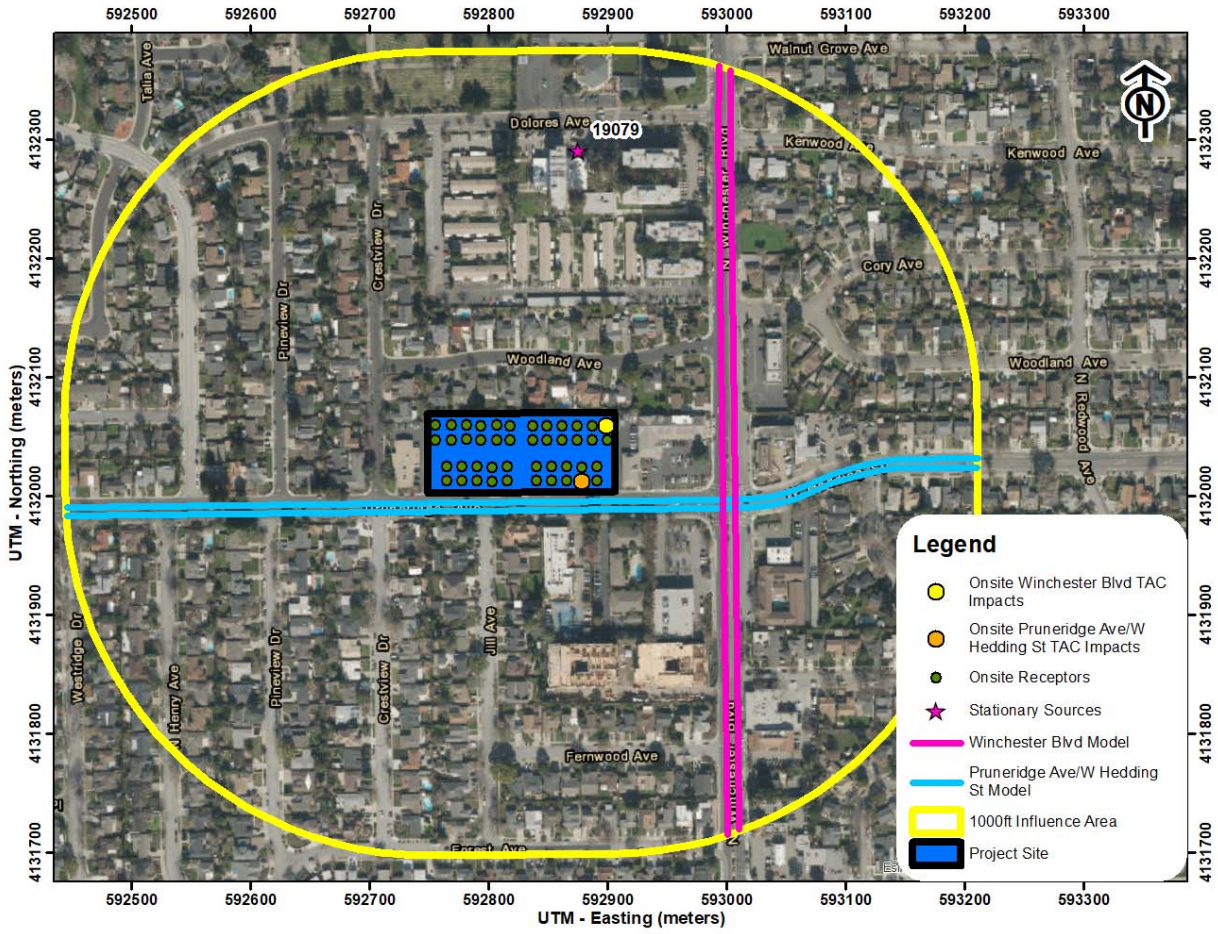
Source		Cancer Risk (per million)	Annual $PM_{2.5}$ ($\mu g/m^3$)	Hazard Index
Project Construction	Unmitigated	7.04 (infant)	0.08	0.01
BAAQMD Single-Source Threshold		***10***	***0.3***	***1.0***
Exceed Threshold?	Unmitigated	*No*	*No*	*No*
Cumulative Operational Sources				
Pruneridge Avenue/W. Hedding Street, ADT 13,756		2.62	0.28	<0.01
N. Winchester Boulevard, ADT 25,957		1.14	0.08	<0.01
Church of the Valley Retirement Homes Inc (Facility ID #19079, Generator), MEI at +1,000 feet		0.06	<0.01	<0.01
Combined Sources	Unmitigated	10.86	0.45	<0.04
BAAQMD Cumulative Source Threshold		***100***	***0.8***	***10.0***
Exceed Threshold?	Unmitigated	*No*	*No*	*No*

Non-CEQA: On-site Cumulative Health Risk Assessment for New Project Residences

In addition to evaluating health impact from project construction, a health risk assessment was completed to assess the impact that the existing TAC sources would have on the new proposed sensitive receptors (residents) introduced by the project. The same existing TAC sources identified above in Table 6 were used.[20] Figure 3 shows the on-site sensitive receptors in relation to the nearby TAC sources. The cumulative on-site health risk assessment results are listed in Table 7. *Attachment 6* includes risk calculations for TAC source impacts upon the proposed on-site sensitive receptors.

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

Figure 3. Locations of New On-Site Residential Receptors, Existing Sources of TACs, and Location of Maximum TAC Impacts



Local Roadways – N. Winchester Boulevard, W. Hedding Street, and Pruneridge Avenue

The roadway analysis for the project residents was conducted in the same manner as described above for the off-site MEI. However, year 2024 (operational year) were conservatively assumed as being representative of future conditions, instead of 2023 (construction year). An analysis based on 2024 resulted in an increased ADT on Pruneridge Avenue/W. Hedding Street of 13,885 vehicles and 26,189 vehicles on N. Winchester Boulevard. On-site receptors were placed throughout the project site to represent the location of sensitive receptors in each townhome. Roadway impacts were modeled at receptor heights of 5 feet (1.5 meters) representing sensitive receptors on the first floor of the townhomes. The portions of each roadway included in the modeling are shown in Figure 3 along with the project site and receptor locations where impacts were modeled.

Maximum increased cancer risks were calculated for the residents at the project site using the maximum modeled TAC concentrations. A 30-year exposure period was used in calculating cancer risks assuming the residents would include third trimester pregnancy and infants/children and were assumed to be in the new homes for 24 hours per day for 350 days per year. The

highest impacts from Pruneridge Avenue/W. Hedding Street occurred at a receptor on the southeastern portion of the project site. The highest impacts from N. Winchester Boulevard occurred at a receptor on the northeastern portion of the project site. Cancer risks associated with the roadways are greatest closest to each roadway and decrease with distance from the road. The roadway community risk impacts at the project site are shown in Table 7. Details of the emission calculations, dispersion modeling, and cancer risk calculations are contained in *Attachment 6.*

Stationary Sources

The stationary source screening analysis for the new on-site sensitive receptors was conducted in the same manner as described above for the construction MEI. Table 7 includes the health risk assessment results from the stationary sources.

Summary of Cumulative Health Risks at the Project Site

Health risk impacts from the existing TAC sources upon the on-site MEI are reported in Table 7. The risks from the singular TAC sources are compared against the BAAQMD single-source threshold. The risks from all the sources are then combined and compared against the BAAQMD cumulative-source threshold. As shown, neither the BAAQMD single-source thresholds nor the cumulative source thresholds are exceeded.

Table 7. Impacts from Combined Sources to Project Site Receptors

Source	Cancer Risk (per million)	Annual $PM_{2.5}$ ($\mu g/m^3$)	Hazard Index
Pruneridge Avenue/W. Hedding Street, ADT 13,885	2.20	0.21	<0.01
N. Winchester Boulevard, ADT 26,189	1.00	0.07	<0.01
Church of the Valley Retirement Homes Inc (Facility ID #19079, Generator), Project Site at 685 feet	0.12	<0.01	<0.01
BAAQMD Single-Source Threshold	***10***	***0.3***	***1.0***
Exceed Threshold?	*No*	*No*	*No*
Cumulative Total	3.32	0.29	<0.03
BAAQMD Cumulative Source Threshold	***100***	***0.8***	***10.0***
Exceed Threshold?	*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 emissions. Also included are any modeling assumptions.

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

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

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

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.

Cancer Risk

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

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

[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.

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

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

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

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

Where:

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

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

Where:

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

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

Parameter	*Exposure Type* →	Infant		Child	Adult
	Age Range →	3rd Trimester	0<2	2 < 16	16 - 30
DPM Cancer Potency Factor $(mg/kg\text{-}day)^{-1}$		1.10E+00	1.10E+00	1.10E+00	1.10E+00
Daily Breathing Rate (L/kg-day) 80th Percentile Rate		273	758	572	261
Daily Breathing Rate (L/kg-day) 95th Percentile Rate		361	1,090	745	335
8-hour Breathing Rate (L/kg-8 hours) 95th Percentile Rate		-	1,200	520	240
Inhalation Absorption Factor		1	1	1	1
Averaging Time (years)		70	70	70	70
Exposure Duration (years)		0.25	2	14	14*
Exposure Frequency (days/year)		350	350	350	350*
Age Sensitivity Factor		10	10	3	1
Fraction of Time at Home (FAH)		0.85-1.0	0.85-1.0	0.72-1.0	0.73*
* 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: 1957 Pruneridge Avenue Residential Project

Complete ALL Portions in Yellow

See Equipment Type TAB for type, horsepower and load factor

Project Size 22 Dwelling Units; 2.29 total project acres disturbed

44,333 s.f. residential (44333)

_____ s.f. retail

_____ s.f. office/commercial

_____ s.f. other, specify:

_____ s.f. parking garage; 63 spaces

_____ s.f. parking lot; 63 spaces

Construction Days Monday to Friday

Construction Hours 7 am to 6 pm

Pile Driving? Y/N? NO

Project include on-site GENERATOR OR FIRE PUMP during project OPERATION (not construction) 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:**	**1/2/2023**	**Total phase:**	**10**			**Overall Import/Export Volumes**
		End Date:	**1/13/2023**					
1	Concrete/Industrial Saws	81	0.73	8	1	0.8	473	**Demolition Volume**
2	Excavators	158	0.38	8	10	8	9606	Square footage of buildings to be demolished
	Rubber-Tired Dozers	247	0.4			0	0	(*or* total tons to be hauled)
2	Tractors/Loaders/Backhoes	97	0.37	8	5	4	2871	**13,940** square feet *or*
	Other Equipment?							**1000** Hauling volume (tons)
								Any pavement demolished and hauled? **500 tons**
	Site Preparation	**Start Date:**	**1/12/2023**	**Total phase:**	**5**			
		End Date:	**1/18/2023**					
	Graders	187	0.41			0	0	
1	Rubber Tired Dozers	247	0.4	8	5	8	3952	
2	Tractors/Loaders/Backhoes	97	0.37	8	5	8	2871	
	Other Equipment?							
	Grading / Excavation	**Start Date:**	**1/17/2023**	**Total phase:**	**17**			
		End Date:	**2/8/2023**					**Soil Hauling Volume**
	Excavators	158	0.38			#VALUE!	#VALUE!	Export volume = **Currently 6000** cubic yards (However, we will try to optomize this to reduce the Export Volume
1	Graders	187	0.41	8	14	6.588235294	8587	Import volume = **250** cubic yards
	Rubber Tired Dozers	247	0.4			0	0	
	Concrete/Industrial Saws	81	0.73			0	0	
2	Tractors/Loaders/Backhoes	97	0.37	8	4	1.882352941	2297	
1	*Other Equipment? Scrapers*	361	0.48	8	7	3.294117647	9704	
	Trenching/Foundation	**Start Date:**	**2/3/2023**	**Total phase:**	**30**			
		End Date:	**3/16/2023**					
2	Tractor/Loader/Backhoe	97	0.37	8	30	8	17227	
2	Excavators	158	0.38	8	15	4	14410	
	Other Equipment?							
	Building - Exterior	**Start Date:**	**3/7/2023**	**Total phase:**	**90**			**Cement Trucks? 300 Total Round-Trips**
		End Date:	**7/10/2023**					
	Cranes	231	0.29			0	0	Electric? (Y/N) YES Otherwise assumed diesel
2	Forklifts	89	0.2	8	60	5.333333333	17088	Liquid Propane (LPG)? (Y/N) NO Otherwise Assumed diesel
	Generator Sets	84	0.74			0	0	Or temporary line power? (Y/N) Yes
2	Tractors/Loaders/Backhoes	97	0.37	8	30	2.666666667	17227	
	Welders	46	0.45			0	0	
	Other Equipment?							
	Building - Interior/Architectural Coating	**Start Date:**	**6/7/2023**	**Total phase:**	**45**			
		End Date:	**8/8/2023**					
	Air Compressors	78	0.48			0	0	
1	Aerial Lift	62	0.31	8	6	1.066666667	923	
	Other Equipment?							
	Paving	**Start Date:**	**7/22/2023**	**Total phase:**	**1**			
		Start Date:	**7/24/2023**					
	Cement and Mortar Mixers	9	0.56			0	0	
	Pavers	130	0.42			0	0	**Asphalt? 140CY cubic yards or ____ round trips?**
1	Paving Equipment	132	0.36	8	1	8	380	
1	Rollers	80	0.38	8	1	8	243	
1	Tractors/Loaders/Backhoes	97	0.37	8	1	8	287	
	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							
2023	0.35	0.30	0.01	0.01	0.01	52.50	
EMFAC							
2023	0.01	0.09	0.01	0.002	0.004		
Total Construction Emissions by Year							
2023	0.36	0.39	0.02	0.02		52.50	
	Total Construction Emissions						
Tons	0.36	0.39	0.02	0.02		52.50	
Pounds/Workdays	*Average Daily Emissions*					Workdays	
2023	4.60	4.91	0.26	0.20			**157**
Threshold - lbs/day	**54.0**	**54.0**	**82.0**	**54.0**			
	Total Construction Emissions						
Pounds	4.60	4.91	0.26	0.20		0.00	
Average	4.60	4.91	0.26	0.20		0.00	157.00
Threshold - lbs/day	**54.0**	**54.0**	**82.0**	**54.0**			

Paving

	sq in	sq ft	Cft	CY	Deliveries	Trips
Concrete			0	0	0	0
Asphalt			0	0	140	16.8	34
Asphalt Demo			0	0	0	0

1957 Pruneridge Avenue, Santa Clara - Santa Clara County, Annual

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

1957 Pruneridge Avenue, Santa Clara

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Condo/Townhouse	22.00	Dwelling Unit	2.29	44,333.00	63
Enclosed Parking Structure	63.00	Space	0.00	25,200.00	0
Parking Lot	63.00	Space	0.00	25,200.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2024
Utility Company	Silicon Valley Power				
CO2 Intensity (lb/MWhr)	307.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Lot acreage and number of dwelling units from provided construction woksheet. Square footage of townhomes from provided plans. Total number of parking spaces provided from plans, default square footages used.

Construction Phase - Adjusted based on total workdays provided.

Off-road Equipment - Provided construction worksheet.

Off-road Equipment - Provided construction worksheet.

Off-road Equipment - Provided construction worksheet.

Off-road Equipment - Provided construction worksheet.

Off-road Equipment - Provided cosntruction worksheet.

Off-road Equipment - Provided construction worksheet.

Off-road Equipment - Provided construction worksheet.

Date: 11/29/2022 10:15 AM

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Grading - Grading = 250-cy soil import, 6,000-cy soil export.

Demolition - Existing tons to be haukled = 1,000-tons (99 trips compared to 63 trips for sqft)

Trips and VMT - EMFAC2021 adjustment 0 trips, demo= 500 tons pavement demo, building const = 300 concrete truck round trips, paving = 140-cy asphalt.

