APPENDIX I

HEALTH RISK ASSESSMENT

Health Risk Assessment (Revised)

200 North Bascom Avenue Medical Office Building

May 24, 2021

Prepared by

EMC Planning Group

HEALTH RISK ASSESSMENT (REVISED)

200 NORTH BASCOM AVENUE MEDICAL OFFICE BUILDING

PREPARED FOR

City of San José

Department of Planning, Building, and Code Enforcement

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1.0 Introduction

1.1 PURPOSE

The purpose of this report is to address community health risk impacts associated with the construction of a medical office building at 200 N. Bascom Avenue, San José. Construction activities associated with the project, including demolition and clearing of the existing structures at the site, would generate air pollutant emissions volumes, which were predicted using models. Community health risk assessments typically look at all substantial sources of toxic air contaminants (TACs) that can affect sensitive receptors located within 1,000 feet of a project site (i.e., influence area). These sources include rail lines, highways, busy surface streets, and stationary sources. The potential health risk impacts to nearby sensitive receptors from exposure to emissions generated by project demolition and construction activity were evaluated in combination with exposures to existing TACs from stationary sources and high-traffic volume roadways. The impact analysis is based on the guidance provided by the Bay Area Air Quality Management District (hereinafter "air district").

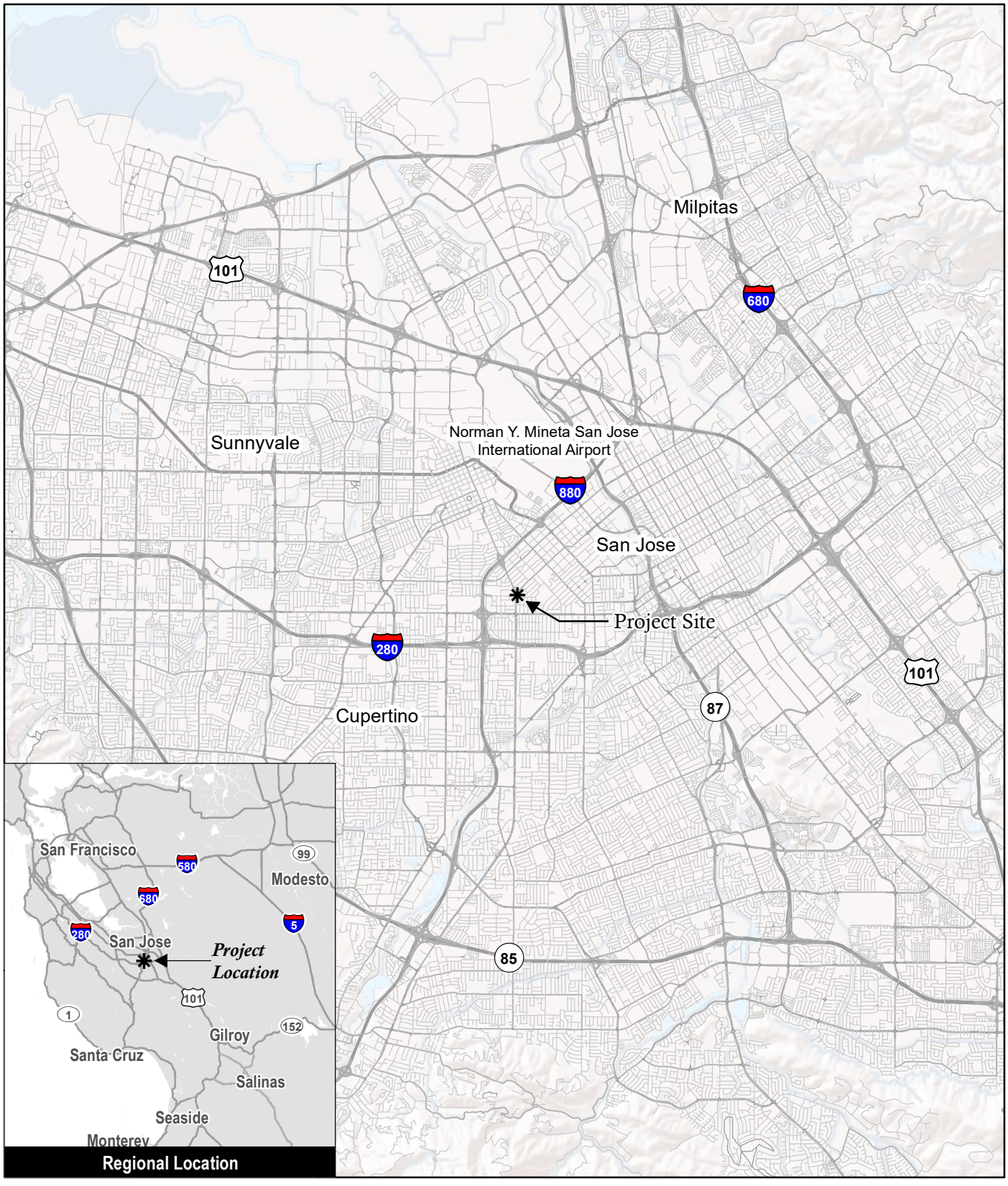
This introductory section provides a description of the project. Section 2 describes the existing environmental setting including air quality conditions, and the regulatory setting for addressing emissions-related health risks. Section 3 identifies thresholds of significance and describes the analysis methodology. Section 4 presents an assessment of project-related health risks related to emissions generated by construction of the project, and Section 5 identifies references cited and includes a list of persons who prepared this technical report.

1.2 PROJECT DESCRIPTION

The proposed project is the demolition of an existing 5,900 square-foot one-story medical building (which was destroyed by fire on February 3, 2021) and its replacement with a 34,987 square foot four-story medical building on a 0.46-acre project site located at 200 N. Bascom Avenue in the City of San José. Figure 1-1, Location Map, presents the regional location of the project site. Figure 1-2, Aerial Photograph, presents the project site boundary and surrounding land uses.

The proposed project includes the construction of two levels of underground parking with 60 parking spaces, with additional parking at ground level for two additional vehicles, as well as for bicycles and motorcycles.

The existing medical building would be demolished and the site would be cleared of pavement. Grading for the proposed project includes excavation of 7,500 cubic yards of soil to accommodate the proposed underground parking garage, and import of 100 cubic yards of soils. The excavated soils would be disposed of off-site. Additional improvements include replacement of sidewalks and driveway apron in the public right-of-way along the site frontage on Forest Avenue. Figure 1-3, Preliminary Civil Site Plan, shows the site plan including frontage improvements. Construction is expected to begin in 2022, with the project planned for operation in 2023.



Source: ESRI 2018

Figure 1-1

Location Map

200 North Bascom Avenue Construction Health Risk Assessment

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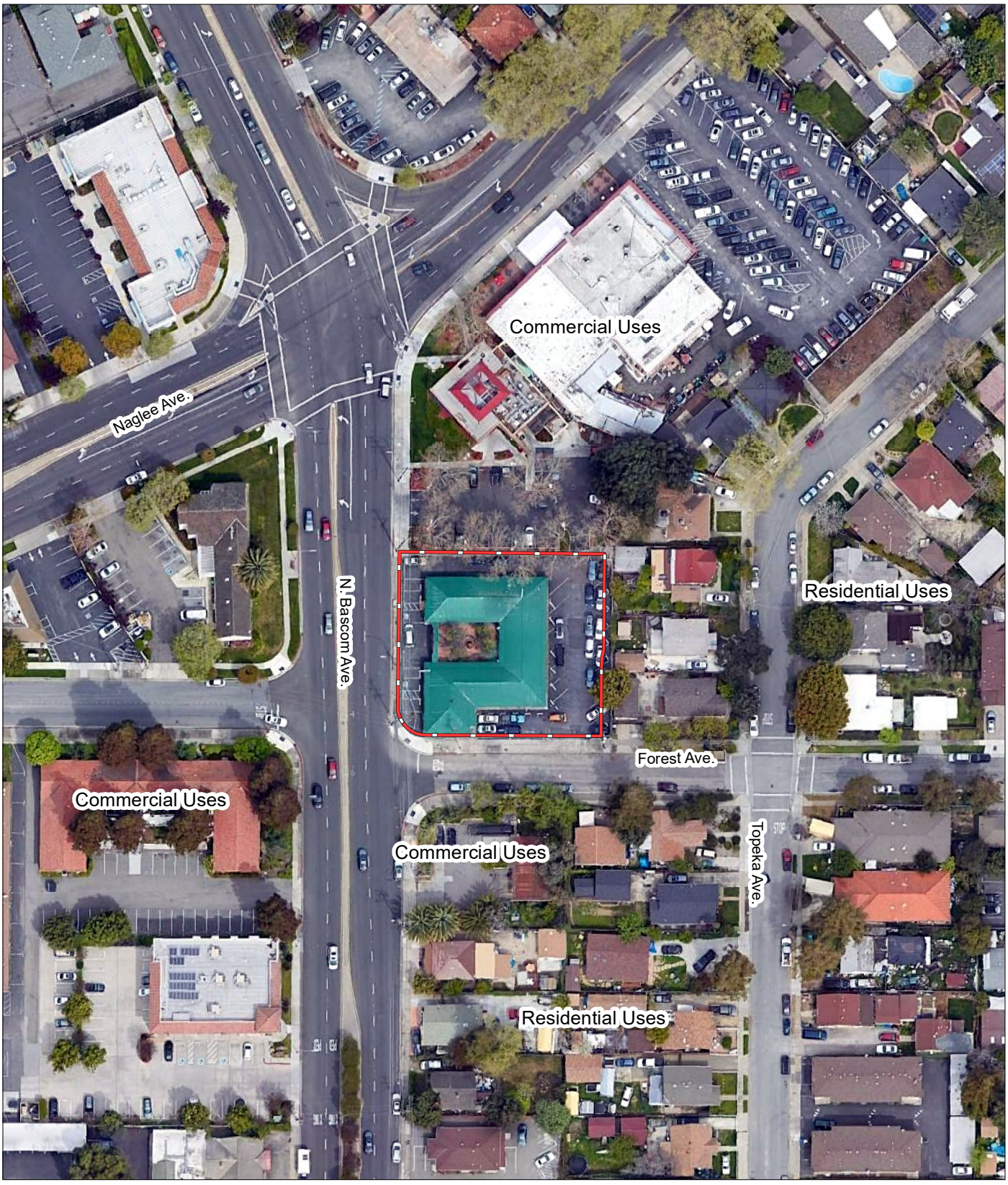

