

# ***1001 S. WOLFE ROAD AIR QUALITY & GREENHOUSE GAS ASSESSMENT***

*Sunnyvale, California*

**August 23, 2024**

**Prepared for:**

Samir Sharma  
VIA Email: [Samir19@gmail.com](mailto:Samir19@gmail.com)

**Prepared by:**

Zachary Palm  
Jordyn Bauer

**ILLINGWORTH & RODKIN, INC.**  
■■■ Acoustics • Air Quality ■■■  
429 East Cotati Avenue  
Cotati, CA 94931  
(707) 794-0400

I&R Project#: 24-084

## Introduction

The purpose of this report is to address the potential air quality, health risk, and greenhouse gas (GHG) impacts associated with the proposed residential project located at 1001 South Wolfe Street in Sunnyvale, California. Air quality impacts and GHG emissions would be associated with the demolition of the existing uses at the site, construction of the new building and infrastructure, and operation of the project. Air pollutant emissions associated with construction of the project were estimated using appropriate computer models. In addition, the potential project health risks and the impact of 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).<sup>1</sup>

## Project Description

The 0.29-acre project site is currently comprised of an existing single-family home. The project proposes to demolish the existing use to construct five, three-story townhome units totaling 12,035 square feet (sf). Each unit would have a two-car garage and there would be four guest parking spaces. Construction is proposed to begin in October 2025 and be completed by March 2026.

## 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<sub>10</sub>), and fine particulate matter (PM<sub>2.5</sub>).

### Air Pollutants of Concern

High ozone concentrations in the air basin are caused by the cumulative emissions of reactive organic gases (ROG) and nitrogen oxides (NO<sub>x</sub>). These precursor pollutants react under certain meteorological conditions to form ozone concentrations. Controlling the emissions of these precursor pollutants is the focus of the Bay Area's attempts to reduce ambient ozone concentrations. The highest ozone concentrations in the Bay Area occur in the eastern and southern inland valleys that are downwind of air pollutant sources. High ozone concentrations aggravate respiratory and cardiovascular diseases, reduced lung function, and increase coughing and chest discomfort.

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

---

<sup>1</sup> Bay Area Air Quality Management District, 2022 CEQA Guidelines, April 2023.

### Toxic Air Contaminants

TACs 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 of TACs can result in adverse health effects, they are regulated at the regional, State, and federal level.

Diesel exhaust is the predominant TAC in urban air and is estimated to represent about three-quarters of the cancer risk from TACs (based on the Bay Area average). According to the California Air Resources Board (CARB), diesel exhaust is a complex mixture of gases, vapors, and fine particles. This complexity makes the evaluation of health effects from diesel exhaust exposure 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 and incorporated in BAAQMD's current CEQA guidance.<sup>2</sup>

### 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, infants and small 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 would be located in the single- and multi-family residences surrounding the site. There are additional residences at further distances. This project would introduce new sensitive receptors (i.e., residents) to the area.

## **Regulatory Setting**

### Federal Regulations

The United States Environmental Protection Agency (EPA) sets nationwide emission standards for mobile sources, which include on-road (highway) motor vehicles such trucks, buses, and automobiles, and non-road (off-road) vehicles and equipment used in construction, agricultural, industrial, and mining activities (such as bulldozers and loaders). The EPA also sets nationwide

---

<sup>2</sup> 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.

fuel standards. California also has the ability to set motor vehicle emission standards and standards for fuel used in California, as long as they are the same or more stringent than the federal standards.

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

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

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

### State Regulations

To address the issue of diesel emissions in the state, CARB developed the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles.<sup>4</sup> In addition to requiring more stringent emission standards for new on-road and off-road mobile sources and stationary diesel-fueled engines to reduce particulate matter emissions by 90 percent, a significant component of the plan involves application of emission control strategies to existing diesel vehicles and equipment. Many of the measures of the Diesel Risk Reduction Plan have been approved and adopted, including the federal on-road and non-road diesel engine emission standards for new engines, as well as adoption of regulations for low sulfur fuel in California.

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. CARB regulations require on-road diesel trucks to be retrofitted with particulate matter controls or replaced to meet 2010 or later engine standards that have much lower DPM and PM<sub>2.5</sub> emissions. This regulation will substantially reduce these emissions between 2013 and 2023. While new trucks and buses will meet strict federal standards, this measure is intended to accelerate the rate

---

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

<sup>4</sup> California Air Resources Board, 2000. Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles. October.

at which the fleet either turns over so there are more cleaner vehicles on the road or is retrofitted to meet similar standards. With this regulation, older, more polluting trucks would be removed from the roads sooner.

CARB has also adopted and implemented regulations to reduce DPM and NOx emissions from in-use (existing) and new off-road heavy-duty diesel vehicles (e.g., loaders, tractors, bulldozers, backhoes, off-highway trucks, etc.). The regulations apply to diesel-powered off-road vehicles with engines 25 horsepower (hp) or greater. The regulations are intended to reduce particulate matter and NOx exhaust emissions by requiring owners to turn over their fleet (replace older equipment with newer equipment) or retrofit existing equipment in order to achieve specified fleet-averaged emission rates. Implementation of this regulation, in conjunction with stringent federal off-road equipment engine emission limits for new vehicles, will significantly reduce emissions of DPM and NOx.

#### 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.<sup>5</sup> The program examines TAC emissions from point sources, area sources, and on-road and off-road mobile sources with an emphasis on diesel exhaust, which is a major contributor to airborne health risk in California. The CARE program is an on-going program that encourages community involvement and input. The technical analysis portion of the CARE program has been 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 has been used to develop emission reduction activities 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. Seven areas have been identified by BAAQMD as impacted communities. They include Eastern San Francisco, Richmond/San Pablo, Western Alameda, San José, Vallejo, Concord, and Pittsburgh/Antioch. The project site is not located within any of the BAAQMD CARE areas.

---

<sup>5</sup> See BAAQMD: <https://www.baaqmd.gov/community-health/community-health-protection-program/community-air-risk-evaluation-care-program>.

Overburdened communities are areas located (i) within a census tract identified by the California Communities Environmental Health Screening Tool (CalEnviroScreen), Version 4.0 implemented by OEHHA, as having an overall score at or above the 70th percentile, or (ii) within 1,000 feet of any such census tract.<sup>6</sup> The BAAQMD has identified several overburdened areas within its boundaries. However, the project site is not within an overburdened area as the Project site is scored at the 25<sup>th</sup> percentile on CalEnviroScreen.<sup>7</sup>

#### *BAAQMD CEQA Air Quality Guidelines*

In June 2010, BAAQMD adopted thresholds of significance to assist in the review of projects under CEQA. In 2023, the BAAQMD revised the *California Environmental Quality Act (CEQA) Air Quality Guidelines* that include significance thresholds to assist in the evaluation of air quality impacts of projects and plans proposed within the Bay Area. The current BAAQMD 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 include assessment methodologies for criteria air pollutants, air toxics, odors, and GHG emissions as shown in Table 1.<sup>8</sup> Air quality impacts and health risks are considered potentially significant if they exceed these thresholds.

The BAAQMD recommends all projects include a “basic” set of best management practices (BMPs) to manage fugitive dust and consider impacts from dust (i.e., fugitive PM<sub>10</sub> and PM<sub>2.5</sub>) to be less than significant if BMPs are implemented (listed below). BAAQMD strongly encourages enhanced BMPs for construction sites near schools, residential areas, other sensitive land uses, or if air quality impacts were found to be significant.

---

<sup>6</sup> See BAAQMD: [https://www.baaqmd.gov/~/media/dotgov/files/rules/reg-2-permits/2021-amendments/documents/20210722\\_01\\_appendixd\\_mapsofoverburdenedcommunities-pdf.pdf?la=en](https://www.baaqmd.gov/~/media/dotgov/files/rules/reg-2-permits/2021-amendments/documents/20210722_01_appendixd_mapsofoverburdenedcommunities-pdf.pdf?la=en).

<sup>7</sup> OEHAA, CalEnviroScreen 4.0 Maps <https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-40>

<sup>8</sup> Bay Area Air Quality Management District, 2022 CEQA Guidelines. April2023.

**Table 1. BAAQMD CEQA Significance Thresholds**

Criteria Air Pollutant	Construction Thresholds							
	Average Daily Emissions (lbs./day)							
ROG	54							
NO <sub>x</sub>	54							
PM <sub>10</sub>	82 (Exhaust)							
PM <sub>2.5</sub>	54 (Exhaust)							
CO	Not Applicable							
Fugitive Dust (PM <sub>10</sub> /PM <sub>2.5</sub> )	Best Management Practices (BMPs)*							
Health Risks and Hazards	Single Sources / Individual Projects			Combined Sources (Cumulative from all sources within 1000-foot zone of influence)				
Excess Cancer Risk	>10 in a million	OR Compliance with Qualified Community Risk Reduction Plan	>100 in a million	OR Compliance with Qualified Community Risk Reduction Plan				
Hazard Index	>1.0		>10.0					
Incremental annual PM <sub>2.5</sub>	>0.3 µg/m <sup>3</sup>		>0.8 µg/m <sup>3</sup>					
Greenhouse Gas Emissions								
Land Use Projects – (Must Include A or B)	<p>A. Projects must include, at a minimum, the following project design elements:</p> <ol style="list-style-type: none"> <li>1. Buildings <ul style="list-style-type: none"> <li>a. The project will not include natural gas appliances or natural gas plumbing (in both residential and nonresidential development).</li> <li>b. The project will not result in any wasteful, inefficient, or unnecessary energy usage as determined by the analysis required under CEQA Section 21100(b)(3) and Section 15126.2(b) of the State CEQA Guidelines.</li> </ul> </li> <li>2. Transportation <ul style="list-style-type: none"> <li>a. Achieve a reduction in project-generated vehicle miles traveled (VMT) below the regional average consistent with the current version of the California Climate Change Scoping Plan (currently 15 percent) or meet a locally adopted Senate Bill 743 VMT target, reflecting the recommendations provided in the Governor's Office of Planning and Research's Technical Advisory on Evaluating Transportation Impacts in CEQA: <ul style="list-style-type: none"> <li>i. Residential projects: 15 percent below the existing VMT per capita</li> <li>ii. Office projects: 15 percent below the existing VMT per employee</li> <li>iii. Retail projects: no net increase in existing VMT</li> </ul> </li> <li>b. Achieve compliance with off-street electric vehicle requirements in the most recently adopted version of CALGreen Tier 2.</li> </ul> </li> </ol> <p>Be consistent with a local GHG reduction strategy that meets the criteria under State CEQA Guidelines Section 15183.5(b).</p>							
<p>Note: ROG = reactive organic gases, NOx = nitrogen oxides, PM<sub>10</sub> = coarse particulate matter or particulates with an aerodynamic diameter of 10 micrometers (µm) or less, PM<sub>2.5</sub> = fine particulate matter or particulates with an aerodynamic diameter of 2.5µm or less. VMT = vehicle miles traveled. GHG = greenhouse gas.</p> <p>* BAAQMD strongly recommends implementing all feasible fugitive dust management practices especially when construction projects are located near sensitive communities, including schools, residential areas, or other sensitive land uses.</p>								

## City of Sunnyvale General Plan

The following air quality goals and policies contained in the City's General Plan<sup>9</sup> are applicable to the proposed project:

**Goal EM-11 Improved Air Quality:** Improve Sunnyvale's Air Quality and Reduce the Exposure of its Citizens to Air Pollutants.

- *Policy EM-11.1:* The City should actively participate in regional air quality planning. Future development within Sunnyvale impacts regional air quality. Indirect impacts are related to vehicle trips attracted to or generated by residential, commercial or employment-generating land uses. There are several methods in which land use regulations can be used to both reduce emissions and alleviate the impact on residences. By locating employment and retail services areas closer to residential areas, vehicle use can be reduced.
- *Policy EM-11.2:* Utilize land use strategies to reduce air quality impact, including opportunities for citizens to live and work in close proximity.
- *Policy EM-11.3:* Require all new development to utilize site planning to protect citizens from unnecessary exposure to air pollutants.
- *Policy EM-11.4:* Apply the indirect source rule to new development with significant air quality impacts. Indirect source review would cover commercial and residential projects as well as other land uses that produce or attract motor vehicle traffic.

## City of Sunnyvale Land Use and Transportation Element

In 2022, Sunnyvale adopted an update to the City's Land Use and Transportation Element (LUTE) of its General Plan. The LUTE combined the long-range planning requirements of both land use and circulation elements into one chapter of the General Plan. An environmental impact report (EIR) for the LUTE evaluated the environmental impacts associated with development of the City based on the land use and transportation elements established in the LUTE. Air quality and GHG emissions associated with construction and operation of the LUTE were addressed in that EIR.

Much of the air quality impacts associated with this project were addressed under the *LUTE Draft EIR*.<sup>10</sup> Projects constructed in Sunnyvale are subject to the mitigation measures contained in the LUTE DEIR. Impacts and mitigation measures pertaining to the proposed DEIR were identified. This included project-specific impacts. The focus of this air quality study is to address impacts associated with criteria air pollutants and TAC exposure associated with project construction and exposure of project occupants to TAC sources near the project site (i.e., within 1,000 feet). This air quality report incorporates the mitigation measures (MM) described in the LUTE.

---

<sup>9</sup> City of Sunnyvale, 2011. *Sunnyvale General Plan*.

<sup>10</sup> City of Sunnyvale. 2016. *Land Use and Transportation Element Draft Environmental Impact Report* (SCH No.2012032003). August.

The LUTE DEIR identified significant and unavoidable impacts with respect to temporary construction period emissions (Impact 3.5.3). Potentially significant impacts were also identified in regard to exposing existing and new sensitive receptors to unhealthy levels of TACs and PM<sub>2.5</sub> (Impact 3.5.5 & 3.5.6).

*MM 3.5.3 Violate an Air Quality Standard or Contribute Substantially to an Air Quality Violation During Short-Term Construction Activities*

**NEW POLICY:** Prior to the issuance of grading or building permits, the City of Sunnyvale shall ensure that the BAAQMD basic construction mitigation measures from Table 8-1 of the BAAQMD 2011 CEQA Air Quality Guidelines (or subsequent updates) are noted on the construction documents.<sup>11</sup>

**NEW POLICY:** In the cases where construction projects are projected to exceed the BAAQMD's air pollutant significance thresholds for NO<sub>x</sub>, PM<sub>10</sub>, and/or PM<sub>2.5</sub>, all off-road diesel-fueled equipment (e.g., rubber-tired dozers, graders, scrapers, excavators, asphalt paving equipment, cranes, tractors) shall be at least CARB Tier 3 Certified or better.

The DEIR identified potentially significant impacts associated with exposure of sensitive receptors to substantial pollutant concentrations because the project may expose new sensitive receptors to significant health risks associated with TAC exposure. To address this issue, MM 3.5.6 requires future projects located within 1,000 feet of sensitive receptors to perform a construction health risk assessment:

*MM 3.5.5 Exposure of Sensitive Receptors to Substantial Toxic Air Containments Concentrations During Construction*

**NEW POLICY:** In the case when a subsequent project's construction span is greater than 5 acres and/or is scheduled to last more than two years, the subsequent project applicant shall be required to prepare a site-specific construction pollutant mitigation plan in consultation with Bay Area Air Quality Management District (BAAQMD) staff prior to the issuance of grading permits. A project-specific construction-related dispersion modeling acceptable to the BAAQMD shall be used to identify potential toxic air contaminant impacts, including diesel particulate matter. If BAAQMD risk thresholds (i.e., probability of contracting cancer is greater than 10 in one million) would be exceeded, mitigation measures shall be identified in the construction pollutant mitigation plan to address potential impacts and shall be based on site-specific information such as the distance to the nearest sensitive receptors, project site plan details, and construction schedule. The City shall ensure construction contracts include all identified measures and that the measures reduce the health risk below BAAQMD risk thresholds. Construction pollutant mitigation plan measures shall include but not be limited to:

1. Limiting the amount of acreage to be graded in a single day.

---

<sup>11</sup> Note that the BAAQMD Basic Construction Mitigation Measures Recommended for ALL Proposed Projects is listed as Table 5-2 in the BAAQMD 2022 CEQA Air Quality Guidelines.

2. Restricting intensive equipment usage and intensive ground disturbance to hours outside of normal school hours.
3. Notifying affected sensitive receptors one week prior to commencing onsite construction so that any necessary precautions (such as rescheduling or relocation of outdoor activities) can be implemented. The written notification shall include the name and telephone number of the individual empowered to manage construction of the project. In the event that complaints are received, the individual empowered to manage construction shall respond to the complaint within 24 hours. The response shall include identification of measures being taken by the project construction contractor to reduce construction-related air pollutants. Such a measure may include the relocation of equipment.

*MM 3.5.6 Exposure of Sensitive Receptors to Substantial Toxic Air Contaminant Concentrations During Operation*

**NEW POLICY:** The following measures shall be utilized in site planning and building designs to reduce TAC and PM<sub>2.5</sub> exposure where new receptors are located within 1,000 feet of emissions sources:

- Future development that includes sensitive receptors (such as residences, schools, hospitals, daycare centers, or retirement homes) located within 1,000 feet of Caltrain, Central Expressway, El Camino Real, Lawrence Expressway, Mathilda Avenue, Sunnyvale-Saratoga Road, US 101, State Route 237, State Route 85, and/or stationary sources shall require site-specific analysis to determine the level of health risk. This analysis shall be conducted following procedures outlined by the BAAQMD. If the site-specific analysis reveals significant exposures from all sources (i.e., health risk in terms of excess cancer risk greater than 100 in one million, acute or chronic hazards with a hazard Index greater than 10, or annual PM<sub>2.5</sub> exposures greater than 0.8 µg/m<sup>3</sup>) measures shall be employed to reduce the risk to below the threshold (e.g., electrostatic filtering systems or equivalent systems and location of vents away from TAC sources). If this is not possible, the sensitive receptors shall be relocated.
- Future nonresidential developments identified as a permitted stationary TAC source or projected to generate more than 100 heavy-duty truck trips daily will be evaluated through the CEQA process or BAAQMD permit process to ensure they do not cause a significant health risk in terms of excess cancer risk greater than 10 in one million, acute or chronic hazards with a hazard Index greater than 1.0, or annual PM<sub>2.5</sub> exposures greater than 0.3 µg/m<sup>3</sup> through source control measures.
- For significant cancer risk exposure, as defined by the BAAQMD, indoor air filtration systems shall be installed to effectively reduce particulate levels to avoid adverse public health impacts. Projects shall submit performance specifications and design details to demonstrate that lifetime residential exposures would not result in adverse public health impacts (less than 10 in one million chances).

## AIR QUALITY IMPACTS AND MITIGATION MEASURES

### **Impact AIR-1: Conflict with or obstruct implementation of the applicable air quality plan?**

BAAQMD is the regional agency responsible for overseeing compliance with State and Federal laws, regulations, and programs within the San Francisco Bay Area Air Basin (SFBAAB). BAAQMD, with assistance from the Association of Bay Area Governments (ABAG) and Metropolitan Transportation Commission (MTC), prepares and implements specific plans to meet the applicable laws, regulations, and programs. The most recent and comprehensive of which is the *Bay Area 2017 Clean Air Plan*.<sup>12</sup> The primary goals of the Clean Air Plan are to attain air quality standards, reduce population exposure and protect public health, and reduce GHG emissions and protect the climate. The BAAQMD has also developed CEQA guidelines to assist lead agencies in evaluating the significance of air quality and GHG impacts. In formulating compliance strategies, BAAQMD relies on planned land uses established by local general plans. Land use planning affects vehicle travel, which, in turn, affects region-wide emissions of air pollutants and GHGs.

The 2017 Clean Air Plan, adopted by BAAQMD in April 2017, includes control measures that are intended to reduce air pollutant emissions in the Bay Area either directly or indirectly. Guidance provided in the BAAQMD CEQA guidelines recommends that Plans show consistency with the control measures listed within the Clean Air Plan. At the project-level, there are no consistency measures or thresholds provided in BAAQMD's CEQA guidance. The proposed project would not conflict with the latest Clean Air planning efforts since 1) project would have emissions below the BAAQMD thresholds (see Impact below), 2) the project would be considered urban infill as it redevelops an active land use, 3) the project would be located near employment centers, and 4) the project would be located near transit with regional connections.

### **Impact AIR-2: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?**

The Bay Area is considered a non-attainment area for ground-level O<sub>3</sub> and PM<sub>2.5</sub> under both the NAAQS and the CAAQS. The area is also considered non-attainment for PM<sub>10</sub> under the CAAQS, but not the NAAQS. The area has attained both State and Federal ambient air quality standards for CO. As part of an effort to attain and maintain ambient air quality standards for O<sub>3</sub>, PM<sub>2.5</sub> and PM<sub>10</sub>, the BAAQMD has established thresholds of significance for these air pollutants and their precursors. The O<sub>3</sub> precursor pollutant thresholds are for ROG and NOx, while PM<sub>10</sub>, and PM<sub>2.5</sub> have specific thresholds. The thresholds apply to both construction period emissions and operational period emissions.

---

<sup>12</sup> Bay Area Air Quality Management District (BAAQMD), 2017. *Final 2017 Clean Air Plan*.

## Construction Period Emissions

The California Emissions Estimator Model (CalEEMod) Version 2022 was used to estimate emissions from on-site construction activity, construction vehicle trips, and evaporative emissions. The project land use types and size were input to CalEEMod. The CalEEMod model output along with construction inputs are included in *Attachment 1*.