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

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	11.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim

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tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstructionPhase	NumDays	10.00	45.00
tblConstructionPhase	NumDays	220.00	90.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	6.00	17.00
tblConstructionPhase	NumDays	10.00	1.00
tblConstructionPhase	NumDays	3.00	5.00
tblConstructionPhase	PhaseEndDate	1/11/2024	8/8/2023
tblConstructionPhase	PhaseEndDate	12/14/2023	7/10/2023
tblConstructionPhase	PhaseEndDate	1/27/2023	1/13/2023
tblConstructionPhase	PhaseEndDate	2/9/2023	2/8/2023
tblConstructionPhase	PhaseEndDate	12/28/2023	7/24/2023
tblConstructionPhase	PhaseEndDate	2/1/2023	1/18/2023
tblConstructionPhase	PhaseStartDate	12/29/2023	6/7/2023
tblConstructionPhase	PhaseStartDate	2/10/2023	3/7/2023
tblConstructionPhase	PhaseStartDate	2/2/2023	1/17/2023
tblConstructionPhase	PhaseStartDate	12/15/2023	7/22/2023
tblConstructionPhase	PhaseStartDate	1/28/2023	1/12/2023
tblGrading	MaterialExported	0.00	6,000.00
tblGrading	MaterialImported	0.00	250.00
tblLandUse	LandUseSquareFeet	22,000.00	44,333.00
tblLandUse	LotAcreage	1.38	2.29
tblLandUse	LotAcreage	0.57	0.00
tblLandUse	LotAcreage	0.57	0.00
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Dozers
tblOffRoadEquipment	OffRoadEquipmentType		Scrapers
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes

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tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	UsageHours	6.00	1.10
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.80
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	7.00	5.30
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	6.60
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	6.00	2.70
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	7.00	1.90

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tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblTripsAndVMT	HaulingTripNumber	99.00	0.00
tblTripsAndVMT	HaulingTripNumber	781.00	0.00
tblTripsAndVMT	VendorTripNumber	11.00	0.00
tblTripsAndVMT	WorkerTripNumber	13.00	0.00
tblTripsAndVMT	WorkerTripNumber	8.00	0.00
tblTripsAndVMT	WorkerTripNumber	10.00	0.00
tblTripsAndVMT	WorkerTripNumber	37.00	0.00
tblTripsAndVMT	WorkerTripNumber	8.00	0.00
tblTripsAndVMT	WorkerTripNumber	7.00	0.00
tblTripsAndVMT	WorkerTripNumber	10.00	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.353	0.2987	0.3695	5.9000e-004	0.0349	0.0146	0.0494	0.0109	0.0134	0.0243	0.0000	52.0892	52.0892	0.0165	0.0000	52.5016
Maximum	**0.3530**	**0.2987**	**0.3695**	**5.9000e-004**	**0.0349**	**0.0146**	**0.0494**	**0.0109**	**0.0134**	**0.0243**	**0.0000**	**52.0892**	**52.0892**	**0.0165**	**0.0000**	**52.5016**

Mitigated Construction

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.3338	0.2373	0.4190	5.9000e-004	0.0157	9.60E-04	0.0167	4.90E-03	9.6000e-004	5.8700e-003	0.0000	52.0892	52.0892	0.0165	0.0000	52.5016
Maximum	**0.3338**	**0.2373**	**0.4190**	**5.9000e-004**	**0.0157**	**9.6000e-004**	**0.0167**	**4.9000e-003**	**9.6000e-004**	**5.8700e-003**	**0.0000**	**52.0892**	**52.0892**	**0.0165**	**0.0000**	**52.5016**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**5.46**	**20.56**	**-13.39**	**0.00**	**55.00**	**93.40**	**66.29**	**55.00**	**92.84**	**75.85**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-2-2023	4-1-2023	0.2231	0.1682
2	4-2-2023	7-1-2023	0.2132	0.1915
3	7-2-2023	9-30-2023	0.2121	0.2083
		Highest	0.2231	0.2083

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/2/2023	1/13/2023	5	10	
2	Site Preparation	Site Preparation	1/12/2023	1/18/2023	5	5	
3	Grading	Grading	1/17/2023	2/8/2023	5	17	
4	Trenching	Trenching	2/3/2023	3/16/2023	5	30	
5	Building Construction	Building Construction	3/7/2023	7/10/2023	5	90	
6	Architectural Coating	Architectural Coating	6/7/2023	8/8/2023	5	45	

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7	Paving	Paving	7/22/2023	7/24/2023	5	1	

Acres of Grading (Site Preparation Phase): 2.5

Acres of Grading (Grading Phase): 14.02

Acres of Paving: 0

Residential Indoor: 89,774; Residential Outdoor: 29,925; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 3,024 (Architectural

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	1.10	78	0.48
Paving	Cement and Mortar Mixers	0	0.00	9	0.56
Demolition	Concrete/Industrial Saws	1	0.80	81	0.73
Building Construction	Cranes	0	0.00	231	0.29
Building Construction	Forklifts	2	5.30	89	0.20
Building Construction	Generator Sets	0	0.00	84	0.74
Grading	Graders	1	6.60	187	0.41
Site Preparation	Graders	0	0.00	187	0.41
Paving	Pavers	0	0.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	8.00	80	0.38
Demolition	Rubber Tired Dozers	0	0.00	247	0.40
Grading	Rubber Tired Dozers	0	0.00	247	0.40
Site Preparation	Scrapers	0	0.00	367	0.48
Building Construction	Tractors/Loaders/Backhoes	2	2.70	97	0.37
Demolition	Tractors/Loaders/Backhoes	2	4.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	1.90	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Welders	0	0.00	46	0.45

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Demolition	Excavators	2	8.00	158	0.38
Site Preparation	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	1	3.30	367	0.48
Trenching	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Trenching	Excavators	2	4.00	158	0.38

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	4	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	3	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	4	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2023

Unmitigated Construction On-Site

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

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Fugitive Dust					0.0107	0.0000	0.0107	1.6200e-003	0.0000	1.6200e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.8100e-003	0.0245	0.0456	7.0000e-005		1.2000e-003	1.2000e-003		1.1100e-003	1.1100e-003	0.0000	6.1736	6.1736	1.9200e-003	0.0000	6.2217
Total	**2.8100e-003**	**0.0245**	**0.0456**	**7.0000e-005**	**0.0107**	**1.2000e-003**	**0.0119**	**1.6200e-003**	**1.1100e-003**	**2.7300e-003**	**0.0000**	**6.1736**	**6.1736**	**1.9200e-003**	**0.0000**	**6.2217**

Unmitigated Construction Off-Site

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.8100e-003	0.0000	4.8100e-003	7.3000e-004	0.0000	7.3000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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Off-Road	1.0400e-003	0.0307	0.0528	7.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	6.1736	6.1736	1.9200e-003	0.0000	6.2217
Total	**1.0400e-003**	**0.0307**	**0.0528**	**7.0000e-005**	**4.8100e-003**	**1.1000e-004**	**4.9200e-003**	**7.3000e-004**	**1.1000e-004**	**8.4000e-004**	**0.0000**	**6.1736**	**6.1736**	**1.9200e-003**	**0.0000**	**6.2217**

Mitigated Construction Off-Site

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

3.3 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0164	0.0000	0.0164	8.4200e-003	0.0000	8.4200e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4700e-003	0.0255	0.0189	4.0000e-005		1.1800e-003	1.1800e-003		1.0900e-003	1.0900e-003	0.0000	3.2435	3.2435	1.0500e-003	0.0000	3.2698

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Total	**2.4700e-003**	**0.0255**	**0.0189**	**4.0000e-005**	**0.0164**	**1.1800e-003**	**0.0176**	**8.4200e-003**	**1.0900e-003**	**9.5100e-003**	**0.0000**	**3.2435**	**3.2435**	**1.0500e-003**	**0.0000**	**3.2698**

Unmitigated Construction Off-Site

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.3700e-003	0.0000	7.3700e-003	3.7900e-003	0.0000	3.7900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.0000e-004	0.0124	0.0230	4.0000e-005		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	3.2435	3.2435	1.0500e-003	0.0000	3.2698
Total	**7.0000e-004**	**0.0124**	**0.0230**	**4.0000e-005**	**7.3700e-003**	**6.0000e-005**	**7.4300e-003**	**3.7900e-003**	**6.0000e-005**	**3.8500e-003**	**0.0000**	**3.2435**	**3.2435**	**1.0500e-003**	**0.0000**	**3.2698**

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Mitigated Construction Off-Site

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

3.4 Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.7900e-003	0.0000	7.7900e-003	8.6000e-004	0.0000	8.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.0600e-003	0.0679	0.0424	1.1000e-004		2.5000e-003	2.5000e-003		2.3000e-003	2.3000e-003	0.0000	9.8577	9.8577	3.1900e-003	0.0000	9.9374
Total	**6.0600e-003**	**0.0679**	**0.0424**	**1.1000e-004**	**7.7900e-003**	**2.5000e-003**	**0.0103**	**8.6000e-004**	**2.3000e-003**	**3.1600e-003**	**0.0000**	**9.8577**	**9.8577**	**3.1900e-003**	**0.0000**	**9.9374**

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

Unmitigated Construction Off-Site

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.5000e-003	0.0000	3.5000e-003	3.9000e-004	0.0000	3.9000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.9100e-003	0.0318	0.0624	1.1000e-004		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	9.8577	9.8577	3.1900e-003	0.0000	9.9374
Total	**1.9100e-003**	**0.0318**	**0.0624**	**1.1000e-004**	**3.5000e-003**	**1.8000e-004**	**3.6800e-003**	**3.9000e-004**	**1.8000e-004**	**5.7000e-004**	**0.0000**	**9.8577**	**9.8577**	**3.1900e-003**	**0.0000**	**9.9374**

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

Mitigated Construction Off-Site

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

3.5 Trenching - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.3700e-003	0.0693	0.1158	1.7000e-004		3.4100e-003	3.4100e-003		3.1400e-003	3.1400e-003	0.0000	15.0129	15.0129	4.8600e-003	0.0000	15.1343
Total	**7.3700e-003**	**0.0693**	**0.1158**	**1.7000e-004**		**3.4100e-003**	**3.4100e-003**		**3.1400e-003**	**3.1400e-003**	**0.0000**	**15.0129**	**15.0129**	**4.8600e-003**	**0.0000**	**15.1343**

Unmitigated Construction Off-Site

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

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.0400e-003	0.0748	0.1290	1.7000e-004		2.8000e-004	2.8000e-004		2.8000e-004	2.8000e-004	0.0000	15.0129	15.0129	4.8600e-003	0.0000	15.1343
Total	**3.0400e-003**	**0.0748**	**0.1290**	**1.7000e-004**		**2.8000e-004**	**2.8000e-004**		**2.8000e-004**	**2.8000e-004**	**0.0000**	**15.0129**	**15.0129**	**4.8600e-003**	**0.0000**	**15.1343**

Mitigated Construction Off-Site

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

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

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

3.6 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0107	0.1039	0.1360	1.9000e-004		5.8400e-003	5.8400e-003		5.3700e-003	5.3700e-003	0.0000	16.3173	16.3173	5.2800e-003	0.0000	16.4492
Total	**0.0107**	**0.1039**	**0.1360**	**1.9000e-004**		**5.8400e-003**	**5.8400e-003**		**5.3700e-003**	**5.3700e-003**	**0.0000**	**16.3173**	**16.3173**	**5.2800e-003**	**0.0000**	**16.4492**

Unmitigated Construction Off-Site

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

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

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.1700e-003	0.0812	0.1404	1.9000e-004		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004	0.0000	16.3173	16.3173	5.2800e-003	0.0000	16.4492
Total	**4.1700e-003**	**0.0812**	**0.1404**	**1.9000e-004**		**3.0000e-004**	**3.0000e-004**		**3.0000e-004**	**3.0000e-004**	**0.0000**	**16.3173**	**16.3173**	**5.2800e-003**	**0.0000**	**16.4492**

Mitigated Construction Off-Site

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

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

3.7 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3226					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.9000e-004	5.3700e-003	7.4700e-003	1.0000e-005		2.9000e-004	2.9000e-004		2.9000e-004	2.9000e-004	0.0000	1.0532	1.0532	6.0000e-005	0.0000	1.0548
Total	**0.3234**	**5.3700e-003**	**7.4700e-003**	**1.0000e-005**		**2.9000e-004**	**2.9000e-004**		**2.9000e-004**	**2.9000e-004**	**0.0000**	**1.0532**	**1.0532**	**6.0000e-005**	**0.0000**	**1.0548**

Unmitigated Construction Off-Site

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

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3226					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.2000e-004	4.3700e-003	7.5600e-003	1.0000e-005		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	1.0532	1.0532	6.0000e-005	0.0000	1.0548
Total	**0.3228**	**4.3700e-003**	**7.5600e-003**	**1.0000e-005**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**1.0532**	**1.0532**	**6.0000e-005**	**0.0000**	**1.0548**

Mitigated Construction Off-Site

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

3.8 Paving - 2023

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

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.4000e-004	2.3700e-003	3.3200e-003	0.0000		1.2000e-004	1.2000e-004		1.1000e-004	1.1000e-004	0.0000	0.4310	0.4310	1.4000e-004	0.0000	0.4345
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.4000e-004**	**2.3700e-003**	**3.3200e-003**	**0.0000**		**1.2000e-004**	**1.2000e-004**		**1.1000e-004**	**1.1000e-004**	**0.0000**	**0.4310**	**0.4310**	**1.4000e-004**	**0.0000**	**0.4345**

Unmitigated Construction Off-Site

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

Mitigated Construction On-Site

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.0000e-005	2.1500e-003	3.7100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.4310	0.4310	1.4000e-004	0.0000	0.4345
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.0000e-005**	**2.1500e-003**	**3.7100e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**0.4310**	**0.4310**	**1.4000e-004**	**0.0000**	**0.4345**

Mitigated Construction Off-Site

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

Attachment 3: EMFAC2021 Calculations

Summary of Construction Traffic Emissions (EMFAC2021)

Pollutants YEAR	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	NBio- CO2	CH4	N2O	CO2e
					Tons							*Metric Tons*		
Criteria Pollutants														
2023	0.0080	0.0867	0.1066	0.0007	0.0256	0.0056	0.0312	0.0039	0.0024	0.0062	66.1230	0.0046	0.0086	68.8085
Toxic Air Contaminants (0.5 Mile Trip Length)														
2023	0.0065	0.0214	0.0350	0.0000	0.0011	0.0002	0.0014	0.0002	0.0001	0.0003	4.8811	0.0010	0.0008	5.1400

CalEEMod Construction Inputs

Phase	CalEEMod WORKER TRIPS	CalEEMod VENDOR TRIPS	Total Worker Trips	Total Vendor Trips	CalEEMod HAULING TRIPS	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class	*Worker VMT*	*Vendor VMT*	*Hauling VMT*
Demolition	13	0	130	0	199	0.5	0.5	0.5	LD_Mix	HDT_Mix	HHDT	65	0	99.5
Site Preparation	8	0	40	0	0	0.5	0.5	0.5	LD_Mix	HDT_Mix	HHDT	20	0	0
Grading	10	0	170	0	781	0.5	0.5	0.5	LD_Mix	HDT_Mix	HHDT	85	0	390.5
Trenching	10	0	300	0	0	0.5	0.5	0.5	LD_Mix	HDT_Mix	HHDT	150	0	0
Building Construction	37	11	3330	990	600	0.5	0.5	0.5	LD_Mix	HDT_Mix	HHDT	1665	495	300
Architectural Coating	7	0	315	0	0	0.5	0.5	0.5	LD_Mix	HDT_Mix	HHDT	157.5	0	0
Paving	8	0	8	0	34	0.5	0.5	0.5	LD_Mix	HDT_Mix	HHDT	4	0	17

Number of Days Per Year					
2023	1/2/23	8/8/23	219	157	
			219	**157**	***Total Workdays***

Phase	Start Date	End Date	Days/Week	Workdays
Demolition	1/2/2023	1/13/2023	5	10
Site Preparation	1/12/2023	1/18/2023	5	5
Grading	1/17/2023	2/8/2023	5	17
Trenching	2/3/2023	3/16/2023	5	30
Building Construction	3/7/2023	7/10/2023	5	90
Architectural Coating	6/7/2023	8/8/2023	5	45
Paving	7/22/2023	7/24/2023	5	1

