Appendix A

Air Quality Assessment

1655 LINCOLN AVENUE SUBDIVISION CONSTRUCTION COMMUNITY HEALTH RISK ASSESSMENT

San José, California

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Introduction

The purpose of this report is to address the potential health risk impacts associated with the construction of a proposed residential development located at 1655 Lincoln Avenue in San José, California. The air quality impacts from this project would be associated with demolition of the existing land use 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 project site is occupied by one single-family home on a 1.0-acre lot. The project proposes to demolish the existing single-family home to construct a five-lot subdivision and private street totaling five single-family homes. Each subdivided lot would total 3,200 square feet (sf). Construction is expected to begin in November of 2023 and be completed by April of 2024.

Setting

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

Air Pollutants of Concern

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

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

San José Envision 2040 General Plan

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

Applicable Goals – Air Pollutant Emission Reduction
Goal MS-10 Minimize emissions from new development.

Applicable Policies – Air Pollutant Emission Reduction

MS-10.1 Assess projected air emissions from new development in conformance with the Bay Area Air Quality Management District (BAAQMD) CEQA Guidelines and relative to state and federal standards. Identify and implement feasible air emission reduction measures.

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

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

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

Applicable Goals – Toxic Air Contaminants

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

Applicable Policies – Toxic Air Contaminants

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

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

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

Actions – Toxic Air Contaminants

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

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

Applicable Goals – Construction Air Emissions

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

Applicable Policies – Construction Air Emissions

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

Applicable Actions – Construction Air Emissions

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

Sensitive Receptors

There are groups of people more affected by air pollution than others. CARB has identified the following persons who are most likely to be affected by air pollution: children under 16, the elderly over 65, athletes, and people with cardiovascular and chronic respiratory diseases. These groups are classified as sensitive receptors. Locations that may contain a high concentration of these sensitive population groups include residential areas, hospitals, daycare facilities, elder care facilities, and elementary schools. For cancer risk assessments, children are the most sensitive receptors, since they are more susceptible to cancer causing TACs. Residential locations are assumed to include infants and small children. The closest sensitive receptors to the project site are the residents in the single-family housing surrounding the project site. 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 $PM_{2.5}$.[5] This assessment included dispersion modeling to predict the offsite and onsite concentrations resulting from project construction, so that lifetime cancer risks and non-cancer health effects could be evaluated. The methodology for computing health risks impacts is contained in *Attachment 1*.

Construction Period Emissions

The California Emissions Estimator Model (CalEEMod) 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.[6] 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.

[5] DPM is identified by California as a toxic air contaminant due to the potential to cause cancer.
[6] 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
Single Family Housing	5	Dwelling Unit	30,467	1
Other Asphalt Surfaces	13.09	1,000-sf	13,086	

Construction Inputs

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

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 based on CalEEMod defaults. The construction schedule assumed that the earliest possible start date would be November 2023 and would be completed over a period of approximately five months, or 123 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, estimate of soil material imported and/or exported to the site, and the estimate of concrete and asphalt truck trips. CalEEMod provides daily estimates of worker and vendor trips for each applicable phase. The total trips for worker and vendor trips were computed by multiplying the daily trip rate by the number of days in that phase. Haul trips for demolition and soil import/export were estimated by CalEEMod using the estimated demolition and grading volumes provided.[7] 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 worker trips are assumed to be comprised of light-duty autos (EMFAC category LDA) and light duty trucks (EMFAC category LDT1and 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

[7] CalEEMod assumes each truck can carry 10 tons per load or 10 cubic yards of material.

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 2024 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	100	-	28	Est. 2,900-sf of existing building demolition and est. 1,700-sf of pavement demolition. CalEEMod default worker trips
Site Preparation	5	-	-	CalEEMod default worker trips.
Grading	16	-	250	Est. 1,000-cy soil export and Est. 1,000-cy soil import. CalEEMod default worker trips.
Trenching	10	-	-	CalEEMod default worker trips.
Building Construction	700	300	114	Est. 57 concrete-truck round trips. CalEEMod default worker and vendor trips.
Architectural Coating	5	-	-	CalEEMod default worker trips.
Paving	90	-	250	Est. 125 asphalt truck round trips. CalEEMod default worker trips.

Notes: [1] Based on 2024 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 (123 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)				
2023-2024	0.26	0.39	0.02	0.02
Average Daily Construction Emissions (pounds/day)				
2023-2024 (123 construction workdays)	4.16	6.41	0.31	0.28
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: Include measures to control dust and exhaust 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.

Community 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 (35 pounds). Uncontrolled fugitive dust ($PM_{2.5}$) emissions were calculated by CalEEMod as less than 0.003 tons (6 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.[8,9] 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.[10] The release height incorporates both the physical release height from the construction equipment (i.e., the height of the exhaust pipe) and plume rise after it leaves the exhaust pipe. Plume rise is due to both the high temperature of the exhaust and the high velocity of the exhaust gas. It should be noted that when modeling an area source, plume rise is not calculated by the AERMOD dispersion model as it would do for a point source (exhaust stack). Therefore, the release height from an area source used to represent emissions from sources with plume rise, such as construction equipment, should be based on the height the exhaust plume is expected to achieve, not just the height of the top of the exhaust pipe.

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

AERMOD Inputs and Meteorological Data

The modeling used a five-year data set (2013 - 2017) of hourly meteorological data from the San Jose Airport prepared for use with the AERMOD model by BAAQMD. Construction emissions were modeled as occurring daily between 8:00 a.m. to 5:00 p.m., when the majority of construction activity is expected to occur. Annual DPM and $PM_{2.5}$ concentrations from

[8] 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

[9] 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

[10] 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

construction activities during the 2023-2024 period were calculated using the model. DPM and $PM_{2.5}$ concentrations were calculated at nearby sensitive receptors. Receptor heights of 5 feet (1.5 meters) were used to represent the breathing height on the first floor of nearby single-family residences.[11]

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

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

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.

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

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 MEIs were located at two different receptors. The cancer risk MEI was located on the first floor of an adjacent single-family home south of the project site and the annual $PM_{2.5}$ concentration MEI was located on the first floor of another single-family home south of the project site. Table 5 summarizes the maximum cancer risks, $PM_{2.5}$ concentrations, and HI for project's construction activities at the MEIs. *Attachment 4* to this report includes the emission calculations used for the construction area source modeling and the cancer risk calculations.

As shown in Table 5, the maximum cancer risks from uncontrolled (i.e., unmitigated) construction activities at the cancer risk MEI location would exceed the BAAQMD single-source significance threshold. However, with the incorporation of the *Mitigation Measure AQ-1 and AQ-2*, the mitigated risk values would reduce emissions such that the cancer risk associated with construction would no longer exceed the BAAQMD single-source significance threshold. The unmitigated annual $PM_{2.5}$ concentration and HI at the MEIs do not exceed their respective BAAQMD single-source significance thresholds.

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

Source		Cancer Risk[1] (per million)	Annual $PM_{2.5}$[1] ($\mu g/m^3$)	Hazard Index
Project Construction	Unmitigated	**12.15 (infant)**	0.09	0.01
	Mitigated[2]	0.83 (infant)	0.02	<0.01
	BAAQMD Single-Source Threshold	***10***	***0.3***	***1.0***
Exceed Threshold?	Unmitigated	***Yes***	*No*	*No*
	Mitigated[2]	*No*	*No*	*No*

Notes: [1] Maximum cancer risk and $PM_{2.5}$ concentration occur at different receptor locations.
[2] Construction equipment with Tier 4 interim engines and BMPs as Mitigation Measures.

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

Implement a feasible plan to reduce DPM emissions by 50 percent such that increased cancer risk and annual $PM_{2.5}$ concentrations from construction would be reduced below TAC significance levels as follows:

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

a. If use of Tier 4 equipment is not available, alternatively use equipment that meets U.S. EPA emission standards for Tier 3 engines and include particulate matter emissions control equivalent to CARB Level 3 verifiable diesel emission control devices that altogether achieve a 50 percent reduction in particulate matter exhaust in comparison to uncontrolled equipment; alternatively (or in combination).

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

2. Alternatively, the applicant may develop another construction operations plan demonstrating that the construction equipment used on-site would achieve a reduction in construction diesel particulate matter emissions by 50 percent or greater. Elements of the plan could include a combination of some of the following measures:
   - Implementation of No. 1 above to use Tier 4 or alternatively fueled equipment,
   - Installation of electric power lines during early construction phases to avoid use of diesel generators and compressors,
   - Use of electrically-powered equipment,
   - Forklifts and aerial lifts used for exterior and interior building construction shall be electric or propane/natural gas powered,
   - Change in construction build-out plans to lengthen phases, and
   - Implementation of different building techniques that result in less diesel equipment usage.

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

Effectiveness of Mitigation Measure AQ-1 and AQ-2

CalEEMod was used to compute emissions associated with this mitigation measure assuming that all equipment met U.S. EPA Tier 4 Interim engine standards and BAAQMD best management practices for construction were included. With these implemented, the project's construction cancer risk levels (assuming infant exposure) would be reduced by 93 percent to 0.83 chances per million. Assuming a level of mitigation that achieves a 50-percent reduction in the project's DPM emissions, increased cancer risks would be reduced to below 10 chances per million. As a result, the project's construction risks would be reduced below the BAAQMD single-source thresholds.

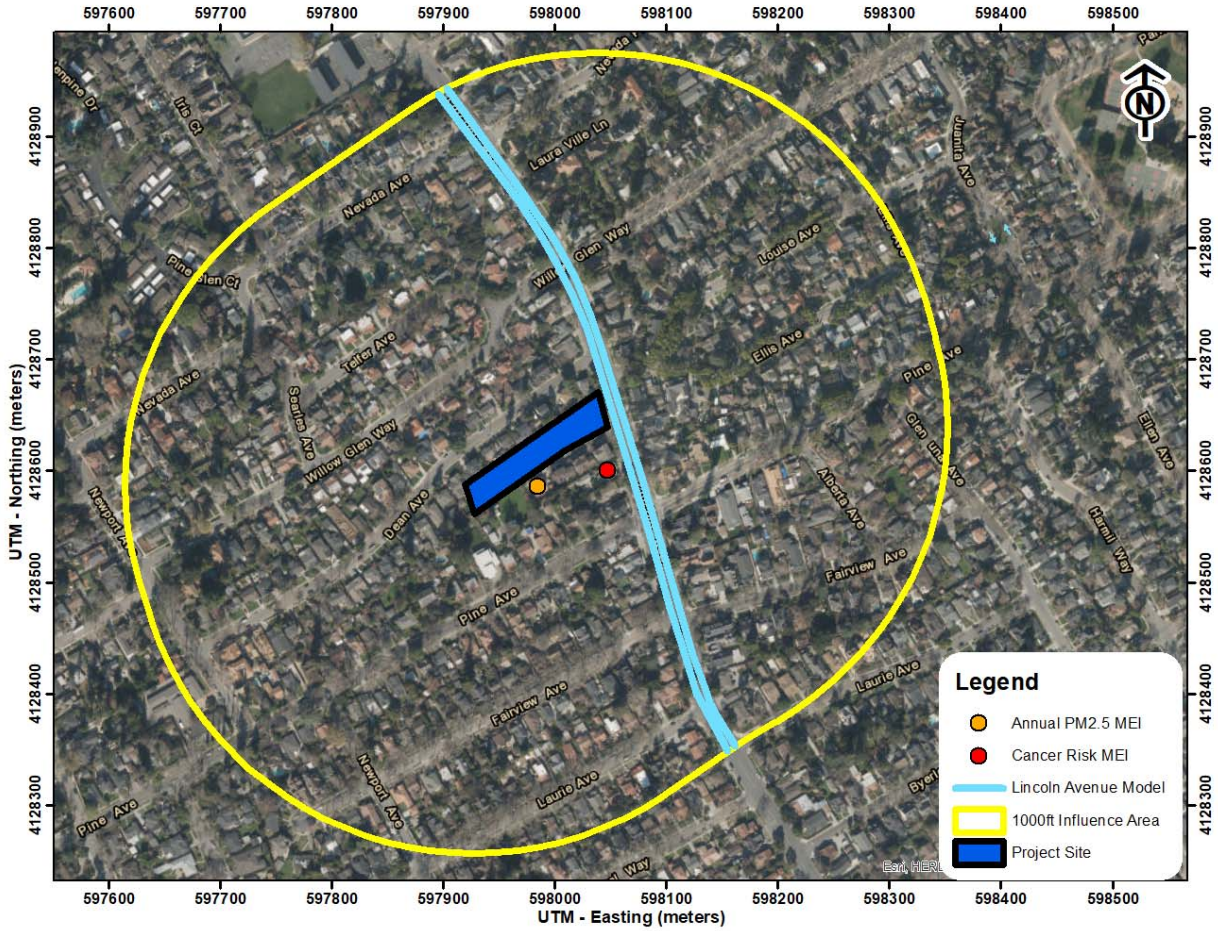
Cumulative Health Risks of all TAC Sources at the Off-Site Project MEIs

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 San Jose indicated that one roadway within the influence area, Lincoln Avenue, would have traffic exceeding 10,000

vehicles per day.[12] 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 no stationary sources with the potential to affect the project site and MEIs. Figure 2 shows the region included within the influence area and the off-site MEIs. Health risk impacts from these sources upon the MEIs are reported in Table 6. Details of the modeling and health risk calculations are included in *Attachment 5.*

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



Local Roadways – Lincoln Avenue

A refined analysis of potential health impacts from vehicle traffic on Lincoln 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.

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

The project site is adjacent to Lincoln Avenue and the closest MEI to the roadway (the cancer risk MEI) is located adjacent to Lincoln Avenue. A review of the ADT information provided by City of San Jose indicates this portion of Lincoln Avenue has an estimated weekday traffic volume of approximately 15,981 vehicles per day based on counts collected in 2006.[13] Assuming a 1% per year increase, the estimated ADT on Lincoln Avenue in 2023 was 18,698 vehicles.

Traffic Emissions Modeling

This analysis involved the development of DPM, organic TACs, and $PM_{2.5}$ emissions for traffic on Lincoln Avenue 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),[14] 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 MEIs and project site, 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,[15] which were then applied to the ADT volumes to obtain estimated hourly traffic volumes and emissions for the roadway. An average travel speed of 35 miles per hour (mph) on Lincoln Avenue was used for all hours of the day based on posted speed limit signs on the roadway.