### CalEEMod Inputs

#### *Land Uses*

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

**Table 2. Summary of Project Land Use Inputs**

Project Land Uses	Size	Units	Square Feet (sf)	Acreage
Condo/Townhouse	5	Dwelling Unit	12,035	
Parking Lot	4	Parking Space	-	0.29

#### *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 quantities, average hours per day, total number of workdays, and schedule, were based on CalEEMod default information for a project of this type and size (included in *Attachment 1*). The project applicant estimates the earliest possible start date to be October 2025 and based on CalEEMod defaults would be built out over a period of approximately six months, or 126 construction workdays. The operational year was assumed to be 2026.

#### *Construction 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 provided demolition material to be exported, estimated soil imported and/or exported to the site, and the estimated amount of concrete/asphalt truck trips to and from the site. CalEEMod provides daily estimates of worker and vendor trips for each applicable phase. Daily haul trips for demolition and grading were developed by CalEEMod using the provided demolition and estimated soil export volumes. The amount of concrete/asphalt was estimated and converted to daily one-way trips, assuming two trips per delivery.

### Summary of Computed Construction Period Emissions

Average daily construction emissions were estimated for the total duration of the project (126 days). Table 3 shows the unmitigated average daily construction emissions of ROG, NOx, PM<sub>10</sub> exhaust, and PM<sub>2.5</sub> exhaust during construction of the project. As indicated in Table 3, the

predicted project unmitigated construction emissions would not exceed the BAAQMD significance thresholds.

**Table 3. Construction Period Emissions - Unmitigated**

Year	ROG	NOx	PM <sub>10</sub> Exhaust	PM <sub>2.5</sub> Exhaust
<i>Construction Emissions Total (Tons)</i>				
2025 + 2026	0.12	0.30	0.01	0.01
<i>Average Daily Construction Emissions (pounds/day)</i>				
2025 + 2026 (126 construction workdays)	1.85	4.75	0.19	0.18
<i>BAAQMD Thresholds (pounds per day)</i>	<i>54 lbs./day</i>	<i>54 lbs./day</i>	<i>82 lbs./day</i>	<i>54 lbs./day</i>
<b>Exceed Threshold?</b>	No	No	No	No

Construction activities, particularly during site preparation and grading, would temporarily generate fugitive dust in the form of PM<sub>10</sub> and PM<sub>2.5</sub>. 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 recommends all projects include a “basic” set of best management practices (BMPs) to manage fugitive dust and consider impacts from dust (i.e. fugitive PM<sub>10</sub> and PM<sub>2.5</sub>) to be less than significant BMPs are implemented. *Mitigation Measure 3.5.3* from the LUTE DEIR implements the BAAQMD basic BMPs to control dust and exhaust during construction prior to grading or building permit issuance.

**LUTE DEIR MM 3.5.3:** **Include BAAQMD basic BMPs to control dust and exhaust during construction.**

During any construction period ground disturbance, the applicant shall ensure that the project contractor implement measures to control dust and exhaust. Implementation of the 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.

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 practicable. Building pads shall be laid as soon as practicable after grading unless seeding or soil binders are used.

6. All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph.
7. All trucks and equipment, including their tires, shall be washed off prior to leaving the site.
8. Unpaved roads providing access to site located 100 feet or further from a paved road shall be treated with a 6- to 12-inch layer of compacted layer of wood chips, mulch, or gravel.
9. Publicly visible signs shall be posted with the telephone number and name of the 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 General Air Pollution Complaints number shall be visible to ensure compliance with applicable regulations.

#### *Effectiveness of LUTE DEIR MM 3.5.3*

The measures above are consistent with BAAQMD-recommended basic BMPs for reducing fugitive dust contained in the BAAQMD CEQA Air Quality Guidelines. For this analysis, only the basic set of BMPs are required as the unmitigated fugitive dust emissions from construction are below the BAAQMD single-source threshold.

### **Operational Emissions Screening**

Chapter 4 of the BAAQMD CEQA Guidelines includes screening standards for criteria air pollutants. These screening standards provide a conservative indication of whether implementing a proposed project could result in potentially significant criteria air pollutants impacts. If all screening standards for criteria air pollutants are met by a proposed project, then a detailed assessment of the project's criteria air pollutant emissions would not need to be performed. The project would meet these operational screening standards since 1) the land uses sizes described in Table 2 are below the applicable operational screening level sizes shown in the Guidelines, 2) the project would not include stationary sources, and 3) operational activities would not overlap with construction activities. Therefore, this project would not exceed the operational criteria pollutant thresholds and further pollutant analysis was not required.

### **Impact AIR-3: Expose sensitive receptors to substantial pollutant concentrations?**

This project would introduce a new temporary source of TACs during construction (i.e., on-site construction and truck hauling emissions). There are sensitive receptors within 1,000 feet of the project site. Project construction activity would generate dust and equipment exhaust that would affect nearby sensitive receptors. The project would not include any stationary sources. Traffic generated by the project would consist of mostly light-duty gasoline-powered vehicles, which would produce TAC and air pollutant emissions in the local area.

Project impacts to existing sensitive receptors were addressed for temporary construction activities and long-term operational conditions. There are also several sources of existing TACs and localized air pollutants in the vicinity of the project. The impact of the existing sources of TAC

was also assessed in terms of describing the cumulative risk which includes the project contribution, as well as the risk on the new sensitive receptors introduced by the project.

### **Health Risk Methodology**

Health risk impacts were addressed by predicting increased cancer risk, the increase in annual PM<sub>2.5</sub> concentrations, and by computing the Hazard Index (HI) for non-cancer health risks. The risk impacts from the project are the risks from construction sources. These sources include on-site construction activity and construction truck hauling. To evaluate the increased cancer risks from the project, a 30-year exposure period was used, per BAAQMD guidance,<sup>13</sup> with the sensitive receptors being exposed to project construction emissions during this timeframe.

The project increased cancer risk is computed by summing the project construction cancer risk over the entire construction period. Unlike the increased maximum cancer risk, the annual PM<sub>2.5</sub> concentration and HI values are not additive but based on the annual maximum values for the entirety of the project. The project maximally exposed individual (MEI) is identified as the sensitive receptor that is most impacted by the project's construction.

The methodology for computing health risks impacts is contained in Appendix E of the BAAQMD CEQA Guidelines. TAC and PM<sub>2.5</sub> emissions are calculated, a dispersion model used to estimate ambient pollutant concentrations, and cancer risks and HI calculated using DPM concentrations.

### **Modeled Sensitive Receptors**

Receptors for this assessment included locations where sensitive populations would be present for extended periods of time (i.e., chronic exposures). This includes the existing residences near the site as shown in Figure 1. Residential receptors are assumed to include all receptor groups (i.e., third trimester, infants, children, and adults) with almost continuous exposure to project emissions. While there are additional sensitive receptors within 1,000 feet of the project site, the receptors chosen are adequate to identify maximum impacts from the project.

### **Health Risk from Project Construction**

The primary health risk impact issues associated with construction projects are cancer risks associated with diesel exhaust (i.e., DPM), which is a known TAC, and exposure to high ambient concentrations of dust (i.e., PM<sub>2.5</sub>). Both pose a potential health and nuisance impact to nearby receptors. 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<sub>2.5</sub>.<sup>14</sup> This assessment included dispersion modeling to predict the offsite concentrations resulting from project construction, so that lifetime cancer risks and non-cancer health effects could be estimated.

---

<sup>13</sup>BAAQMD, 2022. Appendix E of the *BAAQMD CEQA Guidelines*. April 2023.

<sup>14</sup>DPM is identified by California as a toxic air contaminant due to the potential to cause cancer.

## Construction Emissions

The CalEEMod model provided total uncontrolled annual PM<sub>10</sub> exhaust emissions (assumed to be DPM) for the off-road construction equipment and for exhaust emissions from on-road vehicles. Total DPM emissions were estimated to be 0.01 tons (24 pounds) and fugitive dust emissions (PM<sub>2.5</sub>) to be less than 0.01 tons (2 pounds) from all construction stages. 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 one mile was used to represent vehicle travel while at or near the construction site. It was assumed that the emissions from on-road vehicles traveling at or near the site would occur at the construction site.

## Dispersion Modeling

The U.S. EPA AERMOD dispersion model was used to predict DPM and PM<sub>2.5</sub> 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.<sup>15</sup> Emission sources for the construction site were grouped into two categories: exhaust emissions of DPM and fugitive PM<sub>2.5</sub> dust emissions.

### *Construction Sources*

To represent the construction equipment exhaust emissions, an area source was used with an emission release height of 20 feet (6 meters).<sup>16</sup> 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, was 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<sub>2.5</sub> emissions, an area source with a near-ground level release height of 7 feet (2 meters) was used. 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.

---

<sup>15</sup> BAAQMD, 2023, *Appendix E of the 2022 BAAQMD CEQA Guidelines*. April.

<sup>16</sup> California Air Resource Board, 2007. *Proposed Regulation for In-Use Off-Road Diesel Vehicles, Appendix D: Health Risk Methodology*. April. Web: <https://ww3.arb.ca.gov/regact/2007/ordiesl07/ordiesl07.htm>

### *AERMOD Inputs and Meteorological Data*

The modeling used a five-year data set (2013 - 2017) of hourly meteorological data from the San José International Airport was used with the AERMOD model. Construction emissions were modeled as occurring between 7:00 a.m. to 6:00 p.m., when the majority of construction is expected to occur. Annual DPM and PM<sub>2.5</sub> concentrations from construction activities during the 2025 - 2026 period were calculated at nearby sensitive receptors using the model. Receptor heights of 5 feet (1.5 meters) and 15 feet (4.5 meters) were used to represent the breathing height on the first and second floors of nearby residences.<sup>17</sup>

### Summary of Construction Health Risk Impacts

The maximum increased cancer risks were calculated using the modeled TAC concentrations combined with BAAQMD CEQA guidance for age sensitivity factors and exposure parameters. Age-sensitivity factors reflect the greater sensitivity of infants and small children to cancer causing TACs. Third trimester, infant, child, and adult exposures were assumed to occur at all residences during the entire construction period.

Non-cancer health hazards and maximum PM<sub>2.5</sub> concentrations were also calculated. The maximum modeled annual PM<sub>2.5</sub> 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 DPM reference exposure level of 5 µg/m<sup>3</sup>.

The modeled maximum annual DPM and PM<sub>2.5</sub> concentrations were identified at nearby sensitive receptors to find the MEI. Results of this assessment indicated that the construction MEI was located south of the project site on the first floor (5 feet above the ground) of a single-family residence. The location of the MEI and nearby sensitive receptors are shown in Figure 1. Table 4 summarizes the maximum cancer risks, PM<sub>2.5</sub> concentrations, and HI for project related construction activities at the MEI.

As shown in Table 4, the unmitigated cancer risk from construction activities at the MEI location would exceed the BAAQMD single-source significance thresholds. However, with the incorporation of *Mitigation Measure AQ-1*, the cancer risk would no longer exceed the BAAQMD single-source significance threshold. The annual PM<sub>2.5</sub> concentration and hazard index, with and without mitigation, do not exceed their respective BAAQMD single-source significance threshold. *Attachment 2* to this report includes the emission calculations used for the construction modeling and the cancer risk calculations.

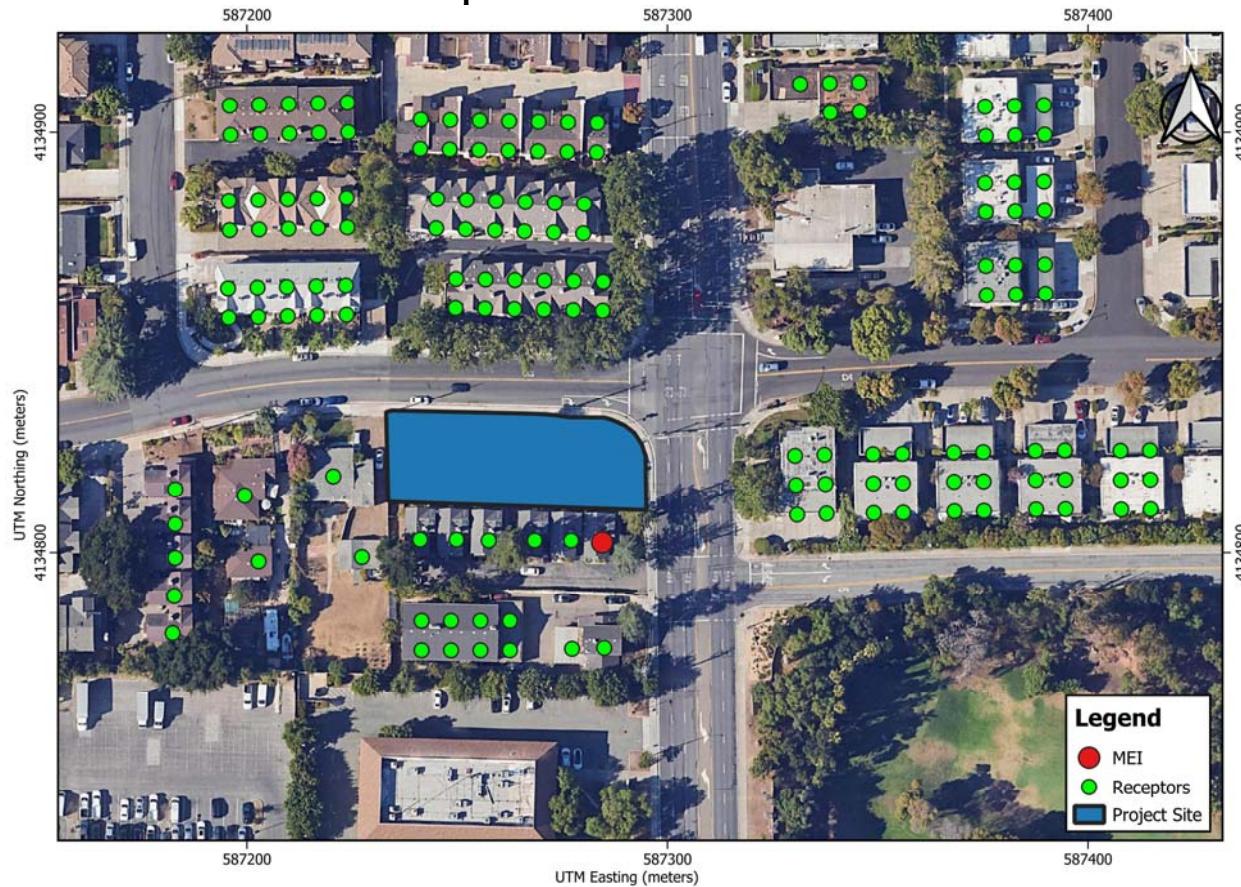
---

<sup>17</sup> 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>

**Table 4. Construction Risk Impacts at the Off-Site MEI**

Source		Cancer Risk (per million)	Annual PM <sub>2.5</sub> (µg/m <sup>3</sup> )	Hazard Index
Project Construction	Unmitigated	15.19 (infant)	0.12	0.02
	Mitigated	2.44 (infant)	0.04	<0.01
<b>BAAQMD Single-Source Threshold</b>		<b>10.0</b>	<b>0.3</b>	<b>1.0</b>
<b>Exceed Threshold?</b>	Unmitigated	<b>Yes</b>	<i>No</i>	<i>No</i>
	Mitigated	<i>No</i>	<i>No</i>	<i>No</i>

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



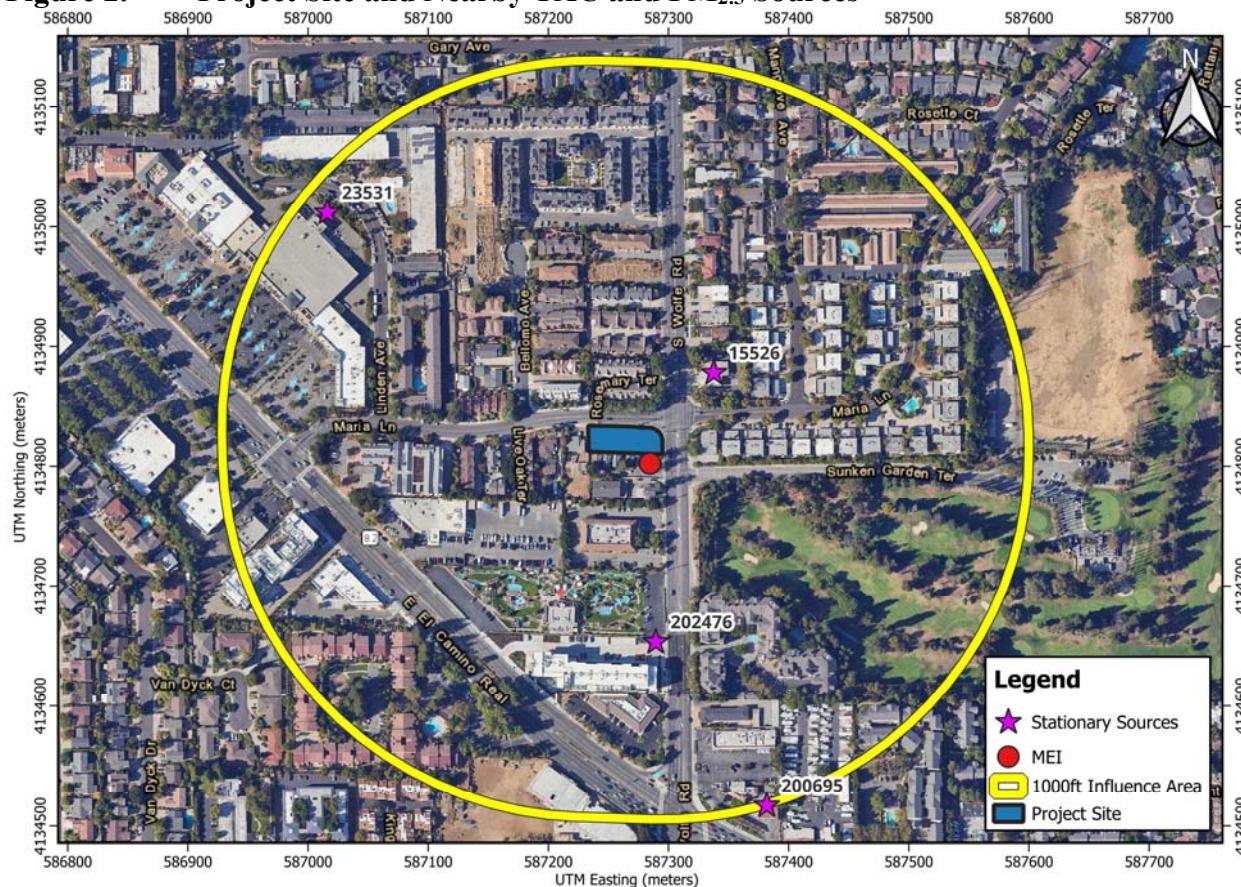
### Cumulative Health Risks

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

A review of the project area using BAAQMD's geographic information systems (GIS) screening maps identified the existing health risks from nearby roadway and stationary sources at the MEI. Local roadways and four stationary sources within the 1,000-foot influence area could have cumulative health risk impacts at the MEI. Figure 2 shows the locations of the sources affecting the MEI within the influence area. Health risk impacts from these sources upon the MEI are

reported in Table 5. Details of the cumulative screening and health risk calculations are included in *Attachment 3*.

**Figure 2. Project Site and Nearby TAC and PM<sub>2.5</sub> Sources**



#### Local Roadways – Nearby Roads

The project site is located near multiple intersecting streets. Cancer risk, PM<sub>2.5</sub> concentrations, and HI associated with traffic on the nearby roadways were estimated using BAAQMD screening values provided via GIS data files (i.e., raster files).<sup>18</sup> BAAQMD raster files provide screening-level cancer risk, PM<sub>2.5</sub> concentrations, and HI for roadways within the Bay Area and were produced using AERMOD and 20x20-meter emissions grid. The raster file uses EMFAC2021 data for vehicle emissions and fleet mix for roadways and includes Appendix E of the Air District's CEQA Air Quality Guidance for risk assessment assumptions. These estimates represent conservative risks reflective of 2022 conditions and are meant to provide a conservative estimate of future conditions, which do not reflect the increased proportion of zero emission motor vehicles that will result in lower future emissions.<sup>19</sup> These screening values are considered higher than values that would be obtained with refined modeling methods. These raster data are based on region-wide emissions rather than those that occur within 1,000 feet of the project. More

<sup>18</sup> BAAQMD, *Health Risk Screening and Modeling*, 2022. Web: <https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/ceqa-tools/health-risk-screening-and-modeling>

<sup>19</sup> BAAQMD, 2022. BAAQMD CEQA Air Quality Guidelines Appendix E, Section 9. April 2023

information regarding the assumptions used to develop the screening layers can be found in Sections 6 and 7 in Appendix E of BAAQMD's 2022 CEQA guidance.<sup>20</sup> Screening-level cancer risk, PM<sub>2.5</sub> concentration, and HI for the cumulative roadway impacts at the construction MEI are listed in Table 5.

#### BAAQMD Permitted Stationary Sources

Permitted stationary sources of air pollution near the project site were identified using BAAQMD's *Permitted Stationary Sources 2022* GIS website,<sup>21</sup> which identifies the location of nearby stationary sources and their estimated risk and hazard impacts, including emissions and adjustments to account for OEHHA guidance. Four sources were identified using this tool, one gas dispensing facility and three emergency diesel generators. The BAAQMD GIS website provided screening risks and hazards for the diesel generators. A stationary source information request was submitted to BAAQMD in order to estimate health risk impacts from the gasoline dispensing facility.<sup>22</sup>

The screening risk and hazard levels provided by BAAQMD for the stationary sources were adjusted for distance using BAAQMD's *Distance Adjustment Multiplier Tool for Diesel Internal Combustion Engines* and CARB's *Gasoline Station Risk Screening Tool*. BAAQMD provided the gasoline throughputs for the gas dispensing facility near the project site.<sup>23</sup> The provided throughputs along with the distance between the MEI and the gas dispensing facility, and the region for the gas station was input into the CARB tool to calculate the cancer risk and hazard index. Health risk impacts from the stationary sources upon the MEI are reported in Table 5.