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Project Site

Source: ESRI 2019, Santa Clara County GIS 2018, Google Earth 2019

Figure 1-2

Aerial Photograph

200 North Bascom Avenue Construction Health Risk Assessment

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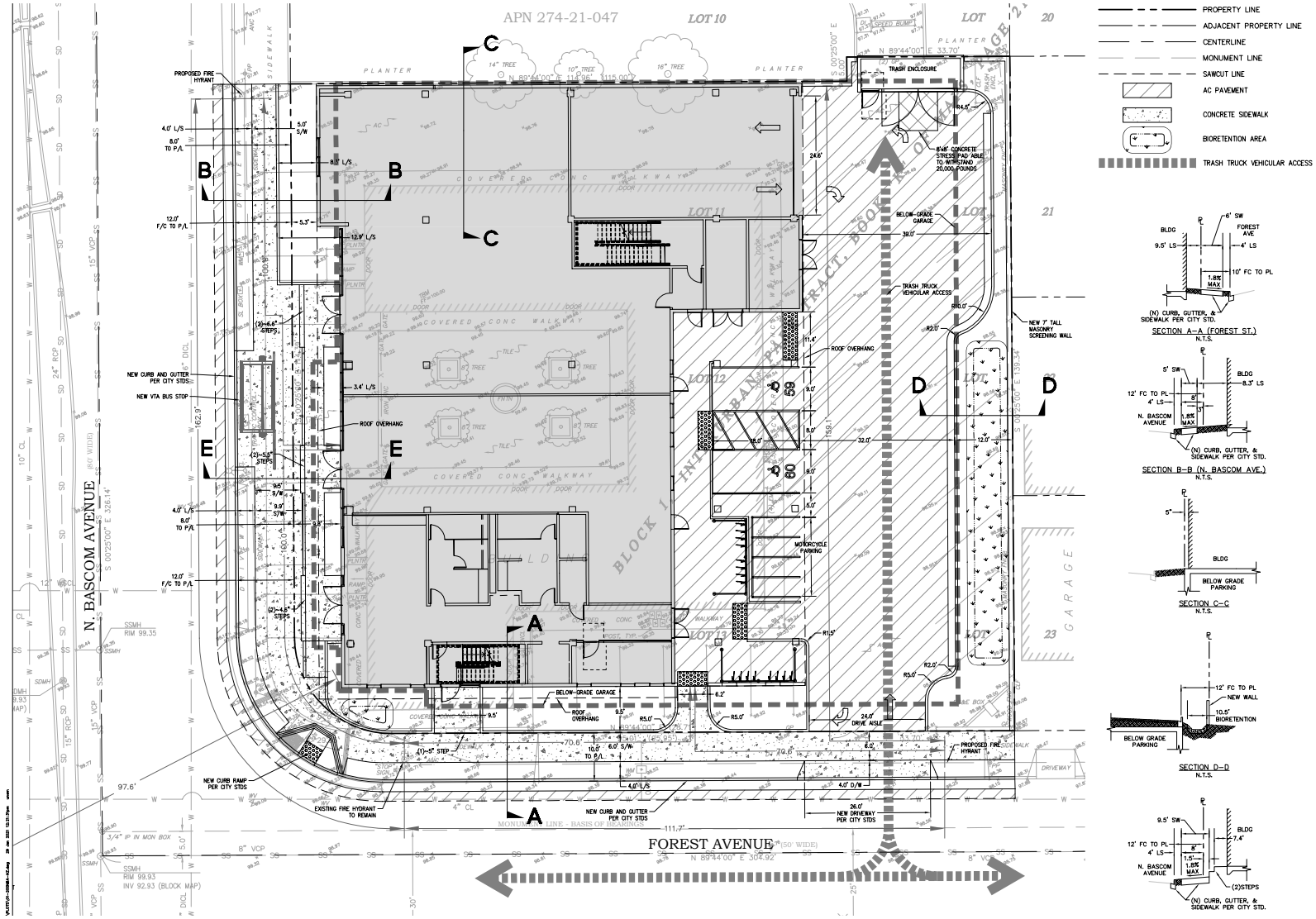

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Source: Ratcliff Architects 2021, BKF 2021

Figure 1-3
Preliminary Civil Site Plan

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2.0
Setting

2.1 ENVIRONMENTAL SETTING

Regional Climate and Topography

The project is located in Santa Clara County, which is in the San Francisco Bay Area Air Basin (hereinafter "air basin"). The air basin encompasses all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara counties, and the southern portions of Solano and Sonoma counties.

The topography of the air basin is characterized by complex terrain, consisting of coastal mountain ranges, inland valleys and bays. This complex terrain, especially the higher elevations, distorts the normal wind flow patterns in the air basin. The greatest distortion occurs when low-level inversions are present and the air beneath the inversion flows independently of air above the inversion, a condition that is common in the summer time.

The climate of the air basin is determined largely by a high-pressure system that is usually present over the eastern Pacific Ocean off the west coast of North America. During winter, the Pacific high-pressure system shifts southward, allowing more storms to pass through the region. During summer and early fall, when few storms pass through the region, emissions generated within the Bay Area can combine with abundant sunshine under the restraining influences of topography and subsidence inversions to create conditions that are conducive to the formation of photochemical pollutants, such as ozone, and secondary particulates, such as nitrates and sulfates.

Temperature inversions can often occur during the summer and winter months. An inversion is a layer of warmer air over a layer of cooler air that traps and concentrates pollutants near the ground. As such, the highest air pollutant concentrations in the air basin generally occur during inversions (Bay Area Air Quality Management District 2017).

The project site is located in the Santa Clara Valley climatological subregion. The Santa Clara Valley subregion is bounded by the Bay to the north and by mountains to the east, south and west. Temperatures are warm on summer days and cool on summer nights, and winter temperatures are fairly mild. At the northern end of the valley, mean maximum temperatures are in the low-80's degrees Fahrenheit (°F) during the summer and the high-50's °F during the winter, and mean minimum temperatures range from the high-50's °F in

the summer to the low-40's °F in the winter. Winds in the valley are greatly influenced by the terrain, resulting in a prevailing flow that roughly parallels the valley's northwest-southeast axis. A north-northwesterly sea breeze flows through the valley during the afternoon and early evening, and a light south-southeasterly drainage flow occurs during the late evening and early morning. In the summer the southern end of the valley sometimes becomes a "convergence zone," when air flowing from the Monterey Bay gets channeled northward into the southern end of the valley and meets with the prevailing north-northwesterly winds. Wind speeds are greatest in the spring and summer and weakest in the fall and winter. Nighttime and early morning hours frequently have calm winds in all seasons, while summer afternoons and evenings are quite breezy. Strong winds are rare, associated mostly with the occasional winter storm (Bay Area Air Quality Management District 2017).

The air pollution potential of the Santa Clara Valley is high. High summer temperatures, stable air and mountains surrounding the valley combine to promote ozone formation. In addition to the many local sources of pollution, ozone precursors from San Francisco, San Mateo and Alameda counties are carried by prevailing winds to the Santa Clara Valley. The valley tends to channel pollutants to the southeast. In addition, on summer days with low level inversions, ozone can be recirculated by southerly drainage flows in the late evening and early morning and by the prevailing north-westerly winds in the afternoon. A similar recirculation pattern occurs in the winter, affecting levels of carbon monoxide and particulate matter. This movement of the air up and down the valley increases the impact of the pollutants significantly (Bay Area Air Quality Management District 2017).

Air Pollutants of Concern

The air basin is currently designated as a non-attainment area for state and national ozone standards, for state and national fine particulate matter ($PM_{2.5}$) standards, and state respirable particulate matter (PM_{10}) standards.

Ground-level ozone is 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 ground-level ozone. 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 in 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 or 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.

Toxic Air Contaminants

TACs have the potential to cause adverse health effects in humans, including increasing the risk of cancer upon exposure or acute (short-term) and/or chronic (long-term) non-cancer health effects. Examples of TACs include certain aromatic and chlorinated hydrocarbons, diesel particulate matter (DPM), certain metals, and asbestos. TACs are generated by a number of sources, including stationary sources such as dry cleaners, gas stations, combustion sources, and laboratories; mobile sources, such as automobiles; and area sources, such as landfills. Adverse health effects associated with exposure to TACs may include carcinogenic (i.e., cancer-causing) and non-carcinogenic effects. Non-carcinogenic effects typically affect one or more target organ systems and may be experienced through either acute or chronic exposure to a given TAC.

Construction activity on the project site would generate emissions of TACs from equipment and trucks that could affect nearby sensitive receptors. The project site is located on Bascom Avenue. Typically, for residential projects located near high-volume roadways, the primary TAC of concern with non-cancer health effects is DPM. Vehicle traffic on Bascom Avenue would generate DPM volumes that could negatively affect the health of nearby sensitive receptors.

Construction Emissions

Construction emissions are typically generated by the use of heavy equipment, the transport of materials, and construction employee commute trips. Construction-related emissions consist primarily of ROG, NO_X, carbon monoxide, and particulate matter (PM_{10} and $PM_{2.5}$). Emissions of ROG, NO_X, carbon monoxide, and exhaust particulate matter are generated primarily by the operation of gas and diesel-powered motor vehicles, asphalt paving activities, and the application of architectural coatings. Fugitive particulate matter emissions are generated primarily by wind erosion of exposed graded surfaces.

Stationary Source Emissions

A stationary source consists of a single emission source with an identified emission point, such as a stack at an industrial facility. Facilities can have multiple emission point sources located on-site and sometimes the facility as a whole is referred to as a stationary source. Examples of air district-permitted stationary sources include refineries, gasoline dispensing stations, dry cleaning establishments, back-up diesel generators, boilers, heaters, flares, cement kilns, and other types of combustion equipment, as well as non-combustion sources such as coating or printing operations.

According to the air district's Permitted Stationary Source Risks and Hazards geographic information systems (GIS) mapping tool, no stationary sources are located within 1,000 feet of the project site.

Sensitive Receptors

There are groups of people more affected by air pollution than others. Children, the elderly, and people with illnesses are especially vulnerable to the effects of air pollution. 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.

There are a number of sensitive residential receptors near the project site. The air district recommends a health risk assessment when sensitive receptors are located within 1,000 feet of construction activities. Figure 2-1, Sensitive Receptors Within 1,000 Feet, presents the locations of sensitive receptors within 1,000 feet of the project site.

2.2 Regulatory Setting

Federal

United States Environmental Protection Agency

The United States Environmental Protection Agency (EPA) was established on December 2, 1970 to create a single agency that covered several agency concerns: federal research, monitoring, standard-setting and enforcement.

The EPA regulates diesel engine design and has implemented a series of measures since 1996 to reduce NO_x and particulate emissions from off-road and highway diesel equipment. EPA Tier 1 non-road diesel engine standards were introduced in 1996, Tier 2 in 2001, Tier 3 in 2006, with final Tier 4 in 2014 (DieselNet 2017). Table 2-1, Typical Non-road Engine Emissions Standards, compares emissions standards for NO_x and particulate matter from non-road engine Tier 1 through Tier 4 for typical engine sizes. As illustrated in the table, emissions for these pollutants have decreased significantly for construction equipment manufactured over the past 20 years, and especially for construction equipment manufactured in the past five years.

Source: ESRI 2019, Santa Clara County GIS 2018, Google Earth 2018

Figure 2-1

Sensitive Receptors Within 1,000 Feet

200 North Bascom Avenue Construction Health Risk Assessment

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Table 2-1 Typical Non-road Engine Emissions Standards

Engine Tier and Year Introduced	NO_X Emissions[1]			Particulate Emissions[1]		
	100-175 HP	175-300 HP	300-600 HP	100-175 HP	175-300 HP	300-600 HP
Tier 1 (1996)	6.90	6.90	6.90	--	0.40	0.40
Tier 2 (2001)	--[2]	--[2]	--[2]	0.22	0.15	0.15
Tier 3 (2006)	--[2]	--[2]	--[2]	-- †[3]	-- †[3]	-- †[3]
Tier 4 (2014)	0.30	0.30	0.30	0.015	0.015	0.015

SOURCE: DieselNet 2017

NOTES:

1. Expressed in g/bhp-hr, where g/bhp-hr stands for grams per brake horsepower-hour.
2. Tier 1 standards for NO_X remained in effect.
3. † - Not adopted, engines must meet Tier 2 PM standard.