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[13] https://www.arcgis.com/home/item.html?id=709ef12897bc42aa8e3d87f4505641c0

[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

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

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.[16] TAC and $PM_{2.5}$ emissions from traffic on Lincoln Avenue 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 MEIs with receptor heights of 5 feet (1.5 meters) to represent the breathing heights on the first floor of residents in the single-family units.

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 Lincoln Avenue on the off-site MEIs 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 Lincoln Avenue traffic are provided in *Attachment 5*.

BAAQMD Permitted Stationary Sources

There were no identified sources within the project's 1,000-foot influence area found using the BAAQMD's *Permitted Stationary Sources 2020* geographic information system (GIS) map website.[17] This mapping tool identifies the location of nearby stationary sources and their estimated risk and hazard impacts.

Summary of Cumulative Health Risk Impact at Off-Site MEI

Table 6 reports both the project and cumulative community risk impacts at the sensitive receptors most affected by project construction and operation (i.e., the project MEIs). The project would have an exceedance with respect to community risk caused by project construction since the unmitigated maximum cancer risk exceeds the BAAQMD single-source thresholds. With the implementation of *Mitigation Measure AQ-1 and AQ-2*, the project's cancer risk would be lowered to a level below the single-source thresholds. The cancer risk, annual $PM_{2.5}$ concentration, and hazard index, unmitigated or mitigated, do no exceed the BAAQMD cumulative-source thresholds.

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

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	**12.15 (infant)**	0.09	0.01
	Mitigated	0.83 (infant)	0.02	<0.01
BAAQMD Single-Source Threshold		***10***	***0.3***	***1.0***
Exceed Threshold?	Unmitigated	***Yes***	*No*	*No*
	Mitigated	*No*	*No*	*No*
Cumulative Operational Sources				
Lincoln Avenue, ADT 18,698		2.37	0.05	<0.01
Combined Sources	Unmitigated	14.52	0.14	<0.02
	Mitigated	3.20	0.07	<0.02
BAAQMD Cumulative Source Threshold		***100***	***0.8***	***10.0***
Exceed Threshold?	Unmitigated	*No*	*No*	*No*
	Mitigated	*No*	*No*	*No*

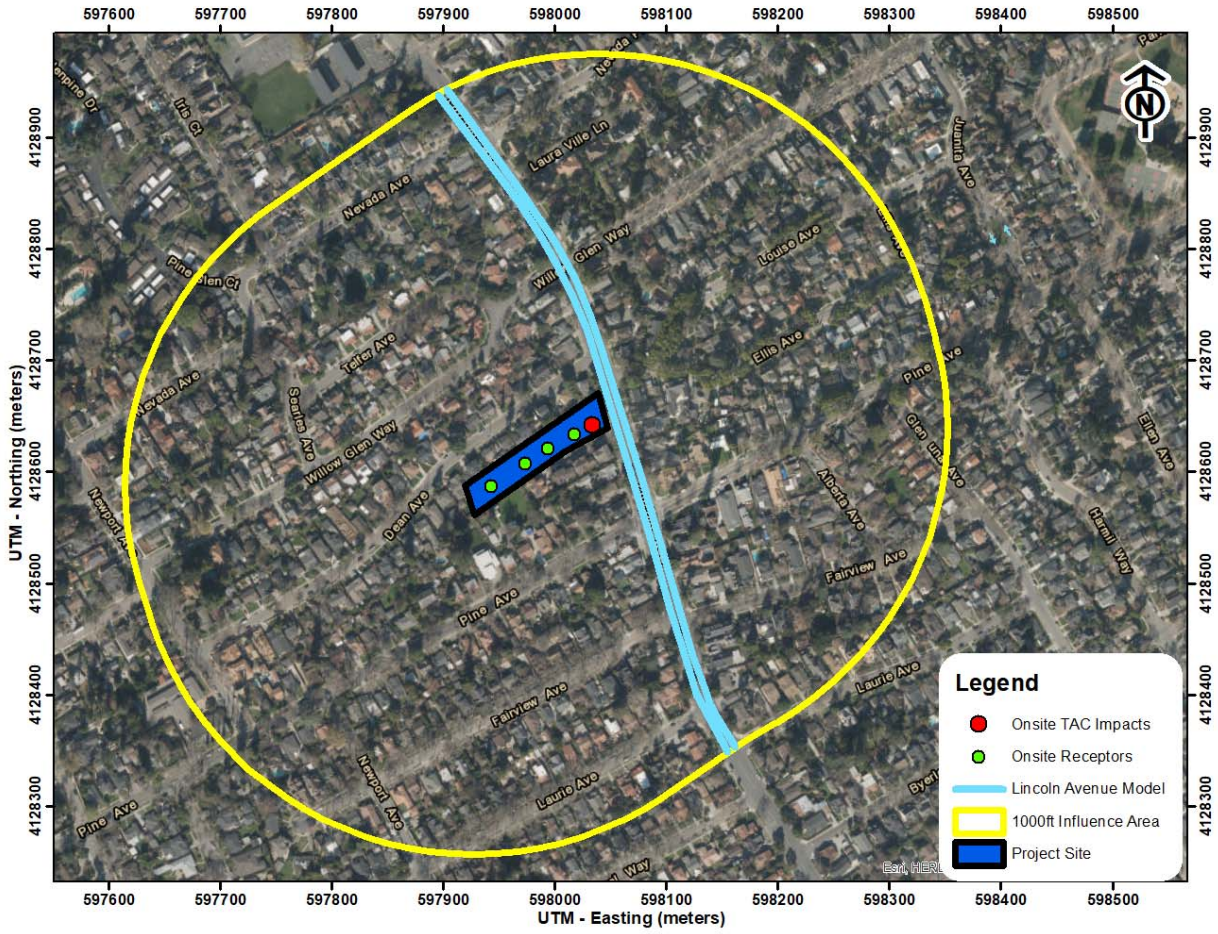
Non-CEQA: On-site Community Risk Assessment for TAC Sources - New Project Residences

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

A health risk assessment was completed to assess the impact that the existing TAC sources would have on the new proposed sensitive receptors (residents) introduced by the project. The same existing TAC sources identified above in Table 6 were used.[18] 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 5* includes risk calculations for TAC source impacts upon the proposed on-site sensitive receptors.

[18] 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 and Location of Maximum TAC Impacts



Local Roadways – Lincoln Avenue

The roadway analysis for the project residents was conducted in the same manner as described above for the off-site MEIs. However, year 2025 (operational year) emission factors were conservatively assumed as being representative of future conditions, instead of 2023 (construction year) which resulted in an increased ADT of 19,018 vehicles. On-site receptors were placed throughout the project site representing each of the proposed townhouses. Roadway impacts were modeled at receptor heights of 5 feet (1.5 meters) representing sensitive receptors on the first floor of each single-family home. The portion of the 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 Lincoln Avenue occurred at a receptor on the first floor of a single-family

home closest to Lincoln Avenue. Health risks associated with TAC emissions form the roadway are greatest closest to the roadway and decrease with distance. The roadway health risk impacts to the on-site MEI are shown in Table 7. Details of the emission calculations, dispersion modeling, and cancer risk calculations are contained in *Attachment 5.*

Stationary Sources

As mentioned above, there are no nearby stationary sources within 1,000 feet of the project site.

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, none of the risk values exceed BAAQMD single-source or cumulative-source thresholds.

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
Lincoln Avenue, ADT 19,018	2.20	0.20	<0.01
BAAQMD Single-Source Threshold	***10***	***0.3***	***1.0***
Exceed Threshold?	*No*	*No*	*No*
Cumulative Total	2.20	0.20	<0.01
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.[19] 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.[20] 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.[21] 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

[19] 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.
[20] CARB, 2015. *Risk Management Guidance for Stationary Sources of Air Toxics*. July 23.
[21] 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: 1655 Lincoln Ave DEFAULTS

Complete ALL Portions in Yellow

See Equipment Type TAB for type, horsepower and load factor

Project Size
5 Dwelling Units
1 total project acres disturbed
30,467 s.f. residential
s.f. retail
s.f. office/commercial
13,086 s.f. other, specify: Private street
s.f. parking garage ____ spaces
s.f. parking lot ____ spaces
Construction Days (i.e, M-F) ____ to ____
Construction Hours ____ am to ____ pm

Pile Driving? Y/N?

Project include on-site GENERATOR OR FIRE PUMP during project OPERATION (not construction)? Y/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:**	**11/1/2023**	**Total phase:**	**10**			**Overall Import/Export Volumes**
		End Date:	**11/14/2023**					
1	Concrete/Industrial Saws	81	0.73	8	10	8	4730	**Demolition Volume**
	Excavators	158	0.38			0	0	Square footage of buildings to be demolished
1	Rubber-Tired Dozers	247	0.4	1	10	1	988	(*or* total tons to be hauled)
2	Tractors/Loaders/Backhoes	97	0.37	6	10	6	4307	**2,900** square feet *or*
	Other Equipment?							**?** Hauling volume (tons)
								Any pavement demolished and hauled? **1,700 sf**
	Site Preparation	**Start Date:**	**11/15/2023**	**Total phase:**	**1**			
		End Date:	**11/15/2023**					
1	Graders	187	0.41	8	1	8	613	
1	Rubber Tired Dozers	247	0.4	8	1	8	790	
	Tractors/Loaders/Backhoes	97	0.37			0	0	
	Other Equipment?							
	Grading / Excavation	**Start Date:**	**11/16/2023**	**Total phase:**	**2**			
		End Date:	**11/17/2023**					**Soil Hauling Volume**
	Excavators	158	0.38			0	0	Export volume = **1000** cubic yards?
1	Graders	187	0.41	6	2	6	920	Import volume = **1000** cubic yards?
1	Rubber Tired Dozers	247	0.4	6	2	6	1186	
	Concrete/Industrial Saws	81	0.73			0	0	
1	Tractors/Loaders/Backhoes	97	0.37	7	2	7	502	
	Other Equipment?							
	Trenching/Foundation	**Start Date:**	**11/16/2023**	**Total phase:**	**2**			
		End Date:	**11/17/2023**					
1	Tractor/Loader/Backhoe	97	0.37	8	2	8	574	
1	Excavators	158	0.38	8	2	8	961	
	Other Equipment?							
	Building - Exterior	**Start Date:**	**11/18/2023**	**Total phase:**	**100**			**Cement Trucks? 57 Total Round-Trips**
		End Date:	**4/5/2024**					
1	Cranes	231	0.29	4	100	4	26796	Electric? (Y/N) Otherwise assumed diesel
2	Forklifts	89	0.2	6	100	6	21360	Liquid Propane (LPG)? (Y/N) Otherwise Assumed diesel
	Generator Sets	84	0.74			0	0	Or temporary line power? (Y/N)
2	Tractors/Loaders/Backhoes	97	0.37	8	100	8	57424	
	Welders	46	0.45			0	0	
	Other Equipment?							
	Building - Interior/Architectural Coating	**Start Date:**	**4/6/2024**	**Total phase:**	**5**			
		End Date:	**4/12/2024**					
1	Air Compressors	78	0.48	6	5	6	1123	
	Aerial Lift	62	0.31			0	0	
	Other Equipment?							
	Paving	**Start Date:**	**4/13/2024**	**Total phase:**	**5**			
		Start Date:	**4/19/2024**					
4	Cement and Mortar Mixers	9	0.56	6	5	6	605	
1	Pavers	130	0.42	7	5	7	1911	**Asphalt? ___ cubic yards or 125 round trips?**
	Paving Equipment	132	0.36			0	0	
1	Rollers	80	0.38	7	5	7	1064	
1	Tractors/Loaders/Backhoes	97	0.37	7	5	7	1256	
	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							
2023-2024	0.25	0.37	0.02	0.02	0.003	61.17	
EMFAC							
2023-2024	0.002	0.03	0.002	0.001	0.001	20.90	
Total Construction Emissions by Year							
2023-2024	0.26	0.39	0.02	0.02		82.08	
	Total Construction Emissions						
Tons	0.26	0.39	0.02	0.02		82.08	
Pounds/Workdays	*Average Daily Emissions*					Workdays	
2023-2024	4.16	6.41	0.31	0.28			**123**
Threshold - lbs/day	**54.0**	**54.0**	**82.0**	**54.0**			
	Total Construction Emissions						
Pounds	4.16	6.41	0.31	0.28		0.00	
Average	4.16	6.41	0.31	0.28		0.00	123.00
Threshold - lbs/day	**54.0**	**54.0**	**82.0**	**54.0**			

Mitigated Construction Criteria Air Pollutants							
Mitigated	ROG	NOX	PM10 Exhaust	PM2.5 Exhaust	M2.5 Fugitiv	**CO2e**	
Year	Tons					MT	
Construction Equipment							
2023-2024			0.001		0.001		
EMFAC							
2023-2024							
Total Construction Emissions by Year							
2023-2024	0.00	0.00	0.00	0.00	0.00	0.00	
	Total Construction Emissions						
Tons	0.00	0.00	0.00	0.00		0.00	

Pavement demo

	sq in	sq ft	Cft	CY	Deliveries	Trips
Concrete		1700	1700	62.96296	7.555556	15
Asphalt		0	0	0	0	0
Asphalt Demo		0	0	0	0	0

Cement

	sq in	sq ft	Cft	CY	Deliveries	Trips
Concrete		12750	12750	472.2222	56.66667	113
Asphalt		0	0	0	0	0
Asphalt Demo		0	0	0	0	0

Asphalt paving

	sq in	sq ft	Cft	CY	Deliveries	Trips
Concrete		28000	28000	1037.037	124.4444	249
Asphalt		0	0	0	0	0
Asphalt Demo		0	0	0	0	0

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

1655 Lincoln Ave, San Jose

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1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	5.00	Dwelling Unit	1.00	30,467.00	14
Other Asphalt Surfaces	13.09	1000sqft	0.00	13,086.00	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	San Jose Clean Energy				
CO2 Intensity (lb/MWhr)	178	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

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

Land Use - Defaults - square feet provided by Gerry's Plan sheet. Total lot acreage provided by project description recieved via email.

Construction Phase - Defaults based on Nov 2023 start date provided by applicant.