#### Summary of Cumulative Health Risk Impact at Construction MEI

Table 5 reports both the project and cumulative health risk impacts at the sensitive receptors most affected by construction (i.e., the MEI). The project does exceed the BAAQMD single-source significance threshold because of project construction activity. However, with the incorporation of *Mitigation Measure AQ-1*, the project's construction cancer risk falls below the BAAQMD single-source significance threshold. The project does not exceed, with or without mitigation, any of the BAAQMD cumulative-source significance thresholds.

---

<sup>20</sup> BAAQMD, 2022. BAAQMD CEQA Air Quality Guidelines Appendix E. April 2023.

[https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-guidelines-2022/appendix-e-recommended-methods-for-screening-and-modeling-local-risks-and-hazards\\_final-pdf.pdf?la=en](https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-guidelines-2022/appendix-e-recommended-methods-for-screening-and-modeling-local-risks-and-hazards_final-pdf.pdf?la=en)

<sup>21</sup> BAAQMD,

<https://baaqmd.maps.arcgis.com/apps/webappviewer/index.html?id=845658c19eae4594b9f4b805fb9d89a3>

<sup>22</sup> Correspondence with BAAQMD CEQA, July 8, 2024

<sup>23</sup> Email from BAAQMD, July 8, 2024. Subject: "RE\_ Public Records Number 2024-06-0069 Stationary Source Request for 24-084 1001S Wolfe Rd Sunnyvale SSIF"

**Table 5. Impacts from Combined Sources at Project MEI**

Source		Cancer Risk (per million)	Annual PM <sub>2.5</sub> ( $\mu\text{g}/\text{m}^3$ )	Hazard Index
<b>Project Impacts</b>				
Project Construction	Unmitigated	<b>15.19 (infant)</b>	0.12	0.02
	Mitigated	2.44 (infant)	0.04	<0.01
	<b>BAAQMD Single-Source Threshold</b>	<b>10.0</b>	<b>0.3</b>	<b>1.0</b>
<b>Exceed Threshold?</b>	Unmitigated	<b>Yes</b>	<b>No</b>	<b>No</b>
	Mitigated	No	No	No
<b>Cumulative Impacts</b>				
Cumulative Roadways – BAAQMD Raster		9.39	0.21	0.03
City of Sunnyvale - Station 4 -155-1 (Facility ID #15526, Generator), MEI at 1000+ feet.		0.06	-	-
Hampton Inn & Suites - Sunnyvale (Facility ID #202476, Generator), MEI at 1000+ feet.		0.29	-	-
Safeway Inc #1439 (Facility ID #23531, Generator), MEI at 1000+ feet.		0.01	-	-
Zip Thru Car Wash Sunnyvale (Facility ID #200695, Gas Dispensing Facility), MEI at 580 feet.		0.05	-	-
Cumulative Total	Unmitigated	24.99	0.33	0.05
	Mitigated	12.24	0.25	<0.04
	<b>BAAQMD Cumulative Source Threshold</b>	<b>100</b>	<b>0.8</b>	<b>10.0</b>
<b>Exceed Threshold?</b>	Unmitigated	No	No	No
	Mitigated	No	No	No

**Mitigation Measure AQ-1: Use construction equipment that has low diesel particulate matter exhaust emissions.**

Implement a feasible plan to reduce diesel particulate matter emissions by at least 35 percent such that increased cancer risk 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 final emission standards for PM (PM<sub>10</sub> and PM<sub>2.5</sub>), if feasible, otherwise,
  - a. If use of Tier 4 final 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 at least a 35 percent reduction in particulate matter exhaust in comparison to uncontrolled 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 at least 35 percent or greater. Elements of the plan could include a combination of some of the following measures:
  - Installation of electric power lines during early construction phases to avoid use of diesel portable equipment,
  - 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*

CalEEMod was used to compute emissions associated with these mitigation measures assuming that all construction equipment met U.S. EPA Tier 4 interim engine standards. With these implemented, the project's construction cancer risk levels (assuming infant exposure) would be reduced by 84 percent to 2.44 per million. As a result, the project's construction risks would be reduced below the BAAQMD single-source threshold.

#### **On-Site Health Risk Assessment for TAC Sources - New Project Residences**

In addition to evaluating health impacts from project construction, a health risk assessment was completed to assess the impact that the existing TAC sources would have on the new proposed sensitive receptors (residents) that the project would introduce. The same TAC sources identified above were used in this health risk assessment.<sup>24</sup> On-site health risk results are listed in Table 6. Attachment 3 includes the screening and modeling information used for TAC source impacts upon the proposed on-site sensitive receptors.

##### Local Roadways – Nearby Roads

The roadway screening impacts were conducted in the same manner as described above for the off-site MEI. While the roadway screening tool indicated that the cumulative cancer risks and PM<sub>2.5</sub> concentration impacts are just above the BAAQMD single-source thresholds, given the number of roadways in the influence area, individual roadway impacts if modeled separately have health risk impacts at the project site that are individually below the single-source BAAQMD thresholds. Table 6 includes the health risk screening results for the nearby roadways at the project site.

##### Stationary Sources

The stationary source screening analysis of the source for the new project sensitive receptors was conducted in the same manner as described above for the MEI. Table 6 includes the health risk screening results for the stationary source at the project site.

---

<sup>24</sup> 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.

Summary of Cumulative Health Risks at the Project Site

Health risk impacts from the existing TAC sources upon the project site are reported in Table 6. The risks from 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, the existing sources of TAC emissions do not exceed the BAAQMD single-source or cumulative-source thresholds for cancer risk, annual PM<sub>2.5</sub> concentration, or HI.

**Table 6. Impacts from Nearby Sources to Project Site Receptors**

Source	Cancer Risk (per million)	Annual PM <sub>2.5</sub> ( $\mu\text{g}/\text{m}^3$ )	Hazard Index
<b>Single-Source Impacts</b>			
City of Sunnyvale - Station 4 -155-1 (Facility ID #15526, Generator), Project Site at 135 feet.	0.10	<0.01	<0.01
Hampton Inn & Suites - Sunnyvale (Facility ID #202476, Generator), Project Site at 495 feet.	0.29	<0.01	<0.01
Safeway Inc #1439 (Facility ID #23531, Generator), Project Site at 820 feet.	0.02	<0.01	<0.01
Zip Thru Car Wash Sunnyvale (Facility ID #200695, Gas Dispensing Facility), Project Site at 905 feet.	0.07	-	0.03
<b>BAAQMD Single-Source Threshold</b>		<b>&gt;10.0</b>	<b>&gt;0.3</b>
<i>Exceed Threshold?</i>		<i>No</i>	<i>No</i>
<b>Cumulative-Source Impacts</b>			
Cumulative Nearby Roadways, BAAQMD Raster	14.61	0.39	0.06
Cumulative Total	15.09	<0.42	<0.12
<b>BAAQMD Cumulative Source Threshold</b>		<b>&gt;100</b>	<b>&gt;0.8</b>
<i>Exceed Threshold?</i>		<i>No</i>	<i>No</i>

## Greenhouse Gas Emissions

### Setting

Gases that trap heat in the atmosphere, GHGs, regulate the earth's temperature. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate. The most common GHGs are carbon dioxide (CO<sub>2</sub>) and water vapor but there are also several others, most importantly methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF<sub>6</sub>). These are released into the earth's atmosphere through a variety of natural processes and human activities. Sources of GHGs are generally as follows:

- CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O are byproducts of fossil fuel combustion.
- N<sub>2</sub>O is associated with agricultural operations such as fertilization of crops.
- CH<sub>4</sub> is commonly created by off-gassing from agricultural practices (e.g., keeping livestock) and landfill operations.
- Chlorofluorocarbons (CFCs) were widely used as refrigerants, propellants, and cleaning solvents but their production has been stopped by international treaty.
- HFCs are now used as a substitute for CFCs in refrigeration and cooling.
- PFCs and sulfur hexafluoride emissions are commonly created by industries such as aluminum production and semi-conductor manufacturing.

Each GHG has its own potency and effect upon the earth's energy balance. This is expressed in terms of a global warming potential (GWP), with CO<sub>2</sub> being assigned a value of 1 and sulfur hexafluoride being several orders of magnitude stronger. In GHG emission inventories, the weight of each gas is multiplied by its GWP and is measured in units of CO<sub>2</sub> equivalents (CO<sub>2</sub>e).

An expanding body of scientific research supports the theory that global climate change is currently affecting changes in weather patterns, average sea level, ocean acidification, chemical reaction rates, and precipitation rates, and that it will increasingly do so in the future. The climate and several naturally occurring resources within California are adversely affected by the global warming trend. Increased precipitation and sea level rise will increase coastal flooding, saltwater intrusion, and degradation of wetlands. Mass migration and/or loss of plant and animal species could also occur. Potential effects of global climate change that could adversely affect human health include more extreme heat waves and heat-related stress; an increase in climate-sensitive diseases; more frequent and intense natural disasters such as flooding, hurricanes and drought; and increased levels of air pollution.

### Federal and Statewide GHG Emissions

The U.S. EPA reported that in 2022, total gross nationwide GHG emissions were 5,215.6 million metric tons (MMT) carbon dioxide equivalent (CO<sub>2</sub>e).<sup>25</sup> These emissions were lower than peak levels of 7,416 MMT that were emitted in 2007. CARB updates the statewide GHG emission

<sup>25</sup> United States Environmental Protection Agency, 2022. *Draft Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2020*. February. Web: <https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks>

inventory on an annual basis where the latest inventory includes 2000 through 2020 emissions.<sup>26</sup> In 2020, GHG emissions from statewide emitting activities were 369.2 MMT CO<sub>2</sub>e. The 2020 emissions have decreased by 25 percent since peak levels in 2004 and are 35.3 MMT CO<sub>2</sub>e lower than 2019 emissions level and almost 62 MMT CO<sub>2</sub>e below the State's 2020 GHG limit of 431 MMT CO<sub>2</sub>e. Per capita GHG emissions in California have dropped from a 2001 peak of 13.8 MT CO<sub>2</sub>e per person to 9.3 MT CO<sub>2</sub>e per person in 2020.

### Recent Regulatory Actions for GHG Emissions

#### *Executive Order S-3-05 – California GHG Reduction Targets*

Executive Order (EO) S-3-05 was signed by Governor Arnold Schwarzenegger in 2005 to set GHG emission reduction targets for California. The three targets established by this EO are as follows: (1) reduce California's GHG emissions to 2000 levels by 2010, (2) reduce California's GHG emissions to 1990 levels by 2020, and (3) reduce California's GHG emissions by 80 percent below 1990 levels by 2050.

#### *Assembly Bill 32 – California Global Warming Solutions Act (2006)*

Assembly Bill (AB) 32, the Global Warming Solutions Act of 2006, codified the State's GHG emissions target by directing CARB to reduce the State's global warming emissions to 1990 levels by 2020. AB 32 was signed and passed into law by Governor Schwarzenegger on September 27, 2006. Since that time, the CARB, CEC, California Public Utilities Commission (CPUC), and Building Standards Commission have all been developing regulations that will help meet the goals of AB 32 and Executive Order S-3-05, which has a target of reducing GHG emissions 85 percent below 1990 levels.

The first Scoping Plan for AB 32 was adopted by CARB in December 2008. Its most recent update was completed in December of 2022<sup>27</sup>. It contains the State's main strategies to achieve carbon neutrality by 2045. This plan extends and expands upon the earlier versions with a target of reducing anthropogenic emissions to 85 percent below 1990 levels by 2045. It also takes the step of adding carbon neutrality as a science-based guide and touchstone for California's climate work. Measures to achieve carbon neutrality include rapidly moving to zero emission vehicles (ZEV), removing natural gas as an option for space conditioning, increasing the number of solar arrays and wind turbines, and scaling up renewable hydrogen for hard-to-electrify end uses.

#### *Senate Bill 375 – California's Regional Transportation and Land Use Planning Efforts (2008)*

California enacted legislation (SB 375) to expand the efforts of AB 32 by controlling indirect GHG emissions caused by urban sprawl. SB 375 provides incentives for local governments and applicants to implement new conscientiously planned growth patterns. This includes incentives for creating attractive, walkable, and sustainable communities and revitalizing existing communities.

<sup>26</sup> CARB. 2022. *California Greenhouse Gas Emission for 2000 to 2020*. Web:

[https://ww2.arb.ca.gov/sites/default/files/classic/cc/inventory/2000-2020\\_ghg\\_inventory\\_trends.pdf](https://ww2.arb.ca.gov/sites/default/files/classic/cc/inventory/2000-2020_ghg_inventory_trends.pdf)

<sup>27</sup> CARB. 2022. Final 2022 Scoping Plan Update and Appendices. Web: <https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/2022-scoping-plan-documents>

The legislation also allows applicants to bypass certain environmental reviews under CEQA if they build projects consistent with the new sustainable community strategies. Development of more alternative transportation options that would reduce vehicle trips and miles traveled, along with traffic congestion, would be encouraged. SB 375 enhances CARB's ability to reach the AB 32 goals by directing the agency in developing regional GHG emission reduction targets to be achieved from the transportation sector for 2020 and 2035. CARB works with the metropolitan planning organizations (e.g., ABAG and MTC) to align their regional transportation, housing, and land use plans to reduce VMT and demonstrate the region's ability to attain its GHG reduction targets. A similar process is used to reduce transportation emissions of ozone precursor pollutants in the Bay Area.

#### *Senate Bill 350 - Renewable Portfolio Standards*

In September 2015, the California Legislature passed SB 350, which increases the states Renewables Portfolio Standard (RPS) for content of electrical generation from the 33 percent target for 2020 to a 50 percent renewables target by 2030.

#### *Executive Order B-30-15 & Senate Bill 32 GHG Reduction Targets – 2030 GHG Reduction Target*

In April 2015, Governor Brown signed EO B-30-15, which extended the goals of AB 32, setting a GHG emissions target at 40 percent of 1990 levels by 2030. On September 8, 2016, Governor Brown signed Senate Bill (SB) 32, which legislatively established the GHG reduction target of 40 percent of 1990 levels by 2030. In November 2017, CARB issued *California's 2017 Climate Change Scoping Plan*.<sup>28</sup> While the State is on track to exceed the AB 32 scoping plan 2020 targets, this plan is an update to reflect the enacted SB 32 reduction target.

SB 32 was passed in 2016, which codified a 2030 GHG emissions reduction target of 40 percent below 1990 levels. CARB has drafted a 2022 Scoping Plan Update to reflect the 2030 target set by Executive Order B-30-15 and codified by SB 32. The 2022 draft plan:

- Identifies a path to keep California on track to meet its SB 32 GHG reduction target of at least 40 percent below 1990 emissions by 2030.
- Identifies a technologically feasible, cost-effective path to achieve carbon neutrality by 2045 or earlier.
- Focuses on strategies for reducing California's dependency on petroleum to provide consumers with clean energy options that address climate change, improve air quality, and support economic growth and clean sector jobs.
- Integrates equity and protecting California's most impacted communities as a driving principle.
- Incorporates the contribution of natural and working lands to the state's GHG emissions, as well as its role in achieving carbon neutrality.
- Relies on the most up to date science, including the need to deploy all viable tools, including carbon capture and sequestration as well a direct air capture.

---

<sup>28</sup> California Air Resource Board, 2017. *California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Targets*. November. Web: [https://ww2.arb.ca.gov/sites/default/files/classic/cc/scopingplan/scoping\\_plan\\_2017.pdf](https://ww2.arb.ca.gov/sites/default/files/classic/cc/scopingplan/scoping_plan_2017.pdf)

- Evaluates multiple options for achieving our GHG and carbon neutrality targets, as well as the public health benefits and economic impacts associated with each.

The Scoping Plan was updated in 2022 and lays out how the state can get to carbon neutrality by 2045 or earlier. It is the first Scoping Plan that adds carbon neutrality as a science-based guide and touchstone beyond statutorily established emission reduction targets.<sup>29</sup>

The mid-term 2030 target is considered critical by CARB on the path to obtaining an even deeper GHG emissions target of 80 percent below 1990 levels by 2050, as directed in Executive Order S-3-05. The 2022 Scoping Plan outlines the suite of policy measures, regulations, planning efforts, and investments in clean technologies and infrastructure, providing a blueprint to continue driving down GHG emissions and to not only obtain the statewide goals, but cost-effectively achieve carbon-neutrality by 2045 or earlier. In the 2022 Scoping Plan, CARB recommends:

- VMT per capita reduced 12% below 2019 levels by 2030 and 22% below 2019 levels by 2045.
- 100% of Light-duty vehicle sales are zero emissions vehicles (ZEV) by 2035.
- 100% of medium duty/heavy duty vehicle sales are ZEV by 2040.
- 100% of passenger and other locomotive sales are ZEV by 2030.
- 100% of line haul locomotive sales are ZEV by 2035.
- All electric appliances in new residential and commercial building beginning 2026 (residential) and 2029 (commercial).
- 80% of residential appliance sales are electric by 2030 and 100% of residential appliance sales are electric by 2035.
- 80% of commercial appliance sales are electric by 2030 and 100% of commercial appliance sales are electric by 2045.

#### *SB 743 Transportation Impacts*

Senate Bill 743 required lead agencies to abandon the old “level of service” metric for evaluating a project’s transportation impacts, which was based solely on the amount of delay experienced by motor vehicles. In response, the Governor’s Office of Planning and Research (OPR) developed a VMT metric that considered other factors such as reducing GHG emissions and developing multimodal transportation<sup>30</sup>. A VMT-per-capita metric was adopted into the CEQA Guidelines Section 15064.3 in November 2017. Given current baseline per-capita VMT levels computed by CARB in the 2030 Scoping Plan of 22.24 miles per day for light-duty vehicles and 24.61 miles per day for all vehicle types, the reductions needed to achieve the 2050 climate goal are 16.8 percent for light-duty vehicles and 14.3 percent for all vehicle types combined. Based on this analysis (as well as other factors), OPR recommended using a 15-percent reduction in per capita VMT as an appropriate threshold of significance for evaluating transportation impacts.

---

<sup>29</sup> <https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/2022-scoping-plan-documents>

<sup>30</sup> Governor’s Office of Planning and Research. 2018. *Technical Advisory on Evaluating Transportation Impacts in CEQA*. December.

### *Executive Order B-55-18 – Carbon Neutrality*

In 2018, a new statewide goal was established to achieve carbon neutrality as soon as possible, but no later than 2045, and to maintain net negative emissions thereafter. CARB and other relevant state agencies are tasked with establishing sequestration targets and create policies/programs that would meet this goal.

### *Senate Bill 100 – Current Renewable Portfolio Standards*

In September 2018, SB 100 was signed by Governor Brown to revise California’s RPS program goals, furthering California’s focus on using renewable energy and carbon-free power sources for its energy needs. The bill would require all California utilities to supply a specific percentage of their retail sales from renewable resources by certain target years. By December 31, 2024, 44 percent of the retail sales would need to be from renewable energy sources, by December 31, 2026 the target would be 40 percent, by December 31, 2027 the target would be 52 percent, and by December 31, 2030 the target would be 60 percent. By December 31, 2045, all California utilities would be required to supply retail electricity that is 100 percent carbon-free and sourced from eligible renewable energy resource to all California end-use customers.

### *California Building Standards Code – Title 24 Part 11 & Part 6*

The California Green Building Standards Code (CALGreen Code) is part of the California Building Standards Code under Title 24, Part 11.<sup>31</sup> The CALGreen Code encourages sustainable construction standards that involve planning/design, energy efficiency, water efficiency resource efficiency, and environmental quality. These green building standard codes are mandatory statewide and are applicable to residential and non-residential developments. The most recent CALGreen Code (2022 California Building Standard Code) was effective as of January 1, 2023.

The California Building Energy Efficiency Standards (California Energy Code) is under Title 24, Part 6 and is overseen by the California Energy Commission (CEC). This code includes design requirements to conserve energy in new residential and non-residential developments, while being cost effective for homeowners. This Energy Code is enforced and verified by cities during the planning and building permit process. The current energy efficiency standards (2022 Energy Code) replaced the 2019 Energy Code as of January 1, 2023. Under the 2019 standards, single-family homes are predicted to be 53 percent more efficient than homes built under the 2016 standard due more stringent energy-efficiency standards and mandatory installation of solar photovoltaic systems. For nonresidential developments, it is predicted that these buildings will use 30 percent less energy due to lightening upgrades.<sup>32</sup>

Requirements for electric vehicle (EV) charging infrastructure are set forth in Title 24 of the California Code of Regulations. The CALGreen standards consist of a set of mandatory standards required for new development, as well as two more voluntary standards known as Tier 1 and Tier 2. The CalGreen 2022 standards require deployment of additional EV chargers in various building

---

<sup>31</sup> See: <https://www.dgs.ca.gov/BSC/Resources/Page-Content/Building-Standards-Commission-Resources-List-Folder/CALGreen#:~:text=CALGreen%20is%20the%20first%20in,to%201990%20levels%20by%202020.>

<sup>32</sup> See: [https://www.energy.ca.gov/sites/default/files/2020-03/Title\\_24\\_2019\\_Building\\_Standards\\_FAQ\\_ada.pdf](https://www.energy.ca.gov/sites/default/files/2020-03/Title_24_2019_Building_Standards_FAQ_ada.pdf)

types, including multifamily residential and nonresidential land uses. They include requirements for both EV capable parking spaces and the installation of Level 2 EV supply equipment for multifamily residential and nonresidential buildings. The 2022 CALGreen standards include requirements for both EV readiness, installation of EV chargers, and include both mandatory requirements and more aggressive voluntary Tier 1 and Tier 2 provisions. Providing EV charging infrastructure that meets current CALGreen requirements will not be sufficient to power the anticipated more extensive level of EV penetration in the future that is needed to meet SB 30 climate goals.