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

Region	Calendar Y	Vehicle Ca	Model Yea	Speed	Fuel	Population	Total VMT	CVMT	EVMT	Trips	NOx RUN	NOx IDLE	NOx STRE	PM2.5 RU	PM2.5 IDL	PM2.5 STI	PM2.5 PM	PM10 RU	PM10 IDL	PM10 STR	PM10 PM	PM10 PM	CO2 RUN	CO2 IDLE	CO2 STRE	CH4 RUN	CH4 IDLE	CH4 STRE	N2O RUN	N2O IDLE	N2O STRE	ROG RUN	ROG IDLE	ROG STRE	ROG HOT	ROG RUN	ROG DIUR	TOG RUN	TOG IDLE	TOG STRE	TOG HOT	TOG RUN	TOG DIUR	NH3 RUN	CO RUNEX	CO_IDLEX	CO_STREX	SOx RUNEX	SOx IDLEX	SOx_STREX
Santa Clara	2023	HHDT	Aggregate	Aggregate	Gasoline	3.45401	114.309	114.309	0	69.1078	8.10787	0	1.6025	0.00493	0	0.0017	0.005	0.03527	0.00536	0	0.00185	0.02	0.10076	2306.82	0	49.8119	0.34023	0	0.00018	0.20891	0	0.0457	2.10487	0	0.00098	0.15837	1.42664	10.6538	3.07142	0	0.00107	0.15837	1.42664	10.6538	0.04047	83.0074	0	1.02738	0.02281	0	0.00049
Santa Clara	2023	HHDT	Aggregate	Aggregate	Diesel	8235.06	991289	991289	0	120861	1.96937	63.4049	2.84946	0.02596	0.03163	0	0.00877	0.02753	0.02713	0.03306	0	0.03508	0.07866	1656.8	12241.3	0	0.00081	0.23745	0	0.26103	1.92863	0	0.01742	5.11216	0	0	0	0	0.01983	5.8198	0	0	0	0	0.21462	0.08739	74.2014	0	0.01569	0.11592	0
Santa Clara	2023	HHDT	Aggregate	Aggregate	Electricity	6.70171	411.505	0	411.505	103.204	0	0	0	0	0	0	0.00874	0.01338	0	0	0	0.03496	0.03824	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2023	HHDT	Aggregate	Aggregate	Natural Ga	753.737	53296	53296	0	6914.03	1.20884	13.9283	0	0.00177	0.02424	0	0.009	0.04673	0.00193	0.02636	0	0.036	0.13351	1398.51	10630.2	0	2.44811	37.4467	0	0.2851	2.16704	0	0.05457	0.57226	0	0	0	0	2.5208	38.2595	0	0	0	0	0.86011	13.7825	74.0396	0	0	0	0
Santa Clara	2023	LDA	Aggregate	Aggregate	Gasoline	601938	2.2E+07	2.2E+07	0	2795479	0.04741	0	0.27189	0.00122	0	0.00199	0.002	0.00266	0.00132	0	0.00217	0.008	0.00759	281.43	0	71.6648	0.0026	0	0.07645	0.005	0	0.03413	0.01016	0	0.35379	0.09476	0.24061	1.48055	0.01482	0	0.38736	0.09476	0.24061	1.48055	0.03378	0.78762	0	3.43661	0.00278	0	0.00071
Santa Clara	2023	LDA	Aggregate	Aggregate	Diesel	1871.12	56220.8	56220.8	0	8000.53	0.23832	0	0	0.01856	0	0	0.002	0.0027	0.0194	0	0	0.008	0.00771	234.426	0	0	0.00141	0	0	0.03693	0	0	0.03042	0	0	0	0	0	0	0.03463	0	0	0	0.0031	0.34246	0	0	0.00222	0	0
Santa Clara	2023	LDA	Aggregate	Aggregate	Electricity	53751.1	2268185	0	2268185	265250	0	0	0	0	0	0	0.002	0.00153	0	0	0	0.008	0.00438	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2023	LDA	Aggregate	Aggregate	Plug-in Hy	15805.3	700611	356650	343961	65355	0.00334	0	0.11551	0.00066	0	0.00217	0.002	0.00137	0.00072	0	0.00236	0.008	0.00392	142.11	0	66.0887	0.00046	0	0.0426	0.00061	0	0.02092	0.00144	0	0.17328	0.04064	0.03609	0.44706	0.00211	0	0.18973	0.04064	0.03609	0.44706	0.01971	0.21991	0	1.33989	0.0014	0	0.00065
Santa Clara	2023	LDT1	Aggregate	Aggregate	Gasoline	53782.3	1744480	1744480	0	239738	0.14329	0	0.40434	0.00185	0	0.00284	0.002	0.00324	0.00201	0	0.00308	0.008	0.00925	332.654	0	88.3113	0.00699	0	0.11256	0.01026	0	0.03983	0.03122	0	0.58321	0.17414	0.50309	2.80701	0.04555	0	0.63854	0.17414	0.50309	2.80701	0.03577	1.55341	0	5.66004	0.00329	0	0.00087
Santa Clara	2023	LDT1	Aggregate	Aggregate	Diesel	26.0471	391.87	391.87	0	75.1774	1.65906	0	0	0.24041	0	0	0.002	0.00373	0.25128	0	0	0.008	0.01065	415.548	0	0	0.01393	0	0	0.06547	0	0	0.29985	0	0	0	0	0	0	0.34136	0	0	0	0.0031	1.6014	0	0	0.00394	0	0
Santa Clara	2023	LDT1	Aggregate	Aggregate	Electricity	194.894	7068.18	0	7068.18	916.483	0	0	0	0	0	0	0.002	0.00154	0	0	0	0.008	0.0044	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2023	LDT1	Aggregate	Aggregate	Plug-in Hy	43.2768	2048.37	944.158	1104.21	178.949	0.00302	0	0.11551	0.00039	0	0.00141	0.002	0.00138	0.00042	0	0.00153	0.008	0.00395	128.765	0	70.8664	0.00041	0	0.04244	0.00054	0	0.02076	0.00131	0	0.17328	0.02458	0.02178	0.28592	0.00191	0	0.18973	0.02458	0.02178	0.28592	0.01936	0.19958	0	1.33989	0.00127	0	0.0007
Santa Clara	2023	LDT2	Aggregate	Aggregate	Gasoline	280180	1E+07	1E+07	0	1311796	0.07721	0	0.35835	0.00126	0	0.002	0.002	0.00313	0.00138	0	0.00218	0.008	0.00893	348.396	0	89.5445	0.00312	0	0.08776	0.00638	0	0.03865	0.01242	0	0.41073	0.08512	0.22419	1.4049	0.01812	0	0.44969	0.08512	0.22419	1.4049	0.03554	0.89682	0	3.8921	0.00344	0	0.00089
Santa Clara	2023	LDT2	Aggregate	Aggregate	Diesel	978.497	36936.9	36936.9	0	4673.4	0.04616	0	0	0.00543	0	0	0.002	0.0031	0.00568	0	0	0.008	0.00886	313.067	0	0	0.00065	0	0	0.04932	0	0	0.01398	0	0	0	0	0	0	0.01592	0	0	0	0.0031	0.1321	0	0	0.00297	0	0
Santa Clara	2023	LDT2	Aggregate	Aggregate	Electricity	1105.88	38931.7	0	38931.7	5663.05	0	0	0	0	0	0	0.002	0.00152	0	0	0	0.008	0.00436	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2023	LDT2	Aggregate	Aggregate	Plug-in Hy	1696.55	77270.7	37142.7	40128	7015.23	0.00315	0	0.11551	0.0005	0	0.00176	0.002	0.00138	0.00055	0	0.00191	0.008	0.00394	134.254	0	77.036	0.00043	0	0.04246	0.00057	0	0.02078	0.00136	0	0.17328	0.02624	0.02445	0.31823	0.02014	0.20798	0	1.33989	0.00133	0	0.00076
Santa Clara	2023	LHDT1	Aggregate	Aggregate	Gasoline	19181	711085	711085	0	285768	0.19781	0.03737	0.66388	0.00159	0	0.00033	0.002	0.0273	0.00173	0	0.00036	0.008	0.078	889.742	120.266	25.8396	0.00948	0.11564	0.03452	0.01108	0.00301	0.05189	0.04766	0.42815	0.17223	0.05056	0.2776	2.91378	0.06954	0.62476	0.18857	0.05056	0.2776	2.91378	0.04487	1.22511	3.75343	3.08025	0.0088	0.00119	0.00026
Santa Clara	2023	LHDT1	Aggregate	Aggregate	Diesel	9807.46	384085	384085	0	123366	1.78063	2.02927	0	0.03825	0.02697	0	0.003	0.0273	0.03998	0.02819	0	0.012	0.078	635.427	132.908	0	0.00862	0.0051	0	0.10011	0.02094	0	0.18565	0.10976	0	0	0	0	0.21135	0.12495	0	0	0	0.16551	0.51888	0.90975	0	0.00602	0.00126	0
Santa Clara	2023	LHDT2	Aggregate	Aggregate	Gasoline	2494.38	90793	90793	0	37162.6	0.18702	0.03682	0.64206	0.00145	0	0.00026	0.002	0.03185	0.00157	0	0.00028	0.008	0.091	997.384	138.797	25.7233	0.00707	0.11457	0.03346	0.01097	0.00297	0.05045	0.03305	0.42203	0.16561	0.04699	0.25097	2.6763	0.04822	0.61583	0.18132	0.04699	0.25097	2.6763	0.04497	0.96189	3.75941	3.11931	0.00986	0.00137	0.00025
Santa Clara	2023	LHDT2	Aggregate	Aggregate	Diesel	4479.53	176769	176769	0	56346.9	1.41694	1.99826	0	0.03418	0.02703	0	0.003	0.03185	0.03572	0.02825	0	0.012	0.091	764.504	212.121	0	0.00782	0.0051	0	0.12045	0.03342	0	0.16845	0.10976	0	0	0	0	0.19177	0.12495	0	0	0	0.17898	0.44054	0.90975	0	0.00724	0.00201	0
Santa Clara	2023	MCY	Aggregate	Aggregate	Gasoline	27894.5	164895	164895	0	55789	0.58693	0	0.14237	0.00178	0	0.00341	0.001	0.0042	0.0019	0	0.00363	0.004	0.012	188.309	0	49.5981	0.16762	0	0.18748	0.04022	0	0.00838	1.10592	0	1.39264	3.5601	3.74568	3.94787	1.32414	0	1.51387	3.5601	3.74568	3.94787	0.00876	13.0896	0	8.0512	0.00186	0	0.00049
Santa Clara	2023	MDV	Aggregate	Aggregate	Gasoline	153799	5358084	5358084	0	712434	0.11759	0	0.47011	0.00129	0	0.00214	0.002	0.00319	0.0014	0	0.00233	0.008	0.00911	422.679	0	109.033	0.00441	0	0.11029	0.00848	0	0.04308	0.01883	0	0.55926	0.10198	0.2858	1.72733	0.02744	0	0.61231	0.10198	0.2858	1.72733	0.03543	1.06733	0	4.33325	0.00418	0	0.00108
Santa Clara	2023	MDV	Aggregate	Aggregate	Diesel	2374.92	86834.4	86834.4	0	11267.1	0.0531	0	0	0.00515	0	0	0.002	0.00318	0.00538	0	0	0.008	0.00909	411.163	0	0	0.00053	0	0	0.06478	0	0	0.0114	0	0	0	0	0	0.01297	0	0	0	0.0031	0.20259	0	0	0.0039	0	0
Santa Clara	2023	MDV	Aggregate	Aggregate	Electricity	1130.12	40073.7	0	40073.7	5799.83	0	0	0	0	0	0	0.002	0.00152	0	0	0	0.008	0.00435	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2023	MDV	Aggregate	Aggregate	Plug-in Hy	986.09	41899.1	20787.3	21111.8	4077.48	0.00326	0	0.11551	0.00064	0	0.00215	0.002	0.00138	0.00069	0	0.00234	0.008	0.00393	138.532	0	96.6849	0.00044	0	0.04226	0.00058	0	0.02059	0.00141	0	0.17328	0.02985	0.02806	0.35962	0.00205	0	0.18973	0.02985	0.02806	0.35962	0.02084	0.21448	0	1.33989	0.00137	0	0.00096
Santa Clara	2023	MH	Aggregate	Aggregate	Gasoline	2522.74	22546.9	22546.9	0	252.375	0.47913	0	0.41252	0.00178	0	0.00043	0.003	0.01576	0.00194	0	0.00047	0.012	0.04502	1948.24	0	31.8758	0.01815	0	0.03803	0.02809	0	0.04265	0.08225	0	0.16378	13.0399	0.30297	4.77362	0.12002	0	0.17932	13.0399	0.30297	4.77362	0.04474	2.11194	0	3.62938	0.01926	0	0.00032
Santa Clara	2023	MH	Aggregate	Aggregate	Diesel	959.158	9344.85	9344.85	0	95.9158	4.26955	0	0	0.09791	0	0	0.004	0.01567	0.10233	0	0	0.016	0.04479	1081.43	0	0	0.0057	0	0	0.17038	0	0	0.12281	0	0	0	0	0	0.13981	0	0	0	0.15001	0.41028	0	0	0.01025	0	0
Santa Clara	2023	MHDT	Aggregate	Aggregate	Gasoline	1418.7	70785.9	70785.9	0	28385.4	0.56286	0.0883	0.45305	0.00139	0	0.00055	0.003	0.01576	0.00151	0	0.0006	0.012	0.04502	1792.41	536.966	47.1992	0.01807	0.25459	0.04939	0.02638	0.00706	0.03257	0.09086	1.01002	0.27957	0.03719	0.30238	3.03792	0.13258	1.47383	0.30609	0.03719	0.30238	3.03792	0.04497	1.90969	15.0852	6.15628	0.01772	0.00531	0.00047
Santa Clara	2023	MHDT	Aggregate	Aggregate	Diesel	10273.6	431550	431550	0	122419	1.33734	13.5724	1.62416	0.01652	0.03574	0	0.003	0.01594	0.01726	0.03736	0	0.012	0.04555	1151.56	2263.79	0	0.00172	0.0123	0	0.18143	0.35666	0	0.03705	0.26478	0	0	0	0	0.04218	0.30143	0	0	0	0.20901	0.13257	7.58339	0	0.0109	0.02144	0
Santa Clara	2023	MHDT	Aggregate	Aggregate	Electricity	4.74984	101.802	0	101.802	59.6458	0	0	0	0	0	0	0.003	0.00799	0	0	0	0.012	0.02283	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2023	MHDT	Aggregate	Aggregate	Natural Ga	83.841	4047.87	4047.87	0	762.81	0.14132	6.52743	0	0.00114	0.01765	0	0.003	0.016	0.00124	0.01919	0	0.012	0.04572	989.385	5296.53	0	0.74006	17.5916	0	0.20169	1.07973	0	0.01057	0.25135	0	0	0	0	0.75528	17.9536	0	0	0	1.06	2.99271	33.6434	0	0	0	0
Santa Clara	2023	OBUS	Aggregate	Aggregate	Gasoline	458.897	20830.1	20830.1	0	9181.62	0.55308	0.06499	0.40562	0.00089	0	0.00026	0.003	0.01568	0.00097	0	0.00029	0.012	0.0448	1784.09	381.846	31.8944	0.01581	0.19494	0.03628	0.02618	0.00525	0.03077	0.07811	0.74523	0.1923	0.03471	0.15404	2.76625	0.11398	1.08744	0.21055	0.03471	0.15404	2.76625	0.04492	1.74396	5.76837	4.0717	0.01764	0.00377	0.00032
Santa Clara	2023	OBUS	Aggregate	Aggregate	Diesel	870.421	61645.7	61645.7	0	8910.75	1.20319	7.4101	1.5414	0.02032	0.00863	0	0.003	0.01802	0.02124	0.00902	0	0.012	0.05148	1282.54	1552.95	0	0.00199	0.02057	0	0.20206	0.24467	0	0.04286	0.44283	0	0	0	0	0.04879	0.56413	0	0	0	0.21586	0.15345	7.51086	0	0.01214	0.01471	0
Santa Clara	2023	OBUS	Aggregate	Aggregate	Natural Ga	6.1456	409.547	409.547	0	54.6958	0.21932	1.54911	0	0.00092	0.00362	0	0.003	0.01615	0.001	0.00394	0	0.012	0.04614	1017.4	1188.28	0	0.77407	4.38127	0	0.2074	0.24224	0	0.01106	0.0626	0	0	0	0	0.78999	4.4714	0	0	0	1.06	3.21195	6.7242	0	0	0	0
Santa Clara	2023	SBUS	Aggregate	Aggregate	Gasoline	166.987	8309.31	8309.31	0	667.947	0.51932	0.9257	0.7051	0.00086	0	0.00056	0.002	0.01572	0.00094	0	0.00061	0.008	0.04492	815.091	2602.03	58.6695	0.01187	2.46208	0.07492	0.02773	0.08622	0.0649	0.05774	10.6294	0.42706	0.11222	0.2593	1.59144	0.08426	15.5104	0.46758	0.11222	0.2593	1.59144	0.045	1.46951	82.1675	10.5643	0.00806	0.02572	0.00058
Santa Clara	2023	SBUS	Aggregate	Aggregate	Diesel	667.118	15392.7	15392.7	0	9659.88	4.02801	22.3986	0.46716	0.02091	0.02125	0	0.003	0.01572	0.02185	0.02221	0	0.012	0.04492	1148.52	2237.81	0	0.00275	0.00808	0	0.18095	0.35257	0	0.05916	0.17402	0	0	0	0	0.06735	0.19811	0	0	0	0.14415	0.18149	4.58185	0	0.01088	0.02119	0
Santa Clara	2023	SBUS	Aggregate	Aggregate	Electricity	0.30237	3.51049	0	3.51049	4.37836	0	0	0	0	0	0	0.003	0.00786	0	0	0	0.012	0.02246	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2023	SBUS	Aggregate	Aggregate	Natural Ga	23.5076	595.871	595.871	0	340.39	0.58732	5.2827	0	0.00338	0.01108	0	0.003	0.01572	0.00367	0.01205	0	0.012	0.04492	1271.13	4058.81	0	3.49061	15.4024	0	0.25913	0.82742	0	0.04987	0.22007	0	0	0	0	3.56242	15.7193	0	0	0	1.06	11.9028	20.112	0	0	0	0
Santa Clara	2023	UBUS	Aggregate	Aggregate	Gasoline	45.9471	4798.24	4798.24	0	183.788	0.02681	0	0.44344	0.00114	0	0.00013	0.002	0.03185	0.00124	0	0.00014	0.008	0.091	926.292	0	36.8461	0.00203	0	0.04171	0.00421	0	0.07015	0.00561	0	0.14784	0.03814	0.09212	0.4568	0.00819	0	0.16187	0.03814	0.09212	0.4568	0.045	0.57113	0	6.07379	0.00916	0	0.00036
Santa Clara	2023	UBUS	Aggregate	Aggregate	Diesel	436.668	48829.7	48829.7	0	1746.67	0.38626	0	0	0.00702	0	0	0.0083	0.0385	0.00734	0	0	0.0332	0.11	1100.96	0	0	0.00321	0	0	0.17346	0	0	0.06921	0	0	0	0	0	0.07879	0	0	0	0	0.18785	0.07937	0	0	0.01043	0	0
Santa Clara	2023	UBUS	Aggregate	Aggregate	Electricity	5.04676	199.003	0	199.003	20.187	0	0	0	0	0	0	0.009	0.01925	0	0	0	0.036	0.055	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2023	UBUS	Aggregate	Aggregate	Natural Ga	42.2611	4829.67	4829.67	0	169.045	0.05878	0	0	0.00028	0	0	0.00818	0.0385	0.0003	0	0	0.03273	0.11	1299.13	0	0	4.24574	0	0	0.26484	0	0	0.06066	0	0	0	0	0	4.33309	0	0	0	0	0.97	49.0423	0	0	0	0	0