Off-road Equipment - Defaults

Off-road Equipment - Defaults

Off-road Equipment - Defaults

Off-road Equipment - Defaults

Off-road Equipment - Defaults

Off-road Equipment - Defaults

Off-road Equipment - Defaults

Grading - Using defaults. Estimated grading = 1,000-cy imported, 1,000-cy exported.

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Demolition - Estimated existing building square footage = 1300+1600 = 2.900 square feet.

Trips and VMT - EMFAC2021 adjustments 0 trips, demo = 1,700-sf estimated pavement demo, building const = estimated 57 total concrete truck round trips, paving = est 125 asphalt truck round trips

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	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	8.00
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
tblConstructionPhase	PhaseEndDate	4/19/2024	4/12/2024
tblConstructionPhase	PhaseEndDate	4/12/2024	4/19/2024

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstructionPhase	PhaseStartDate	4/13/2024	4/6/2024
tblConstructionPhase	PhaseStartDate	4/6/2024	4/13/2024
tblGrading	MaterialExported	0.00	1,000.00
tblGrading	MaterialImported	0.00	1,000.00
tblLandUse	LandUseSquareFeet	9,000.00	30,467.00
tblLandUse	LotAcreage	1.62	1.00
tblLandUse	LotAcreage	0.30	0.00
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblProjectCharacteristics	CO2IntensityFactor	807.98	178
tblTripsAndVMT	HaulingTripNumber	13.00	0.00
tblTripsAndVMT	HaulingTripNumber	250.00	0.00
tblTripsAndVMT	VendorTripNumber	3.00	0.00
tblTripsAndVMT	WorkerTripNumber	10.00	0.00
tblTripsAndVMT	WorkerTripNumber	5.00	0.00
tblTripsAndVMT	WorkerTripNumber	8.00	0.00
tblTripsAndVMT	WorkerTripNumber	5.00	0.00
tblTripsAndVMT	WorkerTripNumber	7.00	0.00
tblTripsAndVMT	WorkerTripNumber	1.00	0.00
tblTripsAndVMT	WorkerTripNumber	18.00	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

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Year	tons/yr										MT/yr					
2023	0.0143	0.1415	0.1564	2.6000e-004	7.1200e-003	6.90E-03	0.0140	2.83E-03	6.40E-03	9.2300e-003	0.0000	22.6332	22.6332	6.5800e-003	0.0000	22.7978
2024	0.24	0.2252	0.2695	4.4000e-004	0.0000	0.0106	0.0106	0.0000	9.81E-03	9.8100e-003	0.0000	38.0733	38.0733	0.0121	0.0000	38.375
Maximum	**0.2400**	**0.2252**	**0.2695**	**4.4000e-004**	**7.1200e-003**	**0.0106**	**0.0140**	**2.8300e-003**	**9.8100e-003**	**9.8100e-003**	**0.0000**	**38.0733**	**38.0733**	**0.0121**	**0.0000**	**38.3750**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	5.2300e-003	0.0993	0.1764	2.6000e-004	3.2000e-003	4.10E-04	3.6200e-003	1.27E-03	4.1000e-004	1.6900e-003	0.0000	22.6332	22.6332	6.5800e-003	0.0000	22.7978
2024	0.2261	0.1694	0.3005	4.4000e-004	0.0000	7.00E-04	7.0000e-004	0.0000	7.0000e-004	7.0000e-004	0.0000	38.0733	38.0733	0.0121	0.0000	38.3750
Maximum	**0.2261**	**0.1694**	**0.3005**	**4.4000e-004**	**3.2000e-003**	**7.0000e-004**	**3.6200e-003**	**1.2700e-003**	**7.0000e-004**	**1.6900e-003**	**0.0000**	**38.0733**	**38.0733**	**0.0121**	**0.0000**	**38.3750**

	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	**9.01**	**26.74**	**-11.98**	**0.00**	**55.06**	**93.67**	**82.48**	**55.12**	**93.15**	**87.45**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	11-1-2023	1-31-2024	0.2284	0.1573
2	2-1-2024	4-30-2024	0.3877	0.3399
		Highest	0.3877	0.3399

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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	11/1/2023	11/14/2023	5	10	
2	Site Preparation	Site Preparation	11/15/2023	11/15/2023	5	1	
3	Grading	Grading	11/16/2023	11/17/2023	5	2	
4	Trenching	Trenching	11/16/2023	11/17/2023	5	2	
5	Building Construction	Building Construction	11/18/2023	4/5/2024	5	100	
6	Architectural Coating	Architectural Coating	4/6/2024	4/12/2024	5	5	
7	Paving	Paving	4/13/2024	4/19/2024	5	5	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0

Residential Indoor: 61,696; Residential Outdoor: 20,565; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 785 (Architectural

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Trenching	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	6.00	187	0.41
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29

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Building Construction	Forklifts	2	6.00	89	0.20
Trenching	Excavators	1	8.00	158	0.38
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	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	2	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

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule 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					
Fugitive Dust					1.4300e-003	0.0000	1.4300e-003	2.2000e-004	0.0000	2.2000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.2300e-003	0.0289	0.0370	6.0000e-005		1.4100e-003	1.4100e-003		1.3500e-003	1.3500e-003	0.0000	5.2091	5.2091	9.5000e-004	0.0000	5.2328
Total	**3.2300e-003**	**0.0289**	**0.0370**	**6.0000e-005**	**1.4300e-003**	**1.4100e-003**	**2.8400e-003**	**2.2000e-004**	**1.3500e-003**	**1.5700e-003**	**0.0000**	**5.2091**	**5.2091**	**9.5000e-004**	**0.0000**	**5.2328**

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

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Category	tons/yr										MT/yr					
Fugitive Dust					6.4000e-004	0.0000	6.4000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.1800e-003	0.0227	0.0397	6.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	5.2091	5.2091	9.5000e-004	0.0000	5.2328
Total	**1.1800e-003**	**0.0227**	**0.0397**	**6.0000e-005**	**6.4000e-004**	**9.0000e-005**	**7.3000e-004**	**1.0000e-004**	**9.0000e-005**	**1.9000e-004**	**0.0000**	**5.2091**	**5.2091**	**9.5000e-004**	**0.0000**	**5.2328**

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					

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Fugitive Dust					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.7000e-004	3.0900e-003	1.9600e-003	0.0000		1.1000e-004	1.1000e-004		1.0000e-004	1.0000e-004	0.0000	0.4275	0.4275	1.4000e-004	0.0000	0.4309
Total	**2.7000e-004**	**3.0900e-003**	**1.9600e-003**	**0.0000**	**2.7000e-004**	**1.1000e-004**	**3.8000e-004**	**3.0000e-005**	**1.0000e-004**	**1.3000e-004**	**0.0000**	**0.4275**	**0.4275**	**1.4000e-004**	**0.0000**	**0.4309**

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					1.2000e-004	0.0000	1.2000e-004	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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Off-Road	9.0000e-005	1.5500e-003	2.9300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.4275	0.4275	1.4000e-004	0.0000	0.4309
Total	**9.0000e-005**	**1.5500e-003**	**2.9300e-003**	**0.0000**	**1.2000e-004**	**1.0000e-005**	**1.3000e-004**	**1.0000e-005**	**1.0000e-005**	**2.0000e-005**	**0.0000**	**0.4275**	**0.4275**	**1.4000e-004**	**0.0000**	**0.4309**

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					5.4300e-003	0.0000	5.4300e-003	2.5900e-003	0.0000	2.5900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.3000e-004	0.0102	5.5500e-003	1.0000e-005		4.2000e-004	4.2000e-004		3.9000e-004	3.9000e-004	0.0000	1.2381	1.2381	4.0000e-004	0.0000	1.2481

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Total	**9.3000e-004**	**0.0102**	**5.5500e-003**	**1.0000e-005**	**5.4300e-003**	**4.2000e-004**	**5.8500e-003**	**2.5900e-003**	**3.9000e-004**	**2.9800e-003**	**0.0000**	**1.2381**	**1.2381**	**4.0000e-004**	**0.0000**	**1.2481**

Unmitigated Construction Off-Site

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.4400e-003	0.0000	2.4400e-003	1.1600e-003	0.0000	1.1600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.5000e-004	4.1800e-003	8.0800e-003	1.0000e-005		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	1.2381	1.2381	4.0000e-004	0.0000	1.2481
Total	**2.5000e-004**	**4.1800e-003**	**8.0800e-003**	**1.0000e-005**	**2.4400e-003**	**2.0000e-005**	**2.4600e-003**	**1.1600e-003**	**2.0000e-005**	**1.1800e-003**	**0.0000**	**1.2381**	**1.2381**	**4.0000e-004**	**0.0000**	**1.2481**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule 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	3.4000e-004	3.0800e-003	5.4900e-003	1.0000e-005		1.5000e-004	1.5000e-004		1.4000e-004	1.4000e-004	0.0000	0.7273	0.7273	2.4000e-004	0.0000	0.7332
Total	**3.4000e-004**	**3.0800e-003**	**5.4900e-003**	**1.0000e-005**		**1.5000e-004**	**1.5000e-004**		**1.4000e-004**	**1.4000e-004**	**0.0000**	**0.7273**	**0.7273**	**2.4000e-004**	**0.0000**	**0.7332**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated Construction Off-Site

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.3000e-004	3.6300e-003	6.2600e-003	1.0000e-005		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.7273	0.7273	2.4000e-004	0.0000	0.7332
Total	**1.3000e-004**	**3.6300e-003**	**6.2600e-003**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**0.7273**	**0.7273**	**2.4000e-004**	**0.0000**	**0.7332**

Mitigated Construction Off-Site

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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

3.6 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.4800e-003	0.0963	0.1065	1.7000e-004		4.8000e-003	4.8000e-003		4.4200e-003	4.4200e-003	0.0000	15.0313	15.0313	4.8600e-003	0.0000	15.1528
Total	**9.4800e-003**	**0.0963**	**0.1065**	**1.7000e-004**		**4.8000e-003**	**4.8000e-003**		**4.4200e-003**	**4.4200e-003**	**0.0000**	**15.0313**	**15.0313**	**4.8600e-003**	**0.0000**	**15.1528**

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					

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule 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**

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	3.5700e-003	0.0672	0.1194	1.7000e-004		2.8000e-004	2.8000e-004		2.8000e-004	2.8000e-004	0.0000	15.0313	15.0313	4.8600e-003	0.0000	15.1528
Total	**3.5700e-003**	**0.0672**	**0.1194**	**1.7000e-004**		**2.8000e-004**	**2.8000e-004**		**2.8000e-004**	**2.8000e-004**	**0.0000**	**15.0313**	**15.0313**	**4.8600e-003**	**0.0000**	**15.1528**

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

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule 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**

3.6 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0208	0.2091	0.2474	4.0000e-004		9.8800e-003	9.8800e-003		9.0900e-003	9.0900e-003	0.0000	35.0848	35.0848	0.0114	0.0000	35.3685
Total	**0.0208**	**0.2091**	**0.2474**	**4.0000e-004**		**9.8800e-003**	**9.8800e-003**		**9.0900e-003**	**9.0900e-003**	**0.0000**	**35.0848**	**35.0848**	**0.0114**	**0.0000**	**35.3685**

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 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					
Off-Road	8.3400e-003	0.1568	0.2787	4.0000e-004		6.5000e-004	6.5000e-004		6.5000e-004	6.5000e-004	0.0000	35.0848	35.0848	0.0114	0.0000	35.3685
Total	**8.3400e-003**	**0.1568**	**0.2787**	**4.0000e-004**		**6.5000e-004**	**6.5000e-004**		**6.5000e-004**	**6.5000e-004**	**0.0000**	**35.0848**	**35.0848**	**0.0114**	**0.0000**	**35.3685**

Mitigated Construction Off-Site

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

3.7 Architectural Coating - 2024

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule 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					
Archit. Coating	0.2172					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.5000e-004	3.0500e-003	4.5300e-003	1.0000e-005		1.5000e-004	1.5000e-004		1.5000e-004	1.5000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6392
Total	**0.2177**	**3.0500e-003**	**4.5300e-003**	**1.0000e-005**		**1.5000e-004**	**1.5000e-004**		**1.5000e-004**	**1.5000e-004**	**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6392**

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 Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.2172					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.4000e-004	2.6500e-003	4.5800e-003	1.0000e-005		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6392
Total	**0.2173**	**2.6500e-003**	**4.5800e-003**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6392**

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 - 2024

Unmitigated Construction On-Site

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule 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	1.4800e-003	0.0131	0.0176	3.0000e-005		6.1000e-004	6.1000e-004		5.7000e-004	5.7000e-004	0.0000	2.3502	2.3502	6.8000e-004	0.0000	2.3673
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.4800e-003**	**0.0131**	**0.0176**	**3.0000e-005**		**6.1000e-004**	**6.1000e-004**		**5.7000e-004**	**5.7000e-004**	**0.0000**	**2.3502**	**2.3502**	**6.8000e-004**	**0.0000**	**2.3673**

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

Date: 12/2/2022 11:19 AM

1655 Lincoln Ave, San Jose - Santa Clara County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule 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	4.1000e-004	0.0100	0.0173	3.0000e-005		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	2.3502	2.3502	6.8000e-004	0.0000	2.3673
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.1000e-004**	**0.0100**	**0.0173**	**3.0000e-005**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**	**0.0000**	**2.3502**	**2.3502**	**6.8000e-004**	**0.0000**	**2.3673**

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

1655 Lincoln Ave Summary of Construction Traffic Emissions (EMFAC2021)

Pollutants	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	NBio- CO2	CH4	N2O	CO2e
YEAR	*Tons*										*Metric Tons*			
Criteria Pollutants														
2023-2024	0.0018	0.0277	0.0267	0.0002	0.0067	0.0017	0.0085	0.0010	0.0007	0.0018	20.0392	0.0014	0.0028	20.9030
Toxic Air Contaminants (0.5 Mile Trip Length)														
2023-2024	0.0015	0.0076	0.0094	0.0000	0.0003	0.0001	0.0004	0.0000	0.0000	0.0001	1.6198	0.0003	0.0003	1.7047