CEC studies have identified the most aggressive electrification scenario as putting the building sector on track to reach the carbon neutrality goal by 2045.<sup>33</sup> Installing new natural gas infrastructure in new buildings will interfere with this goal. To meet the State's goal, communities have been adopting "Reach" codes that prohibit natural gas connections in new and remodeled buildings.

#### *Advanced Clean Cars*

The Advanced Clean Cars Program, originally adopted by CARB in 2012, was designed to bring together CARB's traditional passenger vehicle requirements to meet federal air quality standards and also support California's AB 32 goals to develop and implement programs to reduce GHG emissions back down to 1990 levels by 2020, a goal achieved in 2016 as a result of numerous emissions reduction programs.

*Advanced Clean Cars II (ACC II)* is phase two of the original rule. ACC II establishes a year-by-year process, starting in 2026, so all new cars and light trucks sold in California will be zero-emission vehicles by 2035, including plug-in hybrid electric vehicles. The regulation codifies the light-duty vehicle goals set out in Governor Newsom's Executive Order N-79-20. Currently, 16 percent of new light-duty vehicles sold in California are zero emissions or plug-in hybrids. By 2030, 68 percent of new vehicles sold in California would be zero emissions and 100 percent by 2035.

#### City of Sunnyvale Climate Action Playbook

The City of Sunnyvale Climate Action Playbook<sup>34</sup> is a plan to reduce GHG emissions and address climate change. The Climate Action Playbook was born out of the Climate Action Plan 2.0 (CAP 2.0) Initiative (2017), a framework to update Sunnyvale's updated Climate Action Plan (CAP 1.0) from 2014 and accelerate local action to further prevent climate change. The Climate Action Playbook was adopted in August 2019 and replaces the CAP 1.0. It contains goals and strategies to reduce greenhouse gas emissions by 56 percent by 2030 and 80 percent by 2050. However, the CAP does not have a specific metric ton GHG threshold for project-level construction or operation. Therefore, the BAAQMD's CEQA Air Quality Guideline's thresholds are used.

---

<sup>33</sup> California Energy Commission. 2021. *Final Commission Report: California Building Decarbonization Assessment*. Publication Number CEC-400-2021-006-CMF. August

<sup>34</sup> City of Sunnyvale, *City of Sunnyvale's Climate Action Playbook*, August 2019. Web: <https://sunnyvale.ca.gov/civicax/filebank/blobdload.aspx?t=73319.64&BlobID=26529>

## City of Sunnyvale Land Use and Transportation Element Draft Environmental Impact Report

Much of the air quality impacts associated with the proposed project were addressed under the *City of Sunnyvale Land Use and Transportation Element (LUTE) Draft Environmental Impact Report (DEIR)*. Projects constructed within the City of Sunnyvale are subject to the mitigation measures contained in the LUTE DEIR. Impacts and mitigation measures pertaining to the proposed DEIR were identified. This included project-specific impacts. The focus of this GHG study is to address impacts associated with GHG exposure associated with project construction and operation. This air quality report incorporates the mitigation measures (MM) described in the LUTE. The DEIR identified cumulatively considerable impacts with respect to GHG emissions (Impact 3.13.1):

*MM 3.13.1 Upon adoption of the Draft LUTE, the City will update the Climate Action Plan to include the new growth projects of the Draft LUTE and make any necessary adjustments to the CAP to ensure year 2020 and 2035 greenhouse gas emission reduction targets are attained. (Note that the City has prepared an update – Climate Action Playbook, described above)*

## BAAQMD GHG Significance Thresholds

On April 20, 2022, BAAQMD adopted new thresholds of significance for operational GHG emissions from land use projects for projects beginning the CEQA process. The following framework is how BAAQMD will determine GHG significance moving forward.<sup>35</sup> Note BAAQMD intends that the thresholds apply to projects that begin the CEQA process after adoption of the thresholds, unless otherwise directed by the lead agency. The new thresholds of significance are:

- A. Projects must include, at a minimum, the following project design elements:
  - a. Buildings
    - i. The project will not include natural gas appliances or natural gas plumbing (in both residential and non-residential development).
    - ii. The project will not result in any wasteful, inefficient, or unnecessary energy usage as determined by the analysis required under CEQA Section 21100(b)(3) and Section 15126.2(b) of the State CEQA Guidelines.
  - b. Transportation
    - i. Achieve a reduction in project-generated vehicle miles traveled (VMT) below the regional average consistent with the current version of the California Climate Change Scoping Plan (currently 15 percent) or meet a locally adopted Senate Bill 743 VMT target, reflecting the recommendations provided in the Governor's Office of Planning and Research's Technical Advisory on Evaluating Transportation Impacts in CEQA:
      1. Residential Projects: 15 percent below the existing VMT per capita

---

<sup>35</sup> Justification Report: BAAQMD CEQA Thresholds for Evaluating the Significance of Climate Impacts from Land Use Project and Plans. Web: <https://www.baaqmd.gov/~/media/planning-and-research/ceqa/ceqa-thresholds-2022/justification-report-pdf.pdf?la=en>

2. Office Projects: 15 percent below the existing VMT per employee
3. Retail Projects: no net increase in existing VMT

- ii. Achieve compliance with off-street electric vehicle requirements in the most recently adopted version of CALGreen Tier 2.

B. Be consistent with a local GHG reduction strategy that meets the criteria under State CEQA Guidelines Section 15183.5(b).

Any new land use project would have to include either section A or B from the above list, not both, to be considered in compliance with BAAQMD's GHG thresholds of significance.

**Impact GHG-1: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?**

GHG emissions associated with development of the proposed project would occur over the short-term from construction activities, consisting primarily of emissions from equipment exhaust and worker and vendor trips. There would also be long-term operational emissions associated with vehicular traffic within the project vicinity, energy and water usage, and solid waste disposal. Emissions for the proposed project are discussed below.

**CalEEMod Modeling**

CalEEMod was used to predict GHG emissions from operation of the site assuming full build-out of the project. The project land use types and size and other project-specific information were input to the model, as described above within the construction period emissions. CalEEMod output is included in *Attachment 1*.

***Model 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 CalEEMod. The earliest year of operation would be 2026. Emissions associated with build-out later than 2026 would be lower.

***Traffic Information***

CalEEMod allows the user to enter specific vehicle trip generation rates. However, project specific traffic information was not provided for this project at the time that modeling was developed. As a result, the CalEEMod default trip generation rates were utilized to calculate emissions from project traffic. The project would produce approximately 37 daily weekday trips. The default trip lengths and trip types specified by CalEEMod were used.

***Energy***

CalEEMod defaults for energy use were used, which include the 2019 Title 24 Building Standards. GHG emissions modeling includes those indirect emissions from electricity consumption. The

model has a default rate of 2 pounds of CO<sub>2</sub> per megawatt of electricity produced, which is based on Silicon Valley Clean Energy (SVCE) 2019 emissions rate.

The Project plans do not show any natural gas infrastructure, and the applicant has confirmed the building will be all electric. Therefore, natural gas use for the project land uses was set to zero and reassigned to electricity use in CalEEMod.

#### *Wood-Burning Devices*

CalEEMod default inputs assume new residential construction would include wood-burning fireplaces and stoves. The project would not include wood-burning devices, as these devices are prohibited by BAAQMD Regulation 6, Rule 3.<sup>36</sup> Therefore, the number of woodstoves and woodburning fireplaces in CalEEMod were set to zero.

#### *Other Inputs*

Default model assumptions for emissions associated with solid waste generation were used. Wastewater treatment was changed to 100-percent aerobic conditions to represent the use of city services (i.e., the project would not send wastewater to septic tanks or facultative lagoons).

#### Construction GHG Emissions

GHG emissions associated with construction were computed at 77 MT of CO<sub>2</sub>e for the total construction period. These are the emissions from on-site operation of construction equipment, vendor and hauling truck trips, and worker trips. Neither the City nor BAAQMD have an adopted threshold of significance for construction-related GHG emissions, though the California Office of Planning and Research (OPR) recommends quantifying emissions and disclosing that GHG emissions would occur during construction, even in cases where BAAQMD does not. BAAQMD also encourages the incorporation of best management practices to reduce GHG emissions during construction where feasible and applicable.

#### Operational GHG Emissions

The CalEEMod model was used to estimate daily emissions associated with operation of the fully developed site under the proposed project. As shown in Table 7 for informational purposes, the annual GHG emissions resulting from operation of the proposed project are predicted to be 31 MT of CO<sub>2</sub>e in 2026.

---

<sup>36</sup> Bay Area Air Quality Management District, [https://www.baaqmd.gov/~/media/dotgov/files/rules/regulation-6-rule-3/documents/20191120\\_r0603\\_final-pdf.pdf?la=en](https://www.baaqmd.gov/~/media/dotgov/files/rules/regulation-6-rule-3/documents/20191120_r0603_final-pdf.pdf?la=en)

**Table 7. Annual Project GHG Emissions (CO<sub>2</sub>e) in Metric Tons**

Source Category	Proposed Project in 2026
Mobile	29
Area	<1
Energy Consumption	<1
Water Usage	<1
Solid Waste Generation	1
Refrigerants	<1
Total (MT CO <sub>2</sub> e/year)	31

The project must be consistent with a local GHG reduction strategy (Threshold B) or meet the minimum project design elements recommended by BAAQMD (Threshold A). Threshold A is being applied to the analysis of this project. To meet the BAAQMD's GHG Threshold A, the project would be required to demonstrate the following:

1. Avoid construction of new natural gas connections for the residential building,
  - Conforms – According to the project applicant, the project will be all-electric and not include new natural gas connections.
2. Avoid wasteful or inefficient use of electricity,
  - Conforms – would meet CALGreen Building Standards Code requirements that are considered to be energy efficient.
3. Include electric vehicle charging infrastructure that meets current Building Code CALGreen Tier 2 compliance, and
  - **Does not conform** – The project would not provide electric vehicle charging infrastructure.
4. Reduce VMT per capita by 15 percent over baseline conditions.
  - Conforms – The project is exempt from this requirement since it is anticipated to generate traffic below 110 trips daily trips, which is the threshold that requires a project-level VMT analysis. Therefore, it would be below screening thresholds for this impact.

Because the project does not include electric vehicle charging infrastructure, the project does not conform with the BAAQMD GHG significance thresholds. In order to conform, the project must include EV charging infrastructure that meets current CALGreen Tier 2 compliance in the garages.

**Mitigation Measure GHG-1:** **Include EV charging infrastructure that meets current Building Code CALGreen Tier 2 compliance in the garage of each dwelling unit.**

The design of the garages attached to each dwelling unit must be modified to include EV charging infrastructure that meets current CALGreen Tier 2 compliance.

If the project successfully implements *Mitigation Measure GHG-1*, the project would conform with all four BAAQMD GHG significance thresholds and would have a less than significant impact with respect to GHG emissions.

**Impact GHG-2:      Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?**

The proposed project would be constructed in conformance with 2022 CalGreen and Title 24 Building Codes, which requires high-efficiency water fixtures, water-efficient irrigation systems, and compliance with current energy efficiency standards. Compliance with these standards ensures compliance with State and federal plans, policies, and regulations applicable to GHG emissions.

## **Supporting Documentation**

*Attachment 1* includes the CalEEMod outputs for project construction and greenhouse gas emissions. Also included are any modeling assumptions.

*Attachment 2* includes the health risk assessment. This includes the summary of the dispersion modeling and the cancer risk calculations for construction. The AERMOD dispersion modeling files for this assessment, which are quite voluminous, are available upon request and would be provided in digital format.

*Attachment 3* includes the cumulative health risk screening and calculations from sources affecting the project MEI and new project sensitive receptors.

**Attachment 1: CalEEMod Input Assumptions and Outputs**

Air Quality/Noise Construction Information Data Request

Project Name: 1001 S. Wolfe Rd, Sunnyvale DEFAULTS

Complete ALL Portions in Yellow

Project Size	5 Dwelling Units	0.29 total project acres disturbed
	12,035 s.f. residential	
	s.f. retail	
	s.f. office/commercial	
	s.f. other, specify:	
	s.f. parking garage	spaces
	s.f. parking lot	4 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: 10/1/2025	Total phase: 10					Overall Import/Export Volumes
		End Date: 10/14/2025						
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	1,152 square feet or
	Other Equipment?							? Hauling volume (tons)
	Site Preparation	Start Date: 10/15/2025	Total phase: 1					Any pavement demolished and hauled? ? tons
		End Date: 10/15/2025						
1	Graders	187	0.41	8	1	8	613	
	Rubber Tired Dozers	247	0.4			0	0	
1	Tractors/Loaders/Backhoes	97	0.37	8	1	8	287	
	Other Equipment?							
	Grading / Excavation	Start Date: 10/16/2025	Total phase: 2					Soil Hauling Volume
		End Date: 10/17/2025						
	Excavators	158	0.38			0	0	Export volume = Est. 500 cubic yards?
1	Graders	187	0.41	6	2	6	920	Import volume = Est. 500 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: 10/18/2025	Total phase: 2					
		End Date: 10/21/2025						
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: 10/22/2025	Total phase: 100					Cement Trucks? Est. 18, Total Round-Trips
		End Date: 3/10/2026						
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: 3/11/2026	Total phase: 5					
		End Date: 3/17/2026						
1	Air Compressors	78	0.48	6	5	6	1123	
	Aerial Lift	62	0.31			0	0	
	Other Equipment?							
	Paving	Start Date: 3/18/2026	Total phase: 5					
		Start Date: 3/24/2026						
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 ___ 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.

Complete one sheet for each project component

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

It is assumed that water trucks would be used during grading

Add or subtract phases and equipment, as appropriate

Modify horsepower or load factor, as appropriate

Construction Criteria Air Pollutants							
Unmitigated	ROG	NOX	PM10 Exhaust	PM2.5 Exhaust	PM2.5 Fugitive	CO2e	
Year	Tons					MT	
Construction Equipment							
2025+2026	0.12	0.30	0.01	0.01	0.001	68.57	
	<i>Total Construction Emissions</i>						
Tons	0.12	0.30	0.01	0.01		68.57	
Pounds/Workdays	<i>Average Daily Emissions</i>					Workdays	
2025+2026	1.85	4.75	0.19	0.18			126
Threshold - lbs/day	54.0	54.0	82.0	54.0			
	<i>Total Construction Emissions</i>						
Pounds	232.68	599.09	24.20	22.26		0.00	
Average	1.85	4.75	0.19	0.18		0.00	126.00
Threshold - lbs/day	54.0	54.0	82.0	54.0			
CO2e							
Category	Project						
Mobile	29.26						
Area	0.06						
Energy	0.07						
Water	0.11						
Waste	1.16						
Refrig.	0.01						
TOTAL	30.67	0.00	0.00	0.00			
Net GHG Emissions		30.67			0.00		

# 24-084 1001 S. Wolfe Rd, Sunnyvale BMPs T4i 2026 Detailed Report

## Table of Contents

### 1. Basic Project Information

#### 1.1. Basic Project Information

#### 1.2. Land Use Types

#### 1.3. User-Selected Emission Reduction Measures by Emissions Sector

### 2. Emissions Summary

#### 2.1. Construction Emissions Compared Against Thresholds

#### 2.2. Construction Emissions by Year, Unmitigated

#### 2.3. Construction Emissions by Year, Mitigated

#### 2.4. Operations Emissions Compared Against Thresholds

#### 2.5. Operations Emissions by Sector, Unmitigated

#### 2.6. Operations Emissions by Sector, Mitigated

### 3. Construction Emissions Details

#### 3.1. Demolition (2025) - Unmitigated

#### 3.2. Demolition (2025) - Mitigated

#### 3.3. Site Preparation (2025) - Unmitigated

- 3.4. Site Preparation (2025) - Mitigated
- 3.5. Grading (2025) - Unmitigated
- 3.6. Grading (2025) - Mitigated
- 3.7. Building Construction (2025) - Unmitigated
- 3.8. Building Construction (2025) - Mitigated
- 3.9. Building Construction (2026) - Unmitigated
- 3.10. Building Construction (2026) - Mitigated
- 3.11. Paving (2026) - Unmitigated
- 3.12. Paving (2026) - Mitigated
- 3.13. Architectural Coating (2026) - Unmitigated
- 3.14. Architectural Coating (2026) - Mitigated
- 3.15. Trenching (2025) - Unmitigated
- 3.16. Trenching (2025) - Mitigated

4. Operations Emissions Details

- 4.1. Mobile Emissions by Land Use
  - 4.1.1. Unmitigated
  - 4.1.2. Mitigated
- 4.2. Energy

- 4.2.1. Electricity Emissions By Land Use - Unmitigated
- 4.2.2. Electricity Emissions By Land Use - Mitigated
- 4.2.3. Natural Gas Emissions By Land Use - Unmitigated
- 4.2.4. Natural Gas Emissions By Land Use - Mitigated
- 4.3. Area Emissions by Source
  - 4.3.1. Unmitigated
  - 4.3.2. Mitigated
- 4.4. Water Emissions by Land Use
  - 4.4.1. Unmitigated
  - 4.4.2. Mitigated
- 4.5. Waste Emissions by Land Use
  - 4.5.1. Unmitigated
  - 4.5.2. Mitigated
- 4.6. Refrigerant Emissions by Land Use
  - 4.6.1. Unmitigated
  - 4.6.2. Mitigated
- 4.7. Offroad Emissions By Equipment Type
  - 4.7.1. Unmitigated

#### 4.7.2. Mitigated

### 4.8. Stationary Emissions By Equipment Type

#### 4.8.1. Unmitigated

#### 4.8.2. Mitigated

### 4.9. User Defined Emissions By Equipment Type

#### 4.9.1. Unmitigated

#### 4.9.2. Mitigated

### 4.10. Soil Carbon Accumulation By Vegetation Type

#### 4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

#### 4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

#### 4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

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

#### 4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

## 5. Activity Data

### 5.1. Construction Schedule

### 5.2. Off-Road Equipment

#### 5.2.1. Unmitigated

## 5.2.2. Mitigated

## 5.3. Construction Vehicles

### 5.3.1. Unmitigated

### 5.3.2. Mitigated

## 5.4. Vehicles

### 5.4.1. Construction Vehicle Control Strategies

## 5.5. Architectural Coatings

## 5.6. Dust Mitigation

### 5.6.1. Construction Earthmoving Activities

### 5.6.2. Construction Earthmoving Control Strategies

## 5.7. Construction Paving

## 5.8. Construction Electricity Consumption and Emissions Factors

## 5.9. Operational Mobile Sources

### 5.9.1. Unmitigated

### 5.9.2. Mitigated

## 5.10. Operational Area Sources

### 5.10.1. Hearths

#### 5.10.1.1. Unmitigated

- 5.10.1.2. Mitigated
- 5.10.2. Architectural Coatings
- 5.10.3. Landscape Equipment
- 5.10.4. Landscape Equipment - Mitigated
- 5.11. Operational Energy Consumption
  - 5.11.1. Unmitigated
  - 5.11.2. Mitigated
- 5.12. Operational Water and Wastewater Consumption
  - 5.12.1. Unmitigated
  - 5.12.2. Mitigated
- 5.13. Operational Waste Generation
  - 5.13.1. Unmitigated
  - 5.13.2. Mitigated
- 5.14. Operational Refrigeration and Air Conditioning Equipment
  - 5.14.1. Unmitigated
  - 5.14.2. Mitigated
- 5.15. Operational Off-Road Equipment
  - 5.15.1. Unmitigated

5.15.2. Mitigated

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

5.16.2. Process Boilers

5.17. User Defined

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

5.18.1.2. Mitigated

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

5.18.1.2. Mitigated

5.18.2. Sequestration

5.18.2.1. Unmitigated

5.18.2.2. Mitigated

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

6.2. Initial Climate Risk Scores

6.3. Adjusted Climate Risk Scores

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

7.2. Healthy Places Index Scores

7.3. Overall Health & Equity Scores

7.4. Health & Equity Measures

7.5. Evaluation Scorecard

7.6. Health & Equity Custom Measures

8. User Changes to Default Data

## 1. Basic Project Information

### 1.1. Basic Project Information

Data Field	Value
Project Name	24-084 1001 S. Wolfe Rd, Sunnyvale BMPs T4i 2026
Construction Start Date	10/1/2025
Operational Year	2026
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.70
Precipitation (days)	32.8
Location	1001 S Wolfe Rd, Sunnyvale, CA 94086, USA
County	Santa Clara
City	Sunnyvale
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	1752
EDFZ	1
Electric Utility	Silicon Valley Clean Energy
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.26

### 1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Condo/Townhouse	5.00	Dwelling Unit	0.29	12,035	0.00	—	15.0	—

Parking Lot	4.00	Space	0.00	0.00	0.00	—	—	—
-------------	------	-------	------	------	------	---	---	---