Category		Mix %	Adj	ROG_DIURN	ROG_HTSK	ROG_IDLEX	ROG_RESTL	ROG_RUNEX	ROG_RUNLS	ROG_STREX	NOX_IDLEX	NOX_RUNEX	NOX_STREX	CO_IDLEX	CO_RUNEX	CO_STREX	SO2_IDLEX	SO2_RUNEX	SO2_STREX	Road Dust PM10	PM10_PMBW	PM10_PMTW	PM10_IDLEX	PM10_RUNEX	PM10_STREX	Road Dust PM25	PM25_PMBW	PM25_PMTW	PM25_IDLEX	PM25_RUNEX	PM25_STREX	CO2_NBIO_IDLEX	CO2_NBIO_RUNEX	CO2_NBIO_STREX	CH4_IDLEX	CH4_RUNEX	CH4_STREX	N2O_IDLE	N2O_RUNEX	N2O_STREX
																														19	22	23	8	9	10						
Hauling	HHDT	100.0	1	0.000287604	8.55424E-05	0.332404817	0	0.01953334	0.00077057	5.28839E-07	4.1629787	1.930480649	2.692504026	5.211988	0.7948148	0.000555	0.0074608	0.01488345	2.65981E-07		0.081444	0.035123	0.002283	0.025833	9.98684E-07		0.028506	0.008781	0.002179	0.0247116	9.18E-07	850.51039	1643.0479	0.0269048	0.235881	0.125647179	9.74075E-08	0.136898	0.262148415	2.4682E-05
	MHD	0.0	0	0.028424515	0.006961572	0.027529656	0	0.04434978	0.05660825	0.052337336	0.9240436	1.219274528	1.396113281	0.673566	0.4037701	1.152494	0.0015021	0.011767743	8.73526E-05	0.299	0.045469	0.012	0.002542	0.014931	0.000112942	0.04499	0.015914	0.003	0.002431	0.0142769	0.000104	161.33734	1239.5984	8.8359741	0.012943	0.009906777	0.009245497	0.024829	0.159885109	0.00609652
Vendor	HHDT	50.0	0.5	0.000143802	4.27712E-05	0.166202408	0	0.00976667	0.00038529	2.6442E-07	2.0814893	0.965240325	1.346252013	2.605994	0.3974074	0.000277	0.0037304	0.007441725	1.32991E-07		0.040722	0.017561	0.001142	0.012916	4.99342E-07		0.014253	0.00439	0.001089	0.0123558	4.59E-07	425.2552	821.52395	0.0134524	0.11794	0.06282359	4.87037E-08	0.068449	0.131074208	1.2341E-05
	MHD	50.0	0.5	0.014212257	0.003480786	0.013764828	0	0.02217489	0.02830413	0.026168668	0.4620218	0.609637264	0.698056641	0.336783	0.2018851	0.576247	0.0007511	0.005883871	4.36763E-05		0.022735	0.006	0.001271	0.007465	5.64711E-05		0.007957	0.0015	0.001216	0.0071384	5.19E-05	80.66867	619.79918	4.417987	0.006471	0.004953388	0.004622749	0.012414	0.079942554	0.00304826
			1	0.01435606	0.003523557	0.179967236	0	0.03194156	0.02868941	0.026168932	2.5435111	1.574877589	2.044308654	2.942777	0.5992925	0.576524	0.0044815	0.013325596	4.38093E-05	0.299	0.063457	0.023561	0.002413	0.020382	5.69705E-05	0.04499	0.02221	0.00589	0.002305	0.0194942	5.24E-05	505.92387	1441.3231	4.4314394	0.124412	0.067776978	0.004622797	0.080863	0.211016762	0.0030606
Worker	LDA	50.0	0.5	0.143306127	0.042683769	0	0	0.0045285	0.10768412	0.159592017	0	0.021192179	0.122461753	0	0.3503116	1.546631	0	0.001247244	0.00032278		0.0036	0.004	0	0.000614	0.000990927		0.00126	0.001	0	0.0005655	0.000911	0	126.17319	32.650143	0	0.001154545	0.034539145	0	0.00224937	0.01544107
	LDT1	25.0	0.25	0.156677436	0.04332923	0	0	0.00778025	0.12516577	0.145126689	0	0.035722679	0.100614187	0	0.3863947	1.408382	0	0.000818289	0.000217331		0.002307	0.002	0	0.000514	0.000767762		0.000807	0.0005	0	0.0004735	0.000706	0	82.773349	21.983712	0	0.00173807	0.028010471	0	0.00255413	0.00991395
	LDT2	25.0	0.25	0.074138692	0.021036563	0	0	0.00307324	0.05534742	0.101569939	0	0.019062039	0.088569484	0	0.2213791	0.96209	0	0.000853405	0.000219425		0.002219	0.002	0	0.000345	0.000540097		0.000777	0.0005	0	0.0003173	0.000497	0	86.33608	22.19552	0	0.000769908	0.021709383	0	0.001616766	0.00956276
			1	0.374122256	0.107049562	0	0	0.015382	0.28819731	0.406288645	0	0.075976897	0.311645425	0	0.9580854	3.917103	0	0.002918938	0.000759537	0.299	0.008126	0.008	0	0.001473	0.002298785	0.04499	0.002844	0.002	0	0.0013563	0.002114	0	295.28262	76.829375	0	0.003662524	0.084258998	0	0.006420266	0.03491778

Attachment 4: Project Construction Emissions and Health Risk Calculations

1957 Pruneridge Ave, Santa Clara, 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 ($g/s/m^2$)
2023	Construction	0.0148	CON_DPM	29.7	0.00739	9.32E-04	10,439	8.93E-08
Total		***0.0148***		***29.7***	***0.0074***	***0.0009***		

Construction Hours

hr/day =	11	(7am - 6pm)
days/yr =	365	
hours/year =	4015	

1957 Pruneridge Ave, Santa Clara, 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 $g/s/m^2$
2023	Construction	CON_FUG	0.0111	22.1	0.00551	6.95E-04	10,439	6.66E-08
Total			***0.0111***	***22.1***	***0.0055***	***0.0007***		

Construction Hours

hr/day =	11	(7am - 6pm)
days/yr =	365	
hours/year =	4015	

1957 Pruneridge Avenue, Santa Clara, CA
Construction Health Impact Summary

Maximum Impacts at MEI Location - Without Mitigation

Emissions Year	Maximum Concentrations		Cancer Risk (per million)		Hazard Index	Maximum Annual PM2.5 Concentration
	Exhaust PM10/DPM ($\mu g/m^3$)	Fugitive PM2.5 ($\mu g/m^3$)	Infant/Child	Adult	(-)	($\mu g/m^3$)
2023	0.0396	0.0368	7.04	0.11	0.01	0.08
Total	-	-	**7.04**	**0.11**		-
Maximum	0.0396	0.0368	**-**	**-**	**0.01**	**0.08**

1957 Pruneridge, Santa Clara, 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

			Infant/Child - Exposure Information				Adult - Exposure Information						
							Modeled				Maximum		
Exposure Year	Exposure Duration (years)	Age	DPM Conc (ug/m3) Year	DPM Conc (ug/m3) Annual	Age Sensitivity Factor	Infant/Child Cancer Risk (per million)	DPM Conc (ug/m3) Year	DPM Conc (ug/m3) Annual	Age Sensitivity Factor	Adult Cancer Risk (per million)	Hazard Index	Fugitive PM2.5	Total PM2.5
0	0.25	-0.25 - 0*	2023	0.0357	10	0.48	2023	0.0357	-	-			
1	1	0 - 1	2023	0.0357	10	5.86	2023	0.0357	1	0.10	0.007	0.031	0.07
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						**6.34**				**0.10**			

* Third trimester of pregnancy

1957 Pruneridge, Santa Clara, 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				Adult - Exposure Information						
							Modeled				Maximum		
Exposure Year	Exposure Duration (years)	Age	DPM Conc (ug/m3) Year	DPM Conc (ug/m3) Annual	Age Sensitivity Factor	Infant/Child Cancer Risk (per million)	DPM Conc (ug/m3) Year	DPM Conc (ug/m3) Annual	Age Sensitivity Factor	Adult Cancer Risk (per million)	Hazard Index	Fugitive PM2.5	Total PM2.5
0	0.25	-0.25 - 0*	2023	0.0396	10	0.54	2023	0.0396	-	-			
1	1	0 - 1	2023	0.0396	10	6.50	2023	0.0396	1	0.11	0.01	0.037	0.08
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						**7.04**				**0.11**			

* Third trimester of pregnancy

1957 Pruneridge, Santa Clara, CA - Construction Impacts - Without Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction Impacts at Pacific Autism Center for Education - 1 meter - Child Exposure

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

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

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

Where: C_{air} = concentration in air ($\mu g/m^3$)
SCAF = School Child Adjustment Factor (unitless) for source operation and exposures different than 8 hours/day
= (24/SHR) x (7days/SDay) x (SCHR/8 hrs)
SHR = Hours/day of emission source operation
SDay = Number of days per week of source operation
SCHR = School operation hours while emission source in operation
8-Hr BR = Eight-hour breathing rate (L/kg body weight-per 8 hrs)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

	Infant	Child
Age -->	**0 - <2**	**2 - <16**
Parameter		
ASF =	10	3
DPM CPF =	1.10E+00	1.10E+00
8-Hr BR* =	1200	520
SCHR =	9	9
SHR =	9	9
SDay =	5	5
A =	1	1
EF =	250	250
AT =	70	70
SCAF =	4.20	4.20

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

Construction Cancer Risk by Year - Maximum Preschool Impact Receptor Location

Exposure Year	Exposure Duration (years)	Age	Child - Exposure Information: DPM Conc (ug/m3) Year	DPM Conc (ug/m3) Annual	Age* Sensitivity Factor	Child Cancer Risk (per million)	Maximum: Hazard Index	Fugitive PM2.5	Total PM2.5
1	1	3 - 4	2023	0.0336	3	2.37	0.0067	0.032	0.07
Total Increased Cancer Risk						**2.37**			

* Children assumed to be 3 years of age with 1 year of exposure to construction emissions

Attachment 5: Community Risk Modeling Information and Calculations

```
          File Name:   Local Roadways 2023.EF
CT-EMFAC2017 Version:  1.0.2.27401
           Run Date:   1/3/2023 1:27:57 PM
               Area:   Santa Clara (SF)
      Analysis Year:   2023
             Season:   Annual

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

Vehicle Category        VMT Fraction            Diesel VMT Fraction     Gas VMT Fraction
                        Across Category         Within Category         Within Category
        Truck 1              0.015                 0.487                    0.513
        Truck 2              0.020                 0.938                    0.047
      Non-Truck              0.965                 0.014                    0.958

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

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

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

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

       Pollutant Name        35 mph
                PM2.5      0.001511
                  TOG      0.030861
           Diesel PM       0.000350

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

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

       Pollutant Name   Emission Factor
                  TOG          1.357610

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

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

       Pollutant Name   Emission Factor
                PM2.5          0.002108

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

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

       Pollutant Name   Emission Factor
                PM2.5          0.016808

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

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

       Pollutant Name   Emission Factor
                PM2.5          0.014855

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

```
          File Name:   Local Roadways 2024.EF
CT-EMFAC2017 Version:   1.0.2.27401
            Run Date:   1/5/2023 11:23:41 AM
                Area:   Santa Clara (SF)
       Analysis Year:   2024
              Season:   Annual
```

Vehicle Category	VMT Fraction Across Category	Diesel VMT Fraction Within Category	Gas VMT Fraction 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	35 mph
PM2.5	0.001451
TOG	0.028781
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=================================
```

1957 Pruneridge Ave, Santa Clara, CA - Off-Site Residential
Cumulative Operation - Pruneridge Avenue & W Hedding St
DPM Modeling - Roadway Links, Traffic Volumes, and DPM Emissions
Year = 2023

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
DPM_EB_PRN	Pruneridge Avenue Eastbound	EB	2	770.5	0.48	13.3	43.7	3.4	25	6,878
DPM_WB_PRN	Pruneridge Avenue Westbound	WB	2	770.1	0.48	13.3	43.7	3.4	25	6,878
									Total	13,756

Emission Factors

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Emissions per Vehicle (g/VMT)	0.00035			

Emisson Factors from CT-EMFAC2017

2023 Hourly Traffic Volumes and DPM Emissions - DPM_EB_PRN

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	3.91%	269	1.25E-05	9	6.50%	447	2.08E-05	17	5.58%	384	1.79E-05
2	2.59%	178	8.28E-06	10	7.36%	506	2.36E-05	18	3.28%	225	1.05E-05
3	2.88%	198	9.21E-06	11	6.33%	435	2.03E-05	19	2.36%	162	7.55E-06
4	3.34%	229	1.07E-05	12	6.84%	471	2.19E-05	20	0.92%	63	2.95E-06
5	2.19%	150	7.00E-06	13	6.15%	423	1.97E-05	21	2.99%	206	9.57E-06
6	3.39%	233	1.09E-05	14	6.15%	423	1.97E-05	22	4.14%	285	1.33E-05
7	5.98%	411	1.91E-05	15	5.23%	360	1.68E-05	23	2.47%	170	7.92E-06
8	4.66%	320	1.49E-05	16	3.91%	269	1.25E-05	24	0.86%	59	2.76E-06
								Total		6,878	

2023 Hourly Traffic Volumes Per Direction and DPM Emissions - DPM_WB_PRN

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	3.91%	269	1.25E-05	9	6.50%	447	2.08E-05	17	5.58%	384	1.78E-05
2	2.59%	178	8.28E-06	10	7.36%	506	2.36E-05	18	3.28%	225	1.05E-05
3	2.88%	198	9.20E-06	11	6.33%	435	2.02E-05	19	2.36%	162	7.54E-06
4	3.34%	229	1.07E-05	12	6.84%	471	2.19E-05	20	0.92%	63	2.94E-06
5	2.19%	150	6.99E-06	13	6.15%	423	1.97E-05	21	2.99%	206	9.57E-06
6	3.39%	233	1.09E-05	14	6.15%	423	1.97E-05	22	4.14%	285	1.32E-05
7	5.98%	411	1.91E-05	15	5.23%	360	1.67E-05	23	2.47%	170	7.91E-06
8	4.66%	320	1.49E-05	16	3.91%	269	1.25E-05	24	0.86%	59	2.76E-06
								Total		6,878	

1957 Pruneridge Ave, Santa Clara, CA - Off-Site Residential
Cumulative Operation - Pruneridge Avenue & W Hedding St
PM2.5 Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions
Year = 2023

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
PM2.5_EB_PRN	Pruneridge Avenue Eastbound	EB	2	770.5	0.48	13.3	44	1.3	25	6,878
PM2.5_WB_PRN	Pruneridge Avenue Westbound	WB	2	770.1	0.48	13.3	44	1.3	25	6,878
									Total	13,756

Emission Factors - PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Emissions per Vehicle (g/VMT)	0.001511			

Emisson Factors from CT-EMFAC2017

2023 Hourly Traffic Volumes and PM2.5 Emissions - PM2.5_EB_PRN

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	79	1.59E-05	9	7.11%	489	9.83E-05	17	7.38%	508	1.02E-04
2	0.42%	29	5.77E-06	10	4.39%	302	6.07E-05	18	8.17%	562	1.13E-04
3	0.41%	28	5.63E-06	11	4.66%	321	6.45E-05	19	5.70%	392	7.87E-05
4	0.26%	18	3.64E-06	12	5.89%	405	8.14E-05	20	4.27%	294	5.91E-05
5	0.50%	34	6.92E-06	13	6.15%	423	8.50E-05	21	3.26%	224	4.50E-05
6	0.90%	62	1.25E-05	14	6.04%	415	8.34E-05	22	3.30%	227	4.56E-05
7	3.79%	261	5.24E-05	15	7.01%	482	9.69E-05	23	2.46%	169	3.40E-05
8	7.76%	534	1.07E-04	16	7.14%	491	9.86E-05	24	1.86%	128	2.58E-05
								Total		6,878	

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

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	79	1.59E-05	9	7.11%	489	9.82E-05	17	7.38%	508	1.02E-04
2	0.42%	29	5.77E-06	10	4.39%	302	6.07E-05	18	8.17%	562	1.13E-04
3	0.41%	28	5.63E-06	11	4.66%	321	6.44E-05	19	5.70%	392	7.87E-05
4	0.26%	18	3.64E-06	12	5.89%	405	8.13E-05	20	4.27%	294	5.90E-05
5	0.50%	34	6.92E-06	13	6.15%	423	8.50E-05	21	3.26%	224	4.50E-05
6	0.90%	62	1.25E-05	14	6.04%	415	8.34E-05	22	3.30%	227	4.56E-05
7	3.79%	261	5.24E-05	15	7.01%	482	9.69E-05	23	2.46%	169	3.40E-05
8	7.76%	534	1.07E-04	16	7.14%	491	9.86E-05	24	1.86%	128	2.57E-05
								Total		6,878	

1957 Pruneridge Ave, Santa Clara, CA - Off-Site Residential
Cumulative Operation - Pruneridge Avenue & W Hedding St
TOG Exhaust Modeling - Roadway Links, Traffic Volumes, and TOG Exhaust Emissions
Year = 2023

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
TEXH_EB_PRN	Pruneridge Avenue Eastbound	EB	2	770.5	0.48	13.3	44	1.3	25	6,878
TEXH_WB_PRN	Pruneridge Avenue Westbound	WB	2	770.1	0.48	13.3	44	1.3	25	6,878
									Total	13,756

Emission Factors - TOG Exhaust

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Emissions per Vehicle (g/VMT)	0.03086			

Emisson Factors from CT-EMFAC2017

2023 Hourly Traffic Volumes and TOG Exhaust Emissions - TEXH_EB_PRN

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	79	3.25E-04	9	7.11%	489	2.01E-03	17	7.38%	508	2.08E-03
2	0.42%	29	1.18E-04	10	4.39%	302	1.24E-03	18	8.17%	562	2.31E-03
3	0.41%	28	1.15E-04	11	4.66%	321	1.32E-03	19	5.70%	392	1.61E-03
4	0.26%	18	7.43E-05	12	5.89%	405	1.66E-03	20	4.27%	294	1.21E-03
5	0.50%	34	1.41E-04	13	6.15%	423	1.74E-03	21	3.26%	224	9.20E-04
6	0.90%	62	2.55E-04	14	6.04%	415	1.70E-03	22	3.30%	227	9.31E-04
7	3.79%	261	1.07E-03	15	7.01%	482	1.98E-03	23	2.46%	169	6.94E-04
8	7.76%	534	2.19E-03	16	7.14%	491	2.01E-03	24	1.86%	128	5.26E-04
								Total		6,878	