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	10	0	100	0	28	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	1080	0	560
Site Preparation	5	0	5	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	54	0	0
Grading	8	0	16	0	250	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	172.8	0	5000
Trenching	5	0	10	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	108	0	0
Building Construction	7	3	700	300	114	10.8	7.3	7.3	LD_Mix	HDT_Mix	HHDT	7560	2190	832.2
Architectural Coating	1	0	5	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	54	0	0
Paving	18	0	90	0	250	10.8	7.3	7.3	LD_Mix	HDT_Mix	HHDT	972	0	1825

Number of Days Per Year					
2023-2024	11/1/23	4/19/24	171	123	
			171	**123**	***Total Workdays***

Phase	Start Date	End Date	Days/Week	Workdays
Demolition	11/1/2023	11/14/2023	5	10
Site Preparation	11/15/2023	11/15/2023	5	1
Grading	11/16/2023	11/17/2023	5	2
Trenching	11/16/2023	11/17/2023	5	2
Building Construction	11/18/2023	4/5/2024	5	100
Architectural Coating	4/6/2024	4/12/2024	5	5
Paving	4/13/2024	4/19/2024	5	5

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

Region	Calendar Y	Vehicle Ca	Model Yea	Speed	Fuel	Population	Total VMT	CVMT	EVMT	Trips	NOx RUN	NOx IDLEI	NOx STRE	PM2.5 RU	PM2.5 IDL	PM2.5 STI	PM2.5 PM	PM2.5 TIR	PM10 RU	PM10 IDL	PM10 STR	PM10 PM	PM10 TIR	PM10 PM	CO2 RUNI	CO2 IDLEI	CO2 STRE	CH4 RUNI	CH4 IDLEI	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 RUNEI	CO_IDLEX	CO_STREX	SOx RUNE	SOx IDLEX	SOx_STREX
Santa Clara	2024	HHDT	Aggregate	Aggregate	Gasoline	2.58871	115.153	115.153	0	51.7949	7.01372	0	1.69563	0.00361	0	0.00143	0.005	0.03384	0.00393	0	0.00156	0.02	0.09669	2166.16	0	50.0442	0.24601	0	0.00021	0.19293	0	0.0498	1.47824	0	0.00112	0.14902	1.34233	10.0255	2.15705	0	0.00122	0.14902	1.34233	10.0255	0.04274	52.519	0	1.60109	0.02141	0	0.00049
Santa Clara	2024	HHDT	Aggregate	Aggregate	Diesel	8486.69	1001095	1001095	0	124748	1.89457	62.3204	2.89887	0.02567	0.03017	0	0.00877	0.02745	0.02683	0.03153	0	0.03508	0.07844	1634.1	11997	0	0.00078	0.23663	0	0.25745	1.89013	0	0.01673	5.09458	0	0	0	0	0.01905	5.7998	0	0	0	0	0	0.21508	0.08252	74.1058	0	0.01547	0.1136	0
Santa Clara	2024	HHDT	Aggregate	Aggregate	Electricity	28.3304	2794.26	0	2794.26	378.795	0	0	0	0	0	0	0.00859	0.01406	0	0	0	0.03434	0.04016	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2024	HHDT	Aggregate	Aggregate	Natural Ga	794.401	54591.3	54591.3	0	7249.72	1.12825	13.5551	0	0.00172	0.02478	0	0.009	0.04752	0.00187	0.02695	0	0.036	0.13578	1387.53	10583.6	0	2.34474	36.3028	0	0.28286	2.15754	0	0.05083	0.5507	0	0	0	0	2.41273	37.0861	0	0	0	0	0	0.85184	13.402	74.4313	0	0	0	0
Santa Clara	2024	LDA	Aggregate	Aggregate	Gasoline	600108	2.2E+07	2.2E+07	0	2786617	0.04228	0	0.25799	0.00118	0	0.00193	0.002	0.00266	0.00128	0	0.0021	0.008	0.00759	275.955	0	70.0807	0.00234	0	0.07204	0.00467	0	0.03323	0.00894	0	0.32895	0.09049	0.23039	1.42264	0.01304	0	0.36016	0.09049	0.23039	1.42264	0.03471	0.73752	0	3.23307	0.00273	0	0.00069
Santa Clara	2024	LDA	Aggregate	Aggregate	Diesel	1750.02	51573.5	51573.5	0	7442.61	0.21318	0	0	0.01675	0	0	0.002	0.00271	0.0175	0	0	0.008	0.00773	232.398	0	0	0.00129	0	0	0.03661	0	0	0.02775	0	0	0	0	0	0.03159	0	0	0	0	0	0.0031	0.33111	0	0	0.0022	0	0
Santa Clara	2024	LDA	Aggregate	Aggregate	Electricity	57627.4	2472767	0	2472767	282733	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	0	0
Santa Clara	2024	LDA	Aggregate	Aggregate	Plug-in Hy	17457.1	767059	381569	385491	72185.1	0.00326	0	0.11551	0.00062	0	0.00207	0.002	0.00138	0.00067	0	0.00225	0.008	0.00393	138.86	0	65.1247	0.00044	0	0.04244	0.00059	0	0.02076	0.00141	0	0.17328	0.04111	0.03729	0.4471	0.00206	0	0.18973	0.04111	0.03729	0.4471	0.0195	0.21485	0	1.33989	0.00137	0	0.00064
Santa Clara	2024	LDT1	Aggregate	Aggregate	Gasoline	52693.4	1706864	1706864	0	234793	0.12836	0	0.38129	0.00174	0	0.00268	0.002	0.00324	0.00189	0	0.00291	0.008	0.00926	327.257	0	86.3843	0.00626	0	0.10537	0.00942	0	0.03869	0.02774	0	0.53932	0.16533	0.47248	2.66716	0.04048	0	0.59049	0.16533	0.47248	2.66716	0.03608	1.42762	0	5.25305	0.00324	0	0.00085
Santa Clara	2024	LDT1	Aggregate	Aggregate	Diesel	23.4623	343.931	343.931	0	66.4446	1.65193	0	0	0.23937	0	0	0.002	0.00372	0.2502	0	0	0.008	0.01064	415.3	0	0	0.01386	0	0	0.06543	0	0	0.29845	0	0	0	0	0	0.33976	0	0	0	0	0	0.0031	1.59366	0	0	0.00394	0	0
Santa Clara	2024	LDT1	Aggregate	Aggregate	Electricity	211.003	8008.65	0	8008.65	994.435	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	0	0
Santa Clara	2024	LDT1	Aggregate	Aggregate	Plug-in Hy	67.6458	3164.46	1414.3	1750.16	279.715	0.00293	0	0.11551	0.00037	0	0.00138	0.002	0.00139	0.0004	0	0.0015	0.008	0.00397	124.846	0	69.3121	0.0004	0	0.04222	0.00052	0	0.02056	0.00127	0	0.17328	0.02415	0.02096	0.27963	0.00185	0	0.18973	0.02415	0.02096	0.27963	0.01877	0.19347	0	1.33989	0.00123	0	0.00069
Santa Clara	2024	LDT2	Aggregate	Aggregate	Gasoline	285585	1E+07	1E+07	0	1336438	0.06909	0	0.33424	0.00123	0	0.00196	0.002	0.00313	0.00133	0	0.00213	0.008	0.00894	340.325	0	87.2943	0.00286	0	0.08298	0.00594	0	0.03725	0.01124	0	0.38422	0.08174	0.21769	1.36819	0.0164	0	0.42067	0.08174	0.21769	1.36819	0.03636	0.84212	0	3.67376	0.00336	0	0.00086
Santa Clara	2024	LDT2	Aggregate	Aggregate	Diesel	1015.45	37944.3	37944.3	0	4835.43	0.04151	0	0	0.00481	0	0	0.002	0.00311	0.00503	0	0	0.008	0.00889	307.161	0	0	0.00061	0	0	0.04839	0	0	0.0131	0	0	0	0	0	0.01492	0	0	0	0	0	0.0031	0.12998	0	0	0.00291	0	0
Santa Clara	2024	LDT2	Aggregate	Aggregate	Electricity	1597.57	55532.6	0	55532.6	8150.93	0	0	0	0	0	0	0.002	0.00153	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	0	0
Santa Clara	2024	LDT2	Aggregate	Aggregate	Plug-in Hy	2116.58	94757.7	44376.6	50381.1	8752.06	0.00307	0	0.11551	0.00047	0	0.00167	0.002	0.00138	0.00051	0	0.00182	0.008	0.00395	130.788	0	75.6058	0.00042	0	0.04223	0.00055	0	0.02057	0.00133	0	0.17328	0.02595	0.02369	0.30939	0.00194	0	0.18973	0.02595	0.02369	0.30939	0.01964	0.20257	0	1.33989	0.00129	0	0.00075
Santa Clara	2024	LHDT1	Aggregate	Aggregate	Gasoline	19314.1	722529	722529	0	28775.2	0.17374	0.03622	0.637	0.00153	0	0.0003	0.002	0.0273	0.00167	0	0.00033	0.008	0.078	871.456	119.099	25.7802	0.00836	0.11294	0.033	0.00978	0.00298	0.05097	0.04172	0.41502	0.16361	0.0474	0.26314	2.76851	0.06087	0.6056	0.17913	0.0474	0.26314	2.76851	0.0449	1.14228	3.75621	3.12393	0.00862	0.00118	0.00025
Santa Clara	2024	LHDT1	Aggregate	Aggregate	Diesel	10107.7	398004	398004	0	127143	1.56302	1.92168	0	0.03506	0.0268	0	0.003	0.0273	0.03664	0.02802	0	0.012	0.078	631.401	131.15	0	0.00801	0.0051	0	0.09948	0.02066	0	0.17236	0.10976	0	0	0	0	0.19622	0.12495	0	0	0	0	0	0.17278	0.47359	0.90975	0	0.00598	0.00124	0
Santa Clara	2024	LHDT1	Aggregate	Aggregate	Electricity	70.8284	5110.54	0	5110.54	989.427	0	0	0	0	0	0	0.002	0.01365	0	0	0	0.008	0.039	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2024	LHDT2	Aggregate	Aggregate	Gasoline	2506.91	91452.6	91452.6	0	37349.2	0.16518	0.0356	0.62153	0.00139	0	0.00024	0.002	0.03185	0.00151	0	0.00026	0.008	0.091	980.036	127.592	25.5129	0.00618	0.11145	0.03198	0.00982	0.00291	0.04938	0.02861	0.40822	0.15724	0.04419	0.23817	2.55839	0.04175	0.55957	0.17216	0.04419	0.23817	2.55839	0.04497	0.89921	3.76255	3.12993	0.00969	0.00136	0.00025
Santa Clara	2024	LHDT2	Aggregate	Aggregate	Diesel	4663.46	183558	183558	0	58660.4	1.2661	1.8954	0	0.03205	0.027	0	0.003	0.03185	0.0335	0.02822	0	0.012	0.091	756.868	209.562	0	0.00741	0.0051	0	0.11924	0.03302	0	0.15944	0.10976	0	0	0	0	0.18151	0.12495	0	0	0	0	0	0.18413	0.41186	0.90975	0	0.00717	0.00199	0
Santa Clara	2024	LHDT2	Aggregate	Aggregate	Electricity	18.3326	1253.29	0	1253.29	242.668	0	0	0	0	0	0	0.002	0.01593	0	0	0	0.008	0.0455	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2024	MCY	Aggregate	Aggregate	Gasoline	28171.5	166022	166022	0	56343	0.57134	0	0.13548	0.00178	0	0.00325	0.001	0.0042	0.0019	0	0.00346	0.004	0.012	187.743	0	48.377	0.16261	0	0.18197	0.03956	0	0.00802	1.06218	0	1.34532	3.55928	3.75283	3.90029	1.27695	0	1.46261	3.55928	3.75283	3.90029	0.00881	12.6697	0	8.00299	0.00186	0	0.00048
Santa Clara	2024	MDV	Aggregate	Aggregate	Gasoline	156642	5468054	5468054	0	726101	0.10128	0	0.42828	0.00123	0	0.00204	0.002	0.00318	0.00134	0	0.00222	0.008	0.0091	412.805	0	106.222	0.00387	0	0.10186	0.00763	0	0.04097	0.01626	0	0.50881	0.09705	0.27572	1.67706	0.02372	0	0.55708	0.09705	0.27572	1.67706	0.03618	0.97224	0	4.02296	0.00408	0	0.00105
Santa Clara	2024	MDV	Aggregate	Aggregate	Diesel	2400.61	86292.7	86292.7	0	11318.8	0.04884	0	0	0.00491	0	0	0.002	0.00321	0.00513	0	0	0.008	0.00916	405.662	0	0	0.00051	0	0	0.06391	0	0	0.01098	0	0	0	0	0	0.0125	0	0	0	0	0	0.0031	0.20154	0	0	0.00384	0	0
Santa Clara	2024	MDV	Aggregate	Aggregate	Electricity	1678.68	58660.6	0	58660.6	8578.5	0	0	0	0	0	0	0.002	0.00153	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	0	0
Santa Clara	2024	MDV	Aggregate	Aggregate	Plug-in Hy	1250.86	52904	25301.5	27602.5	5172.29	0.00314	0	0.11551	0.00056	0	0.00196	0.002	0.00138	0.00061	0	0.00213	0.008	0.00395	133.537	0	94.0638	0.00042	0	0.04205	0.00055	0	0.0204	0.00136	0	0.17328	0.03032	0.02668	0.34169	0.00198	0	0.18973	0.03032	0.02668	0.34169	0.02009	0.20674	0	1.33989	0.00132	0	0.00093
Santa Clara	2024	MH	Aggregate	Aggregate	Gasoline	2420.57	22012.3	22012.3	0	242.154	0.42094	0	0.41996	0.00168	0	0.0004	0.003	0.01576	0.00183	0	0.00044	0.012	0.04502	1947.5	0	31.6506	0.01548	0	0.03754	0.02573	0	0.04407	0.06827	0	0.15912	12.2114	0.28677	4.59648	0.09962	0	0.17422	12.2114	0.28677	4.59648	0.04485	1.68222	0	3.49725	0.01925	0	0.00031
Santa Clara	2024	MH	Aggregate	Aggregate	Diesel	977.361	9498.3	9498.3	0	97.7361	4.11717	0	0	0.09177	0	0	0.004	0.01567	0.09592	0	0	0.016	0.04479	1081.93	0	0	0.00556	0	0	0.17046	0	0	0.11965	0	0	0	0	0	0.13621	0	0	0	0	0	0.15554	0.39728	0	0	0.01025	0	0
Santa Clara	2024	MHDT	Aggregate	Aggregate	Gasoline	1414.55	71600.4	71600.4	0	28302.3	0.47075	0.08848	0.44096	0.00136	0	0.00053	0.003	0.01576	0.00148	0	0.00058	0.012	0.04502	1768.69	531.8	46.2523	0.01505	0.25808	0.04757	0.02291	0.00727	0.03271	0.07495	1.01271	0.26541	0.03395	0.27636	2.79871	0.10937	1.47774	0.29059	0.03395	0.27636	2.79871	0.04498	1.56073	15.1163	5.82581	0.01749	0.00526	0.00046
Santa Clara	2024	MHDT	Aggregate	Aggregate	Diesel	10390.5	434044	434044	0	123939	1.23282	13.1195	1.64273	0.0144	0.0299	0	0.003	0.01594	0.01505	0.03125	0	0.012	0.04555	1147.31	2248.55	0	0.00151	0.01158	0	0.18076	0.35426	0	0.03245	0.24932	0	0	0	0	0.03695	0.28383	0	0	0	0	0	0.21053	0.12087	7.55603	0	0.01086	0.02129	0
Santa Clara	2024	MHDT	Aggregate	Aggregate	Electricity	30.916	1660.35	0	1660.35	407.454	0	0	0	0	0	0	0.003	0.00796	0	0	0	0.012	0.02273	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2024	MHDT	Aggregate	Aggregate	Natural Ga	90.5945	4303.58	4303.58	0	827.623	0.13342	6.49972	0	0.00118	0.01813	0	0.003	0.01601	0.00128	0.01972	0	0.012	0.04573	984.692	5301.1	0	0.74573	17.3141	0	0.20074	1.08066	0	0.01066	0.24738	0	0	0	0	0.76107	17.6703	0	0	0	0	0	1.06	2.99584	34.7393	0	0	0	0
Santa Clara	2024	OBUS	Aggregate	Aggregate	Gasoline	443.147	19894.3	19894.3	0	8866.48	0.49672	0.06506	0.40855	0.00091	0	0.00025	0.003	0.01568	0.00099	0	0.00027	0.012	0.0448	1764	379.414	31.6131	0.01376	0.19573	0.03606	0.02402	0.0053	0.03103	0.06708	0.74628	0.19096	0.03387	0.15492	2.81839	0.09788	1.08897	0.20908	0.03387	0.15492	2.81839	0.04497	1.49158	5.77464	4.00064	0.01744	0.00375	0.00031
Santa Clara	2024	OBUS	Aggregate	Aggregate	Diesel	893.138	61949.1	61949.1	0	9141.63	1.17864	7.36339	1.54316	0.01985	0.00817	0	0.003	0.01802	0.02075	0.00854	0	0.012	0.05147	1273.38	1538.56	0	0.00193	0.02048	0	0.20062	0.2424	0	0.04166	0.4409	0	0	0	0	0.04743	0.50194	0	0	0	0	0	0.21602	0.15018	7.50048	0	0.01206	0.01457	0
Santa Clara	2024	OBUS	Aggregate	Aggregate	Electricity	1.08748	92.501	0	92.501	21.7583	0	0	0	0	0	0	0.003	0.00784	0	0	0	0.012	0.0224	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2024	OBUS	Aggregate	Aggregate	Natural Ga	7.05737	469.388	469.388	0	62.8106	0.19059	1.53741	0	0.00106	0.0039	0	0.003	0.01615	0.00115	0.00424	0	0.012	0.04614	1004.24	1191.58	0	0.7898	4.2369	0	0.20472	0.24291	0	0.01128	0.06054	0	0	0	0	0.80604	4.32406	0	0	0	0	0	1.06	3.25433	7.35306	0	0	0	0
Santa Clara	2024	SBUS	Aggregate	Aggregate	Gasoline	172.695	8584.87	8584.87	0	690.779	0.50288	0.92594	0.7168	0.00086	0	0.00057	0.002	0.01572	0.00094	0	0.00062	0.008	0.04492	810.606	2589.13	58.1367	0.01114	2.46486	0.07489	0.0271	0.08631	0.06593	0.05406	10.6329	0.42637	0.11391	0.27469	1.68617	0.07888	15.5155	0.46682	0.11391	0.27469	1.68617	0.045	1.38705	82.1884	10.3662	0.00801	0.0256	0.00057
Santa Clara	2024	SBUS	Aggregate	Aggregate	Diesel	670.596	15345.3	15345.3	0	9710.23	3.82139	21.8769	0.48285	0.01977	0.0197	0	0.003	0.01572	0.02066	0.02059	0	0.012	0.04492	1144.18	2229	0	0.00266	0.008	0	0.18027	0.35118	0	0.05738	0.17226	0	0	0	0	0.06532	0.1961	0	0	0	0	0	0.14802	0.1775	4.67779	0	0.01083	0.02111	0
Santa Clara	2024	SBUS	Aggregate	Aggregate	Electricity	2.06467	64.355	0	64.355	23.6464	0	0	0	0	0	0	0.00254	0.00786	0	0	0	0.01016	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	0
Santa Clara	2024	SBUS	Aggregate	Aggregate	Natural Ga	24.3995	612.094	612.094	0	353.305	0.56773	5.2709	0	0.00338	0.01136	0	0.003	0.01572	0.00367	0.01235	0	0.012	0.04492	1261.3	4066.74	0	3.43667	15.2567	0	0.25713	0.82903	0	0.0491	0.21799	0	0	0	0	3.50738	15.5705	0	0	0	0	0	1.06	11.649	20.7469	0	0	0	0
Santa Clara	2024	UBUS	Aggregate	Aggregate	Gasoline	46.0831	4812.45	4812.45	0	184.333	0.02748	0	0.45723	0.00114	0	0.00013	0.002	0.03185	0.00124	0	0.00014	0.008	0.091	926.084	0	36.9478	0.00203	0	0.04307	0.00429	0	0.07172	0.00563	0	0.15298	0.0381	0.09212	0.45644	0.00822	0	0.16749	0.0381	0.09212	0.45644	0.045	0.58115	0	6.1305	0.00916	0	0.00037
Santa Clara	2024	UBUS	Aggregate	Aggregate	Diesel	437.474	48917.6	48917.6	0	1749.9	0.38626	0	0	0.00702	0	0	0.0083	0.0385	0.00734	0	0	0.0332	0.11	1101.14	0	0	0.00321	0	0	0.17348	0	0	0.06921	0	0	0	0	0	0.07879	0	0	0	0	0	0.18791	0.07937	0	0	0.01043	0	0
Santa Clara	2024	UBUS	Aggregate	Aggregate	Electricity	5.34757	235.063	0	235.063	21.3903	0	0	0	0	0	0	0.00888	0.01925	0	0	0	0.03552	0.055	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2024	UBUS	Aggregate	Aggregate	Natural Ga	42.587	4865.19	4865.19	0	170.348	0.05879	0	0	0.00028	0	0	0.00818	0.0385	0.0003	0	0	0.03273	0.11	1299.21	0	0	4.24606	0	0	0.26485	0	0	0.06067	0	0	0	0	0	4.33341	0	0	0	0	0	0.97	49.0479	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	0.000195977	5.82846E-05	0.329789936	0	0.01860554	0.00052501	4.36152E-07	4.075118	1.850604526	2.731408381	5.19556	0.7748868	0.000626	0.0072803	0.014635772	1.93499E-07		0.081298	0.035125	0.002182	0.025474	6.09682E-07		0.028454	0.008781	0.002082	0.024688	5.61E-07	832.31669	1617.1297	0.019573	0.232934	0.121678903	8.02769E-08	0.134072	0.258076714	1.9476E-05
	MHD	0.0	0	0.025794994	0.006259754	0.026359118	0	0.03811329	0.05096401	0.04894298	0.8928585	1.112921974	1.40789614	0.671381	0.3461728	1.07433	0.00149	0.011664295	8.43209E-05	0.299	0.045399	0.012	0.002128	0.012985	0.000106814	0.04499	0.01589	0.003	0.002035	0.0124151	9.82E-05	160.25985	1229.1806	8.5293121	0.013383	0.009658327	0.008772715	0.024689	0.158249654	0.00603192
Vendor	HHDT	50.0	0.5	9.79886E-05	2.91423E-05	0.164894968	0	0.00930277	0.0002625	2.18076E-07	2.037559	0.925302263	1.36570419	2.59778	0.3874434	0.000313	0.0036402	0.007317886	9.67497E-08		0.040649	0.017563	0.001091	0.012737	3.04841E-07		0.014227	0.004391	0.001041	0.0121844	2.8E-07	416.15835	808.56485	0.0097865	0.116467	0.060839451	4.01385E-08	0.067036	0.129038357	9.7382E-06
	MHD	50.0	0.5	0.012897497	0.003129877	0.013179559	0	0.01905664	0.02548201	0.02447149	0.4464293	0.556460987	0.70394807	0.335691	0.1730864	0.537165	0.000745	0.005832147	4.21605E-05		0.0227	0.006	0.001064	0.006492	5.3407E-05		0.007945	0.0015	0.001018	0.0062075	4.91E-05	80.129924	614.5903	4.2646561	0.006691	0.004829164	0.004386358	0.012344	0.079124827	0.00301596
			1	0.012995486	0.003159019	0.178074527	0	0.02835941	0.02574451	0.02447170	2.4839883	1.48176325	2.06965226	2.933471	0.5605298	0.537478	0.0043852	0.013150033	4.22572E-05	0.299	0.063348	0.023563	0.002155	0.01923	5.37119E-05	0.04499	0.022172	0.005891	0.002059	0.0183919	4.94E-05	496.28827	1423.1552	4.2744426	0.123158	0.065668615	0.004386398	0.07938	0.208163184	0.0030257
Worker	LDA	50.0	0.5	0.136796864	0.040510207	0	0	0.00394285	0.10236849	0.147535756	0	0.018684555	0.115476587	0	0.3248678	1.445873	0	0.001211349	0.000313927		0.003584	0.004	0	0.000585	0.000954881		0.001254	0.001	0	0.000539	0.000878	0	122.54122	31.754603	0	0.001026569	0.03235985	0	0.002080964	0.01494032
	LDT1	25.0	0.25	0.148814258	0.041105424	0	0	0.00690435	0.11745495	0.134116008	0	0.0319581	0.094816504	0	0.354682	1.306204	0	0.000804162	0.00021249		0.002306	0.002	0	0.000482	0.00072446		0.000807	0.0005	0	0.0004435	0.000666	0	81.34419	21.494004	0	0.001555571	0.026204278	0	0.002343639	0.00962361
	LDT2	25.0	0.25	0.072043204	0.020150051	0	0	0.00277508	0.05358915	0.094795741	0	0.017007912	0.082407943	0	0.2073341	0.905899	0	0.000831592	0.000213499		0.002217	0.002	0	0.000333	0.000526973		0.000776	0.0005	0	0.0003065	0.000485	0	84.129497	21.596069	0	0.000704556	0.020482149	0	0.001504103	0.0091976
			1	0.357654326	0.101765681	0	0	0.01362228	0.2734126	0.376447505	0	0.067650567	0.292701033	0	0.8868839	3.657977	0	0.002847102	0.000739916	0.299	0.008107	0.008	0	0.001401	0.002206314	0.04499	0.002837	0.002	0	0.001289	0.002029	0	288.01491	74.844675	0	0.003286696	0.079046277	0	0.005928705	0.03376153