State

California Air Resources Board

The California Air Resources Board (CARB) oversees regional air district activities and regulates air quality at the state level. CARB has adopted and implemented a number of regulations for stationary and mobile sources to reduce emissions of DPM. Several of these regulatory programs affect medium and heavy-duty diesel trucks that represent the bulk of DPM emissions from California highways.

California Air Toxics Program

The Toxic Air Contaminant Identification and Control Act of 1983 or Assembly Bill 1807 established the California Air Toxics Program that was designed to reduce exposure to air toxics. The program involves a two-step process: risk identification and risk management. In the risk identification step, upon CARB's request, the Office of Environmental Health Hazard Assessment evaluates the health effects of substances other than pesticides and their pesticidal uses. Substances with the potential to be emitted or are currently being emitted into the ambient air may be identified as a TAC. Once a substance is identified as a TAC, and with the participation of local air districts, industry, and interested public, CARB prepares a report that outlines the need and degree to regulate the TAC through a control measure (California Air Resources Board 2020a).

The Air Toxics Hot Spots Information and Assessment Act or AB 2588 was enacted in 1987, and requires stationary sources to report the types and quantities of certain substances their facilities routinely release into the air. The goals of AB 2588 are to collect emission data, to identify facilities having localized impacts, to ascertain health risks, to notify nearby residents of significant risks, and to reduce those significant risks to acceptable levels (California Air Resources Board 2020b).

Truck and Bus Regulation

As heavy-duty on-road vehicles are a significant source of TACs, the Truck and Bus Regulation is one of the most far-reaching and important tools to reduce smog-forming and toxic emissions and protect public health in disadvantaged communities. The Truck and Bus Regulation requires all trucks and buses, by January 1, 2023, to have 2010 or newer model year engines to reduce DPM and NO_X emissions (California Air Resources Board 2020c). To help ensure that the benefits of this regulation are achieved, starting January 1, 2020, only vehicles compliant with this regulation will be registered by the California Department of Motor Vehicles.

In-Use Off-Road Diesel Vehicle Regulation

The goal of the In-Use Off-Road Diesel-Fueled Fleets Regulation is to reduce DPM and NO_X emissions from in-use (existing) off-road heavy-duty diesel vehicles in California (e.g., loaders, tractors, bulldozers, backhoes, off-highway trucks, etc.) (California Air Resources Board 2020d). This regulation applies to all diesel-powered off-road vehicles with engines 25 horsepower or greater. The regulations are intended to reduce DPM and NO_X exhaust emissions by requiring owners to turn over their fleet (replace older equipment with newer equipment) or retrofit existing equipment in order to achieve specified fleet averaged emission rates.

Regional/Local

Bay Area Air Quality Management District

The air district is charged with regulatory authority over stationary sources of air emissions, monitoring air quality within the air basin, providing guidelines for analysis of air quality impacts pursuant to California Environmental Quality Act (CEQA), and preparing an air quality management plan to maintain or improve air quality in the air basin. The air district's *2017 CEQA Air Quality Guidelines* (2017 CEQA Guidelines) contain instructions on how to evaluate, measure, and mitigate air quality impacts generated from land development construction and operation activities.

City of San José 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:

Air Pollutant Emission Reduction

> Goal MS-10 Minimize emissions from new development.
>
> 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.

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.

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, encourages 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.

Implementing Actions

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.

Policy 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 air district CEQA Guidelines for the relevant project size and type.

City of San José Standard Conditions of Approval

The City has adopted air district requirements for implementation of best management practices during construction to reduce fugitive dust emissions. The following best management practices are required as standard conditions of approval for all phases of construction.

Standard Permit Conditions

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, debris, 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;
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; and
8. Post a publicly visible sign with 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.

3.0
Significance Criteria and Methodology

3.1 Air District Significance Thresholds

The air district's 2017 CEQA Guidelines provide cancer and non-cancer thresholds to establish the level at which TACs would cause significant health risks in sensitive receptors. A summary of the air district's community risk significance thresholds is presented in Table 3-1, Bay Area Air Quality Management District Community Risk Significance Thresholds.

Table 3-1 Community Risk Significance Thresholds

Health Risks and Hazards	Single Sources Within 1,000-foot Zone of Influence	Cumulative Sources Within 1,000-foot Zone of Influence
Excess Cancer Risk	>10.0 per one million	>100 per one million
Non-Cancer Hazard Index	>1.0	>10.0
Incremental annual $PM_{2.5}$	>0.3 µg/m3	>0.8 µg/m3

SOURCE: Bay Area Air Quality Management District 2017

3.2 Methodology and Approach

CalEEMod Modeling

The California Emissions Estimator Model (CalEEMod) Version 2016.3.2 was used to estimate emissions from construction of the project assuming full build-out of the project. The model output from CalEEMod is included as Appendix A.

CalEEMod provided annual emissions for both on- 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. Construction data inputs are based on information provided by the project applicant including construction phases, number and type of construction equipment by phase, demolition and excavation estimates, materials and concrete delivery estimates. CalEEMod defaults were used where project specific construction data was not yet available in sufficient detail. The applicant estimates that

construction would begin in January 2022 and would occur over a 12-month period. The proposed project land uses and demolition/earthwork volumes were modeled as shown in Table 3-2, Project Characteristics.

Table 3-2 Project Characteristics

Project Components	CalEEMod Land Use[1]	Existing	Proposed
Medical Office Building[2]	Medical Office Building[2]	18,805	34,987
Surface Parking Lot	Parking Lot	26[3]	2[3]
Bicycle/Motorcycle Parking/Access[2]	Other Asphalt Surfaces	0	4,700
Landscaping and sidewalks[2,4]	Other Non-Asphalt Surfaces[2]	54	3,340
Sub-grade Parking Structure	Enclosed Parking with Elevator	0[3]	60[3]

SOURCE: Trinity Consultants 2017, Ratcliff Architects 2021.
NOTES:
1. CalEEMod default land use subtype. Descriptions of the model default land use categories and subtypes are found in the User's Guide for CalEEMod Version 2016.3.2 available online at: http://www.aqmd.gov/caleemod/user's-guide.
2. Units are in square feet.
3. Number of parking spaces.
4. Includes offsite improvements to public rights of way.

The CalEEMod software calculates the total annual exhaust PM_{10} emissions (assumed to be DPM) from the off-road construction equipment and on-road vehicles for the overall construction period. The unmitigated criteria air pollutant emissions resulting from project construction are summarized in Table 3-3, Unmitigated Construction Criteria Air Pollutant Emissions.

Table 3-3 Unmitigated Construction Criteria Air Pollutant Emissions

Construction Emissions[1]	Reactive Organic Gases (ROG)	Nitrogen Oxides (NO_X)	Uncontrolled Exhaust Particulate Matter (PM_{10})	Uncontrolled Exhaust Particulate Matter ($PM_{2.5}$)
2022 Annual Emissions (tons/year)	0.2920	1.3857	0.0364	0.0733
Average Daily Emissions (pounds/day)[2]	2.3740	11.2658	0.2959	0.5959

SOURCE: EMC Planning Group 2021
NOTES:
1. Results may vary due to rounding.
2. CalEEMod estimates construction criteria air pollutant emissions in tons per year. A U.S. ton is equal to 2,000 pounds. The emissions estimates in ton per year are multiped by 2,000 pounds to arrive at emissions volume in pounds per year. CalEEMod estimates a total of 246 construction days. Average daily emissions (in pounds per day) are computed by dividing the annual construction emissions (in pounds per year) by the number of construction days.

The on-road emissions are a result of haul truck travel during demolition and grading activities, worker travel, and vendor deliveries during construction. The model default trip length of 7.3 miles 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.

Dispersion Modeling

For short-term construction, a dispersion modeling analysis was conducted of DPM emitted from diesel vehicles and construction equipment on the proposed project site to assess the health risk impacts of the project's construction on nearby off-site sensitive receptors. The dispersion modeling was performed using the American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD), which is an air district-recommended model for modeling atmospheric dispersion of emissions. Principal parameters of AERMOD for the project included the following:

- The 5-year meteorological data set (2013-2017) from the San José International Airport provided by the air district;
- Construction emissions were modeled as occurring daily between 8:00 a.m. to 6:00 p.m. from Monday through Friday;
- Construction combustion equipment exhaust emissions (DPM) were modeled as an area source with an emission release height of six meters (19.68 feet). The elevated source height reflects the height of heavy-duty diesel truck exhaust pipes plus an additional distance for the height of the exhaust plume above the exhaust pipes to account for plume rise of the exhaust gases; and
- Receptor height of 1.5 meters were used to represent the breathing heights of residents in the nearby homes.

Health Risk Calculations

The State of California Office of Environmental Health Hazard Assessment (OEHHA) and California Air Resources Board (CARB) have developed recommended methods for conducting health risk assessments. The *Air Toxics Hot Spots Program Risk Assessment Guidelines: Guidance Manual for Preparation of Health Risk Assessments* (2015 risk assessment guidelines) published in February 2015 are the most recent OEHHA risk assessment guidelines. 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.

Cancer Risk

Potential increased cancer risk from inhalation of TACs are 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 2015 risk assessment guidelines recommend 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 (ASF) associated with the different types of exposure include: ASF of 10 for the third trimester and infant exposures, ASF of three for a child exposure, and ASF of one 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). As recommended by the air district 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, the air district recommends using the 95th percentile breathing rates. Additionally, CARB and the air district recommend the use of a residential exposure duration of 30 years for sources with long-term emissions (e.g., roadways). For workers, assumed to be adults, a 25-year exposure period is recommended by the air district.

Under previous OEHHA and air district guidance, residential receptors were assumed to be at their home 24 hours a day, or 100 percent of the time. In the 2015 risk assessment guidelines, 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 two years old, 0.72 for ages two to less than 16 years, and 0.73 for ages 16 to 70 years. Use of the FAH factors is allowed by the air district if there are no schools in the project vicinity that would 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 x Inhalation Dose x ASF x ED/AT x FAH x 106

Where;

CPF is Cancer potency factor $(mg/kg\text{-}day)^{-1}$;

ASF is Age sensitivity factor for specified age group;

ED is Exposure duration (years);

AT is Averaging time for lifetime cancer risk (years);

FAH is Fraction of time spent at home (unitless); and

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

Where;

C_{air} is Concentration in air ($\mu g/m^3$);

DBR is Daily breathing rate (L/kg body weight-day);

A is Inhalation absorption factor;

EF is Exposure frequency (days/year); and

10^{-6} is Conversion factor.

A summary of the health risk parameters used in this evaluation are presented in Table 3-4, Health Risk Parameters.