2023 Hourly Traffic Volumes Per Direction and TOG Exhaust Emissions - TEXH_WB_PRN

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	79	3.25E-04	9	7.11%	489	2.01E-03	17	7.38%	508	2.08E-03
2	0.42%	29	1.18E-04	10	4.39%	302	1.24E-03	18	8.17%	562	2.31E-03
3	0.41%	28	1.15E-04	11	4.66%	321	1.32E-03	19	5.70%	392	1.61E-03
4	0.26%	18	7.42E-05	12	5.89%	405	1.66E-03	20	4.27%	294	1.21E-03
5	0.50%	34	1.41E-04	13	6.15%	423	1.74E-03	21	3.26%	224	9.19E-04
6	0.90%	62	2.55E-04	14	6.04%	415	1.70E-03	22	3.30%	227	9.31E-04
7	3.79%	261	1.07E-03	15	7.01%	482	1.98E-03	23	2.46%	169	6.94E-04
8	7.76%	534	2.19E-03	16	7.14%	491	2.01E-03	24	1.86%	128	5.26E-04
								Total		6,878	

1957 Pruneridge Ave, Santa Clara, CA - Off-Site Residential
Cumulative Operation - Pruneridge Avenue & W Hedding St
TOG Evaporative Emissions Modeling - Roadway Links, Traffic Volumes, and TOG Evaporative Emissions
Year = 2023

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
TEVAP_EB_PRN	Pruneridge Avenue Eastbound	EB	2	770.5	0.48	13.3	44	1.3	25	6,878
TEVAP_WB_PRN	Pruneridge Avenue Westbound	WB	2	770.1	0.48	13.3	44	1.3	25	6,878
									Total	13,756

Emission Factors - PM2.5 - Evaporative TOG

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Emissions per Vehicle per Hour (g/hour)	1.35761			
Emissions per Vehicle per Mile (g/VMT)	0.03879			

Emisson Factors from CT-EMFAC2017

2023 Hourly Traffic Volumes and TOG Evaporative Emissions - TEVAP_EB_PRN

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	79	4.09E-04	9	7.11%	489	2.52E-03	17	7.38%	508	2.62E-03
2	0.42%	29	1.48E-04	10	4.39%	302	1.56E-03	18	8.17%	562	2.90E-03
3	0.41%	28	1.45E-04	11	4.66%	321	1.65E-03	19	5.70%	392	2.02E-03
4	0.26%	18	9.34E-05	12	5.89%	405	2.09E-03	20	4.27%	294	1.52E-03
5	0.50%	34	1.78E-04	13	6.15%	423	2.18E-03	21	3.26%	224	1.16E-03
6	0.90%	62	3.21E-04	14	6.04%	415	2.14E-03	22	3.30%	227	1.17E-03
7	3.79%	261	1.35E-03	15	7.01%	482	2.49E-03	23	2.46%	169	8.73E-04
8	7.76%	534	2.75E-03	16	7.14%	491	2.53E-03	24	1.86%	128	6.61E-04
								Total		6,878	

2023 Hourly Traffic Volumes Per Direction and TOG Evaporative Emissions - TEVAP_WB_PRN

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	79	4.08E-04	9	7.11%	489	2.52E-03	17	7.38%	508	2.62E-03
2	0.42%	29	1.48E-04	10	4.39%	302	1.56E-03	18	8.17%	562	2.90E-03
3	0.41%	28	1.45E-04	11	4.66%	321	1.65E-03	19	5.70%	392	2.02E-03
4	0.26%	18	9.33E-05	12	5.89%	405	2.09E-03	20	4.27%	294	1.52E-03
5	0.50%	34	1.78E-04	13	6.15%	423	2.18E-03	21	3.26%	224	1.16E-03
6	0.90%	62	3.21E-04	14	6.04%	415	2.14E-03	22	3.30%	227	1.17E-03
7	3.79%	261	1.35E-03	15	7.01%	482	2.49E-03	23	2.46%	169	8.72E-04
8	7.76%	534	2.75E-03	16	7.14%	491	2.53E-03	24	1.86%	128	6.61E-04
								Total		6,878	

1957 Pruneridge Ave, Santa Clara, CA - Off-Site Residential
Cumulative Operation - Pruneridge Avenue & W Hedding St
Fugitive Road PM2.5 Modeling - Roadway Links, Traffic Volumes, and Fugitive Road PM2.5 Emissions
Year = 2023

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
FUG_EB_PRN	Pruneridge Avenue Eastbound	EB	2	770.5	0.48	13.3	44	1.3	25	6,878
FUG_WB_PRN	Pruneridge Avenue Westbound	WB	2	770.1	0.48	13.3	44	1.3	25	6,878
									Total	13,756

Emission Factors - Fugitive PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Tire Wear - Emissions per Vehicle (g/VMT)	0.00211			
Brake Wear - Emissions per Vehicle (g/VMT)	0.01681			
Road Dust - Emissions per Vehicle (g/VMT)	0.01486			
otal Fugitive PM2.5 - Emissions per Vehicle (g/VMT)	0.03377			

Emisson Factors from CT-EMFAC2017

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

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	79	3.56E-04	9	7.11%	489	2.20E-03	17	7.38%	508	2.28E-03
2	0.42%	29	1.29E-04	10	4.39%	302	1.36E-03	18	8.17%	562	2.52E-03
3	0.41%	28	1.26E-04	11	4.66%	321	1.44E-03	19	5.70%	392	1.76E-03
4	0.26%	18	8.13E-05	12	5.89%	405	1.82E-03	20	4.27%	294	1.32E-03
5	0.50%	34	1.55E-04	13	6.15%	423	1.90E-03	21	3.26%	224	1.01E-03
6	0.90%	62	2.79E-04	14	6.04%	415	1.86E-03	22	3.30%	227	1.02E-03
7	3.79%	261	1.17E-03	15	7.01%	482	2.17E-03	23	2.46%	169	7.60E-04
8	7.76%	534	2.40E-03	16	7.14%	491	2.20E-03	24	1.86%	128	5.76E-04
								Total		6,878	

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

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	79	3.56E-04	9	7.11%	489	2.20E-03	17	7.38%	508	2.28E-03
2	0.42%	29	1.29E-04	10	4.39%	302	1.36E-03	18	8.17%	562	2.52E-03
3	0.41%	28	1.26E-04	11	4.66%	321	1.44E-03	19	5.70%	392	1.76E-03
4	0.26%	18	8.13E-05	12	5.89%	405	1.82E-03	20	4.27%	294	1.32E-03
5	0.50%	34	1.55E-04	13	6.15%	423	1.90E-03	21	3.26%	224	1.01E-03
6	0.90%	62	2.79E-04	14	6.04%	415	1.86E-03	22	3.30%	227	1.02E-03
7	3.79%	261	1.17E-03	15	7.01%	482	2.17E-03	23	2.46%	169	7.59E-04
8	7.76%	534	2.40E-03	16	7.14%	491	2.20E-03	24	1.86%	128	5.75E-04
								Total		6,878	

1957 Pruneridge Ave, Santa Clara, CA - Off-Site Residential
Cumulative Operation - Winchester Blvd
DPM Modeling - Roadway Links, Traffic Volumes, and DPM Emissions
Year = 2023

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
DPM_NB_WIN	Winchester Blvd Northbound	NB	2	638.5	0.40	13.3	43.7	3.4	25	12,979
DPM_SB_WIN	Winchester Blvd Southbound	SB	2	647.2	0.40	13.3	43.7	3.4	25	12,979
									Total	25,957

Emission Factors

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Emissions per Vehicle (g/VMT)	0.00035			

Emisson Factors from CT-EMFAC2017

2023 Hourly Traffic Volumes and DPM Emissions - DPM_NB_WIN

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	3.91%	508	1.96E-05	9	6.50%	843	3.25E-05	17	5.58%	724	2.79E-05
2	2.59%	336	1.30E-05	10	7.36%	955	3.68E-05	18	3.28%	425	1.64E-05
3	2.88%	373	1.44E-05	11	6.33%	821	3.17E-05	19	2.36%	306	1.18E-05
4	3.34%	433	1.67E-05	12	6.84%	888	3.43E-05	20	0.92%	119	4.61E-06
5	2.19%	284	1.09E-05	13	6.15%	799	3.08E-05	21	2.99%	388	1.50E-05
6	3.39%	440	1.70E-05	14	6.15%	799	3.08E-05	22	4.14%	537	2.07E-05
7	5.98%	776	2.99E-05	15	5.23%	679	2.62E-05	23	2.47%	321	1.24E-05
8	4.66%	605	2.33E-05	16	3.91%	508	1.96E-05	24	0.86%	112	4.32E-06
								Total		12,979	

2023 Hourly Traffic Volumes Per Direction and DPM Emissions - DPM_SB_WIN

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	3.91%	508	1.98E-05	9	6.50%	843	3.30E-05	17	5.58%	724	2.83E-05
2	2.59%	336	1.31E-05	10	7.36%	955	3.74E-05	18	3.28%	425	1.66E-05
3	2.88%	373	1.46E-05	11	6.33%	821	3.21E-05	19	2.36%	306	1.20E-05
4	3.34%	433	1.69E-05	12	6.84%	888	3.47E-05	20	0.92%	119	4.67E-06
5	2.19%	284	1.11E-05	13	6.15%	799	3.12E-05	21	2.99%	388	1.52E-05
6	3.39%	440	1.72E-05	14	6.15%	799	3.12E-05	22	4.14%	537	2.10E-05
7	5.98%	776	3.03E-05	15	5.23%	679	2.66E-05	23	2.47%	321	1.25E-05
8	4.66%	605	2.36E-05	16	3.91%	508	1.98E-05	24	0.86%	112	4.38E-06
								Total		12,979	

1957 Pruneridge Ave, Santa Clara, CA - Off-Site Residential
Cumulative Operation - Winchester Blvd
PM2.5 Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions
Year = 2023

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
PM2.5_NB_WIN	Winchester Blvd Northbound	NB	2	638.5	0.40	13.3	44	1.3	25	12,979
PM2.5_SB_WIN	Winchester Blvd Southbound	SB	2	647.2	0.40	13.3	44	1.3	25	12,979
									Total	25,957

Emission Factors - PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Emissions per Vehicle (g/VMT)	0.001511			

Emisson Factors from CT-EMFAC2017

2023 Hourly Traffic Volumes and PM2.5 Emissions - PM2.5_NB_WIN

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	149	2.49E-05	9	7.11%	923	1.54E-04	17	7.38%	958	1.60E-04
2	0.42%	54	9.02E-06	10	4.39%	570	9.49E-05	18	8.17%	1061	1.77E-04
3	0.41%	53	8.81E-06	11	4.66%	605	1.01E-04	19	5.70%	739	1.23E-04
4	0.26%	34	5.69E-06	12	5.89%	764	1.27E-04	20	4.27%	555	9.24E-05
5	0.50%	65	1.08E-05	13	6.15%	798	1.33E-04	21	3.26%	423	7.04E-05
6	0.90%	117	1.95E-05	14	6.04%	784	1.30E-04	22	3.30%	428	7.13E-05
7	3.79%	492	8.20E-05	15	7.01%	910	1.52E-04	23	2.46%	319	5.32E-05
8	7.76%	1007	1.68E-04	16	7.14%	926	1.54E-04	24	1.86%	242	4.03E-05
								Total		12,979	

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

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	149	2.52E-05	9	7.11%	923	1.56E-04	17	7.38%	958	1.62E-04
2	0.42%	54	9.15E-06	10	4.39%	570	9.62E-05	18	8.17%	1061	1.79E-04
3	0.41%	53	8.93E-06	11	4.66%	605	1.02E-04	19	5.70%	739	1.25E-04
4	0.26%	34	5.77E-06	12	5.89%	764	1.29E-04	20	4.27%	555	9.36E-05
5	0.50%	65	1.10E-05	13	6.15%	798	1.35E-04	21	3.26%	423	7.14E-05
6	0.90%	117	1.98E-05	14	6.04%	784	1.32E-04	22	3.30%	428	7.23E-05
7	3.79%	492	8.31E-05	15	7.01%	910	1.54E-04	23	2.46%	319	5.39E-05
8	7.76%	1007	1.70E-04	16	7.14%	926	1.56E-04	24	1.86%	242	4.08E-05
								Total		12,979	

1957 Pruneridge Ave, Santa Clara, CA - Off-Site Residential
Cumulative Operation - Winchester Blvd
TOG Exhaust Modeling - Roadway Links, Traffic Volumes, and TOG Exhaust Emissions
Year = 2023

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
TEXH_NB_WIN	Winchester Blvd Northbound	NB	2	638.5	0.40	13.3	44	1.3	25	12,979
TEXH_SB_WIN	Winchester Blvd Southbound	SB	2	647.2	0.40	13.3	44	1.3	25	12,979
									Total	25,957

Emission Factors - TOG Exhaust

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Emissions per Vehicle (g/VMT)	0.03086			

Emisson Factors from CT-EMFAC2017

2023 Hourly Traffic Volumes and TOG Exhaust Emissions - TEXH_NB_WIN

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	149	5.08E-04	9	7.11%	923	3.14E-03	17	7.38%	958	3.26E-03
2	0.42%	54	1.84E-04	10	4.39%	570	1.94E-03	18	8.17%	1061	3.61E-03
3	0.41%	53	1.80E-04	11	4.66%	605	2.06E-03	19	5.70%	739	2.51E-03
4	0.26%	34	1.16E-04	12	5.89%	764	2.60E-03	20	4.27%	555	1.89E-03
5	0.50%	65	2.21E-04	13	6.15%	798	2.72E-03	21	3.26%	423	1.44E-03
6	0.90%	117	3.99E-04	14	6.04%	784	2.66E-03	22	3.30%	428	1.46E-03
7	3.79%	492	1.67E-03	15	7.01%	910	3.10E-03	23	2.46%	319	1.09E-03
8	7.76%	1007	3.43E-03	16	7.14%	926	3.15E-03	24	1.86%	242	8.23E-04
								Total		12,979	

2023 Hourly Traffic Volumes Per Direction and TOG Exhaust Emissions - TEXH_SB_WIN

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	149	5.15E-04	9	7.11%	923	3.18E-03	17	7.38%	958	3.30E-03
2	0.42%	54	1.87E-04	10	4.39%	570	1.97E-03	18	8.17%	1061	3.66E-03
3	0.41%	53	1.82E-04	11	4.66%	605	2.09E-03	19	5.70%	739	2.55E-03
4	0.26%	34	1.18E-04	12	5.89%	764	2.63E-03	20	4.27%	555	1.91E-03
5	0.50%	65	2.24E-04	13	6.15%	798	2.75E-03	21	3.26%	423	1.46E-03
6	0.90%	117	4.05E-04	14	6.04%	784	2.70E-03	22	3.30%	428	1.48E-03
7	3.79%	492	1.70E-03	15	7.01%	910	3.14E-03	23	2.46%	319	1.10E-03
8	7.76%	1007	3.47E-03	16	7.14%	926	3.19E-03	24	1.86%	242	8.34E-04
								Total		12,979	

1957 Pruneridge Ave, Santa Clara, CA - Off-Site Residential
Cumulative Operation - Winchester Blvd
TOG Evaporative Emissions Modeling - Roadway Links, Traffic Volumes, and TOG Evaporative Emissions
Year = 2023

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
TEVAP_NB_WIN	Winchester Blvd Northbound	NB	2	638.5	0.40	13.3	44	1.3	25	12,979
TEVAP_SB_WIN	Winchester Blvd Southbound	SB	2	647.2	0.40	13.3	44	1.3	25	12,979
									Total	25,957

Emission Factors - PM2.5 - Evaporative TOG

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Emissions per Vehicle per Hour (g/hour)	1.35761			
Emissions per Vehicle per Mile (g/VMT)	0.03879			

Emisson Factors from CT-EMFAC2017

2023 Hourly Traffic Volumes and TOG Evaporative Emissions - TEVAP_NB_WIN

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	149	6.39E-04	9	7.11%	923	3.95E-03	17	7.38%	958	4.10E-03
2	0.42%	54	2.32E-04	10	4.39%	570	2.44E-03	18	8.17%	1061	4.53E-03
3	0.41%	53	2.26E-04	11	4.66%	605	2.59E-03	19	5.70%	739	3.16E-03
4	0.26%	34	1.46E-04	12	5.89%	764	3.27E-03	20	4.27%	555	2.37E-03
5	0.50%	65	2.78E-04	13	6.15%	798	3.41E-03	21	3.26%	423	1.81E-03
6	0.90%	117	5.02E-04	14	6.04%	784	3.35E-03	22	3.30%	428	1.83E-03
7	3.79%	492	2.10E-03	15	7.01%	910	3.89E-03	23	2.46%	319	1.36E-03
8	7.76%	1007	4.31E-03	16	7.14%	926	3.96E-03	24	1.86%	242	1.03E-03
								Total		12,979	

2023 Hourly Traffic Volumes Per Direction and TOG Evaporative Emissions - TEVAP_SB_WIN

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	149	6.48E-04	9	7.11%	923	4.00E-03	17	7.38%	958	4.15E-03
2	0.42%	54	2.35E-04	10	4.39%	570	2.47E-03	18	8.17%	1061	4.60E-03
3	0.41%	53	2.29E-04	11	4.66%	605	2.62E-03	19	5.70%	739	3.20E-03
4	0.26%	34	1.48E-04	12	5.89%	764	3.31E-03	20	4.27%	555	2.40E-03
5	0.50%	65	2.82E-04	13	6.15%	798	3.46E-03	21	3.26%	423	1.83E-03
6	0.90%	117	5.09E-04	14	6.04%	784	3.40E-03	22	3.30%	428	1.85E-03
7	3.79%	492	2.13E-03	15	7.01%	910	3.94E-03	23	2.46%	319	1.38E-03
8	7.76%	1007	4.37E-03	16	7.14%	926	4.01E-03	24	1.86%	242	1.05E-03
								Total		12,979	

1957 Pruneridge Ave, Santa Clara, CA - Off-Site Residential
Cumulative Operation - Winchester Blvd
Fugitive Road PM2.5 Modeling - Roadway Links, Traffic Volumes, and Fugitive Road PM2.5 Emissions
Year = **2023**