Attachment 4: Project Construction Emissions and Health Risk Calculations

1655 Lincoln Avenue, San Jose, CA

DPM Emissions and Modeling Emission Rates - Unmitigated

Construction Year	Activity	DPM (ton/year)	Area Source	DPM Emissions (lb/yr)	DPM Emissions (lb/hr)	DPM Emissions (g/s)	Modeled Area (m^2)	DPM Emission Rate ($g/s/m^2$)
2023 - 2024	Construction	0.0176	CON_DPM	35.2	0.01070	1.35E-03	3,912	3.45E-07
Total		***0.0176***		***35.2***	***0.0107***	***0.0013***		

Construction Hours

hr/day =	9	(8am - 5pm)
days/yr =	365	
hours/year =	3285	

1655 Lincoln Avenue, San Jose, CA

PM2.5 Fugitive Dust Emissions for Modeling - Unmitigated

Construction Year	Activity	Area Source	PM2.5 Emissions (ton/year)	PM2.5 Emissions (lb/yr)	PM2.5 Emissions (lb/hr)	PM2.5 Emissions (g/s)	Modeled Area (m^2)	PM2.5 Emission Rate $g/s/m^2$
2023 - 2024	Construction	CON_FUG	0.0029	5.8	0.00175	2.21E-04	3,912	5.64E-08
Total			***0.0029***	***5.8***	***0.0018***	***0.0002***		

Construction Hours

hr/day =	9	(8am - 5pm)
days/yr =	365	
hours/year =	3285	

DPM Construction Emissions and Modeling Emission Rates - With Mitigation

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 - 2024	Construction	0.0012	CON_DPM	2.4	0.00073	9.14E-05	3,912	2.34E-08
Total		***0.0012***		***2.4***	***0.0007***	***0.0001***		

Construction Hours

hr/day = 9 (8am - 5pm)

days/yr = 365

hours/year = 3285

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

Construction Year	Activity	Area Source	PM2.5 Emissions (ton/year)	PM2.5 Emissions (lb/yr)	PM2.5 Emissions (lb/hr)	PM2.5 Emissions (g/s)	Modeled Area (m^2)	PM2.5 Emission Rate $g/s/m^2$
2023 - 2024	Construction	CON_FUG	0.0013	2.6	0.00080	1.01E-04	3,912	2.58E-08
Total			***0.0013***	***2.6***	***0.0008***	***0.0001***		

Construction Hours

hr/day = 9 (8am - 5pm)

days/yr = 365

hours/year = 3285

1655 Lincoln Ave, San Jose, 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 - 2024	0.0683	0.0293	12.15	0.20	0.01	0.09
Total	-	-	**12.15**	**0.20**		-
Maximum	0.0683	0.0293	**-**	**-**	**0.01**	**0.09**

Maximum Impacts at MEI Location - With 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 - 2024	0.0046	0.0134	0.83	0.01	0.00	0.02
Total	-	-	**0.83**	**0.01**	-	-
Maximum	0.0046	0.0134	**-**	**-**	**0.00**	**0.02**

- Tier 4 interim engines and BMPs as Mitigation Measures.

