Exhibit 3e Item 5-A
Planning Board Meeting
July 28, 2025

2433 MARINER SQUARE LOOP AIR QUALITY ASSESSMENT

Alameda, California

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Prepared for:

Stephen Siri
Co-Managing Principal
The Martin Group
1970 Broadway, Suite 745
Oakland, CA 94612

Prepared by:

Casey Divine
Jordyn Bauer

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

I&R Project#: 25-010

Introduction

The purpose of this report is to address the potential air quality and health risk impacts associated with the proposed residential development located at 2433 Mariner Square Loop in Alameda, California. Air quality impacts would be associated with demolition of the existing land uses, construction of the new building and infrastructure, and operation of the project. Air pollutant emissions were estimated using appropriate computer models. In addition, the potential health risks associated with construction and operation of the project and the impact of existing toxic air contaminant (TAC) sources affecting the nearby sensitive receptors were evaluated. The analysis was conducted following guidance provided by the Bay Area Air District (Air District).[1]

Project Description

The approximately 2.34-acre project site is currently developed with four office buildings totaling approximately 37,400 square feet (sf) and an associated surface parking lot. The proposed project would demolish the existing uses and construct an eight-story building consisting of 356 residential units totaling approximately 376,551-sf. Parking would be located on the first three stories with 283 parking spaces totaling approximately 112,165-sf. Additionally, the project would utilize 124 surface parking spaces on the lot adjacent to the project site. The Project would also include an electrically powered fire pump. Construction is anticipated to occur from January 2026 through July 2027.

During construction, all diesel-powered construction equipment larger than 50 horsepower used at the site for more than two continuous days or 20 hours total shall meet U.S. EPA Tier 4 Interim emission standards for PM (PM_{10} and $PM_{2.5}$). This requirement would be included by the City as a Condition of Approval (COA).

Setting

<u>Ambient Air Quality Standards</u>

The Federal and California Clean Air Acts have established ambient air quality standards for different pollutants. National ambient air quality standards (NAAQS) were established by the Federal Clean Air Act of 1970 (amended in 1977 and 1990) for six "criteria" pollutants. These criteria pollutants now include carbon monoxide (CO), ozone (O_3), nitrogen dioxide (NO_2), respirable particulate matter with a diameter less than 10 microns (PM_{10}), fine particulate matter ($PM_{2.5}$), sulfur dioxide (SO_2), and lead (Pb). The air pollutants for which standards have been established are considered the most prevalent air pollutants known to be hazardous to human health. California ambient air quality standards (CAAQS) include the NAAQS pollutants and also hydrogen sulfide, sulfates, vinyl chloride, and visibility reducing particles. These additional CAAQS pollutants tend to have unique sources and are not typically included in environmental air quality assessments. In addition, Pb concentrations have decreased dramatically since it was removed from motor vehicle fuels. The Bay Area has attained the CO standard and monitoring

[1] Formerly known as the Bay Area Air Quality Management District (BAAQMD), *2022 CEQA Guidelines*, April 2023.

data from the last 30 years show relatively low concentrations throughout the Bay Area. Therefore, CO is not an air quality issue for land use type projects such as this one.

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_X). 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 downwind of existing 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_{10}) and fine particulate matter where particles have a diameter of 2.5 micrometers or less ($PM_{2.5}$). Elevated concentrations of PM_{10} and $PM_{2.5}$ are the result of both region-wide (or cumulative) emissions and localized emissions. High particulate matter concentrations aggravate respiratory and cardiovascular diseases, reduce lung function, increase mortality (e.g., lung cancer), and result in reduced lung function growth in children.

Toxic Air Contaminants

TACs 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 into the Air District's California Environmental Quality Act (CEQA) guidance.[2]

$PM_{2.5}$ emissions can include TACs. Due to the adverse health effects caused by $PM_{2.5}$ exposure even at low concentrations, the Air District developed assessing methods and health risk thresholds

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

to address exposure to increased concentrations caused by project $PM_{2.5}$ emissions.[3]

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, people 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 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 are the residents in the multi-family homes to the west of the project site. Additionally, there are seniors in the Oakmont of Mariner Point Assisted Living located to the northeast and the Cardinal Point Assisted Living to the northwest of the project site, and children at the Sugar & Spice Preschool south of the project site. Additional sensitive receptors are located at further distances from the site. Due to the project's proximity to nearby businesses, worker receptors were also included in this analysis. 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 ambient air quality standards (NAAQS) and 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 fuel standards.