Table 3-4 Health Risk Parameters

Parameter	Exposure Type →	Infant		Child		Adult
	Age Range →	3rd Trimester	0<2	2<9	9<16	16-30
DPM Cancer Potency Factor $(mg/kg\text{-}day)^{-1}$		1.10E+00	1.10E+00	1.10E+00	1.10E+00	1.10E+00
Daily Breathing Rate (L/kg-day) 80th Percentile Rate		273	758	631	572	261
Daily Breathing Rate (L/kg-day) 95th Percentile Rate		361	1,090	861	745	335
Inhalation Absorption Factor		1	1	1	1	1
Averaging Time (years)		70	70	70	70	70
Exposure Duration (years)		0.25	2	14	14	14
Exposure Frequency (days/year)		350	350	350	350	350
Age Sensitivity Factor		10	10	3	3	1
Fraction of Time at Home		0.85-1.0	0.85-1.0	0.72-1.0	0.72-1.0	0.73

SOURCES: Bay Area Air Quality Management District 2016 and Office of Environmental Health Hazard Assessment 2015

Non-Cancer Hazards

Potential non-cancer health hazards from TAC exposure are expressed in terms of a hazard index, which is the ratio of the TAC concentration to a reference exposure level. OEHHA has defined acceptable concentration levels for contaminants that pose non-cancer health

hazards. TAC concentrations below the reference exposure level are not expected to cause adverse health impacts, even for sensitive individuals. The total hazard index is calculated as the sum of the hazard indexes for each TAC evaluated and the total hazard index is compared to the air district's 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 DPM. For DPM, the chronic inhalation reference exposure level is 5 $\mu g/m^3$.

Annual $PM_{2.5}$ Concentrations

While not a TAC, $PM_{2.5}$ has been identified by the air district as a pollutant with potential non-cancer health effects that should be included when evaluating potential community health impacts under 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. Annual $PM_{2.5}$ emissions were determined using CalEEMod.

4.0 Analysis

4.1 CONSTRUCTION HEALTH RISKS

Cancer Risk from Diesel Particulate Matter Emissions

Construction of the proposed project would increase lifetime cancer risk (cancer risk) for sensitive receptors within 1,000 feet of the project site who are exposed to the project's temporary construction DPM and $PM_{2.5}$ emissions. The Point of Maximum Impact (PMI), the Maximally Exposed Individual (MEI), and sensitive receptors located within a 1000-foot radius of the construction activity, are shown in Figure 2-1, Sensitive Receptors Within 1,000 Feet, presented previously. The highest annual average downwind concentration is referred to as the PMI. The MEI is the location with the highest concentration where someone is residing or working. The PMI and the MEI are both located at a home just east of the project site. Average annual and daily emissions of DPM and $PM_{2.5}$ were calculated using CalEEMod over the one-year construction period (refer to Table 3-3). AERMOD was used to determine the annual average DPM and $PM_{2.5}$ concentrations, based on the CalEEMod results. Detailed health risk calculations and model results are included in Appendix B.

Unmitigated Cancer Risks

The modeled unmitigated DPM concentration and maximum cancer risks for project-related construction activities at the MEI are summarized in Table 4-1, Unmitigated Construction Cancer Risks at the MEI. While adult cancer risks are below the BAAQMD threshold, the infant/child cancer risks exceed the BAAQMD threshold.

Table 4-1 Unmitigated Construction Cancer Risks at the MEI

Construction Year	DPM PM_{10} Concentration at the MEI[1,2] (ug/m^3)	Infant/Child Cancer Risk (per million) [1]	Adult Cancer Risk (per million) [1]
2022 (0.25 years during pregnancy)	0.29	3.96	-
2022[3]	0.29	47.84	0.84
Air District Single-Source Threshold	-	10.0	10.0
Exceeds Thresholds?	-	*Yes*	*No*

SOURCES: EMC Planning Group 2021 and Bay Area Air Quality Management District 2017.
NOTES:
1. Results may vary due to rounding.
2. The MEI is located at a house immediately east of the project site. The UTM coordinates are approximately 594687.70 meters Easting and 4131673.01 meters Northing (Refer to Figure 4-1).
3. Per OEHHA and BAAQMD direction, pregnancies are included in the first-year calculations.

Figure 4-1, Unmitigated Diesel Particulate Matter Concentrations Within 1,000 Feet, shows project-generated construction DPM concentrations within 1,000 feet of the site. The 10 cases per million cancer risk threshold for children is exceeded when airborne DPM concentrations exceed 0.055 ug/m^3. As shown in Figure 4-1, several homes directly east of the project site near the MEI location would be exposed to DPM concentrations with maximum infant/child cancer risks that exceed 10 cases per million. Subsequently, infants and children that may reside in these homes would be exposed to a cancer risk of greater than 10 cases per million. This is a significant impact and mitigation is required.

Cancer Risks with Construction Emissions Reductions

The use of lower emissions-emitting equipment such as Tier III engines or better, the use of alternative fuels, or electrification of the job site and smaller equipment can reduce construction equipment DPM emissions volumes and their associated cancer risks. In an effort to determine the extent of mitigation required to reduce infant/child cancer risk below the air district threshold, all construction equipment were modeled using a combination of Tier III diesel engines for heavy equipment, and natural gas engines, and electrically powered equipment. The CalEEMod results are described as "mitigated" and are included in Appendix B.

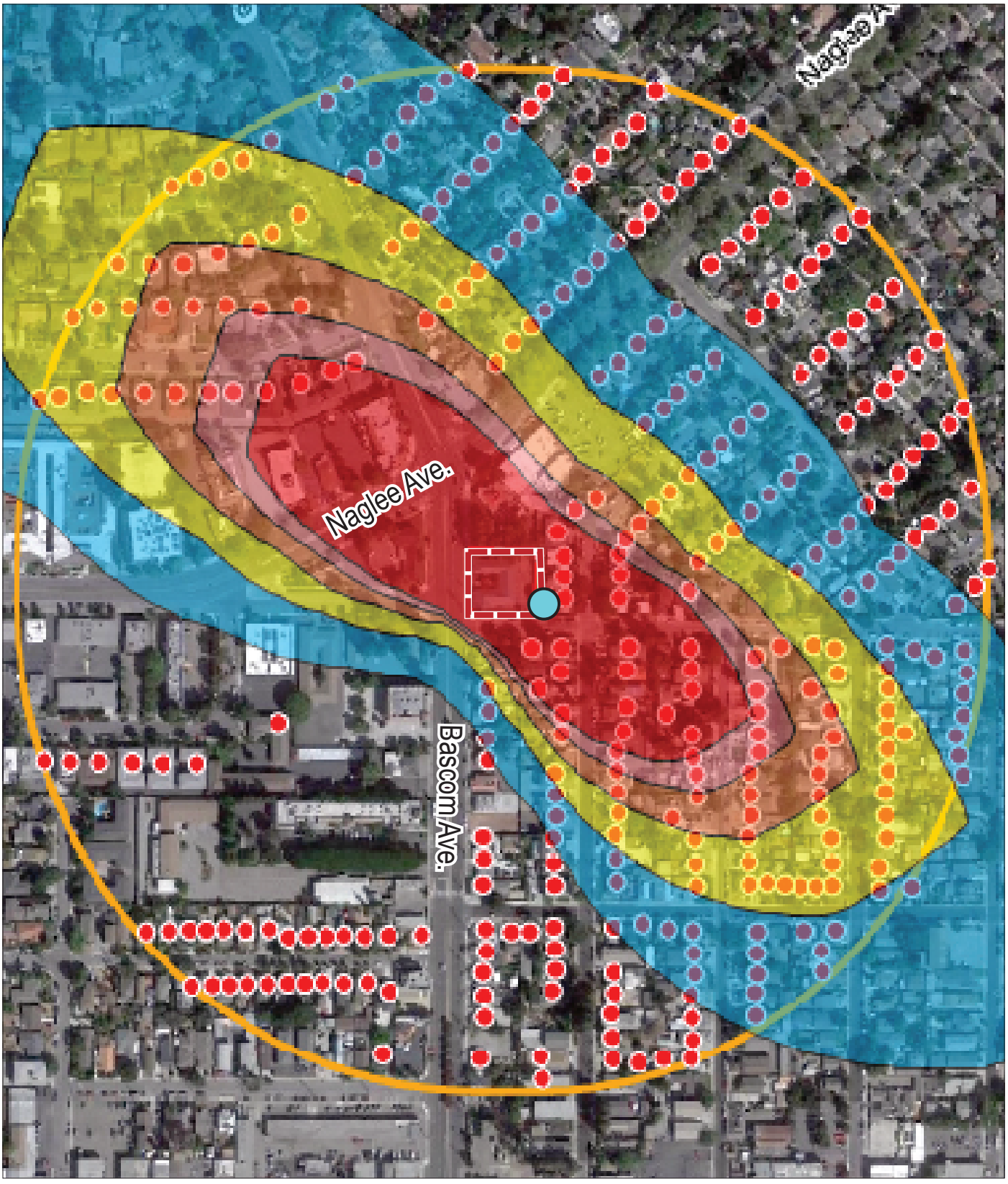
Table 4-2, Mitigated Construction Cancer Risks at the MEI, illustrates the reduced risks at the location of the MEI that would result from the use of Tier III engines, diesel particulate filters, and alternative fuels/electrification on project construction equipment.

Table 4-2 Mitigated Construction Cancer Risks at the MEI

Construction Year	DPM PM_{10} Concentration at the MEI[1,2] (ug/m^3)	Infant/Child Cancer Risk (per million) [1]	Adult Cancer Risk (per million) [1]
2022 (0.25 years during pregnancy)	0.05	0.68	-
2022	0.05	8.19	0.14
Total	-	8.87	0.14
Air District Single-Source Threshold	-	10.0	10.0
Exceeds Thresholds?	-	*No*	*No*

SOURCES: EMC Planning Group 2021 and Bay Area Air Quality Management District 2017
NOTES:
1. Results have been rounded, and may, therefore, vary slightly.

This strategy results in reduced DPM emissions of greater than 82 percent, which correspondingly reduces child cancer risks to fewer than nine cases per million. The mitigated cancer risk is below the BAAQMD significance threshold of 10 cases per million.



Source: BAAQMD 2021

Figure 4-1

Unmitigated Diesel Particulate Matter Concentrations Within 1,000 Feet

200 North Bascom Avenue Construction Health Risk Assessment

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$PM_{2.5}$

$PM_{2.5}$ emissions from combustion engines and fugitive dust were also modeled. Table 4-3, Unmitigated and Mitigated Annual Average $PM_{2.5}$ Concentrations at the MEI, compares unmitigated $PM_{2.5}$ downwind concentrations at the location of the MEI, with the reduced concentrations expected from the use of Tier III Engines and alternative fuels in construction equipment. Unmitigated $PM_{2.5}$ emissions exceed the BAAQMD thresholds, which is a significant impact. $PM_{2.5}$ emissions need to be reduced by 57 percent for related exposures to meet the 0.3 ug/m^3 threshold.

Table 4-3 Unmitigated and Mitigated Annual Average $PM_{2.5}$ Concentrations at the MEI

Construction Year	Unmitigated Average $PM_{2.5}$ Concentrations (ug/m^3) [1]	"Mitigated" Average $PM_{2.5}$ Concentrations (ug/m^3) [1]
2022	0.59	0.25
Air District Single-Source Threshold	0.30	0.30
Exceeds Thresholds?	*Yes*	*No*

SOURCES: EMC Planning Group 2021 and Bay Area Air Quality Management District 2017
NOTES:
1. Results have been rounded, and may, therefore, vary slightly.

Model results showing mitigated construction emissions using a combination of Tier III diesel engines and electrically powered equipment would reduce $PM_{2.5}$ concentrations to 0.25 ug/m^3, which are below the BAAQMD threshold of 0.30 ug/m^3.