1655 Lincoln Avenue, San Jose, CA - Construction Impacts - Without Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at Off-Site MEI Location - 1.5 meter receptor height

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

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

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

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

Values

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

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

			Infant/Child - Exposure Information				Adult - Exposure Information				Maximum		
			DPM Conc (ug/m3)		Age	Infant/Child	Modeled DPM Conc (ug/m3)		Age	Adult			
Exposure Year	**Exposure Duration (years)**	**Age**	**Year**	**Annual**	**Sensitivity Factor**	**Cancer Risk (per million)**	**Year**	**Annual**	**Sensitivity Factor**	**Cancer Risk (per million)**	**Hazard Index**	**Fugitive PM2.5**	**Total PM2.5**
0	0.25	-0.25 - 0*	2023 + 2024	0.0683	10	0.93	2023 + 2024	0.0683	-	-			
1	1	0 - 1	2023 + 2024	0.0683	10	11.22	2023 + 2024	0.0683	1	0.20	0.01	0.029	0.09
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						**12.15**				**0.20**			

* Third trimester of pregnancy

1655 Lincoln Avenue, San Jose, CA - Construction Impacts - With Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at Off-Site MEI Location - 1.5 meter receptor height

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

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

			Infant/Child - Exposure Information				Adult - Exposure Information				Maximum		
			DPM Conc (ug/m3)		Age	Infant/Child	Modeled DPM Conc (ug/m3)		Age	Adult			
Exposure Year	Exposure Duration (years)	Age	Year	Annual	Sensitivity Factor	Cancer Risk (per million)	Year	Annual	Sensitivity Factor	Cancer Risk (per million)	Hazard Index	Fugitive PM2.5	Total PM2.5
0	0.25	-0.25 - 0*	2023 + 2024	0.0046	10	0.06	2023 + 2024	0.0046	-	-			
1	1	0 - 1	2023 + 2024	0.0046	10	0.76	2023 + 2024	0.0046	1	0.01	0.001	0.01	0.02
2	1	1 - 2		0.0000	10	0.00		0.0000	1	0.00			
3	1	2 - 3		0.0000	3	0.00		0.0000	1	0.00			
4	1	3 - 4		0.0000	3	0.00		0.0000	1	0.00			
5	1	4 - 5		0.0000	3	0.00		0.0000	1	0.00			
6	1	5 - 6		0.0000	3	0.00		0.0000	1	0.00			
7	1	6 - 7		0.0000	3	0.00		0.0000	1	0.00			
8	1	7 - 8		0.0000	3	0.00		0.0000	1	0.00			
9	1	8 - 9		0.0000	3	0.00		0.0000	1	0.00			
10	1	9 - 10		0.0000	3	0.00		0.0000	1	0.00			
11	1	10 - 11		0.0000	3	0.00		0.0000	1	0.00			
12	1	11 - 12		0.0000	3	0.00		0.0000	1	0.00			
13	1	12 - 13		0.0000	3	0.00		0.0000	1	0.00			
14	1	13 - 14		0.0000	3	0.00		0.0000	1	0.00			
15	1	14 - 15		0.0000	3	0.00		0.0000	1	0.00			
16	1	15 - 16		0.0000	3	0.00		0.0000	1	0.00			
17	1	16-17		0.0000	1	0.00		0.0000	1	0.00			
18	1	17-18		0.0000	1	0.00		0.0000	1	0.00			
19	1	18-19		0.0000	1	0.00		0.0000	1	0.00			
20	1	19-20		0.0000	1	0.00		0.0000	1	0.00			
21	1	20-21		0.0000	1	0.00		0.0000	1	0.00			
22	1	21-22		0.0000	1	0.00		0.0000	1	0.00			
23	1	22-23		0.0000	1	0.00		0.0000	1	0.00			
24	1	23-24		0.0000	1	0.00		0.0000	1	0.00			
25	1	24-25		0.0000	1	0.00		0.0000	1	0.00			
26	1	25-26		0.0000	1	0.00		0.0000	1	0.00			
27	1	26-27		0.0000	1	0.00		0.0000	1	0.00			
28	1	27-28		0.0000	1	0.00		0.0000	1	0.00			
29	1	28-29		0.0000	1	0.00		0.0000	1	0.00			
30	1	29-30		0.0000	1	0.00		0.0000	1	0.00			
Total Increased Cancer Risk						**0.83**				**0.01**			

* Third trimester of pregnancy

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        25 mph          30 mph          35 mph
                PM2.5      0.002194        0.001765        0.001511
                  TOG      0.046181        0.036838        0.030861
            Diesel PM      0.000382        0.000353        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 2025.EF
CT-EMFAC2017 Version:	1.0.2.27401
Run Date:	1/3/2023 1:28:19 PM
Area:	Santa Clara (SF)
Analysis Year:	2025
Season:	Annual

Vehicle Category	VMT Fraction Across Category	Diesel VMT Fraction Within Category	Gas VMT Fraction Within Category
Truck 1	0.015	0.502	0.498
Truck 2	0.020	0.936	0.048
Non-Truck	0.965	0.015	0.951

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

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

Pollutant Name	25 mph	30 mph	35 mph
PM2.5	0.002020	0.001628	0.001397
TOG	0.040836	0.032640	0.027389
Diesel PM	0.000350	0.000326	0.000328

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

Pollutant Name	Emission Factor
TOG	1.255395

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

Pollutant Name	Emission Factor
PM2.5	0.002108

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

Pollutant Name	Emission Factor
PM2.5	0.016801

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

Pollutant Name	Emission Factor
PM2.5	0.014826

END

1655 Lincoln Ave, San Jose, CA - Off-Site Residential
Cumulative Operation - Lincoln Avenue
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_LIN	Lincoln Avenue Northbound	NB	2	651.4	0.40	13.3	43.7	3.4	25	9,349
DPM_SB_LIN	Lincoln Avenue Southbound	SB	2	651.2	0.40	13.3	43.7	3.4	25	9,349
									Total	18,698

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_LIN

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	3.91%	366	1.44E-05	9	6.50%	607	2.39E-05	17	5.58%	521	2.05E-05
2	2.59%	242	9.52E-06	10	7.36%	688	2.71E-05	18	3.28%	306	1.21E-05
3	2.88%	269	1.06E-05	11	6.33%	591	2.33E-05	19	2.36%	220	8.67E-06
4	3.34%	312	1.23E-05	12	6.84%	640	2.52E-05	20	0.92%	86	3.38E-06
5	2.19%	204	8.04E-06	13	6.15%	575	2.26E-05	21	2.99%	280	1.10E-05
6	3.39%	317	1.25E-05	14	6.15%	575	2.26E-05	22	4.14%	387	1.52E-05
7	5.98%	559	2.20E-05	15	5.23%	489	1.93E-05	23	2.47%	231	9.10E-06
8	4.66%	435	1.71E-05	16	3.91%	366	1.44E-05	24	0.86%	81	3.17E-06
								Total		9,349	

2023 Hourly Traffic Volumes Per Direction and DPM Emissions - DPM_SB_LIN

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	3.91%	366	1.44E-05	9	6.50%	607	2.39E-05	17	5.58%	521	2.05E-05
2	2.59%	242	9.52E-06	10	7.36%	688	2.71E-05	18	3.28%	306	1.21E-05
3	2.88%	269	1.06E-05	11	6.33%	591	2.33E-05	19	2.36%	220	8.67E-06
4	3.34%	312	1.23E-05	12	6.84%	640	2.52E-05	20	0.92%	86	3.38E-06
5	2.19%	204	8.04E-06	13	6.15%	575	2.26E-05	21	2.99%	280	1.10E-05
6	3.39%	317	1.25E-05	14	6.15%	575	2.26E-05	22	4.14%	387	1.52E-05
7	5.98%	559	2.20E-05	15	5.23%	489	1.92E-05	23	2.47%	231	9.09E-06
8	4.66%	435	1.71E-05	16	3.91%	366	1.44E-05	24	0.86%	81	3.17E-06
								Total		9,349	

1655 Lincoln Ave, San Jose, CA - Off-Site Residential
Cumulative Operation - Lincoln Avenue
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_LIN	Lincoln Avenue Northbound	NB	2	651.4	0.40	13.3	44	1.3	25	9,349
PM2.5_SB_LIN	Lincoln Avenue Southbound	SB	2	651.2	0.40	13.3	44	1.3	25	9,349
									Total	18,698

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_LIN

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	108	1.83E-05	9	7.11%	665	1.13E-04	17	7.38%	690	1.17E-04
2	0.42%	39	6.63E-06	10	4.39%	411	6.98E-05	18	8.17%	764	1.30E-04
3	0.41%	38	6.47E-06	11	4.66%	436	7.41E-05	19	5.70%	533	9.05E-05
4	0.26%	25	4.18E-06	12	5.89%	551	9.35E-05	20	4.27%	400	6.79E-05
5	0.50%	47	7.95E-06	13	6.15%	575	9.77E-05	21	3.26%	305	5.18E-05
6	0.90%	85	1.44E-05	14	6.04%	564	9.59E-05	22	3.30%	308	5.24E-05
7	3.79%	355	6.02E-05	15	7.01%	656	1.11E-04	23	2.46%	230	3.91E-05
8	7.76%	726	1.23E-04	16	7.14%	667	1.13E-04	24	1.86%	174	2.96E-05
								Total		9,349	

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

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	108	1.83E-05	9	7.11%	665	1.13E-04	17	7.38%	690	1.17E-04
2	0.42%	39	6.63E-06	10	4.39%	411	6.97E-05	18	8.17%	764	1.30E-04
3	0.41%	38	6.47E-06	11	4.66%	436	7.41E-05	19	5.70%	533	9.04E-05
4	0.26%	25	4.18E-06	12	5.89%	551	9.35E-05	20	4.27%	400	6.79E-05
5	0.50%	47	7.95E-06	13	6.15%	575	9.77E-05	21	3.26%	305	5.17E-05
6	0.90%	85	1.44E-05	14	6.04%	564	9.59E-05	22	3.30%	308	5.24E-05
7	3.79%	355	6.02E-05	15	7.01%	656	1.11E-04	23	2.46%	230	3.91E-05
8	7.76%	726	1.23E-04	16	7.14%	667	1.13E-04	24	1.86%	174	2.96E-05
								Total		9,349	

1655 Lincoln Ave, San Jose, CA - Off-Site Residential
Cumulative Operation - Lincoln Avenue
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_LIN	Lincoln Avenue Northbound	NB	2	651.4	0.40	13.3	44	1.3	25	9,349
TEXH_SB_LIN	Lincoln Avenue Southbound	SB	2	651.2	0.40	13.3	44	1.3	25	9,349
									Total	18,698

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_LIN

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	108	3.74E-04	9	7.11%	665	2.31E-03	17	7.38%	690	2.40E-03
2	0.42%	39	1.35E-04	10	4.39%	411	1.42E-03	18	8.17%	764	2.65E-03
3	0.41%	38	1.32E-04	11	4.66%	436	1.51E-03	19	5.70%	533	1.85E-03
4	0.26%	25	8.54E-05	12	5.89%	551	1.91E-03	20	4.27%	400	1.39E-03
5	0.50%	47	1.62E-04	13	6.15%	575	2.00E-03	21	3.26%	305	1.06E-03
6	0.90%	85	2.93E-04	14	6.04%	564	1.96E-03	22	3.30%	308	1.07E-03
7	3.79%	355	1.23E-03	15	7.01%	656	2.27E-03	23	2.46%	230	7.98E-04
8	7.76%	726	2.52E-03	16	7.14%	667	2.31E-03	24	1.86%	174	6.05E-04
								Total		9,349	

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

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	108	3.73E-04	9	7.11%	665	2.31E-03	17	7.38%	690	2.39E-03
2	0.42%	39	1.35E-04	10	4.39%	411	1.42E-03	18	8.17%	764	2.65E-03
3	0.41%	38	1.32E-04	11	4.66%	436	1.51E-03	19	5.70%	533	1.85E-03
4	0.26%	25	8.53E-05	12	5.89%	551	1.91E-03	20	4.27%	400	1.39E-03
5	0.50%	47	1.62E-04	13	6.15%	575	1.99E-03	21	3.26%	305	1.06E-03
6	0.90%	85	2.93E-04	14	6.04%	564	1.96E-03	22	3.30%	308	1.07E-03
7	3.79%	355	1.23E-03	15	7.01%	656	2.27E-03	23	2.46%	230	7.98E-04
8	7.76%	726	2.52E-03	16	7.14%	667	2.31E-03	24	1.86%	174	6.04E-04
								Total		9,349	

1655 Lincoln Ave, San Jose, CA - Off-Site Residential
Cumulative Operation - Lincoln Avenue
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_LIN	Lincoln Avenue Northbound	NB	2	651.4	0.40	13.3	44	1.3	25	9,349
TEVAP_SB_LIN	Lincoln Avenue Southbound	SB	2	651.2	0.40	13.3	44	1.3	25	9,349
									Total	18,698

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_LIN

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	108	4.70E-04	9	7.11%	665	2.90E-03	17	7.38%	690	3.01E-03
2	0.42%	39	1.70E-04	10	4.39%	411	1.79E-03	18	8.17%	764	3.33E-03
3	0.41%	38	1.66E-04	11	4.66%	436	1.90E-03	19	5.70%	533	2.32E-03
4	0.26%	25	1.07E-04	12	5.89%	551	2.40E-03	20	4.27%	400	1.74E-03
5	0.50%	47	2.04E-04	13	6.15%	575	2.51E-03	21	3.26%	305	1.33E-03
6	0.90%	85	3.69E-04	14	6.04%	564	2.46E-03	22	3.30%	308	1.34E-03
7	3.79%	355	1.55E-03	15	7.01%	656	2.86E-03	23	2.46%	230	1.00E-03
8	7.76%	726	3.16E-03	16	7.14%	667	2.91E-03	24	1.86%	174	7.60E-04
								Total		9,349	