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
FUG_NB_WIN	Winchester Blvd Northbound	NB	2	638.5	0.40	13.3	44	1.3	25	12,979
FUG_SB_WIN	Winchester Blvd Southbound	SB	2	647.2	0.40	13.3	44	1.3	25	12,979
									Total	25,957

Emission Factors - Fugitive PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Tire Wear - Emissions per Vehicle (g/VMT)	0.00211			
Brake Wear - Emissions per Vehicle (g/VMT)	0.01681			
Road Dust - Emissions per Vehicle (g/VMT)	0.01486			
otal Fugitive PM2.5 - Emissions per Vehicle (g/VMT)	0.03377			

Emisson Factors from CT-EMFAC2017

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

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	149	5.56E-04	9	7.11%	923	3.44E-03	17	7.38%	958	3.57E-03
2	0.42%	54	2.02E-04	10	4.39%	570	2.12E-03	18	8.17%	1061	3.95E-03
3	0.41%	53	1.97E-04	11	4.66%	605	2.25E-03	19	5.70%	739	2.75E-03
4	0.26%	34	1.27E-04	12	5.89%	764	2.84E-03	20	4.27%	555	2.06E-03
5	0.50%	65	2.42E-04	13	6.15%	798	2.97E-03	21	3.26%	423	1.57E-03
6	0.90%	117	4.37E-04	14	6.04%	784	2.92E-03	22	3.30%	428	1.59E-03
7	3.79%	492	1.83E-03	15	7.01%	910	3.39E-03	23	2.46%	319	1.19E-03
8	7.76%	1007	3.75E-03	16	7.14%	926	3.45E-03	24	1.86%	242	9.00E-04
								Total		12,979	

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

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	149	5.64E-04	9	7.11%	923	3.48E-03	17	7.38%	958	3.62E-03
2	0.42%	54	2.04E-04	10	4.39%	570	2.15E-03	18	8.17%	1061	4.00E-03
3	0.41%	53	2.00E-04	11	4.66%	605	2.28E-03	19	5.70%	739	2.79E-03
4	0.26%	34	1.29E-04	12	5.89%	764	2.88E-03	20	4.27%	555	2.09E-03
5	0.50%	65	2.45E-04	13	6.15%	798	3.01E-03	21	3.26%	423	1.60E-03
6	0.90%	117	4.43E-04	14	6.04%	784	2.96E-03	22	3.30%	428	1.61E-03
7	3.79%	492	1.86E-03	15	7.01%	910	3.43E-03	23	2.46%	319	1.20E-03
8	7.76%	1007	3.80E-03	16	7.14%	926	3.49E-03	24	1.86%	242	9.13E-04
								Total		12,979	

1957 Pruneridge Ave, Santa Clara, CA - Pruneridge & W Hedding Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
at Construction Residential MEI Receptor (1.5 meter receptor height)

Emission Year	2023
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 Data Years	Concentration (µg/m3)*		
	DPM	Exhaust TOG	Evaporative TOG
2013-2017	0.0020	0.2440	0.3061

Construction Residential MEI PM2.5 Maximum Concentrations

Meteorological Data Years	PM2.5 Concentration (µg/m3)*		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013-2017	0.2787	0.2668	0.0119

1957 Pruneridge Ave, Santa Clara, CA - Winchester Blvd Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
at Construction Residential MEI Receptor (1.5 meter receptor height)

Emission Year	2023
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 Data Years	Concentration (µg/m3)*		
	DPM	Exhaust TOG	Evaporative TOG
2013-2017	0.0011	0.0710	0.0892

Construction Residential MEI PM2.5 Maximum Concentrations

Meteorological Data Years	PM2.5 Concentration (µg/m3)*		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013-2017	0.0812	0.0777	0.0035

1957 Pruneridge Ave, Santa Clara, CA - Pruneridge & W Hedding Traffic Cancer Risk
Impacts at Construction Residential MEIs - 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)			TOTAL
Exposure Year	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	
0	0.25	-0.25 - 0*	2023	10	0.0020	0.2440	0.3061	0.027	0.019	0.0014	0.05
1	1	0 - 1	2023	10	0.0020	0.2440	0.3061	0.332	0.229	0.0169	0.58
2	1	1 - 2	2024	10	0.0020	0.2440	0.3061	0.332	0.229	0.0169	0.58
3	1	2 - 3	2025	3	0.0020	0.2440	0.3061	0.052	0.036	0.0027	0.09
4	1	3 - 4	2026	3	0.0020	0.2440	0.3061	0.052	0.036	0.0027	0.09
5	1	4 - 5	2027	3	0.0020	0.2440	0.3061	0.052	0.036	0.0027	0.09
6	1	5 - 6	2028	3	0.0020	0.2440	0.3061	0.052	0.036	0.0027	0.09
7	1	6 - 7	2029	3	0.0020	0.2440	0.3061	0.052	0.036	0.0027	0.09
8	1	7 - 8	2030	3	0.0020	0.2440	0.3061	0.052	0.036	0.0027	0.09
9	1	8 - 9	2031	3	0.0020	0.2440	0.3061	0.052	0.036	0.0027	0.09
10	1	9 - 10	2032	3	0.0020	0.2440	0.3061	0.052	0.036	0.0027	0.09
11	1	10 - 11	2033	3	0.0020	0.2440	0.3061	0.052	0.036	0.0027	0.09
12	1	11 - 12	2034	3	0.0020	0.2440	0.3061	0.052	0.036	0.0027	0.09
13	1	12 - 13	2035	3	0.0020	0.2440	0.3061	0.052	0.036	0.0027	0.09
14	1	13 - 14	2036	3	0.0020	0.2440	0.3061	0.052	0.036	0.0027	0.09
15	1	14 - 15	2037	3	0.0020	0.2440	0.3061	0.052	0.036	0.0027	0.09
16	1	15 - 16	2038	3	0.0020	0.2440	0.3061	0.052	0.036	0.0027	0.09
17	1	16-17	2039	1	0.0020	0.2440	0.3061	0.006	0.004	0.0003	0.01
18	1	17-18	2040	1	0.0020	0.2440	0.3061	0.006	0.004	0.0003	0.01
19	1	18-19	2041	1	0.0020	0.2440	0.3061	0.006	0.004	0.0003	0.01
20	1	19-20	2042	1	0.0020	0.2440	0.3061	0.006	0.004	0.0003	0.01
21	1	20-21	2043	1	0.0020	0.2440	0.3061	0.006	0.004	0.0003	0.01
22	1	21-22	2044	1	0.0020	0.2440	0.3061	0.006	0.004	0.0003	0.01
23	1	22-23	2045	1	0.0020	0.2440	0.3061	0.006	0.004	0.0003	0.01
24	1	23-24	2046	1	0.0020	0.2440	0.3061	0.006	0.004	0.0003	0.01
25	1	24-25	2047	1	0.0020	0.2440	0.3061	0.006	0.004	0.0003	0.01
26	1	25-26	2048	1	0.0020	0.2440	0.3061	0.006	0.004	0.0003	0.01
27	1	26-27	2049	1	0.0020	0.2440	0.3061	0.006	0.004	0.0003	0.01
28	1	27-28	2050	1	0.0020	0.2440	0.3061	0.006	0.004	0.0003	0.01
29	1	28-29	2051	1	0.0020	0.2440	0.3061	0.006	0.004	0.0003	0.01
30	1	29-30	2052	1	0.0020	0.2440	0.3061	0.006	0.004	0.0003	0.01
Total Increased Cancer Risk								1.50	1.037	0.077	**2.62**

Maximum Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.00040	0.27	0.28

* Third trimester of pregnancy

1957 Pruneridge Ave, Santa Clara, CA - Winchester Blvd Traffic Cancer Risk
Impacts at Construction Residential MEIs - 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)			TOTAL
Exposure Year	**Exposure Duration (years)**	**Age**	**Year**	**Age Sensitivity Factor**	**DPM**	**Exhaust TOG**	**Evaporative TOG**	**DPM**	**Exhaust TOG**	**Evaporative TOG**	
0	0.25	-0.25 - 0*	2023	10	0.0011	0.0710	0.0892	0.015	0.006	0.0004	0.02
1	1	0 - 1	2023	10	0.0011	0.0710	0.0892	0.181	0.067	0.0049	0.25
2	1	1 - 2	2024	10	0.0011	0.0710	0.0892	0.181	0.067	0.0049	0.25
3	1	2 - 3	2025	3	0.0011	0.0710	0.0892	0.028	0.010	0.0008	0.04
4	1	3 - 4	2026	3	0.0011	0.0710	0.0892	0.028	0.010	0.0008	0.04
5	1	4 - 5	2027	3	0.0011	0.0710	0.0892	0.028	0.010	0.0008	0.04
6	1	5 - 6	2028	3	0.0011	0.0710	0.0892	0.028	0.010	0.0008	0.04
7	1	6 - 7	2029	3	0.0011	0.0710	0.0892	0.028	0.010	0.0008	0.04
8	1	7 - 8	2030	3	0.0011	0.0710	0.0892	0.028	0.010	0.0008	0.04
9	1	8 - 9	2031	3	0.0011	0.0710	0.0892	0.028	0.010	0.0008	0.04
10	1	9 - 10	2032	3	0.0011	0.0710	0.0892	0.028	0.010	0.0008	0.04
11	1	10 - 11	2033	3	0.0011	0.0710	0.0892	0.028	0.010	0.0008	0.04
12	1	11 - 12	2034	3	0.0011	0.0710	0.0892	0.028	0.010	0.0008	0.04
13	1	12 - 13	2035	3	0.0011	0.0710	0.0892	0.028	0.010	0.0008	0.04
14	1	13 - 14	2036	3	0.0011	0.0710	0.0892	0.028	0.010	0.0008	0.04
15	1	14 - 15	2037	3	0.0011	0.0710	0.0892	0.028	0.010	0.0008	0.04
16	1	15 - 16	2038	3	0.0011	0.0710	0.0892	0.028	0.010	0.0008	0.04
17	1	16-17	2039	1	0.0011	0.0710	0.0892	0.003	0.001	0.0001	0.00
18	1	17-18	2040	1	0.0011	0.0710	0.0892	0.003	0.001	0.0001	0.00
19	1	18-19	2041	1	0.0011	0.0710	0.0892	0.003	0.001	0.0001	0.00
20	1	19-20	2042	1	0.0011	0.0710	0.0892	0.003	0.001	0.0001	0.00
21	1	20-21	2043	1	0.0011	0.0710	0.0892	0.003	0.001	0.0001	0.00
22	1	21-22	2044	1	0.0011	0.0710	0.0892	0.003	0.001	0.0001	0.00
23	1	22-23	2045	1	0.0011	0.0710	0.0892	0.003	0.001	0.0001	0.00
24	1	23-24	2046	1	0.0011	0.0710	0.0892	0.003	0.001	0.0001	0.00
25	1	24-25	2047	1	0.0011	0.0710	0.0892	0.003	0.001	0.0001	0.00
26	1	25-26	2048	1	0.0011	0.0710	0.0892	0.003	0.001	0.0001	0.00
27	1	26-27	2049	1	0.0011	0.0710	0.0892	0.003	0.001	0.0001	0.00
28	1	27-28	2050	1	0.0011	0.0710	0.0892	0.003	0.001	0.0001	0.00
29	1	28-29	2051	1	0.0011	0.0710	0.0892	0.003	0.001	0.0001	0.00
30	1	29-30	2052	1	0.0011	0.0710	0.0892	0.003	0.001	0.0001	0.00
Total Increased Cancer Risk								0.82	0.301	0.022	**1.14**

* Third trimester of pregnancy

Maximum Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.00022	0.08	0.08

1957 Pruneridge Ave, Santa Clara, CA - Off-Site Residential
Cumulative Operation - Pruneridge Avenue & W Hedding 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_PRN	Pruneridge Avenue Eastbound	EB	2	770.5	0.48	13.3	43.7	3.4	25	6,942
DPM_WB_PRN	Pruneridge Avenue Westbound	WB	2	770.1	0.48	13.3	43.7	3.4	25	6,942
									Total	13,885

Emission Factors

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Emissions per Vehicle (g/VMT)	0.00034			

Emisson Factors from CT-EMFAC2017

2024 Hourly Traffic Volumes and DPM Emissions - DPM_EB_PRN

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	3.91%	271	1.22E-05	9	6.50%	451	2.03E-05	17	5.58%	387	1.75E-05
2	2.59%	180	8.10E-06	10	7.36%	511	2.30E-05	18	3.28%	228	1.03E-05
3	2.88%	200	9.00E-06	11	6.33%	439	1.98E-05	19	2.36%	164	7.38E-06
4	3.34%	232	1.04E-05	12	6.84%	475	2.14E-05	20	0.92%	64	2.88E-06
5	2.19%	152	6.84E-06	13	6.15%	427	1.93E-05	21	2.99%	208	9.36E-06
6	3.39%	236	1.06E-05	14	6.15%	427	1.93E-05	22	4.14%	287	1.30E-05
7	5.98%	415	1.87E-05	15	5.23%	363	1.64E-05	23	2.47%	172	7.74E-06
8	4.66%	323	1.46E-05	16	3.91%	271	1.22E-05	24	0.86%	60	2.70E-06
								Total		6,942	

2024 Hourly Traffic Volumes Per Direction and DPM Emissions - DPM_WB_PRN

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	3.91%	271	1.22E-05	9	6.50%	451	2.03E-05	17	5.58%	387	1.74E-05
2	2.59%	180	8.09E-06	10	7.36%	511	2.30E-05	18	3.28%	228	1.03E-05
3	2.88%	200	8.99E-06	11	6.33%	439	1.98E-05	19	2.36%	164	7.38E-06
4	3.34%	232	1.04E-05	12	6.84%	475	2.14E-05	20	0.92%	64	2.88E-06
5	2.19%	152	6.84E-06	13	6.15%	427	1.92E-05	21	2.99%	208	9.35E-06
6	3.39%	236	1.06E-05	14	6.15%	427	1.92E-05	22	4.14%	287	1.30E-05
7	5.98%	415	1.87E-05	15	5.23%	363	1.64E-05	23	2.47%	172	7.74E-06
8	4.66%	323	1.46E-05	16	3.91%	271	1.22E-05	24	0.86%	60	2.70E-06
								Total		6,942	

1957 Pruneridge Ave, Santa Clara, CA - Off-Site Residential
Cumulative Operation - Pruneridge Avenue & W Hedding 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_PRN	Pruneridge Avenue Eastbound	EB	2	770.5	0.48	13.3	44	1.3	25	6,942
PM2.5_WB_PRN	Pruneridge Avenue Westbound	WB	2	770.1	0.48	13.3	44	1.3	25	6,942
									Total	13,885

Emission Factors - PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Emissions per Vehicle (g/VMT)	0.001451			

Emisson Factors from CT-EMFAC2017

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

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	80	1.54E-05	9	7.11%	494	9.53E-05	17	7.38%	513	9.89E-05
2	0.42%	29	5.59E-06	10	4.39%	305	5.88E-05	18	8.17%	567	1.09E-04
3	0.41%	28	5.46E-06	11	4.66%	324	6.25E-05	19	5.70%	395	7.63E-05
4	0.26%	18	3.53E-06	12	5.89%	409	7.89E-05	20	4.27%	297	5.73E-05
5	0.50%	35	6.71E-06	13	6.15%	427	8.24E-05	21	3.26%	226	4.37E-05
6	0.90%	63	1.21E-05	14	6.04%	419	8.09E-05	22	3.30%	229	4.42E-05
7	3.79%	263	5.08E-05	15	7.01%	487	9.39E-05	23	2.46%	171	3.29E-05
8	7.76%	539	1.04E-04	16	7.14%	495	9.56E-05	24	1.86%	129	2.50E-05
								Total		6,942	

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

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	80	1.54E-05	9	7.11%	494	9.52E-05	17	7.38%	513	9.89E-05
2	0.42%	29	5.59E-06	10	4.39%	305	5.88E-05	18	8.17%	567	1.09E-04
3	0.41%	28	5.46E-06	11	4.66%	324	6.24E-05	19	5.70%	395	7.63E-05
4	0.26%	18	3.52E-06	12	5.89%	409	7.88E-05	20	4.27%	297	5.72E-05
5	0.50%	35	6.70E-06	13	6.15%	427	8.24E-05	21	3.26%	226	4.36E-05
6	0.90%	63	1.21E-05	14	6.04%	419	8.08E-05	22	3.30%	229	4.42E-05
7	3.79%	263	5.08E-05	15	7.01%	487	9.39E-05	23	2.46%	171	3.29E-05
8	7.76%	539	1.04E-04	16	7.14%	495	9.55E-05	24	1.86%	129	2.50E-05
								Total		6,942	

1957 Pruneridge Ave, Santa Clara, CA - Off-Site Residential
Cumulative Operation - Pruneridge Avenue & W Hedding 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_PRN	Pruneridge Avenue Eastbound	EB	2	770.5	0.48	13.3	44	1.3	25	6,942
TEXH_WB_PRN	Pruneridge Avenue Westbound	WB	2	770.1	0.48	13.3	44	1.3	25	6,942
									Total	13,885

Emission Factors - TOG Exhaust

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Emissions per Vehicle (g/VMT)	0.02878			

Emisson Factors from CT-EMFAC2017

2024 Hourly Traffic Volumes and TOG Exhaust Emissions - TEXH_EB_PRN

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	80	3.06E-04	9	7.11%	494	1.89E-03	17	7.38%	513	1.96E-03
2	0.42%	29	1.11E-04	10	4.39%	305	1.17E-03	18	8.17%	567	2.17E-03
3	0.41%	28	1.08E-04	11	4.66%	324	1.24E-03	19	5.70%	395	1.51E-03
4	0.26%	18	6.99E-05	12	5.89%	409	1.56E-03	20	4.27%	297	1.14E-03
5	0.50%	35	1.33E-04	13	6.15%	427	1.63E-03	21	3.26%	226	8.66E-04
6	0.90%	63	2.40E-04	14	6.04%	419	1.60E-03	22	3.30%	229	8.76E-04
7	3.79%	263	1.01E-03	15	7.01%	487	1.86E-03	23	2.46%	171	6.54E-04
8	7.76%	539	2.06E-03	16	7.14%	495	1.90E-03	24	1.86%	129	4.95E-04
								Total		6,942	