In the past twenty years, 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 NO_X and particulate matter ($PM_{2.5}$) 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 NO_X 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.[4]

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 current standards limit the amount of sulfur allowed in diesel fuel to 15 parts per million by weight

[3] Bay Area Air District, 2022 CEQA Air Quality Guidelines, Appendix A, p40.
[4] USEPA, 2000. *Regulatory Announcement, Heavy-Duty Engine and Vehicle Standards and Highway Diesel Fuel Sulfur Control Requirements*. EPA420-F-00-057. December.

(ppmw). Ultra-low sulfur diesel (ULSD), as it is referred to, is 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

The California Air Resources Board (CARB) has set statewide ambient air quality standards (CAAQS) and emission standards for on-road and off-road mobile sources that are more stringent than those adopted by the EPA. Several of these regulatory programs affect medium and heavy-duty diesel trucks that represent the bulk of DPM emissions from California highways. These regulations include the solid waste collection vehicle (SWCV) rule, in-use public and utility fleets, and the heavy-duty diesel truck and bus regulations. In 2008, CARB approved a regulation to reduce emissions of DPM and NO_X from on-road heavy-duty diesel fueled vehicles.[5] The regulation requires affected vehicles to meet specific performance requirements between 2014 and 2023, with all affected diesel vehicles required to have 2010 model-year engines or equivalent by 2023. These requirements have been phased in over the compliance period and depend on the model year of the vehicle.

CARB has also adopted and implemented regulations to reduce DPM and NO_X 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 DPM and NO_X exhaust emissions by requiring owners to turn over their fleet (replace older equipment with newer equipment) or retrofit existing equipment in order to achieve specified fleet-averaged emission rates. Implementation of this regulation, in conjunction with the Federal off-road equipment engine emission limits for new vehicles, has significantly reduce emissions of DPM and NO_X.

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*[6]. 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 emission standards for new diesel engines, as well as adoption of regulations for ULSD fuel in California.

Project Air Quality Conditions

The project is located in Alameda 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

[5] Available online: http://www.arb.ca.gov/msprog/onrdiesel/onrdiesel.htm. Accessed: November 21, 2014.
[6] California Air Resources Board, 2000. *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*. October.

Area meets all ambient air quality standards with the exception of ground-level ozone, respirable particulate matter (PM_{10}), and fine particulate matter ($PM_{2.5}$).

Bay Area Air District (Air District)

The Bay Area Air District 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.

The Air District is the lead agency in developing plans to address attainment and maintenance of the NAAQS and CAAQS. The District also has permit authority over most types of stationary equipment utilized for the proposed project. The Air District 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.

The Air District'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.[7] 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 the Air District as impacted communities. They include Eastern San Francisco, Richmond/San Pablo, Western Alameda, San José, Vallejo, Concord, and Pittsburgh/Antioch. The project site is within the Western Alameda CARE area.

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.[8] The Air District has identified several overburdened areas within its boundaries. The project site is within an overburdened area as the Project site is scored at the 77th percentile on CalEnviroScreen, which is primarily due to high DPM and traffic exposure factors.[9]

[7] See Bay Area Air District: https://www.baaqmd.gov/community-health/community-health-protection-program/community-air-risk-evaluation-care-program.
[8] See Bay Area Air District: https://www.baaqmd.gov/~/media/dotgov/files/rules/reg-2-permits/2021-amendments/documents/20210722_01_appendixd_mapsofoverburdenedcommunities-pdf.pdf?la=en.
[9] OEHAA, CalEnviroScreen 4.0 Maps https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-40

Clean Air Plan

The Air District is responsible for developing a Clean Air Plan which guides the region's air quality planning efforts to attain both the National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS). The Air District's *2017 Clean Air Plan* is the current Clean Air Plan which contains district-wide control measures to reduce ozone precursor emissions (i.e., ROG and NO_X), particulate matter (PM_{10} and $PM_{2.5}$) and greenhouse gas (GHG) emissions.

Furnaces and Boilers and Water Heaters

In 2023, the Air District adopted the proposed amendments to Rules 9-4 and 9-6 that are intended to reduce emissions of NOx from residential and commercial water heaters. These amended rules will affect Bay Area households that use natural gas appliances by, essentially, prohibiting the installation of new natural gas-fired furnaces and water heaters. The rules require appliances that do not emit NOx. Currently, the only zero-NOx appliances available are electric appliances. Implementation begins in 2027, where only zero-NOx water heaters can be sold or installed, in 2029 where only zero-NOx furnaces can be sold or installed, and 2031 where only zero-NOx large commercial heaters can be sold or installed. Note that electric appliances would have zero emission of other criteria pollutants and zero emissions of direct GHG.