Chronic Exposures

DPM emissions are chronically toxic. To determine if the concentration of DPM exceeds the Chronic Reference Exposure Level (REL), downwind concentrations of DPM were also modeled. Table 4-4, Annual Average DPM Construction Concentrations at the MEI, compares the average annual downwind concentrations of unmitigated DPM with concentrations that would result from the use of Tier III engines and electrification of construction equipment. The "mitigated" DPM concentrations would not exceed the chronic hazard threshold and are less than significant.

Discussion Summary

The computed maximum increased lifetime residential cancer risk from exposures to construction emissions would not exceed the BAAQMD significance thresholds for adult cancer risk or chronic exposures, but would exceed the BAAQMD thresholds for infant/child cancer risks, and $PM_{2.5}$ exposures. However, with mitigation, the infant child cancer risk is reduced to fewer than nine cases per million, which is below the BAAQMD significance threshold of 10 cases per million (Table 4-2). With mitigation, $PM_{2.5}$ exposures would be

reduced to 0.25 ug/m^3, which are below the BAAQMD threshold of 0.30 ug/m^3 (Table 4-4). According to the CalEEMod results, an 82 percent reduction in construction DPM emissions and a 57 percent reduction of construction $PM_{2.5}$ emissions would correspond to less than significant infant/child cancer risks and $PM_{2.5}$ exposures.

Table 4-4 Annual Average DPM Construction Concentrations at the MEI

Construction Year	Unmitigated Average DPM Concentrations (ug/m^3) [1]	Mitigated Average DPM Concentrations (ug/m^3) [1]
2022	0.29	0.03
Chronic REL for DPM (ug/m3)	5	5
Resulting Chronic Hazard Index	0.06	<0.01
Chronic Hazard Index Threshold	1.0	1.0
Exceeds Threshold?	*No*	*No*

SOURCES: EMC Planning Group 2021 and Bay Area Air Quality Management District 2017
NOTE: Results have been rounded, and may, therefore, vary slightly.

In addition to compliance with the City of San José standard permit conditions for construction projects, implementation of mitigation measures AQ-1 and AQ-2 would reduce cancer risk and $PM_{2.5}$ exposures to a less-than-significant level.

Mitigation Measures

AQ-1 Prior to the issuance of the demolition permit, the project developer shall prepare, and the project contractor shall implement, a construction emissions avoidance and reduction plan demonstrating an 82 percent reduction in DPM emissions and a 57 percent reduction of $PM_{2.5}$ emissions that correspond with cancer risk and $PM_{2.5}$ exposures at the MEI that will meet the air district's risk thresholds.

The plan shall include specifications of the equipment to be used during construction and confirmation this requirement is met, and shall be submitted for review and approval by the City of San José Director of Planning, Building and Code Enforcement or Director's designee. The plan shall be accompanied by a letter signed by a qualified air quality specialist, verifying that the equipment included in the plan meets the standards set forth in this mitigation measure to achieve the emissions reduction performance standards for DPM and $PM_{2.5}$ emissions set forth above. The plan shall include the following measures:

a. All mobile diesel-powered off-road equipment operating on-site for more than two days and larger than 50 horsepower shall, at a minimum, meet U.S. Environmental Protection Agency (EPA) particulate matter emissions standards for Tier III engines or better;

b. Use alternatively fueled equipment or equipment with zero emissions (i.e., aerial lifts, forklifts, and air compressors, etc., shall be either electrified or fueled by liquefied natural gas/propane);

c. Provide line power to the site during the early phases of construction to minimize the use of diesel-powered stationary equipment, such as generators;

d. Other demonstrable measures identified by the developer that reduce emissions and avoid or minimize exposures to the affected sensitive receptors.

AQ-2 During construction, the project contractor shall implement the following measures to reduce emissions of fugitive dust and exhaust particulate matter, subject to review and approval by the City of San José Planning Director:

a. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered three (3) times per day or at a frequency adequate to maintain minimum soil moisture of 12 percent. Moisture content can be verified by lab samples or moisture probe;

b. All vehicle speeds on unpaved roads shall be limited to 5 mph;

Implementation of mitigation measures AQ-1 and AQ-2 would reduce construction emissions and their associated cancer risks to a less than significant level.

4.2 CUMULATIVE HEALTH RISKS IMPACTS

Project-related construction emissions would contribute to a cumulative increase in health risks when considered in light of other emissions sources such as stationary emitters or high-volume roadways (having greater than 10,000 average daily vehicles) within 1,000 feet of the project site. As noted in Section 2, there are no stationary emissions sources within 1,000 feet of the project site. A review of the project influence area indicates that the average daily traffic on Naglee Avenue between Trace Avenue and Bascom Avenue is 12,420 vehicles per day (TJKM 2021). The roadway risk assessment is included in the model results (Appendix C).

The cumulative community risk impacts at the MEI are summarized in Table 4-5, Cumulative Heath Risks at Construction MEIs.

Table 4-5 Cumulative Health Risks at the MEI

Source	Cancer Risk (per million)[1]	Annual $PM_{2.5}$ Concentration ($\mu g/m^3$)[1]	Chronic Hazard Index[1]
Project Construction (Unmitigated)	47.84 (child)	0.59	0.06
Cumulative Risk from Naglee Avenue (12,420 AADT)	3.54	0.02	0.004
Cumulative with Project (Unmitigated)	51.38	0.61	0.06
Air District Cumulative-Source Threshold	100.00	0.80	10.00
Exceeds Thresholds? (Unmitigated)	*No*	*No*	*No*

SOURCE: EMC Planning Group 2021
NOTES:
1. Results have been rounded, and may, therefore, vary slightly.

The proposed project's unmitigated construction health risks, when considered in addition to other sources of community health risks, do not exceed the BAAQMD cumulative thresholds of significance for cancer risk, $PM_{2.5}$ exposures and chronic health risks. Therefore, the proposed project's contribution to cumulative community health risks are less than cumulatively considerable.

5.0
Report Preparers and Sources

5.1 PREPARERS

Sally Rideout EMPA, Principal Planner

David Craft, Air Quality and Greenhouse Gas Emissions Specialist/Senior Planner

5.2 SOURCES

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APPENDIX A

CalEEMod Results

200 N. Bascom Avenue - Unmitigated and Mitigated CONSTRUCTION

Bay Area AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Medical Office Building	34.99	1000sqft	0.18	34,990.00	0
Enclosed Parking with Elevator	60.00	Space	0.37	31,794.00	0
Other Asphalt Surfaces	4.70	1000sqft	0.11	4,700.00	0
Other Non-Asphalt Surfaces	3.34	1000sqft	0.08	3,340.00	0
Parking Lot	2.00	Space	0.02	800.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	206	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 Intensity Factor for based on the latest year available, 2018

Land Use - From Construction Spreadsheet and CEQA project description

Construction Phase - derived from applicant information.

Off-road Equipment - Derived from applicant information

Trips and VMT - From Construction Spreadsheet. For construction, 100 days of 1 vendor delivery truck arriving per day = 100 trips. 100 trips (200 one way trips) x 20 days = 400 trips one way for cement trucks.

Demolition - From Construction Spreadsheet.

Grading - From Construction Spreadsheet. 0.46 acres + accesses = 5 acres. 5 acres x 20 days = 10 acres total.

Energy Use -

Water And Wastewater - Sewer Only.

Sequestration - 4 trees removed, 4 trees added onsite, 5 trees added offsite.

Construction Off-road Equipment Mitigation - 50hp or greater equipment is Tier 4 with filters and electrification of smaller engines.

Energy Mitigation - Current standards are 30% lower than CalEEMod default.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	5
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

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	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
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tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstructionPhase	NumDays	10.00	20.00
tblConstructionPhase	NumDays	1.00	20.00
tblConstructionPhase	NumDays	2.00	20.00
tblConstructionPhase	NumDays	5.00	20.00
tblConstructionPhase	NumDays	5.00	20.00
tblGrading	MaterialExported	0.00	7,500.00
tblGrading	MaterialImported	0.00	100.00
tblLandUse	LandUseSquareFeet	24,000.00	31,794.00
tblLandUse	LotAcreage	0.80	0.18
tblLandUse	LotAcreage	0.54	0.37
tblOffRoadEquipment	HorsePower	187.00	158.00

tblOffRoadEquipment	LoadFactor	0.41	0.38
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	UsageHours	1.00	4.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	206
tblSequestration	NumberOfNewTrees	0.00	5.00
tblTripsAndVMT	HaulingTripNumber	0.00	400.00
tblTripsAndVMT	VendorTripNumber	12.00	100.00
tblTripsAndVMT	WorkerTripNumber	13.00	10.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.2920	1.3857	0.8930	3.2200e-003	0.1102	0.0364	0.1466	0.0390	0.0343	0.0733	0.0000	297.3073	297.3073	0.0344	0.0000	298.1673
Maximum	**0.2920**	**1.3857**	**0.8930**	**3.2200e-003**	**0.1102**	**0.0364**	**0.1466**	**0.0390**	**0.0343**	**0.0733**	**0.0000**	**297.3073**	**297.3073**	**0.0344**	**0.0000**	**298.1673**

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					
2022	0.2388	1.0878	0.7472	3.2200e-003	0.0792	6.2200e-003	0.0854	0.0254	6.1500e-003	0.0315	0.0000	265.1620	265.1620	0.0310	0.0000	265.9381
Maximum	**0.2388**	**1.0878**	**0.7472**	**3.2200e-003**	**0.0792**	**6.2200e-003**	**0.0854**	**0.0254**	**6.1500e-003**	**0.0315**	**0.0000**	**265.1620**	**265.1620**	**0.0310**	**0.0000**	**265.9381**

	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	**18.21**	**21.50**	**16.32**	**0.00**	**28.14**	**82.92**	**41.76**	**34.93**	**82.07**	**57.01**	**0.00**	**10.81**	**10.81**	**9.77**	**0.00**	**10.81**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-1-2022**	**3-31-2022**	0.4874	0.3566
2	**4-1-2022**	**6-30-2022**	0.6081	0.4702
3	**7-1-2022**	**9-30-2022**	0.5233	0.4440
		Highest	0.6081	0.4702

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2022	1/28/2022	5	20	
2	Site Preparation	Site Preparation	1/29/2022	2/25/2022	5	20	
3	Grading	Grading	2/26/2022	3/25/2022	5	20	
4	Building Construction	Building Construction	3/26/2022	8/12/2022	5	100	
5	Paving	Paving	8/13/2022	9/9/2022	5	20	
6	Architectural Coating	Architectural Coating	9/10/2022	10/7/2022	5	20	

Acres of Grading (Site Preparation Phase): 10

Acres of Grading (Grading Phase): 5

Acres of Paving: 0.58

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 52,485; Non-Residential Outdoor: 17,495; Striped Parking Area:

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	Excavators	1	4.00	158	0.38
Demolition	Rubber Tired Dozers	1	4.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	4.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Excavators	1	4.00	158	0.38
Grading	Graders	1	4.00	158	0.38
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	4.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Welders	1	4.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	7.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Architectural Coating	Aerial Lifts	1	8.00	63	0.31
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	10.00	0.00	44.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	5	10.00	0.00	950.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