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

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	80	3.06E-04	9	7.11%	494	1.89E-03	17	7.38%	513	1.96E-03
2	0.42%	29	1.11E-04	10	4.39%	305	1.17E-03	18	8.17%	567	2.17E-03
3	0.41%	28	1.08E-04	11	4.66%	324	1.24E-03	19	5.70%	395	1.51E-03
4	0.26%	18	6.99E-05	12	5.89%	409	1.56E-03	20	4.27%	297	1.14E-03
5	0.50%	35	1.33E-04	13	6.15%	427	1.63E-03	21	3.26%	226	8.66E-04
6	0.90%	63	2.40E-04	14	6.04%	419	1.60E-03	22	3.30%	229	8.76E-04
7	3.79%	263	1.01E-03	15	7.01%	487	1.86E-03	23	2.46%	171	6.53E-04
8	7.76%	539	2.06E-03	16	7.14%	495	1.89E-03	24	1.86%	129	4.95E-04
								Total		6,942	

1957 Pruneridge Ave, Santa Clara, CA - Off-Site Residential
Cumulative Operation - Pruneridge Avenue & W Hedding 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_PRN	Pruneridge Avenue Eastbound	EB	2	770.5	0.48	13.3	44	1.3	25	6,942
TEVAP_WB_PRN	Pruneridge Avenue Westbound	WB	2	770.1	0.48	13.3	44	1.3	25	6,942
									Total	13,885

Emission Factors - PM2.5 - Evaporative TOG

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Emissions per Vehicle per Hour (g/hour)	1.30355			
Emissions per Vehicle per Mile (g/VMT)	0.03724			

Emisson Factors from CT-EMFAC2017

2024 Hourly Traffic Volumes and TOG Evaporative Emissions - TEVAP_EB_PRN

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	80	3.96E-04	9	7.11%	494	2.45E-03	17	7.38%	513	2.54E-03
2	0.42%	29	1.44E-04	10	4.39%	305	1.51E-03	18	8.17%	567	2.81E-03
3	0.41%	28	1.40E-04	11	4.66%	324	1.60E-03	19	5.70%	395	1.96E-03
4	0.26%	18	9.05E-05	12	5.89%	409	2.02E-03	20	4.27%	297	1.47E-03
5	0.50%	35	1.72E-04	13	6.15%	427	2.12E-03	21	3.26%	226	1.12E-03
6	0.90%	63	3.11E-04	14	6.04%	419	2.08E-03	22	3.30%	229	1.13E-03
7	3.79%	263	1.30E-03	15	7.01%	487	2.41E-03	23	2.46%	171	8.46E-04
8	7.76%	539	2.67E-03	16	7.14%	495	2.45E-03	24	1.86%	129	6.41E-04
								Total		6,942	

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

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	80	3.96E-04	9	7.11%	494	2.44E-03	17	7.38%	513	2.54E-03
2	0.42%	29	1.43E-04	10	4.39%	305	1.51E-03	18	8.17%	567	2.81E-03
3	0.41%	28	1.40E-04	11	4.66%	324	1.60E-03	19	5.70%	395	1.96E-03
4	0.26%	18	9.04E-05	12	5.89%	409	2.02E-03	20	4.27%	297	1.47E-03
5	0.50%	35	1.72E-04	13	6.15%	427	2.11E-03	21	3.26%	226	1.12E-03
6	0.90%	63	3.11E-04	14	6.04%	419	2.07E-03	22	3.30%	229	1.13E-03
7	3.79%	263	1.30E-03	15	7.01%	487	2.41E-03	23	2.46%	171	8.45E-04
8	7.76%	539	2.67E-03	16	7.14%	495	2.45E-03	24	1.86%	129	6.41E-04
								Total		6,942	

1957 Pruneridge Ave, Santa Clara, CA - Off-Site Residential
Cumulative Operation - Pruneridge Avenue & W Hedding 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_PRN	Pruneridge Avenue Eastbound	EB	2	770.5	0.48	13.3	44	1.3	25	6,942
FUG_WB_PRN	Pruneridge Avenue Westbound	WB	2	770.1	0.48	13.3	44	1.3	25	6,942
									Total	13,885

Emission Factors - Fugitive PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Tire Wear - Emissions per Vehicle (g/VMT)	0.00211			
Brake Wear - Emissions per Vehicle (g/VMT)	0.01681			
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_PRN

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	80	3.59E-04	9	7.11%	494	2.22E-03	17	7.38%	513	2.30E-03
2	0.42%	29	1.30E-04	10	4.39%	305	1.37E-03	18	8.17%	567	2.55E-03
3	0.41%	28	1.27E-04	11	4.66%	324	1.45E-03	19	5.70%	395	1.78E-03
4	0.26%	18	8.20E-05	12	5.89%	409	1.84E-03	20	4.27%	297	1.33E-03
5	0.50%	35	1.56E-04	13	6.15%	427	1.92E-03	21	3.26%	226	1.02E-03
6	0.90%	63	2.82E-04	14	6.04%	419	1.88E-03	22	3.30%	229	1.03E-03
7	3.79%	263	1.18E-03	15	7.01%	487	2.19E-03	23	2.46%	171	7.66E-04
8	7.76%	539	2.42E-03	16	7.14%	495	2.22E-03	24	1.86%	129	5.81E-04
								Total		6,942	

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

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	80	3.59E-04	9	7.11%	494	2.21E-03	17	7.38%	513	2.30E-03
2	0.42%	29	1.30E-04	10	4.39%	305	1.37E-03	18	8.17%	567	2.55E-03
3	0.41%	28	1.27E-04	11	4.66%	324	1.45E-03	19	5.70%	395	1.77E-03
4	0.26%	18	8.20E-05	12	5.89%	409	1.83E-03	20	4.27%	297	1.33E-03
5	0.50%	35	1.56E-04	13	6.15%	427	1.92E-03	21	3.26%	226	1.02E-03
6	0.90%	63	2.82E-04	14	6.04%	419	1.88E-03	22	3.30%	229	1.03E-03
7	3.79%	263	1.18E-03	15	7.01%	487	2.18E-03	23	2.46%	171	7.66E-04
8	7.76%	539	2.42E-03	16	7.14%	495	2.22E-03	24	1.86%	129	5.81E-04
								Total		6,942	

1957 Pruneridge Ave, Santa Clara, CA - Off-Site Residential
Cumulative Operation - Winchester Blvd
DPM Modeling - Roadway Links, Traffic Volumes, and DPM Emissions
Year = **2024**

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
DPM_NB_WIN	Winchester Blvd Northbound	NB	2	638.5	0.40	13.3	43.7	3.4	25	13,095
DPM_SB_WIN	Winchester Blvd Southbound	SB	2	647.2	0.40	13.3	43.7	3.4	25	13,095
									Total	26,189

Emission Factors

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Emissions per Vehicle (g/VMT)	0.00034			

Emisson Factors from CT-EMFAC2017

2024 Hourly Traffic Volumes and DPM Emissions - DPM_NB_WIN

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	3.91%	512	1.91E-05	9	6.50%	851	3.18E-05	17	5.58%	730	2.73E-05
2	2.59%	339	1.27E-05	10	7.36%	964	3.60E-05	18	3.28%	429	1.60E-05
3	2.88%	376	1.41E-05	11	6.33%	828	3.09E-05	19	2.36%	309	1.15E-05
4	3.34%	437	1.63E-05	12	6.84%	896	3.35E-05	20	0.92%	120	4.50E-06
5	2.19%	286	1.07E-05	13	6.15%	806	3.01E-05	21	2.99%	392	1.46E-05
6	3.39%	444	1.66E-05	14	6.15%	806	3.01E-05	22	4.14%	542	2.03E-05
7	5.98%	783	2.93E-05	15	5.23%	685	2.56E-05	23	2.47%	324	1.21E-05
8	4.66%	610	2.28E-05	16	3.91%	512	1.91E-05	24	0.86%	113	4.22E-06
								Total		13,095	

2024 Hourly Traffic Volumes Per Direction and DPM Emissions - DPM_SB_WIN

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	3.91%	512	1.94E-05	9	6.50%	851	3.22E-05	17	5.58%	730	2.77E-05
2	2.59%	339	1.28E-05	10	7.36%	964	3.65E-05	18	3.28%	429	1.63E-05
3	2.88%	376	1.43E-05	11	6.33%	828	3.14E-05	19	2.36%	309	1.17E-05
4	3.34%	437	1.65E-05	12	6.84%	896	3.39E-05	20	0.92%	120	4.56E-06
5	2.19%	286	1.08E-05	13	6.15%	806	3.05E-05	21	2.99%	392	1.48E-05
6	3.39%	444	1.68E-05	14	6.15%	806	3.05E-05	22	4.14%	542	2.05E-05
7	5.98%	783	2.97E-05	15	5.23%	685	2.59E-05	23	2.47%	324	1.23E-05
8	4.66%	610	2.31E-05	16	3.91%	512	1.94E-05	24	0.86%	113	4.28E-06
								Total		13,095	

1957 Pruneridge Ave, Santa Clara, CA - Off-Site Residential
Cumulative Operation - Winchester Blvd
PM2.5 Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions
Year = 2024

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
PM2.5_NB_WIN	Winchester Blvd Northbound	NB	2	638.5	0.40	13.3	44	1.3	25	13,095
PM2.5_SB_WIN	Winchester Blvd Southbound	SB	2	647.2	0.40	13.3	44	1.3	25	13,095
									Total	26,189

Emission Factors - PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Emissions per Vehicle (g/VMT)	0.001451			

Emisson Factors from CT-EMFAC2017

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

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	151	2.41E-05	9	7.11%	931	1.49E-04	17	7.38%	967	1.55E-04
2	0.42%	55	8.74E-06	10	4.39%	575	9.20E-05	18	8.17%	1070	1.71E-04
3	0.41%	53	8.54E-06	11	4.66%	611	9.77E-05	19	5.70%	746	1.19E-04
4	0.26%	34	5.51E-06	12	5.89%	771	1.23E-04	20	4.27%	560	8.95E-05
5	0.50%	66	1.05E-05	13	6.15%	806	1.29E-04	21	3.26%	427	6.82E-05
6	0.90%	118	1.89E-05	14	6.04%	791	1.26E-04	22	3.30%	432	6.91E-05
7	3.79%	497	7.94E-05	15	7.01%	918	1.47E-04	23	2.46%	322	5.15E-05
8	7.76%	1016	1.63E-04	16	7.14%	934	1.49E-04	24	1.86%	244	3.90E-05
								Total		13,095	

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

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	151	2.44E-05	9	7.11%	931	1.51E-04	17	7.38%	967	1.57E-04
2	0.42%	55	8.86E-06	10	4.39%	575	9.32E-05	18	8.17%	1070	1.73E-04
3	0.41%	53	8.65E-06	11	4.66%	611	9.90E-05	19	5.70%	746	1.21E-04
4	0.26%	34	5.59E-06	12	5.89%	771	1.25E-04	20	4.27%	560	9.07E-05
5	0.50%	66	1.06E-05	13	6.15%	806	1.31E-04	21	3.26%	427	6.92E-05
6	0.90%	118	1.92E-05	14	6.04%	791	1.28E-04	22	3.30%	432	7.00E-05
7	3.79%	497	8.05E-05	15	7.01%	918	1.49E-04	23	2.46%	322	5.22E-05
8	7.76%	1016	1.65E-04	16	7.14%	934	1.51E-04	24	1.86%	244	3.96E-05
								Total		13,095	

1957 Pruneridge Ave, Santa Clara, CA - Off-Site Residential
Cumulative Operation - Winchester Blvd
TOG Exhaust Modeling - Roadway Links, Traffic Volumes, and TOG Exhaust Emissions
Year = **2024**

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
TEXH_NB_WIN	Winchester Blvd Northbound	NB	2	638.5	0.40	13.3	44	1.3	25	13,095
TEXH_SB_WIN	Winchester Blvd Southbound	SB	2	647.2	0.40	13.3	44	1.3	25	13,095
									Total	26,189

Emission Factors - TOG Exhaust

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Emissions per Vehicle (g/VMT)	0.02878			

Emisson Factors from CT-EMFAC2017

2024 Hourly Traffic Volumes and TOG Exhaust Emissions - TEXH_NB_WIN

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	151	4.78E-04	9	7.11%	931	2.95E-03	17	7.38%	967	3.07E-03
2	0.42%	55	1.73E-04	10	4.39%	575	1.82E-03	18	8.17%	1070	3.39E-03
3	0.41%	53	1.69E-04	11	4.66%	611	1.94E-03	19	5.70%	746	2.37E-03
4	0.26%	34	1.09E-04	12	5.89%	771	2.45E-03	20	4.27%	560	1.78E-03
5	0.50%	66	2.08E-04	13	6.15%	806	2.56E-03	21	3.26%	427	1.35E-03
6	0.90%	118	3.76E-04	14	6.04%	791	2.51E-03	22	3.30%	432	1.37E-03
7	3.79%	497	1.58E-03	15	7.01%	918	2.91E-03	23	2.46%	322	1.02E-03
8	7.76%	1016	3.22E-03	16	7.14%	934	2.96E-03	24	1.86%	244	7.74E-04
								Total		13,095	

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

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	151	4.85E-04	9	7.11%	931	2.99E-03	17	7.38%	967	3.11E-03
2	0.42%	55	1.76E-04	10	4.39%	575	1.85E-03	18	8.17%	1070	3.44E-03
3	0.41%	53	1.72E-04	11	4.66%	611	1.96E-03	19	5.70%	746	2.40E-03
4	0.26%	34	1.11E-04	12	5.89%	771	2.48E-03	20	4.27%	560	1.80E-03
5	0.50%	66	2.11E-04	13	6.15%	806	2.59E-03	21	3.26%	427	1.37E-03
6	0.90%	118	3.81E-04	14	6.04%	791	2.54E-03	22	3.30%	432	1.39E-03
7	3.79%	497	1.60E-03	15	7.01%	918	2.95E-03	23	2.46%	322	1.04E-03
8	7.76%	1016	3.27E-03	16	7.14%	934	3.00E-03	24	1.86%	244	7.85E-04
								Total		13,095	

1957 Pruneridge Ave, Santa Clara, CA - Off-Site Residential
Cumulative Operation - Winchester Blvd
TOG Evaporative Emissions Modeling - Roadway Links, Traffic Volumes, and TOG Evaporative Emissions
Year = 2024

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
TEVAP_NB_WIN	Winchester Blvd Northbound	NB	2	638.5	0.40	13.3	44	1.3	25	13,095
TEVAP_SB_WIN	Winchester Blvd Southbound	SB	2	647.2	0.40	13.3	44	1.3	25	13,095
									Total	26,189

Emission Factors - PM2.5 - Evaporative TOG

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Emissions per Vehicle per Hour (g/hour)	1.30355			
Emissions per Vehicle per Mile (g/VMT)	0.03724			

Emisson Factors from CT-EMFAC2017

2024 Hourly Traffic Volumes and TOG Evaporative Emissions - TEVAP_NB_WIN

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	151	6.19E-04	9	7.11%	931	3.82E-03	17	7.38%	967	3.97E-03
2	0.42%	55	2.24E-04	10	4.39%	575	2.36E-03	18	8.17%	1070	4.39E-03
3	0.41%	53	2.19E-04	11	4.66%	611	2.51E-03	19	5.70%	746	3.06E-03
4	0.26%	34	1.41E-04	12	5.89%	771	3.16E-03	20	4.27%	560	2.30E-03
5	0.50%	66	2.69E-04	13	6.15%	806	3.31E-03	21	3.26%	427	1.75E-03
6	0.90%	118	4.86E-04	14	6.04%	791	3.24E-03	22	3.30%	432	1.77E-03
7	3.79%	497	2.04E-03	15	7.01%	918	3.77E-03	23	2.46%	322	1.32E-03
8	7.76%	1016	4.17E-03	16	7.14%	934	3.83E-03	24	1.86%	244	1.00E-03
								Total		13,095	

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

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	151	6.27E-04	9	7.11%	931	3.87E-03	17	7.38%	967	4.02E-03
2	0.42%	55	2.27E-04	10	4.39%	575	2.39E-03	18	8.17%	1070	4.45E-03
3	0.41%	53	2.22E-04	11	4.66%	611	2.54E-03	19	5.70%	746	3.10E-03
4	0.26%	34	1.43E-04	12	5.89%	771	3.21E-03	20	4.27%	560	2.33E-03
5	0.50%	66	2.73E-04	13	6.15%	806	3.35E-03	21	3.26%	427	1.78E-03
6	0.90%	118	4.93E-04	14	6.04%	791	3.29E-03	22	3.30%	432	1.80E-03
7	3.79%	497	2.07E-03	15	7.01%	918	3.82E-03	23	2.46%	322	1.34E-03
8	7.76%	1016	4.23E-03	16	7.14%	934	3.89E-03	24	1.86%	244	1.02E-03
								Total		13,095	

1957 Pruneridge Ave, Santa Clara, CA - Off-Site Residential
Cumulative Operation - Winchester Blvd
Fugitive Road PM2.5 Modeling - Roadway Links, Traffic Volumes, and Fugitive Road PM2.5 Emissions
Year = **2024**

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
FUG_NB_WIN	Winchester Blvd Northbound	NB	2	638.5	0.40	13.3	44	1.3	25	13,095
FUG_SB_WIN	Winchester Blvd Southbound	SB	2	647.2	0.40	13.3	44	1.3	25	13,095
									Total	26,189