Bay Area Air District CEQA Air Quality Guidelines

In June 2010, the Air District adopted thresholds of significance to assist in the review of projects under CEQA. In 2023, the Air District revised the *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 Air District 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.[10] Air quality impacts and health risks are considered potentially significant if they exceed these thresholds.

The Air District 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_{10} and $PM_{2.5}$) to be less than significant if BMPs are implemented (listed below). The Air District 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.

[10] Bay Area Air District, 2023. *2022 CEQA Guidelines*. April.

Table 1. Bay Area Air District CEQA Significance Thresholds

Criteria Air Pollutant	Construction Thresholds		Operational Thresholds	
	Average Daily Emissions (lbs./day)		Average Daily Emissions (lbs./day)	Annual Average Emissions (tons/year)
ROG	54		54	10
NO_X	54		54	10
PM_{10}	82 (Exhaust)		82	15
$PM_{2.5}$	54 (Exhaust)		54	10
CO	Not Applicable		9.0 ppm (8-hour average) or 20.0 ppm (1-hour average)	
Fugitive Dust	Construction Dust Ordinance or other Best Management Practices (BMPs)*		Not Applicable	
Health Risks and Hazards	**Single Sources/ Individual Project**		**Combined Sources (Cumulative from all sources within 1000-foot zone of influence)**	
Excess Cancer Risk	>10.0 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 $PM_{2.5}$	>0.3 $\mu g/m^3$		>0.8 $\mu g/m^3$	

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

Source: Bay Area Air District, 2022

Basic Best Management Practices / Standard Permit Conditions: **Include measures 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 the Air District and listed below would reduce the air quality impacts associated with grading and new construction to a less-than-significant level. The contractor shall implement the following BMPs that are required of all projects:

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

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

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

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

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

6. 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 sites 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 also be visible to ensure compliance with applicable regulations.

The Air District strongly encourages enhanced BMPs for construction sites near schools, residential areas, or other sensitive land uses. Enhanced measures include:

- Limit the simultaneous occurrence of excavation, grading, and ground-disturbing construction activities.
- Install wind breaks (e.g., trees, fences) on the windward side(s) of actively disturbed areas of construction. Wind breaks should have at maximum 50 percent air porosity.
- Plant vegetative ground cover (e.g., fast-germinating native grass seed) in disturbed areas as soon as possible and watered appropriately until vegetation is established.
- Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent.
- Minimize the amount of excavated material or waste materials stored at the site.
- Hydroseed or apply non-toxic soil stabilizers to construction areas, including previously graded areas, that are inactive for at least 10 calendar days.

Alameda General Plan 2040

The Alameda General Plan 2040 was adopted by the City Council on November 30, 2021 and Amended on June 7, 2022.[11] It includes objectives, policies, and actions designed to guide and manage change to the physical, environmental, economic, and social conditions in the City of Alameda. The following objectives, goals, and actions are applicable to the proposed project:

Health and Safety Element

Objective 7: Protect Alamedans from the harmful effects of air pollutants.

[11] City of Alameda, *Alameda General Plan 2040*, June 7, 2022. Web: https://irp.cdn-website.com/f1731050/files/uploaded/AGP_Book_June2022_Amend-1.pdf

- *Policy HS-62:* **Wildfire Smoke**. Prepare for future wildfire smoke events

  - ***Actions***:

    c. **Indoor Air Quality.** Facilitate and expedite efforts by local property owners and businesses to improve indoor air quality and filtration systems.

    d. **Outdoor Air Quality.** Continue to work with regional and local organizations and businesses to reduce local sources of air pollutants.

- *Policy HS-64:* **Wood Smoke**. Adopt ordinances and regulations to reduce wood smoke in Alameda.

  - ***Actions***:

    a. **Wood Burning Fireplaces and Heaters.** Prohibit wood burning fireplaces and heaters in all new development and remodels.

- *Policy HS-65*: **Construction Air Pollution.** Protect public health by requiring best management practices at construction sites and carefully evaluating the potential health risks of projects that generate substantial toxic air contaminants or projects that propose to place a sensitive user in proximity to an existing source of contaminants.