Building Construction	5	28.00	100.00	400.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	2	6.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Alternative Fuel for Construction Equipment

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.8100e-003	0.0000	4.8100e-003	7.3000e-004	0.0000	7.3000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0100	0.0934	0.0876	1.5000e-004		4.6900e-003	4.6900e-003		4.4400e-003	4.4400e-003	0.0000	13.4456	13.4456	2.9000e-003	0.0000	13.5181
Total	**0.0100**	**0.0934**	**0.0876**	**1.5000e-004**	**4.8100e-003**	**4.6900e-003**	**9.5000e-003**	**7.3000e-004**	**4.4400e-003**	**5.1700e-003**	**0.0000**	**13.4456**	**13.4456**	**2.9000e-003**	**0.0000**	**13.5181**

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	1.6000e-004	5.4600e-003	1.2400e-003	2.0000e-005	3.7000e-004	2.0000e-005	3.9000e-004	1.0000e-004	2.0000e-005	1.2000e-004	0.0000	1.6417	1.6417	8.0000e-005	0.0000	1.6438
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	2.9000e-004	1.9000e-004	2.0600e-003	1.0000e-005	7.9000e-004	1.0000e-005	8.0000e-004	2.1000e-004	0.0000	2.1000e-004	0.0000	0.6435	0.6435	1.0000e-005	0.0000	0.6438
Total	**4.5000e-004**	**5.6500e-003**	**3.3000e-003**	**3.0000e-005**	**1.1600e-003**	**3.0000e-005**	**1.1900e-003**	**3.1000e-004**	**2.0000e-005**	**3.3000e-004**	**0.0000**	**2.2852**	**2.2852**	**9.0000e-005**	**0.0000**	**2.2876**

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					1.8800e-003	0.0000	1.8800e-003	2.8000e-004	0.0000	2.8000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.0400e-003	0.0595	0.0781	1.5000e-004		1.0900e-003	1.0900e-003		1.0900e-003	1.0900e-003	0.0000	10.7573	10.7573	2.7600e-003	0.0000	10.8262
Total	**4.0400e-003**	**0.0595**	**0.0781**	**1.5000e-004**	**1.8800e-003**	**1.0900e-003**	**2.9700e-003**	**2.8000e-004**	**1.0900e-003**	**1.3700e-003**	**0.0000**	**10.7573**	**10.7573**	**2.7600e-003**	**0.0000**	**10.8262**

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	1.6000e-004	5.4600e-003	1.2400e-003	2.0000e-005	3.7000e-004	2.0000e-005	3.9000e-004	1.0000e-004	2.0000e-005	1.2000e-004	0.0000	1.6417	1.6417	8.0000e-005	0.0000	1.6438
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	2.9000e-004	1.9000e-004	2.0600e-003	1.0000e-005	7.9000e-004	1.0000e-005	8.0000e-004	2.1000e-004	0.0000	2.1000e-004	0.0000	0.6435	0.6435	1.0000e-005	0.0000	0.6438

Total	**4.5000e-004**	**5.6500e-003**	**3.3000e-003**	**3.0000e-005**	**1.1600e-003**	**3.0000e-005**	**1.1900e-003**	**3.1000e-004**	**2.0000e-005**	**3.3000e-004**	**0.0000**	**2.2852**	**2.2852**	**9.0000e-005**	**0.0000**	**2.2876**

3.3 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0354	0.0000	0.0354	0.0171	0.0000	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.9800e-003	0.1133	0.0575	1.4000e-004		4.6600e-003	4.6600e-003		4.2900e-003	4.2900e-003	0.0000	12.3018	12.3018	3.9800e-003	0.0000	12.4012
Total	**9.9800e-003**	**0.1133**	**0.0575**	**1.4000e-004**	**0.0354**	**4.6600e-003**	**0.0401**	**0.0171**	**4.2900e-003**	**0.0214**	**0.0000**	**12.3018**	**12.3018**	**3.9800e-003**	**0.0000**	**12.4012**

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	2.3000e-004	1.5000e-004	1.6500e-003	1.0000e-005	6.3000e-004	0.0000	6.4000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.5148	0.5148	1.0000e-005	0.0000	0.5151
Total	**2.3000e-004**	**1.5000e-004**	**1.6500e-003**	**1.0000e-005**	**6.3000e-004**	**0.0000**	**6.4000e-004**	**1.7000e-004**	**0.0000**	**1.7000e-004**	**0.0000**	**0.5148**	**0.5148**	**1.0000e-005**	**0.0000**	**0.5151**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0138	0.0000	0.0138	6.6800e-003	0.0000	6.6800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.4300e-003	0.0689	0.0812	1.4000e-004		4.8000e-004	4.8000e-004		4.8000e-004	4.8000e-004	0.0000	12.3017	12.3017	3.9800e-003	0.0000	12.4012
Total	**3.4300e-003**	**0.0689**	**0.0812**	**1.4000e-004**	**0.0138**	**4.8000e-004**	**0.0143**	**6.6800e-003**	**4.8000e-004**	**7.1600e-003**	**0.0000**	**12.3017**	**12.3017**	**3.9800e-003**	**0.0000**	**12.4012**

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	2.3000e-004	1.5000e-004	1.6500e-003	1.0000e-005	6.3000e-004	0.0000	6.4000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.5148	0.5148	1.0000e-005	0.0000	0.5151
Total	**2.3000e-004**	**1.5000e-004**	**1.6500e-003**	**1.0000e-005**	**6.3000e-004**	**0.0000**	**6.4000e-004**	**1.7000e-004**	**0.0000**	**1.7000e-004**	**0.0000**	**0.5148**	**0.5148**	**1.0000e-005**	**0.0000**	**0.5151**

3.4 Grading - 2022

Unmitigated Construction On-Site

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

Fugitive Dust					0.0106	0.0000	0.0106	4.4900e-003	0.0000	4.4900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.2000e-003	0.0823	0.0927	1.5000e-004		4.3400e-003	4.3400e-003		4.1200e-003	4.1200e-003	0.0000	12.9307	12.9307	2.7400e-003	0.0000	12.9991
Total	**9.2000e-003**	**0.0823**	**0.0927**	**1.5000e-004**	**0.0106**	**4.3400e-003**	**0.0150**	**4.4900e-003**	**4.1200e-003**	**8.6100e-003**	**0.0000**	**12.9307**	**12.9307**	**2.7400e-003**	**0.0000**	**12.9991**

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	3.5300e-003	0.1178	0.0268	3.6000e-004	8.0200e-003	3.4000e-004	8.3600e-003	2.2100e-003	3.3000e-004	2.5300e-003	0.0000	35.4464	35.4464	1.7900e-003	0.0000	35.4912
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	2.9000e-004	1.9000e-004	2.0600e-003	1.0000e-005	7.9000e-004	1.0000e-005	8.0000e-004	2.1000e-004	0.0000	2.1000e-004	0.0000	0.6435	0.6435	1.0000e-005	0.0000	0.6438
Total	**3.8200e-003**	**0.1180**	**0.0289**	**3.7000e-004**	**8.8100e-003**	**3.5000e-004**	**9.1600e-003**	**2.4200e-003**	**3.3000e-004**	**2.7400e-003**	**0.0000**	**36.0899**	**36.0899**	**1.8000e-003**	**0.0000**	**36.1350**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.1400e-003	0.0000	4.1400e-003	1.7500e-003	0.0000	1.7500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.8900e-003	0.0566	0.0807	1.5000e-004		1.0900e-003	1.0900e-003		1.0900e-003	1.0900e-003	0.0000	10.2424	10.2424	2.5900e-003	0.0000	10.3071
Total	**3.8900e-003**	**0.0566**	**0.0807**	**1.5000e-004**	**4.1400e-003**	**1.0900e-003**	**5.2300e-003**	**1.7500e-003**	**1.0900e-003**	**2.8400e-003**	**0.0000**	**10.2424**	**10.2424**	**2.5900e-003**	**0.0000**	**10.3071**

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	3.5300e-003	0.1178	0.0268	3.6000e-004	8.0200e-003	3.4000e-004	8.3600e-003	2.2100e-003	3.3000e-004	2.5300e-003	0.0000	35.4464	35.4464	1.7900e-003	0.0000	35.4912
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	2.9000e-004	1.9000e-004	2.0600e-003	1.0000e-005	7.9000e-004	1.0000e-005	8.0000e-004	2.1000e-004	0.0000	2.1000e-004	0.0000	0.6435	0.6435	1.0000e-005	0.0000	0.6438
Total	**3.8200e-003**	**0.1180**	**0.0289**	**3.7000e-004**	**8.8100e-003**	**3.5000e-004**	**9.1600e-003**	**2.4200e-003**	**3.3000e-004**	**2.7400e-003**	**0.0000**	**36.0899**	**36.0899**	**1.8000e-003**	**0.0000**	**36.1350**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0370	0.3377	0.3368	5.9000e-004		0.0167	0.0167		0.0158	0.0158	0.0000	50.2097	50.2097	0.0114	0.0000	50.4942
Total	**0.0370**	**0.3377**	**0.3368**	**5.9000e-004**		**0.0167**	**0.0167**		**0.0158**	**0.0158**	**0.0000**	**50.2097**	**50.2097**	**0.0114**	**0.0000**	**50.4942**

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	1.4900e-003	0.0496	0.0113	1.5000e-004	3.3800e-003	1.4000e-004	3.5200e-003	9.3000e-004	1.4000e-004	1.0700e-003	0.0000	14.9248	14.9248	7.5000e-004	0.0000	14.9437
Vendor	0.0148	0.4946	0.1226	1.3400e-003	0.0328	9.9000e-004	0.0338	9.4800e-003	9.4000e-004	0.0104	0.0000	128.4005	128.4005	6.0900e-003	0.0000	128.5528
Worker	4.0000e-003	2.6600e-003	0.0289	1.0000e-004	0.0111	7.0000e-005	0.0111	2.9400e-003	7.0000e-005	3.0100e-003	0.0000	9.0090	9.0090	1.9000e-004	0.0000	9.0137
Total	**0.0203**	**0.5469**	**0.1627**	**1.5900e-003**	**0.0472**	**1.2000e-003**	**0.0484**	**0.0134**	**1.1500e-003**	**0.0145**	**0.0000**	**152.3343**	**152.3343**	**7.0300e-003**	**0.0000**	**152.5102**

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	7.3400e-003	0.1553	0.1939	5.9000e-004		1.3000e-003	1.3000e-003		1.3000e-003	1.3000e-003	0.0000	26.3380	26.3380	8.5200e-003	0.0000	26.5510
Total	**7.3400e-003**	**0.1553**	**0.1939**	**5.9000e-004**		**1.3000e-003**	**1.3000e-003**		**1.3000e-003**	**1.3000e-003**	**0.0000**	**26.3380**	**26.3380**	**8.5200e-003**	**0.0000**	**26.5510**

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	1.4900e-003	0.0496	0.0113	1.5000e-004	3.3800e-003	1.4000e-004	3.5200e-003	9.3000e-004	1.4000e-004	1.0700e-003	0.0000	14.9248	14.9248	7.5000e-004	0.0000	14.9437
Vendor	0.0148	0.4946	0.1226	1.3400e-003	0.0328	9.9000e-004	0.0338	9.4800e-003	9.4000e-004	0.0104	0.0000	128.4005	128.4005	6.0900e-003	0.0000	128.5528
Worker	4.0000e-003	2.6600e-003	0.0289	1.0000e-004	0.0111	7.0000e-005	0.0111	2.9400e-003	7.0000e-005	3.0100e-003	0.0000	9.0090	9.0090	1.9000e-004	0.0000	9.0137