Emission Factors - Fugitive PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Tire Wear - Emissions per Vehicle (g/VMT)	0.00211			
Brake Wear - Emissions per Vehicle (g/VMT)	0.01681			
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_NB_WIN

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	151	5.61E-04	9	7.11%	931	3.46E-03	17	7.38%	967	3.60E-03
2	0.42%	55	2.03E-04	10	4.39%	575	2.14E-03	18	8.17%	1070	3.98E-03
3	0.41%	53	1.99E-04	11	4.66%	611	2.27E-03	19	5.70%	746	2.77E-03
4	0.26%	34	1.28E-04	12	5.89%	771	2.87E-03	20	4.27%	560	2.08E-03
5	0.50%	66	2.44E-04	13	6.15%	806	3.00E-03	21	3.26%	427	1.59E-03
6	0.90%	118	4.40E-04	14	6.04%	791	2.94E-03	22	3.30%	432	1.61E-03
7	3.79%	497	1.85E-03	15	7.01%	918	3.42E-03	23	2.46%	322	1.20E-03
8	7.76%	1016	3.78E-03	16	7.14%	934	3.48E-03	24	1.86%	244	9.08E-04
								Total		13,095	

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

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	151	5.69E-04	9	7.11%	931	3.51E-03	17	7.38%	967	3.65E-03
2	0.42%	55	2.06E-04	10	4.39%	575	2.17E-03	18	8.17%	1070	4.03E-03
3	0.41%	53	2.01E-04	11	4.66%	611	2.30E-03	19	5.70%	746	2.81E-03
4	0.26%	34	1.30E-04	12	5.89%	771	2.91E-03	20	4.27%	560	2.11E-03
5	0.50%	66	2.47E-04	13	6.15%	806	3.04E-03	21	3.26%	427	1.61E-03
6	0.90%	118	4.46E-04	14	6.04%	791	2.98E-03	22	3.30%	432	1.63E-03
7	3.79%	497	1.87E-03	15	7.01%	918	3.46E-03	23	2.46%	322	1.21E-03
8	7.76%	1016	3.83E-03	16	7.14%	934	3.52E-03	24	1.86%	244	9.20E-04
								Total		13,095	

1957 Pruneridge Ave, Santa Clara, CA - Pruneridge & W Hedding Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
at OnSite MEI Receptor (1.5 meter receptor height)

Emission Year	2024
Receptor Information	Onsite MEI receptor
Number of Receptors	44
Receptor Height	1.5 meters
Receptor Distances	At Onsite 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 Data Years	Concentration (µg/m3)*		
	DPM	Exhaust TOG	Evaporative TOG
2013-2017	0.0019	0.1729	0.2227

Construction Residential MEI PM2.5 Maximum Concentrations

Meteorological Data Years	PM2.5 Concentration (µg/m3)*		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013-2017	0.2111	0.2025	0.0087

1957 Pruneridge Ave, Santa Clara, CA - Winchester Blvd Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
at OnSite MEI Receptor (1.5 meter receptor height)

Emission Year	2024
Receptor Information	Onsite MEI receptor
Number of Receptors	44
Receptor Height	1.5 meters
Receptor Distances	At Onsite 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 Data Years	Concentration (µg/m3)*		
	DPM	Exhaust TOG	Evaporative TOG
2013-2017	0.0010	0.0599	0.0777

Construction Residential MEI PM2.5 Maximum Concentrations

Meteorological Data Years	PM2.5 Concentration (µg/m3)*		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013-2017	0.0735	0.0704	0.0030

1957 Pruneridge Ave, Santa Clara, CA - Pruneridge & W Hedding Traffic Cancer Risk
Impacts at Onsite 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)			TOTAL
Exposure Year	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	
0	0.25	-0.25 - 0*	2024	10	0.0019	0.1729	0.2227	0.026	0.013	0.0010	0.04
1	1	0 - 1	2024	10	0.0019	0.1729	0.2227	0.312	0.162	0.0123	0.49
2	1	1 - 2	2025	10	0.0019	0.1729	0.2227	0.312	0.162	0.0123	0.49
3	1	2 - 3	2026	3	0.0019	0.1729	0.2227	0.049	0.026	0.0019	0.08
4	1	3 - 4	2027	3	0.0019	0.1729	0.2227	0.049	0.026	0.0019	0.08
5	1	4 - 5	2028	3	0.0019	0.1729	0.2227	0.049	0.026	0.0019	0.08
6	1	5 - 6	2029	3	0.0019	0.1729	0.2227	0.049	0.026	0.0019	0.08
7	1	6 - 7	2030	3	0.0019	0.1729	0.2227	0.049	0.026	0.0019	0.08
8	1	7 - 8	2031	3	0.0019	0.1729	0.2227	0.049	0.026	0.0019	0.08
9	1	8 - 9	2032	3	0.0019	0.1729	0.2227	0.049	0.026	0.0019	0.08
10	1	9 - 10	2033	3	0.0019	0.1729	0.2227	0.049	0.026	0.0019	0.08
11	1	10 - 11	2034	3	0.0019	0.1729	0.2227	0.049	0.026	0.0019	0.08
12	1	11 - 12	2035	3	0.0019	0.1729	0.2227	0.049	0.026	0.0019	0.08
13	1	12 - 13	2036	3	0.0019	0.1729	0.2227	0.049	0.026	0.0019	0.08
14	1	13 - 14	2037	3	0.0019	0.1729	0.2227	0.049	0.026	0.0019	0.08
15	1	14 - 15	2038	3	0.0019	0.1729	0.2227	0.049	0.026	0.0019	0.08
16	1	15 - 16	2039	3	0.0019	0.1729	0.2227	0.049	0.026	0.0019	0.08
17	1	16-17	2040	1	0.0019	0.1729	0.2227	0.005	0.003	0.0002	0.01
18	1	17-18	2041	1	0.0019	0.1729	0.2227	0.005	0.003	0.0002	0.01
19	1	18-19	2042	1	0.0019	0.1729	0.2227	0.005	0.003	0.0002	0.01
20	1	19-20	2043	1	0.0019	0.1729	0.2227	0.005	0.003	0.0002	0.01
21	1	20-21	2044	1	0.0019	0.1729	0.2227	0.005	0.003	0.0002	0.01
22	1	21-22	2045	1	0.0019	0.1729	0.2227	0.005	0.003	0.0002	0.01
23	1	22-23	2046	1	0.0019	0.1729	0.2227	0.005	0.003	0.0002	0.01
24	1	23-24	2047	1	0.0019	0.1729	0.2227	0.005	0.003	0.0002	0.01
25	1	24-25	2048	1	0.0019	0.1729	0.2227	0.005	0.003	0.0002	0.01
26	1	25-26	2049	1	0.0019	0.1729	0.2227	0.005	0.003	0.0002	0.01
27	1	26-27	2050	1	0.0019	0.1729	0.2227	0.005	0.003	0.0002	0.01
28	1	27-28	2051	1	0.0019	0.1729	0.2227	0.005	0.003	0.0002	0.01
29	1	28-29	2052	1	0.0019	0.1729	0.2227	0.005	0.003	0.0002	0.01
30	1	29-30	2053	1	0.0019	0.1729	0.2227	0.005	0.003	0.0002	0.01
Total Increased Cancer Risk								1.41	0.735	0.056	**2.20**

* Third trimester of pregnancy

Maximum Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.00038	0.20	0.21

1957 Pruneridge Ave, Santa Clara, CA - Pruneridge & W Hedding Traffic Cancer Risk
Impacts at Onsite 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)			TOTAL
Exposure Year	**Exposure Duration (years)**	**Age**	**Year**	**Age Sensitivity Factor**	**DPM**	**Exhaust TOG**	**Evaporative TOG**	**DPM**	**Exhaust TOG**	**Evaporative TOG**	
0	0.25	-0.25 - 0*	2024	10	0.0010	0.0599	0.0777	0.013	0.005	0.0004	0.02
1	1	0 - 1	2024	10	0.0010	0.0599	0.0777	0.161	0.056	0.0043	0.22
2	1	1 - 2	2025	10	0.0010	0.0599	0.0777	0.161	0.056	0.0043	0.22
3	1	2 - 3	2026	3	0.0010	0.0599	0.0777	0.025	0.009	0.0007	0.03
4	1	3 - 4	2027	3	0.0010	0.0599	0.0777	0.025	0.009	0.0007	0.03
5	1	4 - 5	2028	3	0.0010	0.0599	0.0777	0.025	0.009	0.0007	0.03
6	1	5 - 6	2029	3	0.0010	0.0599	0.0777	0.025	0.009	0.0007	0.03
7	1	6 - 7	2030	3	0.0010	0.0599	0.0777	0.025	0.009	0.0007	0.03
8	1	7 - 8	2031	3	0.0010	0.0599	0.0777	0.025	0.009	0.0007	0.03
9	1	8 - 9	2032	3	0.0010	0.0599	0.0777	0.025	0.009	0.0007	0.03
10	1	9 - 10	2033	3	0.0010	0.0599	0.0777	0.025	0.009	0.0007	0.03
11	1	10 - 11	2034	3	0.0010	0.0599	0.0777	0.025	0.009	0.0007	0.03
12	1	11 - 12	2035	3	0.0010	0.0599	0.0777	0.025	0.009	0.0007	0.03
13	1	12 - 13	2036	3	0.0010	0.0599	0.0777	0.025	0.009	0.0007	0.03
14	1	13 - 14	2037	3	0.0010	0.0599	0.0777	0.025	0.009	0.0007	0.03
15	1	14 - 15	2038	3	0.0010	0.0599	0.0777	0.025	0.009	0.0007	0.03
16	1	15 - 16	2039	3	0.0010	0.0599	0.0777	0.025	0.009	0.0007	0.03
17	1	16-17	2040	1	0.0010	0.0599	0.0777	0.003	0.001	0.0001	0.00
18	1	17-18	2041	1	0.0010	0.0599	0.0777	0.003	0.001	0.0001	0.00
19	1	18-19	2042	1	0.0010	0.0599	0.0777	0.003	0.001	0.0001	0.00
20	1	19-20	2043	1	0.0010	0.0599	0.0777	0.003	0.001	0.0001	0.00
21	1	20-21	2044	1	0.0010	0.0599	0.0777	0.003	0.001	0.0001	0.00
22	1	21-22	2045	1	0.0010	0.0599	0.0777	0.003	0.001	0.0001	0.00
23	1	22-23	2046	1	0.0010	0.0599	0.0777	0.003	0.001	0.0001	0.00
24	1	23-24	2047	1	0.0010	0.0599	0.0777	0.003	0.001	0.0001	0.00
25	1	24-25	2048	1	0.0010	0.0599	0.0777	0.003	0.001	0.0001	0.00
26	1	25-26	2049	1	0.0010	0.0599	0.0777	0.003	0.001	0.0001	0.00
27	1	26-27	2050	1	0.0010	0.0599	0.0777	0.003	0.001	0.0001	0.00
28	1	27-28	2051	1	0.0010	0.0599	0.0777	0.003	0.001	0.0001	0.00
29	1	28-29	2052	1	0.0010	0.0599	0.0777	0.003	0.001	0.0001	0.00
30	1	29-30	2053	1	0.0010	0.0599	0.0777	0.003	0.001	0.0001	0.00
Total Increased Cancer Risk								0.73	0.255	0.019	**1.00**

Maximum Hazard Index	Fugitive PM2.5	Total PM2.5
0.00020	0.07	0.07

* Third trimester of pregnancy

Bay Area Air Quality Management District

Risk & Hazard Stationary Source Inquiry Form

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

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

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

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

Table A: Requester Contact Information

Date of Request	**10/12/2022**
Contact Name	Zachary Palm
Affiliation	Illingworth & Rodkin, Inc.
Phone	707-794-0400 x117
Email	zpalm@illingworthrodkin.com
Project Name	1957 Pruneridge Ave
Address	1957 Pruneridge Ave
City	Santa Clara
County	Santa Clara
Type (residential, commercial, mixed use, industrial, etc.)	Residential
Project Size (# of units or building square feet)	22-du
Comments:	

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

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

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

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

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

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

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

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

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

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

Table B: Google Earth data

Distance from Receptor (feet) or MEI[1]	Plant No.	Facility Name	Address	Cancer Risk[2]	Hazard Risk[2]	$PM_{2.5}$[2]	Source No.[3]	Type of Source[4]	Fuel Code[5]	Status/Comments
1000+	19079	Church of the Valley Retirement Homes Inc	390 N Winchester Blvd	1.50	0.00	0.00		Generator		2018 Dataset

Construction MEIs

Distance Adjustment Multiplier	Adjusted Cancer Risk Estimate	Adjusted Hazard Risk	Adjusted PM2.5
0.04	0.06	0.00002	0.0001

Project Site

Distance from Receptor (feet) or MEI[1]	FACID (Plant No.)	Distance Adjustment Multiplier	Adjusted Cancer Risk Estimate	Adjusted Hazard Risk	Adjusted PM2.5
685	19079	0.08	0.12	0.00003	0.0002

Footnotes:

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

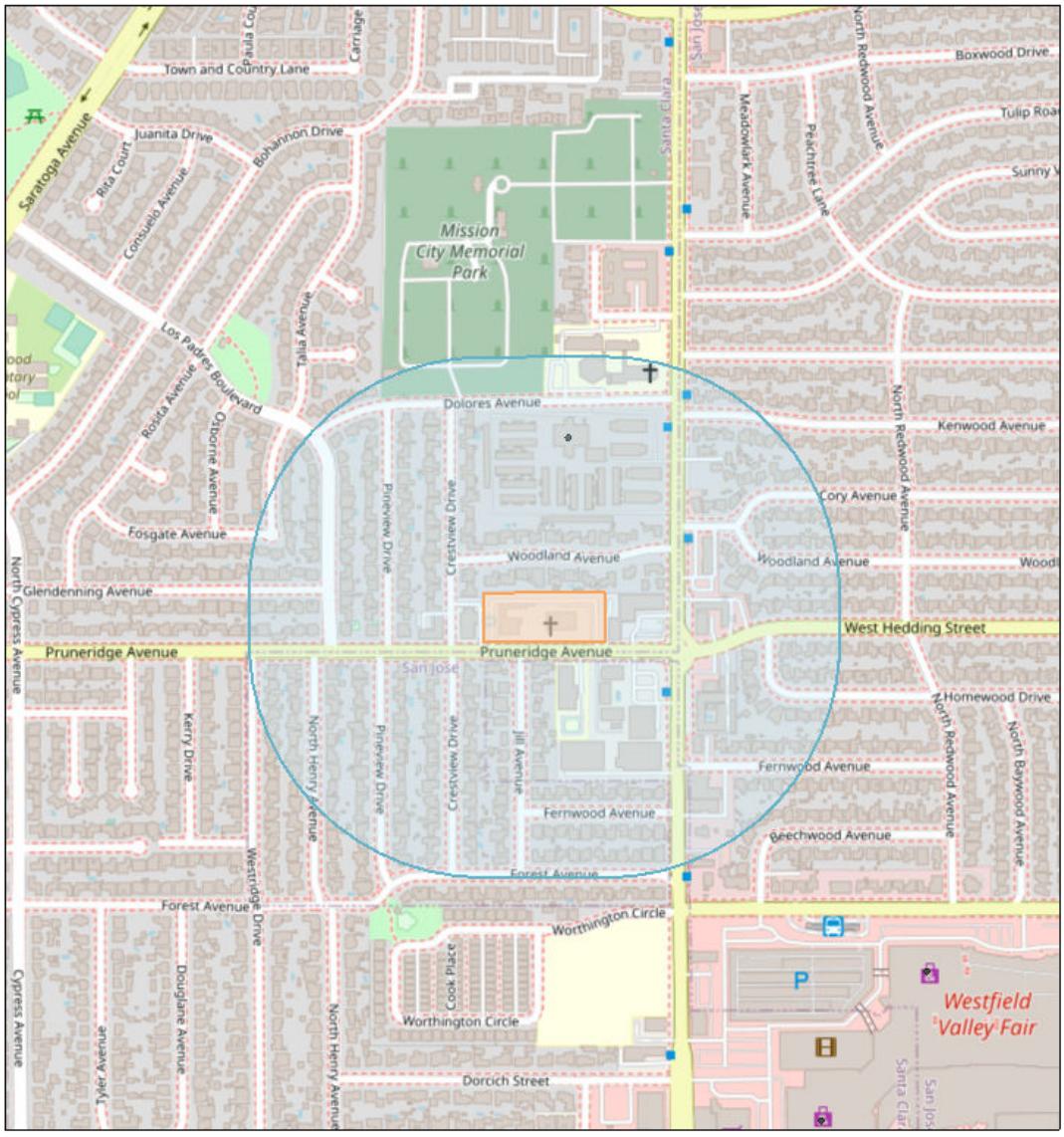
Date last updated:
03/13/2018

Screening Report

Area of Interest (AOI) Information

Area : 4,695,909.52 ft²

Oct 12 2022 13:48:03 Pacific Daylight Time



Summary

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

Permitted Stationary Sources

#	FacID	FacName	Address	City	Street
1	19079	Church of the Valley Retirement Homes Inc	390 N Winchester Blvd	Santa Clara	CA

#	Zip	County	Latitude	Longitude	Details
1	95,050.00	Santa Clara	37.33	-121.95	Generator

#	NAICS	Sector	Sub_Sector	Industry	ChronicHI
1	623,311.00	Health Care and Social Assistance	Nursing and Residential Care Facilities	Continuing Care Retirement Communities	0.0004022

#	PM2_5	Cancer Risk {expression/expr0}	Chronic Hazard Index {expression/expr1}	PM2.5 {expression/expr2}	Count
1	0.0018844	1.497	0	0.002	1

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