### 1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-5	Use Advanced Engine Tiers

## 2. Emissions Summary

### 2.1. Construction Emissions Compared Against Thresholds

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

Un/Mit.	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Unmit.	34.0	16.0	0.55	3.30	3.85	0.48	1.34	1.82	6,479
Mit.	33.9	11.2	0.11	3.30	3.42	0.09	1.34	1.42	6,479
% Reduced	< 0.5%	30%	79%	—	11%	82%	—	22%	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—
Unmit.	0.54	0.95	0.04	0.03	0.07	0.04	0.01	0.05	261
Mit.	0.49	0.83	0.01	0.03	0.04	0.01	0.01	0.02	261
% Reduced	9%	13%	84%	—	47%	83%	—	65%	—
Annual (Max)	—	—	—	—	—	—	—	—	—
Unmit.	0.10	0.17	0.01	0.01	0.01	0.01	< 0.005	0.01	43.2
Mit.	0.09	0.15	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	43.2
% Reduced	9%	13%	84%	—	47%	83%	—	65%	—

### 2.2. Construction Emissions by Year, Unmitigated

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

Year	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—
2025	1.20	16.0	0.55	3.30	3.85	0.48	1.34	1.82	6,479
2026	34.0	4.87	0.19	0.19	0.37	0.17	0.05	0.21	1,379
Average Daily	—	—	—	—	—	—	—	—	—
2025	0.10	0.95	0.04	0.03	0.07	0.04	0.01	0.05	261
2026	0.54	0.73	0.03	0.01	0.04	0.03	< 0.005	0.03	204
Annual	—	—	—	—	—	—	—	—	—
2025	0.02	0.17	0.01	0.01	0.01	0.01	< 0.005	0.01	43.2
2026	0.10	0.13	0.01	< 0.005	0.01	< 0.005	< 0.005	0.01	33.7

## 2.3. Construction Emissions by Year, Mitigated

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

Year	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—
2025	0.33	11.2	0.11	3.30	3.42	0.09	1.34	1.42	6,479
2026	33.9	4.63	0.09	0.19	0.28	0.08	0.05	0.13	1,379
Average Daily	—	—	—	—	—	—	—	—	—
2025	0.03	0.83	0.01	0.03	0.04	0.01	0.01	0.02	261
2026	0.49	0.69	0.01	0.01	0.01	< 0.005	< 0.005	0.01	204
Annual	—	—	—	—	—	—	—	—	—
2025	0.01	0.15	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	43.2
2026	0.09	0.13	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	33.7

## 2.4. Operations Emissions Compared Against Thresholds

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

Un/Mit.	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Unmit.	0.45	0.08	< 0.005	0.19	0.19	< 0.005	0.05	0.05	217
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Unmit.	0.42	0.09	< 0.005	0.19	0.19	< 0.005	0.05	0.05	203
Average Daily (Max)	—	—	—	—	—	—	—	—	—
Unmit.	0.42	0.08	< 0.005	0.16	0.17	< 0.005	0.04	0.04	185
Annual (Max)	—	—	—	—	—	—	—	—	—
Unmit.	0.08	0.01	< 0.005	0.03	0.03	< 0.005	0.01	0.01	30.6

## 2.5. Operations Emissions by Sector, Unmitigated

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

Sector	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Mobile	0.13	0.08	< 0.005	0.19	0.19	< 0.005	0.05	0.05	208
Area	0.33	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.76
Energy	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.41
Water	—	—	—	—	—	—	—	—	0.68
Waste	—	—	—	—	—	—	—	—	6.99
Refrig.	—	—	—	—	—	—	—	—	0.09
Total	0.45	0.08	< 0.005	0.19	0.19	< 0.005	0.05	0.05	217
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—

Mobile	0.12	0.09	< 0.005	0.19	0.19	< 0.005	0.05	0.05	195
Area	0.30	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Energy	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.41
Water	—	—	—	—	—	—	—	—	0.68
Waste	—	—	—	—	—	—	—	—	6.99
Refrig.	—	—	—	—	—	—	—	—	0.09
Total	0.42	0.09	< 0.005	0.19	0.19	< 0.005	0.05	0.05	203
Average Daily	—	—	—	—	—	—	—	—	—
Mobile	0.11	0.08	< 0.005	0.16	0.17	< 0.005	0.04	0.04	176
Area	0.32	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.38
Energy	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.41
Water	—	—	—	—	—	—	—	—	0.68
Waste	—	—	—	—	—	—	—	—	6.99
Refrig.	—	—	—	—	—	—	—	—	0.09
Total	0.42	0.08	< 0.005	0.16	0.17	< 0.005	0.04	0.04	185
Annual	—	—	—	—	—	—	—	—	—
Mobile	0.02	0.01	< 0.005	0.03	0.03	< 0.005	0.01	0.01	29.2
Area	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.06
Energy	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.07
Water	—	—	—	—	—	—	—	—	0.11
Waste	—	—	—	—	—	—	—	—	1.16
Refrig.	—	—	—	—	—	—	—	—	0.01
Total	0.08	0.01	< 0.005	0.03	0.03	< 0.005	0.01	0.01	30.6

## 2.6. Operations Emissions by Sector, Mitigated

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

Sector	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
--------	-----	-----	-------	-------	-------	--------	--------	--------	------

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Mobile	0.13	0.08	< 0.005	0.19	0.19	< 0.005	0.05	0.05	208
Area	0.33	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.76
Energy	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.41
Water	—	—	—	—	—	—	—	—	0.68
Waste	—	—	—	—	—	—	—	—	6.99
Refrig.	—	—	—	—	—	—	—	—	0.09
Total	0.45	0.08	< 0.005	0.19	0.19	< 0.005	0.05	0.05	217
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Mobile	0.12	0.09	< 0.005	0.19	0.19	< 0.005	0.05	0.05	195
Area	0.30	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Energy	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.41
Water	—	—	—	—	—	—	—	—	0.68
Waste	—	—	—	—	—	—	—	—	6.99
Refrig.	—	—	—	—	—	—	—	—	0.09
Total	0.42	0.09	< 0.005	0.19	0.19	< 0.005	0.05	0.05	203
Average Daily	—	—	—	—	—	—	—	—	—
Mobile	0.11	0.08	< 0.005	0.16	0.17	< 0.005	0.04	0.04	176
Area	0.32	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.38
Energy	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.41
Water	—	—	—	—	—	—	—	—	0.68
Waste	—	—	—	—	—	—	—	—	6.99
Refrig.	—	—	—	—	—	—	—	—	0.09
Total	0.42	0.08	< 0.005	0.16	0.17	< 0.005	0.04	0.04	185
Annual	—	—	—	—	—	—	—	—	—
Mobile	0.02	0.01	< 0.005	0.03	0.03	< 0.005	0.01	0.01	29.2
Area	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.06

Energy	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.07
Water	—	—	—	—	—	—	—	—	0.11
Waste	—	—	—	—	—	—	—	—	1.16
Refrig.	—	—	—	—	—	—	—	—	0.01
Total	0.08	0.01	< 0.005	0.03	0.03	< 0.005	0.01	0.01	30.6

### 3. Construction Emissions Details

#### 3.1. Demolition (2025) - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.47	4.33	0.16	—	0.16	0.14	—	0.14	855
Demolition	—	—	—	0.12	0.12	—	0.02	0.02	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.12	< 0.005	—	< 0.005	< 0.005	—	< 0.005	23.4
Demolition	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	< 0.005	—	< 0.005	< 0.005	—	< 0.005	3.88
Demolition	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.00	0.08	0.08	0.00	0.02	0.02	80.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.13	< 0.005	0.03	0.03	< 0.005	0.01	0.01	105
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	2.23
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	2.88
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.37
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.48

### 3.2. Demolition (2025) - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	4.12	0.07	—	0.07	0.06	—	0.06	855
Demolition	—	—	—	0.12	0.12	—	0.02	0.02	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—

Off-Road Equipment	< 0.005	0.11	< 0.005	—	< 0.005	< 0.005	—	< 0.005	23.4
Demolition	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	< 0.005	—	< 0.005	< 0.005	—	< 0.005	3.88
Demolition	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.00	0.08	0.08	0.00	0.02	0.02	80.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.13	< 0.005	0.03	0.03	< 0.005	0.01	0.01	105
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	2.23
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	2.88
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.37
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.48

### 3.3. Site Preparation (2025) - Unmitigated

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

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

Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.47	4.16	0.21	—	0.21	0.20	—	0.20	862
Dust From Material Movement	—	—	—	0.21	0.21	—	0.02	0.02	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	2.36
Dust From Material Movement	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.39
Dust From Material Movement	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.00	0.04	0.04	0.00	0.01	0.01	40.2
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.11
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.02
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

### 3.4. Site Preparation (2025) - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	3.48	0.02	—	0.02	0.02	—	0.02	862
Dust From Material Movement	—	—	—	0.21	0.21	—	0.02	0.02	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	2.36
Dust From Material Movement	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—

Off-Road Equipment	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.39
Dust From Material Movement	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.00	0.04	0.04	0.00	0.01	0.01	40.2
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.11
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.02
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

### 3.5. Grading (2025) - Unmitigated

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

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

Off-Road Equipment	1.09	10.1	0.46	—	0.46	0.43	—	0.43	1,720
Dust From Material Movement	—	—	—	2.08	2.08	—	1.00	1.00	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.06	< 0.005	—	< 0.005	< 0.005	—	< 0.005	9.42
Dust From Material Movement	—	—	—	0.01	0.01	—	0.01	0.01	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	1.56
Dust From Material Movement	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.00	0.06	0.06	0.00	0.01	0.01	60.4
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.09	5.88	0.08	1.16	1.24	0.06	0.32	0.37	4,698
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.33
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.03	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	25.8

Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.06
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	4.26

### 3.6. Grading (2025) - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.22	5.26	0.03	—	0.03	0.03	—	0.03	1,720
Dust From Material Movement	—	—	—	2.08	2.08	—	1.00	1.00	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.03	< 0.005	—	< 0.005	< 0.005	—	< 0.005	9.42
Dust From Material Movement	—	—	—	0.01	0.01	—	0.01	0.01	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	1.56
Dust From Material Movement	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.00	0.06	0.06	0.00	0.01	0.01	60.4
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.09	5.88	0.08	1.16	1.24	0.06	0.32	0.37	4,698
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.33
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.03	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	25.8
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.06
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	4.26

### 3.7. Building Construction (2025) - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.52	5.14	0.22	—	0.22	0.20	—	0.20	1,309
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.07	0.71	0.03	—	0.03	0.03	—	0.03	182
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.13	0.01	—	0.01	0.01	—	0.01	30.1
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.00	0.03	0.03	0.00	0.01	0.01	29.0
Vendor	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	15.1
Hauling	< 0.005	0.03	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	27.1
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	4.07
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	2.10
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	3.76
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.67
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.35
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.62

### 3.8. Building Construction (2025) - Mitigated

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

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

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.18	4.50	0.02	—	0.02	0.02	—	0.02	1,309
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.63	< 0.005	—	< 0.005	< 0.005	—	< 0.005	182
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.11	< 0.005	—	< 0.005	< 0.005	—	< 0.005	30.1
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.00	0.03	0.03	0.00	0.01	0.01	29.0
Vendor	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	15.1
Hauling	< 0.005	0.03	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	27.1
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	4.07
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	2.10
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	3.76
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.67
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.35
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.62

### 3.9. Building Construction (2026) - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.49	4.81	0.19	—	0.19	0.17	—	0.17	1,309
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.65	0.03	—	0.03	0.02	—	0.02	177
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.12	< 0.005	—	< 0.005	< 0.005	—	< 0.005	29.3
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.00	0.03	0.03	0.00	0.01	0.01	28.4
Vendor	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	14.8
Hauling	< 0.005	0.03	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	26.5
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	3.88
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	2.00

Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	3.59
Annual	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	< 0.005	0.64
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.33
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.59

### 3.10. Building Construction (2026) - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.18	4.50	0.02	—	0.02	0.02	—	0.02	1,309
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.61	< 0.005	—	< 0.005	< 0.005	—	< 0.005	177
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.11	< 0.005	—	< 0.005	< 0.005	—	< 0.005	29.3
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.00	0.03	0.03	0.00	0.01	0.01	28.4

Vendor	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	14.8
Hauling	< 0.005	0.03	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	26.5
Average Daily	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	< 0.005	3.88
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	2.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	3.59
Annual	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	< 0.005	0.64
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.33
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.59

### 3.11. Paving (2026) - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.49	4.24	0.18	—	0.18	0.16	—	0.16	826
Paving	0.00	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.06	< 0.005	—	< 0.005	< 0.005	—	< 0.005	11.3
Paving	0.00	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—

Off-Road Equipment	< 0.005	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	1.87
Paving	0.00	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.00	0.14	0.14	0.00	0.03	0.03	138
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.22	< 0.005	0.04	0.05	< 0.005	0.01	0.01	177
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	1.92
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	2.43
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.32
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.40

### 3.12. Paving (2026) - Mitigated

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

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

Off-Road Equipment	0.26	4.36	0.09	—	0.09	0.08	—	0.08	826
Paving	0.00	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.06	< 0.005	—	< 0.005	< 0.005	—	< 0.005	11.3
Paving	0.00	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	1.87
Paving	0.00	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.00	0.14	0.14	0.00	0.03	0.03	138
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.22	< 0.005	0.04	0.05	< 0.005	0.01	0.01	177
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	1.92
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	2.43
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.32
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.40

### 3.13. Architectural Coating (2026) - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.86	0.02	—	0.02	0.02	—	0.02	134
Architectural Coatings	33.9	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	1.84
Architectural Coatings	0.46	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.30
Architectural Coatings	0.08	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.01	0.01	0.00	< 0.005	< 0.005	5.69

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.08
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.01
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

### 3.14. Architectural Coating (2026) - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	1.07	0.03	—	0.03	0.03	—	0.03	134
Architectural Coatings	33.9	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	1.84
Architectural Coatings	0.46	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.30
Architectural Coatings	0.08	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.01	0.01	0.00	< 0.005	< 0.005	5.69
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.08
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.01
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

### 3.15. Trenching (2025) - Unmitigated

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

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

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.20	1.93	0.07	—	0.07	0.06	—	0.06	434
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	2.38
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.39
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.00	0.04	0.04	0.00	0.01	0.01	40.2
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.22
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.04
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

### 3.16. Trenching (2025) - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	2.28	0.04	—	0.04	0.03	—	0.03	434
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	2.38
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.39
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.00	0.04	0.04	0.00	0.01	0.01	40.2
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.22
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.04	0.04
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

## 4. Operations Emissions Details

### 4.1. Mobile Emissions by Land Use

#### 4.1.1. Unmitigated

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

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse	0.13	0.08	< 0.005	0.19	0.19	< 0.005	0.05	0.05	208
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.13	0.08	< 0.005	0.19	0.19	< 0.005	0.05	0.05	208
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse	0.12	0.09	< 0.005	0.19	0.19	< 0.005	0.05	0.05	195
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.12	0.09	< 0.005	0.19	0.19	< 0.005	0.05	0.05	195
Annual	—	—	—	—	—	—	—	—	—
Condo/Townhouse	0.02	0.01	< 0.005	0.03	0.03	< 0.005	0.01	0.01	29.2
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.02	0.01	< 0.005	0.03	0.03	< 0.005	0.01	0.01	29.2

#### 4.1.2. Mitigated

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

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse	0.13	0.08	< 0.005	0.19	0.19	< 0.005	0.05	0.05	208
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.13	0.08	< 0.005	0.19	0.19	< 0.005	0.05	0.05	208
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse	0.12	0.09	< 0.005	0.19	0.19	< 0.005	0.05	0.05	195
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.12	0.09	< 0.005	0.19	0.19	< 0.005	0.05	0.05	195
Annual	—	—	—	—	—	—	—	—	—
Condo/Townhouse	0.02	0.01	< 0.005	0.03	0.03	< 0.005	0.01	0.01	29.2
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.02	0.01	< 0.005	0.03	0.03	< 0.005	0.01	0.01	29.2

#### 4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

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

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	0.41

Parking Lot	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	0.41
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	0.41
Parking Lot	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	0.41
Annual	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	0.07
Parking Lot	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	0.07

#### 4.2.2. Electricity Emissions By Land Use - Mitigated

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

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	0.41
Parking Lot	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	0.41
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	0.41
Parking Lot	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	0.41
Annual	—	—	—	—	—	—	—	—	—

Condo/Townhouse	—	—	—	—	—	—	—	—	—	0.07
Parking Lot	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	0.07

#### 4.2.3. Natural Gas Emissions By Land Use - Unmitigated

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

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Parking Lot	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Total	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Parking Lot	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Total	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Condo/Townhouse	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Parking Lot	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Total	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00

#### 4.2.4. Natural Gas Emissions By Land Use - Mitigated

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

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
----------	-----	-----	-------	-------	-------	--------	--------	--------	------

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00
Parking Lot	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00
Total	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00
Parking Lot	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00
Total	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00
Parking Lot	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00
Total	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00

## 4.3. Area Emissions by Source

### 4.3.1. Unmitigated

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

Source	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Consumer Products	0.26	—	—	—	—	—	—	—	—
Architectural Coatings	0.05	—	—	—	—	—	—	—	—
Landscape Equipment	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.76

Total	0.33	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.76
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Consumer Products	0.26	—	—	—	—	—	—	—	—
Architectural Coatings	0.05	—	—	—	—	—	—	—	—
Total	0.30	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Consumer Products	0.05	—	—	—	—	—	—	—	—
Architectural Coatings	0.01	—	—	—	—	—	—	—	—
Landscape Equipment	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.06
Total	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.06

#### 4.3.2. Mitigated

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

Source	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Consumer Products	0.26	—	—	—	—	—	—	—	—
Architectural Coatings	0.05	—	—	—	—	—	—	—	—
Landscape Equipment	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.76
Total	0.33	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.76

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Consumer Products	0.26	—	—	—	—	—	—	—	—
Architectural Coatings	0.05	—	—	—	—	—	—	—	—
Total	0.30	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Consumer Products	0.05	—	—	—	—	—	—	—	—
Architectural Coatings	0.01	—	—	—	—	—	—	—	—
Landscape Equipment	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.06
Total	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.06

#### 4.4. Water Emissions by Land Use

##### 4.4.1. Unmitigated

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

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	0.68
Parking Lot	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	0.68
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—

Condo/Townhouse	—	—	—	—	—	—	—	—	—	0.68
Parking Lot	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	0.68
Annual	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	0.11
Parking Lot	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	0.11

#### 4.4.2. Mitigated

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

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	0.68
Parking Lot	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	0.68
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	0.68
Parking Lot	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	0.68
Annual	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	0.11
Parking Lot	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	0.11

## 4.5. Waste Emissions by Land Use

### 4.5.1. Unmitigated

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

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	6.99
Parking Lot	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	6.99
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	6.99
Parking Lot	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	6.99
Annual	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	1.16
Parking Lot	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	1.16

### 4.5.2. Mitigated

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

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	6.99

Parking Lot	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	6.99
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	6.99
Parking Lot	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	6.99
Annual	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	1.16
Parking Lot	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	1.16

## 4.6. Refrigerant Emissions by Land Use

### 4.6.1. Unmitigated

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

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	0.09
Total	—	—	—	—	—	—	—	—	0.09
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	0.09
Total	—	—	—	—	—	—	—	—	0.09
Annual	—	—	—	—	—	—	—	—	—

Condo/Townhouse	—	—	—	—	—	—	—	—	—	0.01
Total	—	—	—	—	—	—	—	—	—	0.01

#### 4.6.2. Mitigated

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

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	0.09
Total	—	—	—	—	—	—	—	—	0.09
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	0.09
Total	—	—	—	—	—	—	—	—	0.09
Annual	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	0.01
Total	—	—	—	—	—	—	—	—	0.01

#### 4.7. Offroad Emissions By Equipment Type

##### 4.7.1. Unmitigated

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

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

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

#### 4.7.2. Mitigated

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

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

#### 4.8. Stationary Emissions By Equipment Type

##### 4.8.1. Unmitigated

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

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

Total	—	—	—	—	—	—	—	—	—	—
-------	---	---	---	---	---	---	---	---	---	---

#### 4.8.2. Mitigated

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

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

#### 4.9. User Defined Emissions By Equipment Type

##### 4.9.1. Unmitigated

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

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

##### 4.9.2. Mitigated

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

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

## 4.10. Soil Carbon Accumulation By Vegetation Type

### 4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

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

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

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

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

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

#### 4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

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

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

#### 4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

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

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

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

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

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

Annual	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

#### 4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

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

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

Removed	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—

## 5. Activity Data

### 5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	10/1/2025	10/14/2025	5.00	10.0	—
Site Preparation	Site Preparation	10/15/2025	10/15/2025	5.00	1.00	—
Grading	Grading	10/16/2025	10/17/2025	5.00	2.00	—
Building Construction	Building Construction	10/22/2025	3/10/2026	5.00	100	—
Paving	Paving	3/18/2026	3/24/2026	5.00	5.00	—
Architectural Coating	Architectural Coating	3/11/2026	3/17/2026	5.00	5.00	—
Trenching	Trenching	10/18/2025	10/21/2025	5.00	2.00	—

### 5.2. Off-Road Equipment

#### 5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Demolition	Rubber Tired Dozers	Diesel	Average	1.00	1.00	367	0.40
Demolition	Tractors/Loaders/Back hoes	Diesel	Average	2.00	6.00	84.0	0.37
Site Preparation	Graders	Diesel	Average	1.00	8.00	148	0.41
Site Preparation	Tractors/Loaders/Back hoes	Diesel	Average	1.00	8.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	6.00	148	0.41