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

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	108	4.69E-04	9	7.11%	665	2.90E-03	17	7.38%	690	3.01E-03
2	0.42%	39	1.70E-04	10	4.39%	411	1.79E-03	18	8.17%	764	3.33E-03
3	0.41%	38	1.66E-04	11	4.66%	436	1.90E-03	19	5.70%	533	2.32E-03
4	0.26%	25	1.07E-04	12	5.89%	551	2.40E-03	20	4.27%	400	1.74E-03
5	0.50%	47	2.04E-04	13	6.15%	575	2.51E-03	21	3.26%	305	1.33E-03
6	0.90%	85	3.69E-04	14	6.04%	564	2.46E-03	22	3.30%	308	1.34E-03
7	3.79%	355	1.55E-03	15	7.01%	656	2.86E-03	23	2.46%	230	1.00E-03
8	7.76%	726	3.16E-03	16	7.14%	667	2.91E-03	24	1.86%	174	7.60E-04
								Total		9,349	

1655 Lincoln Ave, San Jose, CA - Off-Site Residential
Cumulative Operation - Lincoln Avenue
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_LIN	Lincoln Avenue Northbound	NB	2	651.4	0.40	13.3	44	1.3	25	9,349
FUG_SB_LIN	Lincoln Avenue Southbound	SB	2	651.2	0.40	13.3	44	1.3	25	9,349
									Total	18,698

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_LIN

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	108	4.09E-04	9	7.11%	665	2.52E-03	17	7.38%	690	2.62E-03
2	0.42%	39	1.48E-04	10	4.39%	411	1.56E-03	18	8.17%	764	2.90E-03
3	0.41%	38	1.45E-04	11	4.66%	436	1.66E-03	19	5.70%	533	2.02E-03
4	0.26%	25	9.34E-05	12	5.89%	551	2.09E-03	20	4.27%	400	1.52E-03
5	0.50%	47	1.78E-04	13	6.15%	575	2.18E-03	21	3.26%	305	1.16E-03
6	0.90%	85	3.21E-04	14	6.04%	564	2.14E-03	22	3.30%	308	1.17E-03
7	3.79%	355	1.35E-03	15	7.01%	656	2.49E-03	23	2.46%	230	8.73E-04
8	7.76%	726	2.76E-03	16	7.14%	667	2.53E-03	24	1.86%	174	6.62E-04
								Total		9,349	

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

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	108	4.09E-04	9	7.11%	665	2.52E-03	17	7.38%	690	2.62E-03
2	0.42%	39	1.48E-04	10	4.39%	411	1.56E-03	18	8.17%	764	2.90E-03
3	0.41%	38	1.45E-04	11	4.66%	436	1.66E-03	19	5.70%	533	2.02E-03
4	0.26%	25	9.34E-05	12	5.89%	551	2.09E-03	20	4.27%	400	1.52E-03
5	0.50%	47	1.78E-04	13	6.15%	575	2.18E-03	21	3.26%	305	1.16E-03
6	0.90%	85	3.21E-04	14	6.04%	564	2.14E-03	22	3.30%	308	1.17E-03
7	3.79%	355	1.35E-03	15	7.01%	656	2.49E-03	23	2.46%	230	8.73E-04
8	7.76%	726	2.75E-03	16	7.14%	667	2.53E-03	24	1.86%	174	6.61E-04
								Total		9,349	

1655 Lincoln Ave, San Jose, CA - Off-Site Residential
Cumulative Operation - Lincoln Avenue
DPM Modeling - Roadway Links, Traffic Volumes, and DPM Emissions
Year = 2025

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
DPM_NB_LIN	Lincoln Avenue Northbound	NB	2	651.4	0.40	13.3	43.7	3.4	25	9,509
DPM_SB_LIN	Lincoln Avenue Southbound	SB	2	651.2	0.40	13.3	43.7	3.4	25	9,509
									Total	19,018

Emission Factors

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

Emisson Factors from CT-EMFAC2017

2025 Hourly Traffic Volumes and DPM Emissions - DPM_NB_LIN

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	3.93%	374	1.38E-05	9	6.41%	609	2.25E-05	17	5.55%	528	1.95E-05
2	2.62%	249	9.20E-06	10	7.36%	700	2.58E-05	18	3.16%	300	1.11E-05
3	2.85%	271	1.00E-05	11	6.34%	603	2.22E-05	19	2.36%	224	8.27E-06
4	3.31%	314	1.16E-05	12	6.92%	658	2.43E-05	20	0.87%	82	3.03E-06
5	2.17%	206	7.60E-06	13	6.29%	598	2.21E-05	21	3.09%	294	1.08E-05
6	3.36%	320	1.18E-05	14	6.23%	593	2.19E-05	22	4.12%	391	1.44E-05
7	6.00%	570	2.10E-05	15	5.15%	490	1.81E-05	23	2.58%	245	9.03E-06
8	4.58%	436	1.61E-05	16	3.84%	365	1.35E-05	24	0.92%	88	3.23E-06
								Total		9,509	

2025 Hourly Traffic Volumes Per Direction and DPM Emissions - DPM_SB_LIN

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	3.93%	374	1.38E-05	9	6.41%	609	2.25E-05	17	5.55%	528	1.95E-05
2	2.62%	249	9.19E-06	10	7.36%	700	2.58E-05	18	3.16%	300	1.11E-05
3	2.85%	271	9.99E-06	11	6.34%	603	2.22E-05	19	2.36%	224	8.27E-06
4	3.31%	314	1.16E-05	12	6.92%	658	2.43E-05	20	0.87%	82	3.03E-06
5	2.17%	206	7.59E-06	13	6.29%	598	2.21E-05	21	3.09%	294	1.08E-05
6	3.36%	320	1.18E-05	14	6.23%	593	2.19E-05	22	4.12%	391	1.44E-05
7	6.00%	570	2.10E-05	15	5.15%	490	1.81E-05	23	2.58%	245	9.03E-06
8	4.58%	436	1.61E-05	16	3.84%	365	1.35E-05	24	0.92%	88	3.23E-06
								Total		9,509	

1655 Lincoln Ave, San Jose, CA - Off-Site Residential
Cumulative Operation - Lincoln Avenue
PM2.5 Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions
Year = 2025

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
PM2.5_NB_LIN	Lincoln Avenue Northbound	NB	2	651.4	0.40	13.3	44	1.3	25	9,509
PM2.5_SB_LIN	Lincoln Avenue Southbound	SB	2	651.2	0.40	13.3	44	1.3	25	9,509
									Total	19,018

Emission Factors - PM2.5

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

Emisson Factors from CT-EMFAC2017

2025 Hourly Traffic Volumes and PM2.5 Emissions - PM2.5_NB_LIN

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	109	1.72E-05	9	7.11%	676	1.06E-04	17	7.39%	703	1.10E-04
2	0.42%	40	6.30E-06	10	4.39%	417	6.55E-05	18	8.18%	777	1.22E-04
3	0.41%	39	6.10E-06	11	4.66%	443	6.96E-05	19	5.69%	541	8.50E-05
4	0.26%	25	3.88E-06	12	5.89%	560	8.79E-05	20	4.28%	407	6.39E-05
5	0.50%	47	7.42E-06	13	6.15%	585	9.19E-05	21	3.25%	309	4.86E-05
6	0.91%	86	1.35E-05	14	6.04%	574	9.02E-05	22	3.30%	313	4.92E-05
7	3.79%	360	5.66E-05	15	7.01%	667	1.05E-04	23	2.46%	234	3.68E-05
8	7.77%	738	1.16E-04	16	7.14%	679	1.07E-04	24	1.86%	177	2.78E-05
								Total		9,509	

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

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	109	1.72E-05	9	7.11%	676	1.06E-04	17	7.39%	703	1.10E-04
2	0.42%	40	6.30E-06	10	4.39%	417	6.55E-05	18	8.18%	777	1.22E-04
3	0.41%	39	6.10E-06	11	4.66%	443	6.96E-05	19	5.69%	541	8.50E-05
4	0.26%	25	3.88E-06	12	5.89%	560	8.79E-05	20	4.28%	407	6.38E-05
5	0.50%	47	7.42E-06	13	6.15%	585	9.18E-05	21	3.25%	309	4.86E-05
6	0.91%	86	1.35E-05	14	6.04%	574	9.02E-05	22	3.30%	313	4.92E-05
7	3.79%	360	5.66E-05	15	7.01%	667	1.05E-04	23	2.46%	234	3.67E-05
8	7.77%	738	1.16E-04	16	7.14%	679	1.07E-04	24	1.86%	177	2.78E-05
								Total		9,509	

1655 Lincoln Ave, San Jose, CA - Off-Site Residential
Cumulative Operation - Lincoln Avenue
TOG Exhaust Modeling - Roadway Links, Traffic Volumes, and TOG Exhaust Emissions
Year = 2025

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
TEXH_NB_LIN	Lincoln Avenue Northbound	NB	2	651.4	0.40	13.3	44	1.3	25	9,509
TEXH_SB_LIN	Lincoln Avenue Southbound	SB	2	651.2	0.40	13.3	44	1.3	25	9,509
									Total	19,018

Emission Factors - TOG Exhaust

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Emissions per Vehicle (g/VMT)	0.02739			

Emisson Factors from CT-EMFAC2017

2025 Hourly Traffic Volumes and TOG Exhaust Emissions - TEXH_NB_LIN

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	109	3.37E-04	9	7.11%	676	2.08E-03	17	7.39%	703	2.16E-03
2	0.42%	40	1.23E-04	10	4.39%	417	1.28E-03	18	8.18%	777	2.39E-03
3	0.41%	39	1.20E-04	11	4.66%	443	1.37E-03	19	5.69%	541	1.67E-03
4	0.26%	25	7.61E-05	12	5.89%	560	1.72E-03	20	4.28%	407	1.25E-03
5	0.50%	47	1.45E-04	13	6.15%	585	1.80E-03	21	3.25%	309	9.53E-04
6	0.91%	86	2.66E-04	14	6.04%	574	1.77E-03	22	3.30%	313	9.65E-04
7	3.79%	360	1.11E-03	15	7.01%	667	2.05E-03	23	2.46%	234	7.21E-04
8	7.77%	738	2.27E-03	16	7.14%	679	2.09E-03	24	1.86%	177	5.46E-04
								Total		9,509	

2025 Hourly Traffic Volumes Per Direction and TOG Exhaust Emissions - TEXH_SB_LIN

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	109	3.37E-04	9	7.11%	676	2.08E-03	17	7.39%	703	2.16E-03
2	0.42%	40	1.23E-04	10	4.39%	417	1.28E-03	18	8.18%	777	2.39E-03
3	0.41%	39	1.20E-04	11	4.66%	443	1.36E-03	19	5.69%	541	1.67E-03
4	0.26%	25	7.61E-05	12	5.89%	560	1.72E-03	20	4.28%	407	1.25E-03
5	0.50%	47	1.45E-04	13	6.15%	585	1.80E-03	21	3.25%	309	9.53E-04
6	0.91%	86	2.66E-04	14	6.04%	574	1.77E-03	22	3.30%	313	9.65E-04
7	3.79%	360	1.11E-03	15	7.01%	667	2.05E-03	23	2.46%	234	7.20E-04
8	7.77%	738	2.27E-03	16	7.14%	679	2.09E-03	24	1.86%	177	5.46E-04
								Total		9,509	

1655 Lincoln Ave, San Jose, CA - Off-Site Residential
Cumulative Operation - Lincoln Avenue
TOG Evaporative Emissions Modeling - Roadway Links, Traffic Volumes, and TOG Evaporative Emissions
Year = 2025

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
TEVAP_NB_LIN	Lincoln Avenue Northbound	NB	2	651.4	0.40	13.3	44	1.3	25	9,509
TEVAP_SB_LIN	Lincoln Avenue Southbound	SB	2	651.2	0.40	13.3	44	1.3	25	9,509
									Total	19,018

Emission Factors - PM2.5 - Evaporative TOG

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

Emisson Factors from CT-EMFAC2017

2025 Hourly Traffic Volumes and TOG Evaporative Emissions - TEVAP_NB_LIN

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	109	4.41E-04	9	7.11%	676	2.73E-03	17	7.39%	703	2.83E-03
2	0.42%	40	1.62E-04	10	4.39%	417	1.68E-03	18	8.18%	777	3.14E-03
3	0.41%	39	1.57E-04	11	4.66%	443	1.79E-03	19	5.69%	541	2.18E-03
4	0.26%	25	9.97E-05	12	5.89%	560	2.26E-03	20	4.28%	407	1.64E-03
5	0.50%	47	1.91E-04	13	6.15%	585	2.36E-03	21	3.25%	309	1.25E-03
6	0.91%	86	3.48E-04	14	6.04%	574	2.32E-03	22	3.30%	313	1.26E-03
7	3.79%	360	1.45E-03	15	7.01%	667	2.69E-03	23	2.46%	234	9.44E-04
8	7.77%	738	2.98E-03	16	7.14%	679	2.74E-03	24	1.86%	177	7.15E-04
								Total		9,509	

2025 Hourly Traffic Volumes Per Direction and TOG Evaporative Emissions - TEVAP_SB_LIN

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	109	4.41E-04	9	7.11%	676	2.73E-03	17	7.39%	703	2.83E-03
2	0.42%	40	1.62E-04	10	4.39%	417	1.68E-03	18	8.18%	777	3.13E-03
3	0.41%	39	1.57E-04	11	4.66%	443	1.79E-03	19	5.69%	541	2.18E-03
4	0.26%	25	9.97E-05	12	5.89%	560	2.26E-03	20	4.28%	407	1.64E-03
5	0.50%	47	1.90E-04	13	6.15%	585	2.36E-03	21	3.25%	309	1.25E-03
6	0.91%	86	3.48E-04	14	6.04%	574	2.32E-03	22	3.30%	313	1.26E-03
7	3.79%	360	1.45E-03	15	7.01%	667	2.69E-03	23	2.46%	234	9.43E-04
8	7.77%	738	2.98E-03	16	7.14%	679	2.74E-03	24	1.86%	177	7.15E-04
								Total		9,509	

1655 Lincoln Ave, San Jose, CA - Off-Site Residential
Cumulative Operation - Lincoln Avenue
Fugitive Road PM2.5 Modeling - Roadway Links, Traffic Volumes, and Fugitive Road PM2.5 Emissions
Year = **2025**