Total	**0.0203**	**0.5469**	**0.1627**	**1.5900e-003**	**0.0472**	**1.2000e-003**	**0.0484**	**0.0134**	**1.1500e-003**	**0.0145**	**0.0000**	**152.3343**	**152.3343**	**7.0300e-003**	**0.0000**	**152.5102**

3.6 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.9300e-003	0.0683	0.0889	1.4000e-004		3.4900e-003	3.4900e-003		3.2200e-003	3.2200e-003	0.0000	11.9443	11.9443	3.7900e-003	0.0000	12.0390
Paving	1.7000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**7.1000e-003**	**0.0683**	**0.0889**	**1.4000e-004**		**3.4900e-003**	**3.4900e-003**		**3.2200e-003**	**3.2200e-003**	**0.0000**	**11.9443**	**11.9443**	**3.7900e-003**	**0.0000**	**12.0390**

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	3.7000e-004	2.5000e-004	2.6800e-003	1.0000e-005	1.0300e-003	1.0000e-005	1.0300e-003	2.7000e-004	1.0000e-005	2.8000e-004	0.0000	0.8366	0.8366	2.0000e-005	0.0000	0.8370
Total	**3.7000e-004**	**2.5000e-004**	**2.6800e-003**	**1.0000e-005**	**1.0300e-003**	**1.0000e-005**	**1.0300e-003**	**2.7000e-004**	**1.0000e-005**	**2.8000e-004**	**0.0000**	**0.8366**	**0.8366**	**2.0000e-005**	**0.0000**	**0.8370**

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	3.2400e-003	0.0670	0.1000	1.4000e-004		5.8000e-004	5.8000e-004		5.8000e-004	5.8000e-004	0.0000	11.6006	11.6006	3.7500e-003	0.0000	11.6944
Paving	1.7000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**3.4100e-003**	**0.0670**	**0.1000**	**1.4000e-004**		**5.8000e-004**	**5.8000e-004**		**5.8000e-004**	**5.8000e-004**	**0.0000**	**11.6006**	**11.6006**	**3.7500e-003**	**0.0000**	**11.6944**

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	3.7000e-004	2.5000e-004	2.6800e-003	1.0000e-005	1.0300e-003	1.0000e-005	1.0300e-003	2.7000e-004	1.0000e-005	2.8000e-004	0.0000	0.8366	0.8366	2.0000e-005	0.0000	0.8370
Total	**3.7000e-004**	**2.5000e-004**	**2.6800e-003**	**1.0000e-005**	**1.0300e-003**	**1.0000e-005**	**1.0300e-003**	**2.7000e-004**	**1.0000e-005**	**2.8000e-004**	**0.0000**	**0.8366**	**0.8366**	**2.0000e-005**	**0.0000**	**0.8370**

3.7 Architectural Coating - 2022

Unmitigated Construction On-Site

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

Archit. Coating	0.1909					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4100e-003	0.0197	0.0291	5.0000e-005		9.2000e-004	9.2000e-004		9.1000e-004	9.1000e-004	0.0000	4.0285	4.0285	6.4000e-004	0.0000	4.0446
Total	**0.1933**	**0.0197**	**0.0291**	**5.0000e-005**		**9.2000e-004**	**9.2000e-004**		**9.1000e-004**	**9.1000e-004**	**0.0000**	**4.0285**	**4.0285**	**6.4000e-004**	**0.0000**	**4.0446**

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	1.7000e-004	1.1000e-004	1.2400e-003	0.0000	4.7000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.3861	0.3861	1.0000e-005	0.0000	0.3863
Total	**1.7000e-004**	**1.1000e-004**	**1.2400e-003**	**0.0000**	**4.7000e-004**	**0.0000**	**4.8000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.3861**	**0.3861**	**1.0000e-005**	**0.0000**	**0.3863**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1909					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.1000e-004	9.4400e-003	0.0127	5.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	1.4753	1.4753	4.8000e-004	0.0000	1.4872
Total	**0.1913**	**9.4400e-003**	**0.0127**	**5.0000e-005**		**1.0000e-004**	**1.0000e-004**		**1.0000e-004**	**1.0000e-004**	**0.0000**	**1.4753**	**1.4753**	**4.8000e-004**	**0.0000**	**1.4872**

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	1.7000e-004	1.1000e-004	1.2400e-003	0.0000	4.7000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.3861	0.3861	1.0000e-005	0.0000	0.3863
Total	**1.7000e-004**	**1.1000e-004**	**1.2400e-003**	**0.0000**	**4.7000e-004**	**0.0000**	**4.8000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.3861**	**0.3861**	**1.0000e-005**	**0.0000**	**0.3863**

CONVERSION CHART
CalEEMod Output -->AERMOD Input

CalEEMod OUTPUT (Tons per Year) to AERMOD Input (Grams per Second per area)
Convert Tons/Year to Grams/Second Formula:
(X tons/year)(2000 lb/ton)(454 grams/lb)(1 year/365 days)(1 day/24 hours)(1 hour/3600 seconds)=
____grams per second
AREA is calculated in m^2. One acre equals 4,046.86 m^2

Project Name: Bascom Avenue Medical Office

Project Site Area:	**Acres**	**m^2**
	0.46	1861.556

CALEEMOD OUTPUT:	**RATE**	**AERMOD INPUT**
	g/sec	**g/sec/area**
UNMITIGATED DPM		
DPM_Tons/YR		
0.0364	0.001048	5.62995E-07
MITIGATED DPM		
DPM_Tons/YR		
0.00622	0.000179	9.62041E-08
Percent DPM Reduction		
82.91208791		
UNMITIGATED $PM_{2.5}$		
0.0733	0.00211	1.13372E-06
MITIGATED $PM_{2.5}$		
0.0315	0.000907	4.87207E-07
Percent $PM_{2.5}$ Reduction		
57.02592087		

APPENDIX B

CONSTRUCTION HEALTH RISK CALCULATIONS

BREEZE AERMOD
Sensitive Receptor Results
2022 Unmitigated DPM PM10

Pollutant: PM10, Type: CONC (ug/m3) 5 YEAR AVG., Group: ALL**

Sen. Rcpt. #	Dsc. Rcpt. #	Description	UTM		Conc.	
			East(m)	North(m)		
1	401	h1	594687.70	4131693.01	0.29126	
2	402	h2	594684.52	4131705.29	0.24589	
3	403	h3	594684.43	4131719.15	0.14313	
4	404	h4	594673.54	4131660.55	0.15479	
5	405	h5	594687.92	4131664.27	0.22502	

BREEZE AERMOD
Sensitive Receptor Results
2022 Mitigated DPM PM10

Pollutant: PM10, Type: CONC (ug/m3) 5 YEAR AVG., Group: ALL**

Sen. Rcpt. #	Dsc. Rcpt. #	Description	UTM		Conc.	
			East(m)	North(m)		
1	401	h1	594687.70	4131693.01	0.02617	
2	402	h2	594684.52	4131705.29	0.0221	
3	403	h3	594684.43	4131719.15	0.01286	
4	404	h4	594673.54	4131660.55	0.01391	
5	405	h5	594687.92	4131664.27	0.02022	

BREEZE AERMOD
Sensitive Receptor Results
2022 Unmitigated PM2.5 Construction

Pollutant: PM25, Type: CONC (ug/m3) 5 YEAR AVG., Group: ALL**

Sen. Rcpt. #	Dsc. Rcpt. #	Description	UTM		Conc.	
			East(m)	North(m)		
1	401	h1	594687.70	4131693.01	0.58718	
2	402	h2	594684.52	4131705.29	0.49573	
3	403	h3	594684.43	4131719.15	0.28856	
4	404	h4	594673.54	4131660.55	0.31206	
5	405	h5	594687.92	4131664.27	0.45363	

BREEZE AERMOD
Sensitive Receptor Results
2022 Mitigated PM2.5 Construction

Pollutant: PM25, Type: CONC (ug/m3) 5 YEAR AVG., Group: ALL**

Sen. Rcpt. #	Dsc. Rcpt. #	Description	UTM		Conc.	
			East(m)	North(m)		
1	401	h1	594687.70	4131693.01	0.22912	
2	402	h2	594684.52	4131705.29	0.19343	
3	403	h3	594684.43	4131719.15	0.1126	
4	404	h4	594673.54	4131660.55	0.12177	
5	405	h5	594687.92	4131664.27	0.17701	

200 North Bascom, San Jose, CA - Construction Impacts, Mitigated
Maximum DPM Cancer Risk 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 1.0E+06

Where: CPF = Cancer Potency Factor $(mg/kg\text{-}day)^{-1}$
ASF = Age Sentivity 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: Cair = 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 - 9	2 - 16	16 - 30
ASF=	10	10	3	3	1
CPF=	1.1	1.1	1.1	1.1	1.1
DBR*=	361	1090	631	572	261
A=	1	1	1	1	1
EF=	350	350	350	350	350
AT=	70	70	70	70	70
FAH=	1	1	1	1	0.73

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Exposure Year	Exposure Duration (years)	Age	Infant/Child - Exposure Information			Infant/Child Cancer Risk (per million)	Adult - Exposure Information			Adult Cancer Risk (per million)
			DPM Conc $(\mu g/m^3)$		Age Sensitivity Factor		DPM Conc $(\mu g/m^3)$		Age Sensitivity Factor	
			Year	Annual			Year	Annual		
0	0.25	-0.25 - 0*	2022	0.04986	10	0.678	2022	0.04986	-	-
1	1	0 - 1	2022	0.04986	10	8.189	2022	0.04986	1	0.143
2	1	1 - 2	0	0.0000	10	0.00	0	0.0000	1	0.00
3	1	2 - 3	0	0.0000	3	0.00	0	0.0000	1	0.00
4	1	3 - 4	0	0.0000	3	0.00	0	0.0000	1	0.00
5	1	4 - 5	0	0.0000	3	0.00	0	0.0000	1	0.00
6	1	5 - 6	0	0.0000	3	0.00	0	0.0000	1	0.00
7	1	6 - 7	0	0.0000	3	0.00	0	0.0000	1	0.00
8	1	7 - 8	0	0.0000	3	0.00	0	0.0000	1	0.00
9	1	8 - 9	0	0.0000	3	0.00	0	0.0000	1	0.00
10	1	9 - 10	0	0.0000	3	0.00	0	0.0000	1	0.00
11	1	10 - 11	0	0.0000	3	0.00	0	0.0000	1	0.00
12	1	11 - 12	0	0.0000	3	0.00	0	0.0000	1	0.00
13	1	12 - 13	0	0.0000	3	0.00	0	0.0000	1	0.00
14	1	13 - 14	0	0.0000	3	0.00	0	0.0000	1	0.00
15	1	14 - 15	0	0.0000	3	0.00	0	0.0000	1	0.00
16	1	15 - 16	0	0.0000	3	0.00	0	0.0000	1	0.00
17	1	16 - 17	0	0.0000	1	0.00	0	0.0000	1	0.00
18	1	17 - 18	0	0.0000	1	0.00	0	0.0000	1	0.00
19	1	18 - 19	0	0.0000	1	0.00	0	0.0000	1	0.00
20	1	19 - 20	0	0.0000	1	0.00	0	0.0000	1	0.00
21	1	20 - 21	0	0.0000	1	0.00	0	0.0000	1	0.00
22	1	21 - 22	0	0.0000	1	0.00	0	0.0000	1	0.00
23	1	22 - 23	0	0.0000	1	0.00	0	0.0000	1	0.00
24	1	23 - 24	0	0.0000	1	0.00	0	0.0000	1	0.00
25	1	24 - 25	0	0.0000	1	0.00	0	0.0000	1	0.00
26	1	25 - 26	0	0.0000	1	0.00	0	0.0000	1	0.00
27	1	26 - 27	0	0.0000	1	0.00	0	0.0000	1	0.00
28	1	27 - 28	0	0.0000	1	0.00	0	0.0000	1	0.00
29	1	28 - 29	0	0.0000	1	0.00	0	0.0000	1	0.00
30	1	29 - 30	0	0.0000	1	0.00	0	0.0000	1	0.00
Total Increased Cancer Risk						**8.867**				**0.143**