Grading	Rubber Tired Dozers	Diesel	Average	1.00	6.00	367	0.40
Grading	Tractors/Loaders/Back hoes	Diesel	Average	1.00	7.00	84.0	0.37
Building Construction	Cranes	Diesel	Average	1.00	4.00	367	0.29
Building Construction	Forklifts	Diesel	Average	2.00	6.00	82.0	0.20
Building Construction	Tractors/Loaders/Back hoes	Diesel	Average	2.00	8.00	84.0	0.37
Paving	Cement and Mortar Mixers	Diesel	Average	4.00	6.00	10.0	0.56
Paving	Pavers	Diesel	Average	1.00	7.00	81.0	0.42
Paving	Rollers	Diesel	Average	1.00	7.00	36.0	0.38
Paving	Tractors/Loaders/Back hoes	Diesel	Average	1.00	7.00	84.0	0.37
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48
Trenching	Tractors/Loaders/Back hoes	Diesel	Average	1.00	8.00	84.0	0.37
Trenching	Excavators	Diesel	Average	1.00	8.00	36.0	0.38

## 5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Concrete/Industrial Saws	Diesel	Tier 4 Interim	1.00	8.00	33.0	0.73
Demolition	Rubber Tired Dozers	Diesel	Tier 4 Interim	1.00	1.00	367	0.40
Demolition	Tractors/Loaders/Back hoes	Diesel	Tier 4 Interim	2.00	6.00	84.0	0.37
Site Preparation	Graders	Diesel	Tier 4 Interim	1.00	8.00	148	0.41
Site Preparation	Tractors/Loaders/Back hoes	Diesel	Tier 4 Interim	1.00	8.00	84.0	0.37
Grading	Graders	Diesel	Tier 4 Interim	1.00	6.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Tier 4 Interim	1.00	6.00	367	0.40

Grading	Tractors/Loaders/Back hoes	Diesel	Tier 4 Interim	1.00	7.00	84.0	0.37
Building Construction	Cranes	Diesel	Tier 4 Interim	1.00	4.00	367	0.29
Building Construction	Forklifts	Diesel	Tier 4 Interim	2.00	6.00	82.0	0.20
Building Construction	Tractors/Loaders/Back hoes	Diesel	Tier 4 Interim	2.00	8.00	84.0	0.37
Paving	Cement and Mortar Mixers	Diesel	Average	4.00	6.00	10.0	0.56
Paving	Pavers	Diesel	Tier 4 Interim	1.00	7.00	81.0	0.42
Paving	Rollers	Diesel	Tier 4 Interim	1.00	7.00	36.0	0.38
Paving	Tractors/Loaders/Back hoes	Diesel	Tier 4 Interim	1.00	7.00	84.0	0.37
Architectural Coating	Air Compressors	Diesel	Tier 4 Interim	1.00	6.00	37.0	0.48
Trenching	Tractors/Loaders/Back hoes	Diesel	Tier 4 Interim	1.00	8.00	84.0	0.37
Trenching	Excavators	Diesel	Tier 4 Interim	1.00	8.00	36.0	0.38

## 5.3. Construction Vehicles

### 5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	10.0	11.7	LDA,LDT1,LDT2
Demolition	Vendor	—	8.40	HHDT,MHDT
Demolition	Hauling	1.40	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	5.00	11.7	LDA,LDT1,LDT2
Site Preparation	Vendor	—	8.40	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT

Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	7.50	11.7	LDA,LDT1,LDT2
Grading	Vendor	—	8.40	HHDT,MHDT
Grading	Hauling	62.5	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	3.60	11.7	LDA,LDT1,LDT2
Building Construction	Vendor	0.53	8.40	HHDT,MHDT
Building Construction	Hauling	0.36	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	17.5	11.7	LDA,LDT1,LDT2
Paving	Vendor	—	8.40	HHDT,MHDT
Paving	Hauling	2.40	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	0.72	11.7	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	8.40	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT
Trenching	—	—	—	—
Trenching	Worker	5.00	11.7	LDA,LDT1,LDT2
Trenching	Vendor	—	8.40	HHDT,MHDT
Trenching	Hauling	0.00	20.0	HHDT
Trenching	Onsite truck	—	—	HHDT

### 5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	10.0	11.7	LDA,LDT1,LDT2
Demolition	Vendor	—	8.40	HHDT,MHDT
Demolition	Hauling	1.40	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	5.00	11.7	LDA,LDT1,LDT2
Site Preparation	Vendor	—	8.40	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	7.50	11.7	LDA,LDT1,LDT2
Grading	Vendor	—	8.40	HHDT,MHDT
Grading	Hauling	62.5	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	3.60	11.7	LDA,LDT1,LDT2
Building Construction	Vendor	0.53	8.40	HHDT,MHDT
Building Construction	Hauling	0.36	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	17.5	11.7	LDA,LDT1,LDT2
Paving	Vendor	—	8.40	HHDT,MHDT
Paving	Hauling	2.40	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	0.72	11.7	LDA,LDT1,LDT2

Architectural Coating	Vendor	—	8.40	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT
Trenching	—	—	—	—
Trenching	Worker	5.00	11.7	LDA,LDT1,LDT2
Trenching	Vendor	—	8.40	HHDT,MHDT
Trenching	Hauling	0.00	20.0	HHDT
Trenching	Onsite truck	—	—	HHDT

## 5.4. Vehicles

### 5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

## 5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	24,371	8,124	0.00	0.00	—

## 5.6. Dust Mitigation

### 5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (Building Square Footage)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	1,152	—
Site Preparation	—	—	0.50	0.00	—
Grading	500	500	1.50	0.00	—
Paving	0.00	0.00	0.00	0.00	0.00

## 5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%

## 5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Condo/Townhouse	—	0%
Parking Lot	0.00	100%

## 5.8. Construction Electricity Consumption and Emissions Factors

### kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	0.00	2.34	0.00	0.00
2026	0.00	2.34	0.00	0.00

## 5.9. Operational Mobile Sources

### 5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Condo/Townhouse	36.6	40.7	31.4	13,302	239	266	205	86,845
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

### 5.9.2. Mitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Condo/Townhouse	36.6	40.7	31.4	13,302	239	266	205	86,845
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

## 5.10. Operational Area Sources

### 5.10.1. Hearths

#### 5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Condo/Townhouse	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	0
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

#### 5.10.1.2. Mitigated

Hearth Type	Unmitigated (number)
Condo/Townhouse	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	0
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0

Pellet Wood Stoves

0

### 5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
24370.875	8,124	0.00	0.00	—

### 5.10.3. Landscape Equipment

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

### 5.10.4. Landscape Equipment - Mitigated

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

## 5.11. Operational Energy Consumption

### 5.11.1. Unmitigated

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

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBtu/yr)
Condo/Townhouse	64,197	2.34	0.0000	0.0000	0.00
Parking Lot	0.00	2.34	0.0000	0.0000	0.00

### 5.11.2. Mitigated

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

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBtu/yr)
Condo/Townhouse	64,197	2.34	0.0000	0.0000	0.00
Parking Lot	0.00	2.34	0.0000	0.0000	0.00

## 5.12. Operational Water and Wastewater Consumption

### 5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Condo/Townhouse	181,332	0.00
Parking Lot	0.00	0.00

### 5.12.2. Mitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Condo/Townhouse	181,332	0.00
Parking Lot	0.00	0.00

## 5.13. Operational Waste Generation

### 5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Condo/Townhouse	3.71	—
Parking Lot	0.00	—

### 5.13.2. Mitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Condo/Townhouse	3.71	—
Parking Lot	0.00	—

## 5.14. Operational Refrigeration and Air Conditioning Equipment

### 5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Condo/Townhouse	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Condo/Townhouse	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

### 5.14.2. Mitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Condo/Townhouse	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Condo/Townhouse	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

## 5.15. Operational Off-Road Equipment

### 5.15.1. Unmitigated

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

### 5.15.2. Mitigated

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

## 5.16. Stationary Sources

## 5.16.1. Emergency Generators and Fire Pumps

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

## 5.16.2. Process Boilers

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

## 5.17. User Defined

Equipment Type	Fuel Type
----------------	-----------

## 5.18. Vegetation

### 5.18.1. Land Use Change

#### 5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres
--------------------------	----------------------	---------------	-------------

#### 5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres
--------------------------	----------------------	---------------	-------------

### 5.18.1. Biomass Cover Type

#### 5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres
--------------------	---------------	-------------

#### 5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres
--------------------	---------------	-------------

## 5.18.2. Sequestration

### 5.18.2.1. Unmitigated

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

### 5.18.2.2. Mitigated

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

## 6. Climate Risk Detailed Report

### 6.1. Climate Risk Summary

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

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	11.6	annual days of extreme heat
Extreme Precipitation	3.80	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about  $\frac{3}{4}$  an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters

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

### 6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

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

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

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

### 6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

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

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

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

## 6.4. Climate Risk Reduction Measures

# 7. Health and Equity Details

## 7.1. CalEnviroScreen 4.0 Scores

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

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	16.8
AQ-PM	15.5
AQ-DPM	65.1
Drinking Water	40.1
Lead Risk Housing	37.4
Pesticides	0.00
Toxic Releases	39.9
Traffic	62.5
Effect Indicators	—
CleanUp Sites	0.00
Groundwater	52.5
Haz Waste Facilities/Generators	75.2
Impaired Water Bodies	0.00
Solid Waste	0.00
Sensitive Population	—
Asthma	4.25
Cardio-vascular	7.54
Low Birth Weights	86.5
Socioeconomic Factor Indicators	—

Education	39.2
Housing	26.7
Linguistic	77.4
Poverty	50.5
Unemployment	11.9

## 7.2. Healthy Places Index Scores

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

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	53.0347748
Employed	51.27678686
Median HI	83.36969075
Education	—
Bachelor's or higher	92.23662261
High school enrollment	100
Preschool enrollment	71.85936096
Transportation	—
Auto Access	18.65776979
Active commuting	80.75195688
Social	—
2-parent households	35.23675093
Voting	83.35685872
Neighborhood	—
Alcohol availability	15.16745798
Park access	81.35506224
Retail density	77.46695753
Supermarket access	94.25125112

Tree canopy	85.01219043
Housing	—
Homeownership	5.800076992
Housing habitability	56.58924676
Low-inc homeowner severe housing cost burden	99.12742205
Low-inc renter severe housing cost burden	84.97369434
Uncrowded housing	27.62735789
Health Outcomes	—
Insured adults	69.44693956
Arthritis	97.6
Asthma ER Admissions	91.8
High Blood Pressure	94.6
Cancer (excluding skin)	85.3
Asthma	98.6
Coronary Heart Disease	97.0
Chronic Obstructive Pulmonary Disease	98.5
Diagnosed Diabetes	95.7
Life Expectancy at Birth	82.6
Cognitively Disabled	52.2
Physically Disabled	95.1
Heart Attack ER Admissions	88.3
Mental Health Not Good	94.2
Chronic Kidney Disease	95.6
Obesity	97.4
Pedestrian Injuries	71.0
Physical Health Not Good	97.3
Stroke	96.9
Health Risk Behaviors	—

Binge Drinking	80.1
Current Smoker	91.5
No Leisure Time for Physical Activity	78.5
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	31.0
Elderly	66.3
English Speaking	38.9
Foreign-born	99.1
Outdoor Workers	76.7
Climate Change Adaptive Capacity	—
Impervious Surface Cover	26.6
Traffic Density	50.6
Traffic Access	87.4
Other Indices	—
Hardship	39.3
Other Decision Support	—
2016 Voting	67.3

### 7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	25.0
Healthy Places Index Score for Project Location (b)	75.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

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

## 7.4. Health & Equity Measures

No Health & Equity Measures selected.

## 7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

## 7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

# 8. User Changes to Default Data

Screen	Justification
Characteristics: Utility Information	Sunnyvale default clean energy provider is Silicon Valley Clean Energy.
Land Use	Lot acreage and square footages from project plans. Number of parking spaces from applicant.
Construction: Construction Phases	Defaults with added trenching phase confirmed by applicant. Start date provided by applicant.
Construction: Trips and VMT	Building Const = Est. 18 concrete truck round trips (0.36 trips/day), Paving = Est. 6 asphalt truck round trips (2.4 trips/day).
Operations: Hearths	No hearths.
Operations: Energy Use	Project design is all-electric. Confirmed no natural gas by project applicant. Convert natural gas to electricity.
Operations: Water and Waste Water	Wastewater treatment 100% aerobic - no septic tanks or lagoons.
Construction: On-Road Fugitive Dust	Air District BMPs 15 mph required by Sunnyvale LUTE DEIR MM 3.5.3.

## 2. Emissions Summary - HRA

### 2.2 Construction Emissions by Year, Unmitigated

Year	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO <sub>2</sub> e
Daily - Summer (Max)									
Daily - Winter (Max)									
2025	1.1457525	11.246654	0.4679230	2.1462555	2.6141785	0.4294419	1.0205603	1.4500023	2067.3502990536595
2026	34.019601	4.8228406	0.1887750	0.0145892	0.1937615	0.1736762	0.0035073	0.1744876	1316.2614134001863
Average Daily									
2025	0.0961321	0.9195849	0.0380465	0.0161819	0.0542285	0.0349958	0.0063006	0.0412965	222.91458655642063
2026	0.5413544	0.7217526	0.0282617	0.0006426	0.0289044	0.0260013	0.0001559	0.0261573	191.2699538084943
Annual									
2025	0.0175441	0.1678242	0.0069435	0.0029532	0.0098967	0.0063867	0.0011498	0.0075366	36.906053693195894
2026	0.0987971	0.1317198	0.0051577	0.0001172	0.0052750	0.0047452	0.0000284	0.0047737	31.6669236149996

## 2. Emissions Summary - HRA

### 2.3 Construction Emissions by Year, Mitigated

Year	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO <sub>2</sub> e
Daily - Summer (Max)									
Daily - Winter (Max)									
2025	0.2781775	6.4415942	0.0667850	2.1462555	2.1826304	0.0625054	1.0205603	1.0555574	2067.3502990536595
2026	33.920436	4.5174696	0.0859889	0.0145892	0.1005781	0.0800065	0.0035073	0.0835138	1316.2614134001863
Average Daily									
2025	0.0327536	0.7985978	0.0057120	0.0161819	0.0218939	0.0055728	0.0063006	0.0118735	222.91458655642063
2026	0.4943131	0.6851217	0.0049351	0.0006426	0.0055777	0.0048210	0.0001559	0.0049769	191.2699538084943
Annual									
2025	0.0059775	0.1457441	0.0010424	0.0029532	0.0039956	0.0010170	0.0011498	0.0021669	36.906053693195894
2026	0.0902121	0.1250347	0.0009006	0.0001172	0.0010179	0.0008798	0.0000284	0.0009082	31.6669236149996

### 5.3. Construction Vehicles - HRA

#### 5.3.1 Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition				
Demolition	Worker	10	1	LDA,LDT1,LDT2
Demolition	Vendor		1	HHDT,MHDT
Demolition	Hauling	1.4	1	HHDT
Demolition	Onsite truck			HHDT
Site Preparation				
Site Preparation	Worker	5	1	LDA,LDT1,LDT2
Site Preparation	Vendor		1	HHDT,MHDT
Site Preparation	Hauling	0	1	HHDT
Site Preparation	Onsite truck			HHDT
Grading				
Grading	Worker	7.5	1	LDA,LDT1,LDT2
Grading	Vendor		1	HHDT,MHDT
Grading	Hauling	62.5	1	HHDT
Grading	Onsite truck			HHDT
Building Construction				
Building Construction	Worker	3.5999999999999996	1	LDA,LDT1,LDT2
Building Construction	Vendor	0.5345	1	HHDT,MHDT
Building Construction	Hauling	0.36	1	HHDT
Building Construction	Onsite truck			HHDT
Paving				
Paving	Worker	17.5	1	LDA,LDT1,LDT2
Paving	Vendor		1	HHDT,MHDT
Paving	Hauling	2.4	1	HHDT
Paving	Onsite truck			HHDT
Architectural Coating				
Architectural Coating	Worker	0.72	1	LDA,LDT1,LDT2
Architectural Coating	Vendor		1	HHDT,MHDT
Architectural Coating	Hauling	0	1	HHDT
Architectural Coating	Onsite truck			HHDT
Trenching				
Trenching	Worker	5	1	LDA,LDT1,LDT2
Trenching	Vendor		1	HHDT,MHDT
Trenching	Hauling	0	1	HHDT
Trenching	Onsite truck			HHDT

### 5.3. Construction Vehicles - HRA

#### 5.3.2 Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition				
Demolition	Worker	10	1	LDA,LDT1,LDT2
Demolition	Vendor		1	HHDT,MHDT
Demolition	Hauling	1.4	1	HHDT
Demolition	Onsite truck			HHDT
Site Preparation				
Site Preparation	Worker	5	1	LDA,LDT1,LDT2
Site Preparation	Vendor		1	HHDT,MHDT
Site Preparation	Hauling	0	1	HHDT
Site Preparation	Onsite truck			HHDT
Grading				
Grading	Worker	7.5	1	LDA,LDT1,LDT2
Grading	Vendor		1	HHDT,MHDT
Grading	Hauling	62.5	1	HHDT
Grading	Onsite truck			HHDT
Building Construction				
Building Construction	Worker	3.5999999999999996	1	LDA,LDT1,LDT2
Building Construction	Vendor	0.5345	1	HHDT,MHDT
Building Construction	Hauling	0.36	1	HHDT
Building Construction	Onsite truck			HHDT
Paving				
Paving	Worker	17.5	1	LDA,LDT1,LDT2
Paving	Vendor		1	HHDT,MHDT
Paving	Hauling	2.4	1	HHDT
Paving	Onsite truck			HHDT
Architectural Coating				
Architectural Coating	Worker	0.72	1	LDA,LDT1,LDT2
Architectural Coating	Vendor		1	HHDT,MHDT
Architectural Coating	Hauling	0	1	HHDT
Architectural Coating	Onsite truck			HHDT
Trenching				
Trenching	Worker	5	1	LDA,LDT1,LDT2
Trenching	Vendor		1	HHDT,MHDT
Trenching	Hauling	0	1	HHDT
Trenching	Onsite truck			HHDT

**Attachment 2: Project Construction Dispersion Modeling Inputs and Risk Calculations**

**1001 S Wolfe Road, Sunnyvale, CA**  
**Construction Health Impact Summary**

**Maximum Impacts at MEI Location - Without Mitigation**

Emissions Year	Maximum Concentrations		Cancer Risk (per million) Infant/Child	Hazard Index (-)	Maximum Annual PM2.5 Concentration ( $\mu\text{g}/\text{m}^3$ )
	Exhaust PM10/DPM ( $\mu\text{g}/\text{m}^3$ )	Fugitive PM2.5 ( $\mu\text{g}/\text{m}^3$ )			
2025 + 2026	0.0854	0.0302	15.19	0.02	0.12
<b>Total Maximum</b>	<b>-</b>	<b>-</b>	<b>15.19</b>		
	0.0854	0.0302	-	<b>0.02</b>	<b>0.12</b>

**Maximum Impacts at MEI Location - With Mitigation**

Emissions Year	Maximum Concentrations		Cancer Risk (per million) Infant/Child	Hazard Index (-)	Maximum Annual PM2.5 Concentration ( $\mu\text{g}/\text{m}^3$ )
	Exhaust PM10/DPM ( $\mu\text{g}/\text{m}^3$ )	Fugitive PM2.5 ( $\mu\text{g}/\text{m}^3$ )			
2025 + 2026	0.0137	0.0302	2.44	0.00	0.04
<b>Total Maximum</b>	<b>-</b>	<b>-</b>	<b>2.44</b>		
	0.0137	0.0302	-	<b>0.00</b>	<b>0.04</b>

1001 S Wolfe Road, Sunnyvale, CA

**DPM Emissions and Modeling Emission Rates - Unmitigated**

Construction Year	Activity	DPM (ton/year)	Area Source	DPM Emissions			Modeled Area (m <sup>2</sup> )	DPM Emission Rate (g/s/m <sup>2</sup> )
				(lb/yr)	(lb/hr)	(g/s)		
2025	Construction	0.0069	CON_DPM	13.9	0.00486	6.12E-04	1,317	4.65E-07
2026	Construction	0.0052	CON_DPM	10.3	0.00361	4.54E-04	1,317	3.45E-07
<b>Total</b>		<b>0.0121</b>		<b>24.2</b>	<b>0.0085</b>	<b>0.0011</b>		

*Construction Hours*

hr/day = 11 (7am - 6pm)  
days/yr = 260  
hours/year = 2860

**DPM Construction Emissions and Modeling Emission Rates - With Mitigation**

Construction Year	Activity	DPM (ton/year)	Area Source	DPM Emissions			Modeled Area (m <sup>2</sup> )	DPM Emission Rate (g/s/m <sup>2</sup> )
				(lb/yr)	(lb/hr)	(g/s)		
2025	Construction	0.0010	CON_DPM	2.1	0.00073	9.19E-05	1,317	6.98E-08
2026	Construction	0.0009	CON_DPM	1.8	0.00063	7.94E-05	1,317	6.03E-08
<b>Total</b>		<b>0.0019</b>		<b>3.9</b>	<b>0.0014</b>	<b>0.0002</b>		