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
FUG_NB_LIN	Lincoln Avenue Northbound	NB	2	651.4	0.40	13.3	44	1.3	25	9,509
FUG_SB_LIN	Lincoln Avenue Southbound	SB	2	651.2	0.40	13.3	44	1.3	25	9,509
									Total	19,018

Emission Factors - Fugitive PM2.5

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

Emisson Factors from CT-EMFAC2017

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

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	109	4.15E-04	9	7.11%	676	2.57E-03	17	7.39%	703	2.66E-03
2	0.42%	40	1.52E-04	10	4.39%	417	1.58E-03	18	8.18%	777	2.95E-03
3	0.41%	39	1.47E-04	11	4.66%	443	1.68E-03	19	5.69%	541	2.05E-03
4	0.26%	25	9.38E-05	12	5.89%	560	2.12E-03	20	4.28%	407	1.54E-03
5	0.50%	47	1.79E-04	13	6.15%	585	2.22E-03	21	3.25%	309	1.17E-03
6	0.91%	86	3.27E-04	14	6.04%	574	2.18E-03	22	3.30%	313	1.19E-03
7	3.79%	360	1.37E-03	15	7.01%	667	2.53E-03	23	2.46%	234	8.88E-04
8	7.77%	738	2.80E-03	16	7.14%	679	2.58E-03	24	1.86%	177	6.72E-04
								Total		9,509	

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

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	109	4.15E-04	9	7.11%	676	2.56E-03	17	7.39%	703	2.66E-03
2	0.42%	40	1.52E-04	10	4.39%	417	1.58E-03	18	8.18%	777	2.95E-03
3	0.41%	39	1.47E-04	11	4.66%	443	1.68E-03	19	5.69%	541	2.05E-03
4	0.26%	25	9.37E-05	12	5.89%	560	2.12E-03	20	4.28%	407	1.54E-03
5	0.50%	47	1.79E-04	13	6.15%	585	2.22E-03	21	3.25%	309	1.17E-03
6	0.91%	86	3.27E-04	14	6.04%	574	2.18E-03	22	3.30%	313	1.19E-03
7	3.79%	360	1.37E-03	15	7.01%	667	2.53E-03	23	2.46%	234	8.87E-04
8	7.77%	738	2.80E-03	16	7.14%	679	2.57E-03	24	1.86%	177	6.72E-04
								Total		9,509	

1655 Lincoln Ave, San Jose, CA - Lincoln Avenue 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	2
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	0.0021	0.1763	0.2220

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	0.0540	0.0517	0.0023

1655 Lincoln Avenue, San Jose, CA - Lincoln Avenue 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	0.0021	0.1763	0.2220	0.029	0.014	0.0010	0.04
1	1	0 - 1	2023	10	0.0021	0.1763	0.2220	0.345	0.165	0.0123	0.52
2	1	1 - 2	2024	10	0.0021	0.1763	0.2220	0.345	0.165	0.0123	0.52
3	1	2 - 3	2025	3	0.0021	0.1763	0.2220	0.054	0.026	0.0019	0.08
4	1	3 - 4	2026	3	0.0021	0.1763	0.2220	0.054	0.026	0.0019	0.08
5	1	4 - 5	2027	3	0.0021	0.1763	0.2220	0.054	0.026	0.0019	0.08
6	1	5 - 6	2028	3	0.0021	0.1763	0.2220	0.054	0.026	0.0019	0.08
7	1	6 - 7	2029	3	0.0021	0.1763	0.2220	0.054	0.026	0.0019	0.08
8	1	7 - 8	2030	3	0.0021	0.1763	0.2220	0.054	0.026	0.0019	0.08
9	1	8 - 9	2031	3	0.0021	0.1763	0.2220	0.054	0.026	0.0019	0.08
10	1	9 - 10	2032	3	0.0021	0.1763	0.2220	0.054	0.026	0.0019	0.08
11	1	10 - 11	2033	3	0.0021	0.1763	0.2220	0.054	0.026	0.0019	0.08
12	1	11 - 12	2034	3	0.0021	0.1763	0.2220	0.054	0.026	0.0019	0.08
13	1	12 - 13	2035	3	0.0021	0.1763	0.2220	0.054	0.026	0.0019	0.08
14	1	13 - 14	2036	3	0.0021	0.1763	0.2220	0.054	0.026	0.0019	0.08
15	1	14 - 15	2037	3	0.0021	0.1763	0.2220	0.054	0.026	0.0019	0.08
16	1	15 - 16	2038	3	0.0021	0.1763	0.2220	0.054	0.026	0.0019	0.08
17	1	16-17	2039	1	0.0021	0.1763	0.2220	0.006	0.003	0.0002	0.01
18	1	17-18	2040	1	0.0021	0.1763	0.2220	0.006	0.003	0.0002	0.01
19	1	18-19	2041	1	0.0021	0.1763	0.2220	0.006	0.003	0.0002	0.01
20	1	19-20	2042	1	0.0021	0.1763	0.2220	0.006	0.003	0.0002	0.01
21	1	20-21	2043	1	0.0021	0.1763	0.2220	0.006	0.003	0.0002	0.01
22	1	21-22	2044	1	0.0021	0.1763	0.2220	0.006	0.003	0.0002	0.01
23	1	22-23	2045	1	0.0021	0.1763	0.2220	0.006	0.003	0.0002	0.01
24	1	23-24	2046	1	0.0021	0.1763	0.2220	0.006	0.003	0.0002	0.01
25	1	24-25	2047	1	0.0021	0.1763	0.2220	0.006	0.003	0.0002	0.01
26	1	25-26	2048	1	0.0021	0.1763	0.2220	0.006	0.003	0.0002	0.01
27	1	26-27	2049	1	0.0021	0.1763	0.2220	0.006	0.003	0.0002	0.01
28	1	27-28	2050	1	0.0021	0.1763	0.2220	0.006	0.003	0.0002	0.01
29	1	28-29	2051	1	0.0021	0.1763	0.2220	0.006	0.003	0.0002	0.01
30	1	29-30	2052	1	0.0021	0.1763	0.2220	0.006	0.003	0.0002	0.01
Total Increased Cancer Risk								1.56	0.749	0.056	**2.37**

Maximum Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.00042	0.05	0.05

* Third trimester of pregnancy

1655 Lincoln Ave, San Jose, CA - Lincoln Avenue Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
at OnSite MEI Receptor (1.5 meter receptor height)

Emission Year	2025
Receptor Information	Onsite MEI receptor
Number of Receptors	5
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	0.0020	0.1565	0.2052

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	0.2004	0.1924	0.0080

1655 Lincoln Avenue, San Jose, CA - Lincoln Avenue 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*	2025	10	0.0020	0.1565	0.2052	0.027	0.012	0.0009	0.04
1	1	0 - 1	2025	10	0.0020	0.1565	0.2052	0.327	0.147	0.0113	0.48
2	1	1 - 2	2026	10	0.0020	0.1565	0.2052	0.327	0.147	0.0113	0.48
3	1	2 - 3	2027	3	0.0020	0.1565	0.2052	0.051	0.023	0.0018	0.08
4	1	3 - 4	2028	3	0.0020	0.1565	0.2052	0.051	0.023	0.0018	0.08
5	1	4 - 5	2029	3	0.0020	0.1565	0.2052	0.051	0.023	0.0018	0.08
6	1	5 - 6	2030	3	0.0020	0.1565	0.2052	0.051	0.023	0.0018	0.08
7	1	6 - 7	2031	3	0.0020	0.1565	0.2052	0.051	0.023	0.0018	0.08
8	1	7 - 8	2032	3	0.0020	0.1565	0.2052	0.051	0.023	0.0018	0.08
9	1	8 - 9	2033	3	0.0020	0.1565	0.2052	0.051	0.023	0.0018	0.08
10	1	9 - 10	2034	3	0.0020	0.1565	0.2052	0.051	0.023	0.0018	0.08
11	1	10 - 11	2035	3	0.0020	0.1565	0.2052	0.051	0.023	0.0018	0.08
12	1	11 - 12	2036	3	0.0020	0.1565	0.2052	0.051	0.023	0.0018	0.08
13	1	12 - 13	2037	3	0.0020	0.1565	0.2052	0.051	0.023	0.0018	0.08
14	1	13 - 14	2038	3	0.0020	0.1565	0.2052	0.051	0.023	0.0018	0.08
15	1	14 - 15	2039	3	0.0020	0.1565	0.2052	0.051	0.023	0.0018	0.08
16	1	15 - 16	2040	3	0.0020	0.1565	0.2052	0.051	0.023	0.0018	0.08
17	1	16-17	2041	1	0.0020	0.1565	0.2052	0.006	0.003	0.0002	0.01
18	1	17-18	2042	1	0.0020	0.1565	0.2052	0.006	0.003	0.0002	0.01
19	1	18-19	2043	1	0.0020	0.1565	0.2052	0.006	0.003	0.0002	0.01
20	1	19-20	2044	1	0.0020	0.1565	0.2052	0.006	0.003	0.0002	0.01
21	1	20-21	2045	1	0.0020	0.1565	0.2052	0.006	0.003	0.0002	0.01
22	1	21-22	2046	1	0.0020	0.1565	0.2052	0.006	0.003	0.0002	0.01
23	1	22-23	2047	1	0.0020	0.1565	0.2052	0.006	0.003	0.0002	0.01
24	1	23-24	2048	1	0.0020	0.1565	0.2052	0.006	0.003	0.0002	0.01
25	1	24-25	2049	1	0.0020	0.1565	0.2052	0.006	0.003	0.0002	0.01
26	1	25-26	2050	1	0.0020	0.1565	0.2052	0.006	0.003	0.0002	0.01
27	1	26-27	2051	1	0.0020	0.1565	0.2052	0.006	0.003	0.0002	0.01
28	1	27-28	2052	1	0.0020	0.1565	0.2052	0.006	0.003	0.0002	0.01
29	1	28-29	2053	1	0.0020	0.1565	0.2052	0.006	0.003	0.0002	0.01
30	1	29-30	2054	1	0.0020	0.1565	0.2052	0.006	0.003	0.0002	0.01
Total Increased Cancer Risk								1.48	0.665	0.051	**2.20**

Maximum Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.00040	0.19	0.20

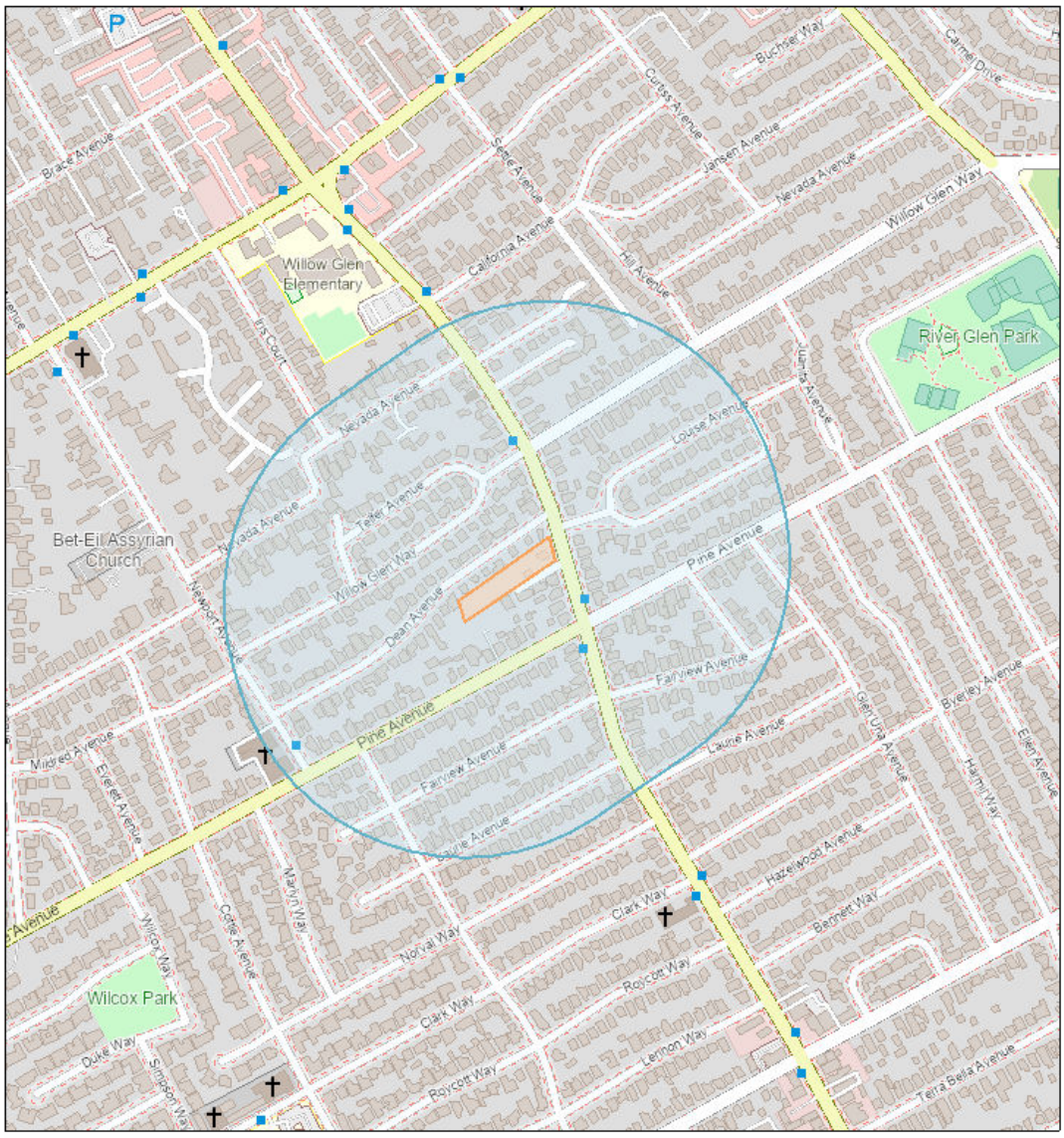
* Third trimester of pregnancy

Screening Report

Area of Interest (AOI) Information

Area : 4,314,527.06 ft²

Oct 7 2022 11:59:03 Pacific Daylight Time



1:9,028

0 0.05 0.1 0.2 mi

0 0.07 0.15 0.3 km

Summary

Name	Count	Area(ft²)	Length(ft)
Permitted Stationary Sources	0	N/A	N/A

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