* Third Trimester of Pregnancy

200 North Bascom, San Jose, CA - Construction Impacts, Mitigated
Maximum DPM Cancer Risk 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 1.0E+06

Where: CPF = Cancer Potency Factor $(mg/kg\text{-}day)^{-1}$
ASF = Age Sentivity 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: Cair = Concentration in air $(\mu g/m^3)$
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A = Inhalation Absorption Factor
EF = Exposure Frequency (days/year)
10^{-6} = Conversion Factor

Values

	Infant/Child				Adult
Age --> Parameter	3rd Trimester	0 - 2	2 - 9	2 - 16	16 - 30
ASF=	10	10	3	3	1
CPF=	1.1	1.1	1.1	1.1	1.1
DBR*=	361	1090	631	572	261
A=	1	1	1	1	1
EF=	350	350	350	350	350
AT=	70	70	70	70	70
FAH=	1	1	1	1	0.73

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Exposure Year	Exposure Duration (years)	Age	Infant/Child - Exposure Information			Infant/Child Cancer Risk (per million)	Adult - Exposure Information			Adult Cancer Risk (per million)
			DPM Conc $(\mu g/m^3)$		Age Sensitivity Factor		DPM Conc $(\mu g/m^3)$		Age Sensitivity Factor	
			Year	Annual			Year	Annual		
0	0.25	-0.25 - 0*	2022	0.04986	10	0.678	2022	0.04986	-	-
1	1	0 - 1	2022	0.04986	10	8.189	2022	0.04986	1	0.143
2	1	1 - 2	0	0.0000	10	0.00	0	0.0000	1	0.00
3	1	2 - 3	0	0.0000	3	0.00	0	0.0000	1	0.00
4	1	3 - 4	0	0.0000	3	0.00	0	0.0000	1	0.00
5	1	4 - 5	0	0.0000	3	0.00	0	0.0000	1	0.00
6	1	5 - 6	0	0.0000	3	0.00	0	0.0000	1	0.00
7	1	6 - 7	0	0.0000	3	0.00	0	0.0000	1	0.00
8	1	7 - 8	0	0.0000	3	0.00	0	0.0000	1	0.00
9	1	8 - 9	0	0.0000	3	0.00	0	0.0000	1	0.00
10	1	9 - 10	0	0.0000	3	0.00	0	0.0000	1	0.00
11	1	10 - 11	0	0.0000	3	0.00	0	0.0000	1	0.00
12	1	11 - 12	0	0.0000	3	0.00	0	0.0000	1	0.00
13	1	12 - 13	0	0.0000	3	0.00	0	0.0000	1	0.00
14	1	13 - 14	0	0.0000	3	0.00	0	0.0000	1	0.00
15	1	14 - 15	0	0.0000	3	0.00	0	0.0000	1	0.00
16	1	15 - 16	0	0.0000	3	0.00	0	0.0000	1	0.00
17	1	16 - 17	0	0.0000	1	0.00	0	0.0000	1	0.00
18	1	17 - 18	0	0.0000	1	0.00	0	0.0000	1	0.00
19	1	18 - 19	0	0.0000	1	0.00	0	0.0000	1	0.00
20	1	19 - 20	0	0.0000	1	0.00	0	0.0000	1	0.00
21	1	20 - 21	0	0.0000	1	0.00	0	0.0000	1	0.00
22	1	21 - 22	0	0.0000	1	0.00	0	0.0000	1	0.00
23	1	22 - 23	0	0.0000	1	0.00	0	0.0000	1	0.00
24	1	23 - 24	0	0.0000	1	0.00	0	0.0000	1	0.00
25	1	24 - 25	0	0.0000	1	0.00	0	0.0000	1	0.00
26	1	25 - 26	0	0.0000	1	0.00	0	0.0000	1	0.00
27	1	26 - 27	0	0.0000	1	0.00	0	0.0000	1	0.00
28	1	27 - 28	0	0.0000	1	0.00	0	0.0000	1	0.00
29	1	28 - 29	0	0.0000	1	0.00	0	0.0000	1	0.00
30	1	29 - 30	0	0.0000	1	0.00	0	0.0000	1	0.00
Total Increased Cancer Risk						**8.867**				**0.143**

* Third Trimester of Pregnancy

APPENDIX C

ROADWAY RISK ASSESSMENT

EMFAC2017 (v1.0.2) Emissions Inventory
Region Type: County
Region: SANTA CLARA
Calendar Year: 2022
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, tons/day for Emissions, 1000 gallons/day for Fuel Consumption. Note 'day' in the unit is operation day.

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	VMT	PM2.5_RUNEX	PM10_RUNEX
SANTA CLARA	2022	All Other Buses	Aggregated	40	DSL	9563.2	0.0001368	0.0001430
SANTA CLARA	2022	LDA	Aggregated	40	DSL	17402.2	0.0001164	0.0001216
SANTA CLARA	2022	LDT1	Aggregated	40	DSL	43.3	0.0000065	0.0000068
SANTA CLARA	2022	LDT2	Aggregated	40	DSL	4063.2	0.0000204	0.0000214
SANTA CLARA	2022	LHD1	Aggregated	40	DSL	14664.5	0.0002262	0.0002365
SANTA CLARA	2022	LHD2	Aggregated	40	DSL	5762.3	0.0000929	0.0000971
SANTA CLARA	2022	MDV	Aggregated	40	DSL	8786.2	0.0000391	0.0000409
SANTA CLARA	2022	MH	Aggregated	40	DSL	1075.7	0.0000767	0.0000801
SANTA CLARA	2022	Motor Coach	Aggregated	40	DSL	193.6	0.0000045	0.0000047
SANTA CLARA	2022	SBUS	Aggregated	40	DSL	1676.0	0.0000536	0.0000560
SANTA CLARA	2022	T6 Ag	Aggregated	40	DSL	0.3	0.0000000	0.0000000
SANTA CLARA	2022	T6 CAIRP heavy	Aggregated	40	DSL	132.1	0.0000007	0.0000007
SANTA CLARA	2022	T6 CAIRP small	Aggregated	40	DSL	17.7	0.0000003	0.0000003
SANTA CLARA	2022	T6 instate construction heavy	Aggregated	40	DSL	751.7	0.0000187	0.0000195
SANTA CLARA	2022	T6 instate construction small	Aggregated	40	DSL	1714.9	0.0000825	0.0000862
SANTA CLARA	2022	T6 instate heavy	Aggregated	40	DSL	9170.6	0.0001340	0.0001401
SANTA CLARA	2022	T6 instate small	Aggregated	40	DSL	15746.5	0.0007223	0.0007549
SANTA CLARA	2022	T6 OOS heavy	Aggregated	40	DSL	74.6	0.0000003	0.0000003
SANTA CLARA	2022	T6 OOS small	Aggregated	40	DSL	10.0	0.0000002	0.0000002
SANTA CLARA	2022	T6 Public	Aggregated	40	DSL	1616.1	0.0000327	0.0000342
SANTA CLARA	2022	T6 utility	Aggregated	40	DSL	265.8	0.0000007	0.0000007
SANTA CLARA	2022	T7 CAIRP	Aggregated	40	DSL	2473.7	0.0000393	0.0000411
SANTA CLARA	2022	T7 CAIRP construction	Aggregated	40	DSL	554.8	0.0000085	0.0000089
SANTA CLARA	2022	T7 NNOOS	Aggregated	40	DSL	3015.7	0.0000327	0.0000342
SANTA CLARA	2022	T7 NOOS	Aggregated	40	DSL	971.9	0.0000142	0.0000148
SANTA CLARA	2022	T7 other port	Aggregated	40	DSL	1919.1	0.0000533	0.0000557
SANTA CLARA	2022	T7 POAK	Aggregated	40	DSL	10738.8	0.0003475	0.0003632
SANTA CLARA	2022	T7 Public	Aggregated	40	DSL	1372.6	0.0000640	0.0000669
SANTA CLARA	2022	T7 Single	Aggregated	40	DSL	3420.9	0.0000917	0.0000959
SANTA CLARA	2022	T7 single construction	Aggregated	40	DSL	1376.3	0.0000335	0.0000351
SANTA CLARA	2022	T7 SWCV	Aggregated	40	DSL	1248.3	0.0000130	0.0000136
SANTA CLARA	2022	T7 tractor	Aggregated	40	DSL	8242.7	0.0001901	0.0001987
SANTA CLARA	2022	T7 tractor construction	Aggregated	40	DSL	1135.3	0.0000319	0.0000333
SANTA CLARA	2022	T7 utility	Aggregated	40	DSL	146.7	0.0000007	0.0000007
SANTA CLARA	2022	UBUS	Aggregated	40	DSL	832.4	0.0000067	0.0000070
						130180	0.0026926	0.0028144
							grams/mile @40 mph	
						grams/hour	0.108	0.113
							PM2.5	PM10
						grams/sec	**3.0E-05**	**3.1E-05**

BREEZE AERMOD
Sensitive Receptor Results
Naglee Avenue DPM PM10 Concentrations

Pollutant: PM10, Type: CONC (ug/m3) 5 YEAR AVG., Group: ALL**

Sen. Rcpt. #	Dsc. Rcpt. #	Description	UTM		Conc.	
			East(m)	North(m)		
1	301	h1	594687.70	4131693.01	0.0199	
2	302	h2	594684.52	4131705.29	0.02113	
3	303	h3	594684.43	4131719.15	0.02234	
4	304	h4	594673.54	4131660.55	0.01719	
5	305	h5	594687.92	4131664.27	0.01729	

http://www.breeze-software.com/

BREEZE AERMOD
Sensitive Receptor Results
Naglee Avenue PM2.5 concentrations

Pollutant: PM10, Type: CONC (ug/m3) 5 YEAR AVG., Group: ALL**

Sen. Rcpt. #	Dsc. Rcpt. #	Description	UTM		Conc.	
			East(m)	North(m)		
1	301	h1	594687.70	4131693.01	0.01926	
2	302	h2	594684.52	4131705.29	0.02044	
3	303	h3	594684.43	4131719.15	0.02162	
4	304	h4	594673.54	4131660.55	0.01664	
5	305	h5	594687.92	4131664.27	0.01673	

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