*Construction Hours*

hr/day = 11 (7am - 6pm)  
days/yr = 260  
hours/year = 2860

1001 S Wolfe Road, Sunnyvale, CA

**PM2.5 Fugitive Dust Emissions for Modeling - Unmitigated**

Construction Year	Activity	Area Source	PM2.5 Emissions			Modeled Area (m <sup>2</sup> )	PM2.5 Emission Rate (g/s/m <sup>2</sup> )
			(ton/year)	(lb/yr)	(g/s)		
2025	Construction	CON_FUG	0.0011	2.3	0.00080	1,317	7.69E-08
2026	Construction	CON_FUG	0.0000	0.1	0.00002	1,317	1.90E-09
<b>Total</b>			<b>0.0012</b>	<b>2.4</b>	<b>0.0008</b>	<b>0.0001</b>	

*Construction Hours*

hr/day = 11 (7am - 6pm)  
days/yr = 260  
hours/year = 2860

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

Construction Year	Activity	Area Source	PM2.5 Emissions			Modeled Area (m <sup>2</sup> )	PM2.5 Emission Rate (g/s/m <sup>2</sup> )
			(ton/year)	(lb/yr)	(g/s)		
2025	Construction	CON_FUG	0.0011	2.3	0.00080	1,317	7.69E-08
2026	Construction	CON_FUG	0.0000	0.1	0.00002	1,317	1.90E-09
<b>Total</b>			<b>0.0012</b>	<b>2.4</b>	<b>0.0008</b>	<b>0.0001</b>	

*Construction Hours*

hr/day = 11 (7am - 6pm)  
days/yr = 260  
hours/year = 2860

**1001 S Wolfe Road, Sunnyvale, CA - Construction Impacts - Without Mitigation**  
**Maximum DPM Cancer Risk and PM2.5 Calculations From Construction**  
**Impacts at Off-Site MEI Location - 4.5 meter receptor height**

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

Where: CPF = Cancer potency factor (mg/kg-day)<sup>1</sup>  
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 ( $\mu\text{g}/\text{m}^3$ )  
DBR = daily breathing rate (L/kg body weight-day)  
A = Inhalation absorption factor  
EF = Exposure frequency (days/year)  
 $10^{-6}$  = Conversion factor

Values

Parameter	Infant/Child			Adult	
	Age →	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**

Exposure Year	Exposure Duration (years)	Age	Infant/Child - Exposure Information		Age Sensitivity Factor	Adult - Exposure Information		Adult Cancer Risk (per million)	Maximum			
			DPM Conc (ug/m3)			Modeled	Age Sensitivity Factor		Hazard Index	Fugitive PM2.5	Total PM2.5	
			Year	Annual		DPM Cone (ug/m3)	Year		Year	Annual		
0	0.25	-0.25 - 0*	2025 + 2026	0.0539	10	0.73	2025 + 2026	0.0539	-	-	-	
1	1	0 - 1	2025 + 2026	0.0539	10	8.85	2025 + 2026	0.0539	1	0.15		
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		
<b>Total Increased Cancer Risk</b>						<b>9.59</b>				<b>0.15</b>		

\* Third trimester of pregnancy

**1001 S Wolfe Road, Sunnyvale, 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-day)<sup>1</sup>  
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 ( $\mu\text{g}/\text{m}^3$ )  
DBR = daily breathing rate (L/kg body weight-day)  
A = Inhalation absorption factor  
EF = Exposure frequency (days/year)  
 $10^{-6}$  = Conversion factor

Values

Parameter	Infant/Child			Adult	
	Age -->	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**

Exposure Year	Exposure Duration (years)	Age	Infant/Child - Exposure Information		Age Sensitivity Factor	Adult - Exposure Information		Adult Cancer Risk (per million)	Maximum			
			DPM Conc (ug/m3)			Modeled	Age Sensitivity Factor		Hazard Index	Fugitive PM2.5	Total PM2.5	
			Year	Annual		DPM Cone (ug/m3)	Year					
0	0.25	-0.25 - 0*	2025 + 2026	0.0854	10	1.16	2025 + 2026	0.0854	-	-	-	
1	1	0 - 1	2025 + 2026	0.0854	10	14.03	2025 + 2026	0.0854	1	0.25	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		
<b>Total Increased Cancer Risk</b>						<b>15.19</b>					<b>0.25</b>	

\* Third trimester of pregnancy

**1001 S Wolfe Road, Sunnyvale, 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-day)<sup>1</sup>

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

Where:  $C_{\text{air}}$  = concentration in air ( $\mu\text{g}/\text{m}^3$ )

DBR = daily breathing rate (L/kg body weight-day)

A = Inhalation absorption factor

EF = Exposure frequency (days/year)

$10^{-6}$  = Conversion factor

**Values**

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

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

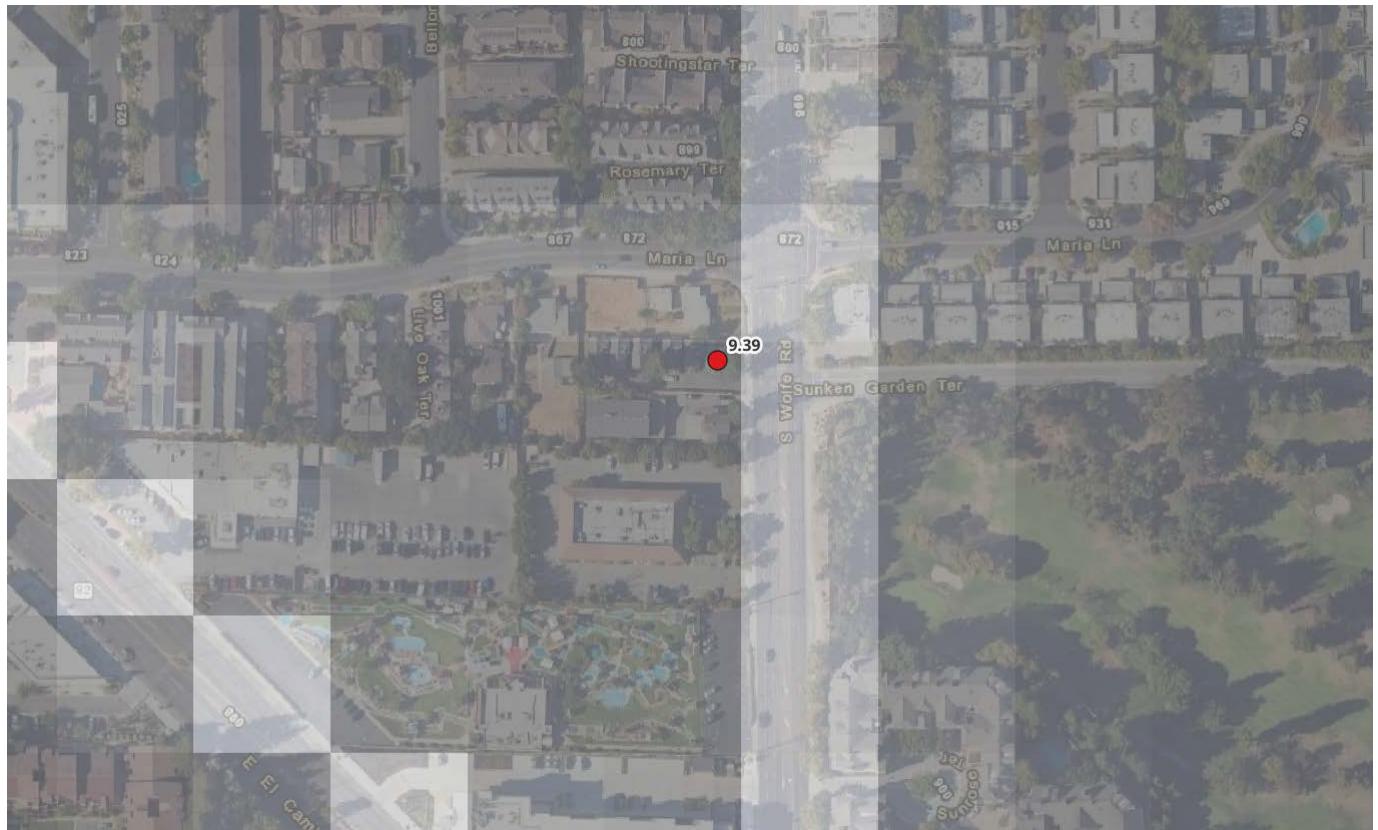
**Construction Cancer Risk by Year - Maximum Impact Receptor Location**

Exposure Year	Exposure Duration (years)	Age	Infant/Child - Exposure Information		Infant/Child Cancer Risk (per million)	Adult - Exposure Information		Adult Cancer Risk (per million)	Maximum				
			DPM Conc (ug/m3)			Modeled							
			Year	Annual		Year	Annual		Hazard Index	Fugitive PM2.5	Total PM2.5		
0	0.25	-0.25 - 0*	2025 + 2026	0.0137	10	0.19	2025 + 2026	0.0137	-	-			
1	1	0 - 1	2025 + 2026	0.0137	10	2.25	2025 + 2026	0.0137	1	0.04			
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			
<b>Total Increased Cancer Risk</b>						<b>2.44</b>					<b>0.04</b>		

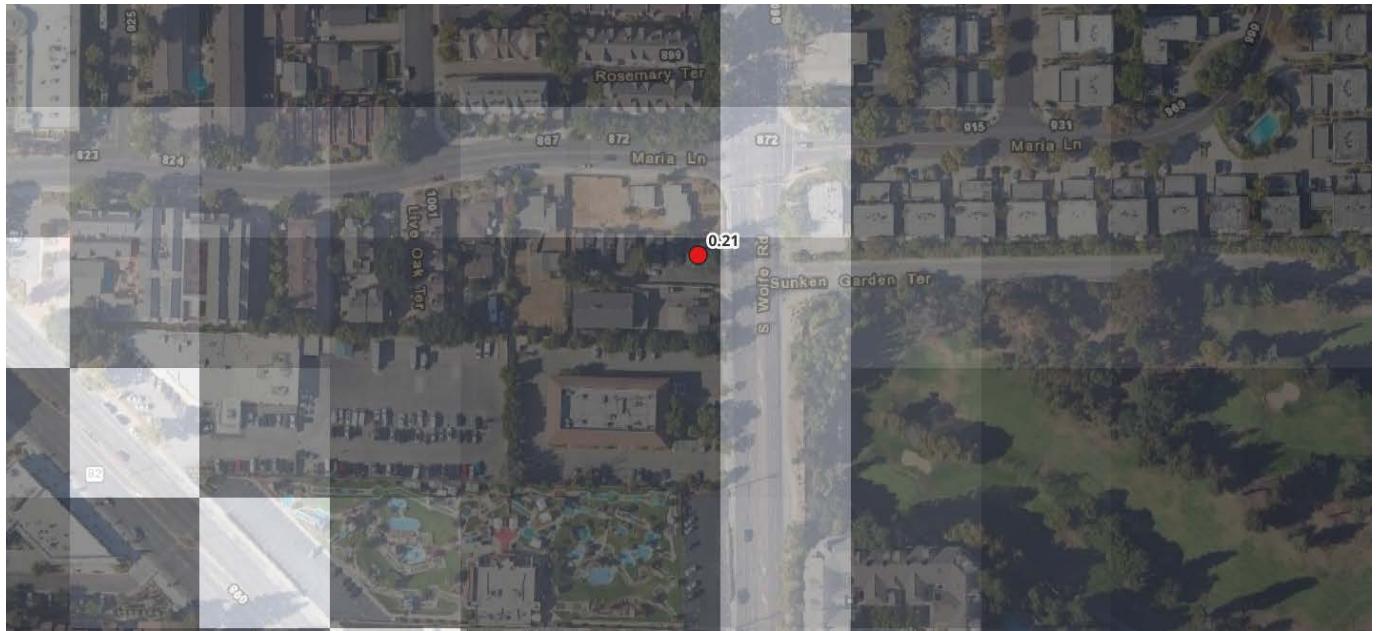
\* Third trimester of pregnancy

### Attachment 3: Cumulative Health Risk Screening and Calculations from Existing TAC Sources

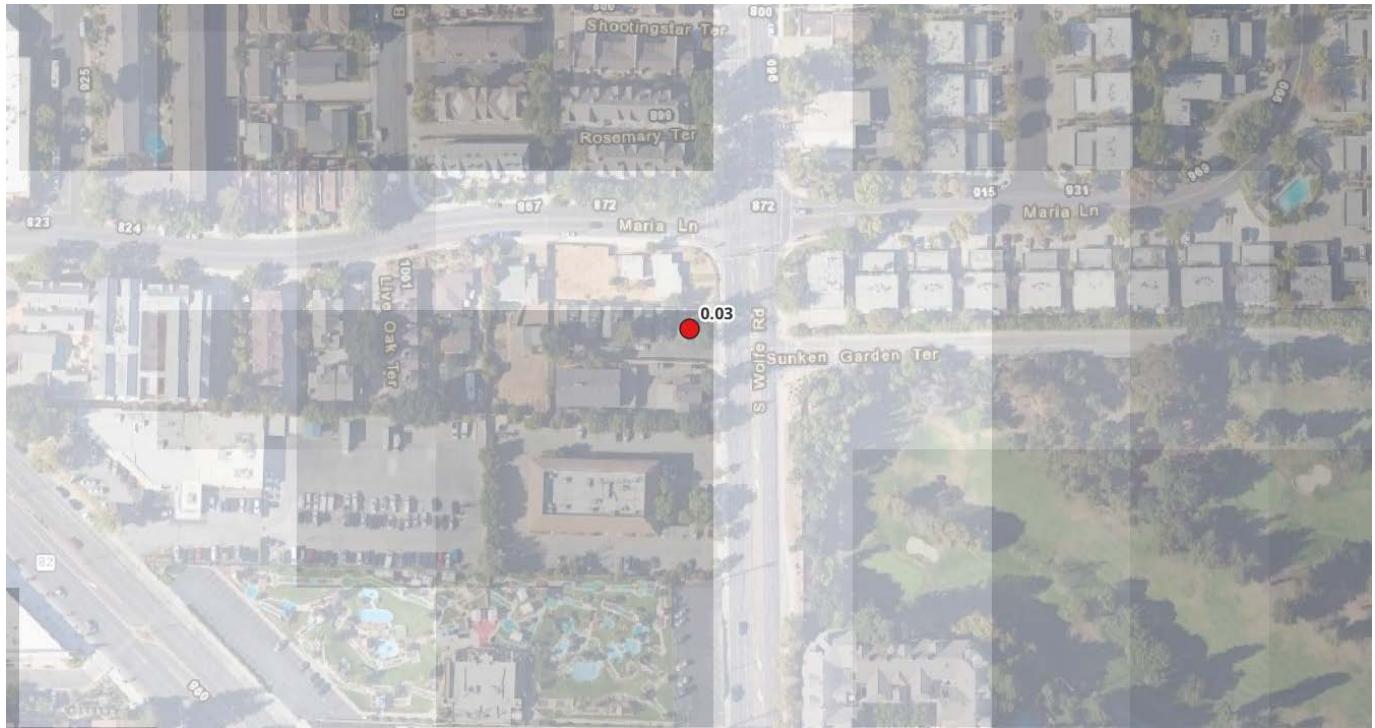
BAAQMD Cancer Risk Raster at MEI



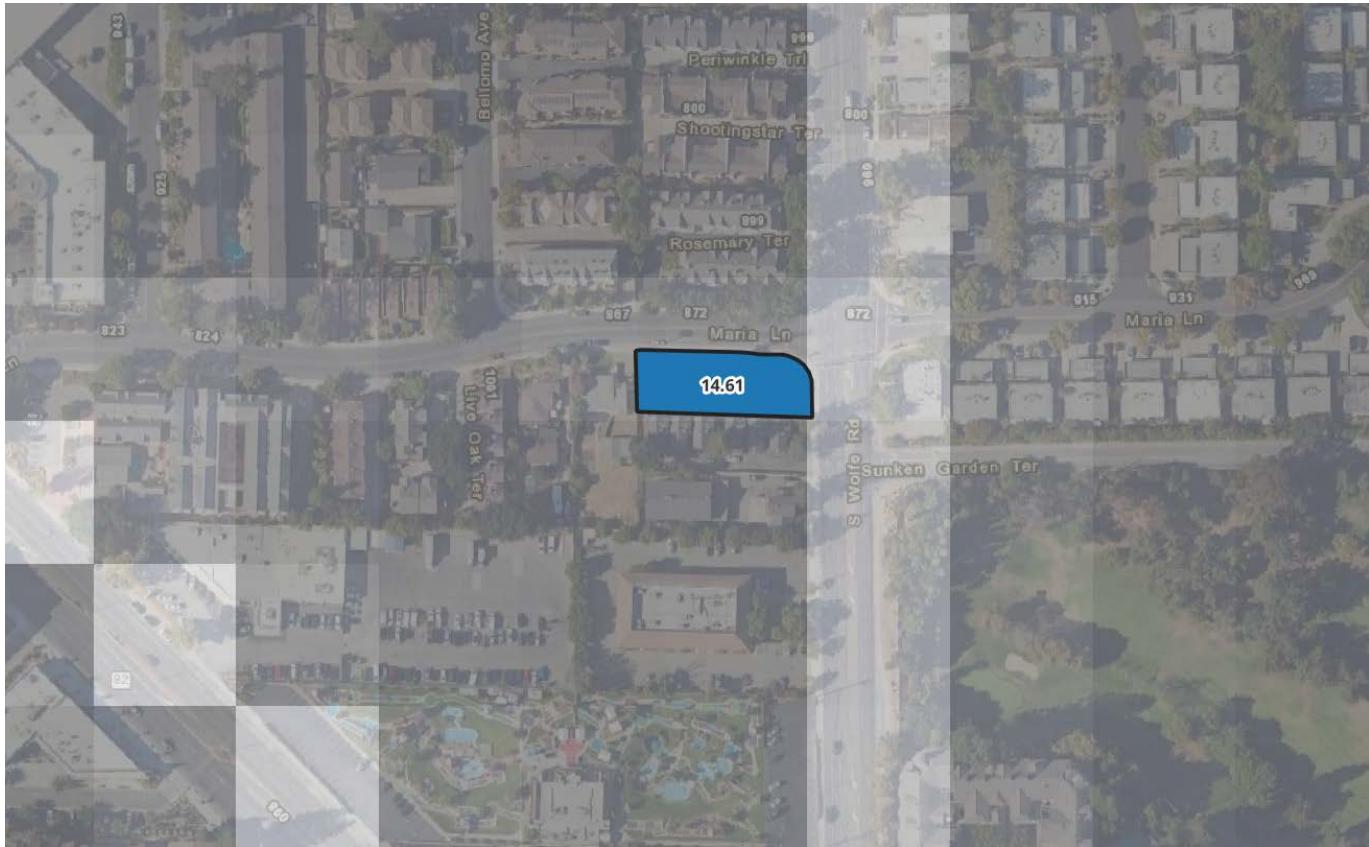
BAAQMD Annual PM<sub>2.5</sub> Concentration Raster at MEI



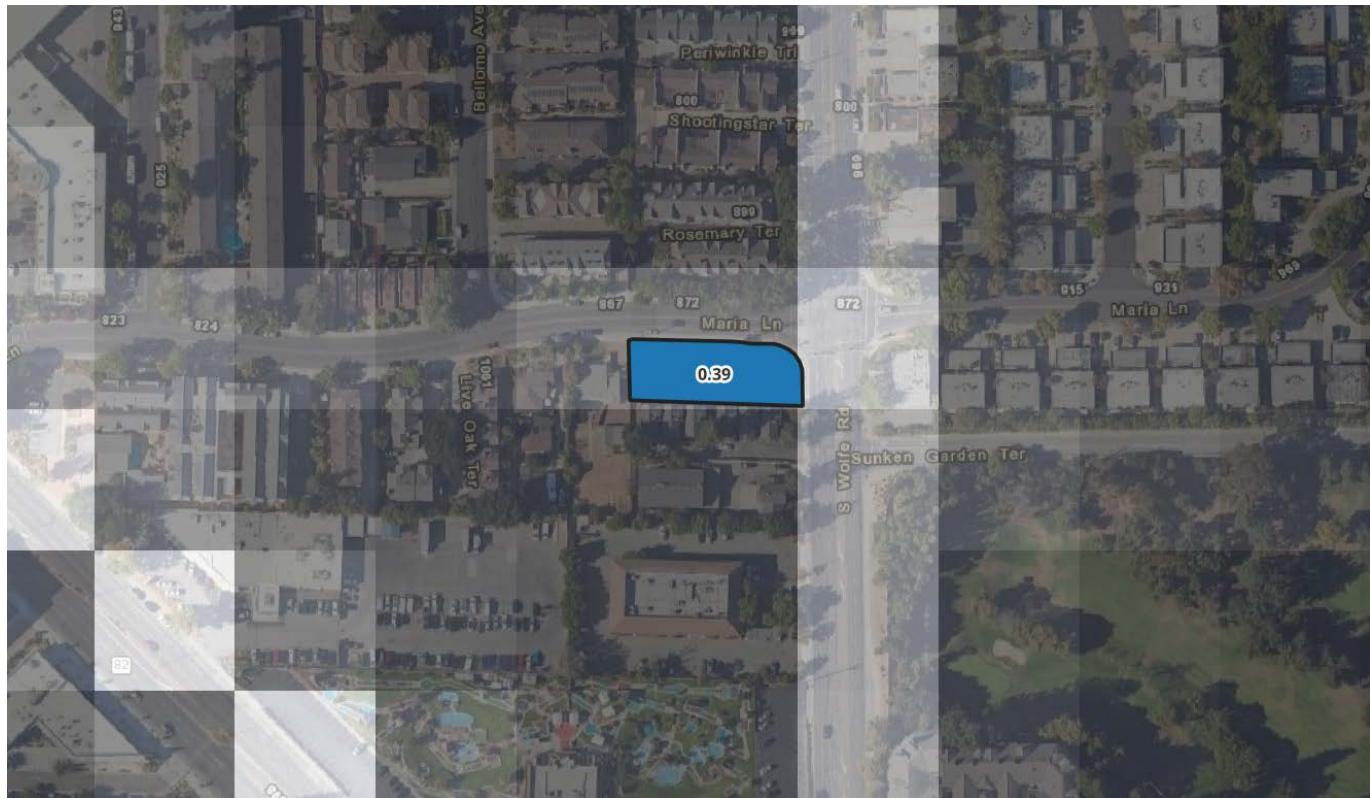
BAAQMD Hazard Index Raster at MEI



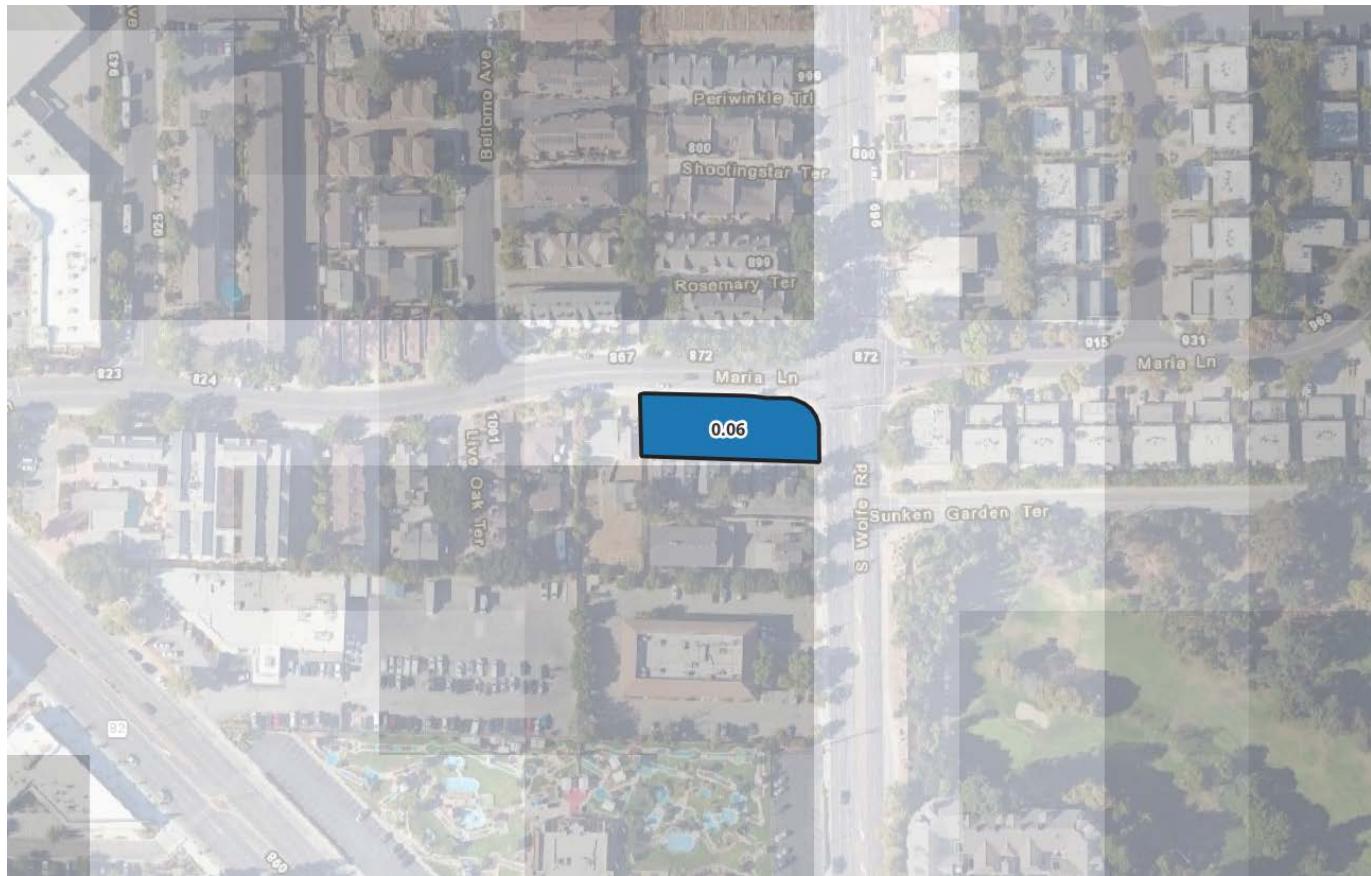
BAAQMD Cancer Risk Raster at Project Site



BAAQMD Annual PM<sub>2.5</sub> Concentration Raster at Project Site



BAAQMD Hazard Index Raster at Project Site





# BAY AREA AIR QUALITY MANAGEMENT DISTRICT

## Risk & Hazard Stationary Source Inquiry Form

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

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

[Click here for guidance on conducting risk & hazard screening, including roadways & freeways, refer to the District's Risk & Hazard Analysis flow chart.](#)

[Click here for District's Recommended Methods for Screening and Modeling Local Risks and Hazards document.](#)

### Table A: Requester Contact Information

Date of Request	8/12/2024
Contact Name	Jordyn Bauer
Affiliation	Illingworth & Rodkin, Inc.
Phone	707-794-0400 x106
Email	<a href="mailto:jbauer@illingworthrodkin.com">jbauer@illingworthrodkin.com</a>
Project Name	1001 S Wolfe Rd
Address	1001 S Wolfe Rd
City	Sunnyvale
County	Santa Clara
Type (residential, commercial, mixed use, industrial, etc.)	Residential
Project Size (# of units or building square feet)	5
Comments:	

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

1. Complete all the contact and project information requested in **Table A**. Incomplete forms will not be processed. Please include a project site map.
2. Download and install the free program Google Earth, <http://www.google.com/earth/download/ge/>, and then download the county specific Google Earth stationary source application files from the District's website, <http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Tools-and-Methodology.aspx>. The small points on the map represent stationary sources permitted by the District (Map A on right). These permitted sources include diesel back-up generators, gas stations, dry cleaners, boilers, printers, auto spray booths, etc. Click on a point to view the source's Information Table, including the name, location, and preliminary estimated cancer risk, hazard index, and PM2.5 concentration.
3. Find the project site in Google Earth by inputting the site's address in the Google Earth search box.
4. Identify stationary sources within at least a 1000ft radius of project site. Verify that the location of the source on the map matches with the source's address in the Information Table, by using the Google Earth address search box to confirm the source's address location. Please report any mapping errors to the District.
5. List the stationary source information in **Table B** in the same order as the source section only.
6. Note that a small percentage of the stationary sources have Health Risk Screening Assessment (HRSA) data INSTEAD of screening level data. These sources will be noted by an asterisk next to the Plant Name (Map B on right). If HRSA values are presented, these values have already been modeled and cannot be adjusted further.
7. Email this completed form to District staff. District staff will provide the most recent risk, hazard, and PM2.5 data that are available for the source(s). If this information or data are not available, source emissions data will be provided. Staff will respond to inquiries within three weeks.

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

Submit forms, maps, and questions to Matthew Hanson at 415-749-8733, or [mhanson@baaqmd.gov](mailto:mhanson@baaqmd.gov)

Table B: Google Earth data

Distance from Receptor (feet) or MEI <sup>1</sup>	Plant No.	Facility Name	Address	Cancer Risk <sup>2</sup>	Hazard Risk <sup>2</sup>	PM <sub>2.5</sub> <sup>2</sup>	Source No. <sup>3</sup>	Type of Source <sup>4</sup>	Fuel Code <sup>5</sup>	Status/Comments	Project MEI			
											Distance Adjustment Multiplier	Adjusted Cancer Risk Estimate	Adjusted Hazard Risk	Adjusted PM2.5
255		15526 City of Sunnyvale - Station 4 -1 96 Wolfe Road		0.18	0	0		Generator		2022 Dataset	0.31	0.06	0.00000	0.00000
490		202476 Hampton Inn & Suites - Sunnyvale	861 EAST EL CAMINO REA	2.42	0	0		Generator		2022 Dataset	0.12	0.29	0.00000	0.00000
1000		23531 Safeway Inc #1439	785 El Camino Real	0.28	0	0		Generator		2022 Dataset	0.04	0.01	0.000	0.00000

Footnotes:

1. Maximally exposed individual
2. These Cancer Risk, Hazard Index, and PM2.5 columns represent the values in the Google Earth Plant Information Table.
3. Each plant may have multiple permits and sources.
4. Permitted sources include diesel back-up generators, gas stations, dry cleaners, boilers, printers, auto spray booths, etc.
5. Fuel codes: 98 = diesel, 189 = Natural Gas.
6. If a Health Risk Screening Assessment (HRSA) was completed for the source, the application number will be listed here.

8. Engineer who completed the HRSA. For District purposes only.
9. All HRSA completed before 1/5/2010 need to be multiplied by an age sensitivity factor of 1.7.
10. The HRSA "Chronic Health" number represents the Hazard Index.
11. Further information about common sources:
  - a. Sources that only include diesel internal combustion engines can be adjusted using the BAAQMD's Diesel Multiplier worksheet.
  - b. The risk from natural gas boilers used for space heating when <25 MM BTU/hr would have an estimated cancer risk of one in a million or less, and a chronic hazard index of 0.003 or c. BAAQMD Reg 11 Rule 16 required that all co-residential (sharing a wall, floor, ceiling or is in the same building as a residential unit) dry cleaners cease use of perc on July 1, 2010. Therefore, there is no cancer risk, hazard or PM2.5 concentrations from co-residential dry cleaning businesses in the BAAQMD.
  - d. Non co-residential dry cleaners must phase out use of perc by Jan. 1, 2023. Therefore, the risk from these dry cleaners does not need to be factored in over a 70-year period, but instead should reflect e. Gas stations can be adjusted using BAAQMD's Gas Station Distance Multiplier worksheet.
  - f. Unless otherwise noted, exempt sources are considered insignificant. See BAAQMD Reg 2 Rule 1 for a list of exempt sources.
  - g. This spray booth is considered to be insignificant.

Date last updated:

03/13/2018

Distance from Receptor (feet) or MEI <sup>1</sup>	FACID (Plant No.)	Project Site			
		Distance Adjustment Multiplier	Adjusted Cancer Risk Estimate	Adjusted Hazard Risk	Adjusted PM2.5
135	15526	0.58	0.10	0.00000	0.00000
495	202476	0.12	0.29	0.00000	0.00000
820	23531	0.06	0.02	0.000	0.00000

**2022 CARB & CAPCOA Gasoline Service Station Industrywide Risk Assessment Look-up Tool**  
**Version 1.0 - February 18, 2022**

Required Value	User Defined Input	Instructions
Annual Throughput (gallons/year)	600000	Enter your gas station's annual throughput in gallons of gasoline dispensed per year.
Hourly Dispensing Throughput (gallons/hour)	500	The tool will calculate the maximum hourly vehicle fueling throughput based on annual throughput as defined by Table 10 of the 2020 Gasoline Service Station Industrywide Risk Assessment Technical Guidance Document (Technical Guidance). If a different value is desired please enter it into cell L4.
Hourly Loading Throughput (gallons/hour)	8800	The tool will calculate the maximum hourly loading throughput based on annual throughput as defined by Table 10 of the Technical Guidance. If a different value is desired please enter it into cell L5.
Meteorological Data	San Jose	Select appropriate meteorological data. Met sets provided include 2 rural (Redding and Lancaster) and 4 urban (Fresno, Ontario, San Diego, and San Jose) locations. Use whichever best correlates to your location. If you would like to use site-specific meteorological data please refer to the Variable Met Tool.
Distance to Nearest Resident (meters)	305	Enter the distance to the nearest residential receptor in meters as measured from the edge of the station canopy. Please note that the value must be between 10 and 1000 meters. The distance you input will round down to the nearest receptor distance used in the Technical Guidance (e.g., 19m will return value at 10m distance).
Distance to Nearest Business (meters)	305	Enter the distance to the nearest worker receptor in meters as measured from the edge of the station canopy. Please note that the value must be between 10 and 1000 meters. The distance you input will round down to the nearest receptor distance used in the Technical Guidance (e.g., 19m will return value at 10m distance).
Distance to Acute Receptor (meters)	305	Enter the distance where acute impacts are expected in meters as measured from the edge of the station canopy. This can be the distance to the property boundary, nearest resident, nearest worker, or any other user defined location. Please note that the value must be between 10 and 1000 meters. The distance you input will round down to the nearest receptor distance used in the Technical Guidance (e.g., 19m will return value at 10m distance).
Control Scenario	EVR Phase I & EVR Phase II	Select the appropriate control scenario for your gas station. Please refer to technical Guidance for an explanation of the different control scenarios. Almost all gas stations in California are equipped with EVR Phase I and EVR Phase II controls.
Include Building Downwash Adjustments	yes	Building downwash may over estimate risk results. High results should be investigated further through site-specific health risk assessment.
Risk Value	Results	
Max Residential Cancer Risk (chances/million)	0.05	
Max Worker Cancer Risk (chances/million)	0.00	
Chronic HI	0.00	
Acute HI	0.01	

**2022 CARB & CAPCOA Gasoline Service Station Industrywide Risk Assessment Look-up Tool**  
**Version 1.0 - February 18, 2022**

Required Value	User Defined Input	Instructions
Annual Throughput (gallons/year)	600000	Enter your gas station's annual throughput in gallons of gasoline dispensed per year.
Hourly Dispensing Throughput (gallons/hour)	500	The tool will calculate the maximum hourly vehicle fueling throughput based on annual throughput as defined by Table 10 of the 2020 Gasoline Service Station Industrywide Risk Assessment Technical Guidance Document (Technical Guidance). If a different value is desired please enter it into cell L4.
Hourly Loading Throughput (gallons/hour)	8800	The tool will calculate the maximum hourly loading throughput based on annual throughput as defined by Table 10 of the Technical Guidance. If a different value is desired please enter it into cell L5.
Meteorological Data	San Jose	Select appropriate meteorological data. Met sets provided include 2 rural (Redding and Lancaster) and 4 urban (Fresno, Ontario, San Diego, and San Jose) locations. Use whichever best correlates to your location. If you would like to use site-specific meteorological data please refer to the Variable Met Tool.
Distance to Nearest Resident (meters)	275	Enter the distance to the nearest residential receptor in meters as measured from the edge of the station canopy. Please note that the value must be between 10 and 1000 meters. The distance you input will round down to the nearest receptor distance used in the Technical Guidance (e.g., 19m will return value at 10m distance).
Distance to Nearest Business (meters)	275	Enter the distance to the nearest worker receptor in meters as measured from the edge of the station canopy. Please note that the value must be between 10 and 1000 meters. The distance you input will round down to the nearest receptor distance used in the Technical Guidance (e.g., 19m will return value at 10m distance).
Distance to Acute Receptor (meters)	275	Enter the distance where acute impacts are expected in meters as measured from the edge of the station canopy. This can be the distance to the property boundary, nearest resident, nearest worker, or any other user defined location. Please note that the value must be between 10 and 1000 meters. The distance you input will round down to the nearest receptor distance used in the Technical Guidance (e.g., 19m will return value at 10m distance).
Control Scenario	EVR Phase I & EVR Phase II	Select the appropriate control scenario for your gas station. Please refer to technical Guidance for an explanation of the different control scenarios. Almost all gas stations in California are equipped with EVR Phase I and EVR Phase II controls.
Include Building Downwash Adjustments	yes	Building downwash may over estimate risk results. High results should be investigated further through site-specific health risk assessment.
Risk Value	Results	
Max Residential Cancer Risk (chances/million)	0.07	
Max Worker Cancer Risk (chances/million)	0.01	
Chronic HI	0.00	
Acute HI	0.03	

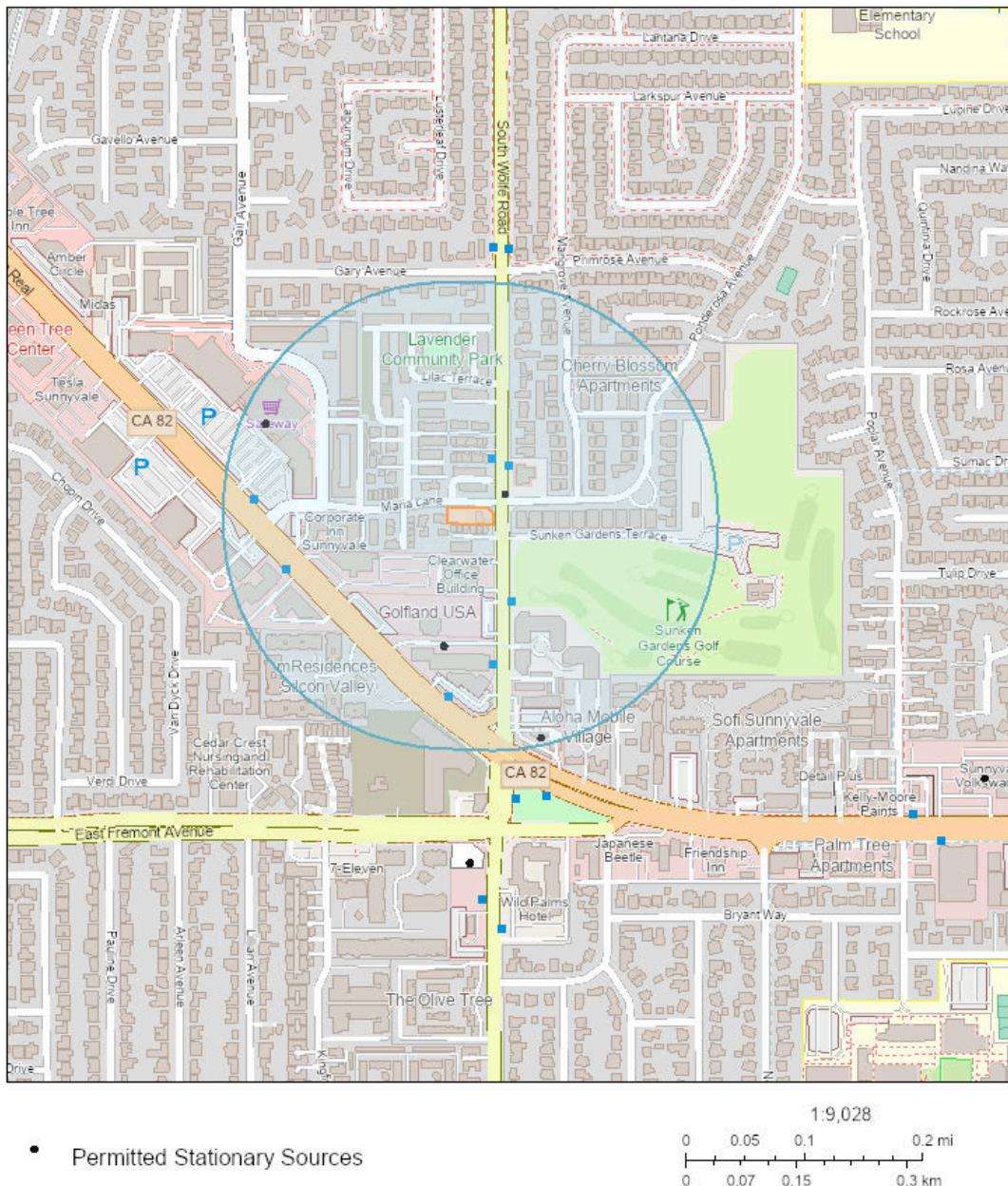


# Screening Report

## Area of Interest (AOI) Information

Area : 3,692,923.04 ft<sup>2</sup>

Aug 9 2024 15:03:49 Pacific Daylight Time



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

## Summary

Name	Count	Area(ft <sup>2</sup> )	Length(ft)
Permitted Stationary Sources	4	N/A	N/A

## Permitted Stationary Sources

#	Address	Cancer_Ris	Chronic_Ha	City	County
1	96 Wolfe Road	0.18	0.00	Sunnyvale	Santa Clara
2	861 EAST EL CAMINO REAL	2.42	0.00	Sunnyvale	Santa Clara
3	785 El Camino Real	0.28	0.00	Sunnyvale	Santa Clara
4	905 E EL CAMINO REAL	7.34	0.03	Sunnyvale	Santa Clara

#	Details	Facility_I	Facility_N	Latitude	Longitude
1	Generator	15526	City of Sunnyvale - Station 4 -155-1	37.36	-122.01
2	Generator	202476	Hampton Inn & Suites - Sunnyvale	37.35	-122.02
3	Generator	23531	Safeway Inc #1439	37.36	-122.02
4	Gas Dispensing Facility	200695-1	Zip Thru Car Wash Sunnyvale	37.35	-122.01

#	NAICS	NAICS_Indu	NAICS_Sect	NAICS_Subs	PM25
1	221112	Fossil Fuel Electric Power Generation	Utilities	Utilities	0.00
2	721110	Hotels (except Casino Hotels) and Motels	Accommodation and Food Services	Accommodation	0.00
3	445110	Supermarkets and Other Grocery (except Convenience) Stores	Retail Trade	Food and Beverage Stores	0.00
4	811192	Car Washes	Other Services (except Public Administration)	Repair and Maintenance	0.00

#	State	Zip	Count
1	CA	94086	1
2	CA	94087	1
3	CA	94087	1
4	CA	94087	1

NOTE: A larger buffer than 1,000 may be warranted depending on proximity to significant sources.