  - ***Actions***:

    a. **Construction Dust**. Reduce dust and harmful air pollutants resulting from construction activities by requiring compliance with best management practices (BMPs) as recommended by the BAAQMD.

    b. **Health Risk Assessment.** Require preparation of a Health Risk Assessment in accordance with policies and procedures of the State Office of Environmental Health Hazard Assessment and the BAAQMD. Adopt recommended health risk mitigations for projects that generate substantial TAC emissions within 1,000 feet of sensitive receptors or for sensitive receptor uses proposed to be located within 1,000 feet of an existing major source of toxic air contaminants.

- *Policy HS-68:* **Toxic Air Contaminants.** Minimize and avoid exposure to toxic air contaminants.

  - ***Actions:***

    a. **New Sources.** As a condition of approval, future discretionary projects that generate substantial TAC emissions (that are not regulated by the BAAQMD, such as construction activities lasting greater than two months or facilities that include more than 100 truck trips per day, 40 trucks with transport refrigeration units (TRUs) per day, or where TRU unit operations exceed 300 hours per week)) that are located within 1,000 feet of sensitive receptors shall submit a Health Risk Assessment (HRA) prepared in accordance with policies and procedures of the State Office of Environmental Health Hazard Assessment and the BAAQMD prior to discretionary project approval. If the HRA shows that the incremental cancer risk, PM2.5 concentrations, or the appropriate non-cancer hazard index exceeds BAAQMD's project-level thresholds, then the applicant shall be required to identify and demonstrate that mitigation measures are capable of reducing potential PM2.5 concentrations, cancer risks, and non-cancer risks to below BAAQMD's project-level significance thresholds.

b. New Sensitive Receptors. As a condition of approval, proposed new sensitive receptor uses proposed within 1,000 feet of existing major sources of TACs (e.g., permitted stationary sources, highways, freeways and roadways with over 10,000 annual average daily traffic (AADT)) shall submit a Health Risk Assessment (HRA) to the City prior to future discretionary project approval. If the HRA shows that the incremental cancer risk, PM2.5 concentrations, or the appropriate non-cancer hazard index exceeds BAAQMD's cumulative-level thresholds, then the applicant shall be required to identify and demonstrate that mitigation measures (e.g., electrostatic filtering systems) are capable of reducing potential cancer and non-cancer risks to below BAAQMD's significance thresholds.

- *Policy HS*-69: **Construction Period Air Quality Impacts.** Minimize air quality impacts as the result of construction activities.

  - ***Actions:***

    a. Construction Mitigations. As a condition of approval, future discretionary projects shall implement the following measures or equivalent, expanded, or modified measures based on project- and site-specific conditions: all exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered at least two times per day; all haul trucks transporting soil, sand, or other loose material off-site shall be covered; 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 shall be prohibited; all vehicle speeds on unpaved roads shall be limited to 15 mph; all roadways, driveways, and sidewalks to be paved shall be completed as soon as possible; idling times shall be minimized either by shutting equipment off when not in use or reducing maximum idling time to 5 minutes; clear signage shall be provided for construction workers at all access points; all construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation; a publicly visible sign shall be posted with the telephone number and person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours; and the Air District's phone number shall also be visible to ensure compliance with applicable regulations.

AIR QUALITY IMPACTS AND CONDITIONS OF APPROVAL

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

The Air District 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). The Air District, 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*.[12] 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 Air District has also developed CEQA guidelines to assist lead agencies in evaluating the significance of air quality and GHG impacts. In formulating compliance strategies, the Air District 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 the Air District 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 Air District 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 the Air District's CEQA guidance. The Project would not introduce any substantial sources of air pollutants or sources permitted by the Air District. The proposed project would not conflict with the latest Clean Air planning efforts since 1) project would have emissions below the Air District 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_3 and $PM_{2.5}$ under both the NAAQS and the CAAQS. The area is also considered non-attainment for PM_{10} 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_3, $PM_{2.5}$ and PM_{10}, the Air District has established thresholds of significance for these air pollutants and their precursors. The O_3 precursor pollutant thresholds are for ROG and NOx, while PM_{10}, and $PM_{2.5}$ have specific thresholds. The thresholds apply to both construction period emissions and operational period emissions. The California Emissions Estimator Model (CalEEMod) Version 2022 was used to estimate emissions from construction activities and project operation.

[12] Bay Area Air District, 2017. *Final 2017 Clean Air Plan.*

Construction Period Emissions

CalEEMod predicted emissions from on-site construction activity, construction vehicle trips, and evaporative emissions. The project land use types and size, and anticipated construction schedule were input to CalEEMod. The CalEEMod model output along with construction inputs are included in *Attachment 1*.

<u>CalEEMod Inputs</u>

Land Use Inputs

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

Table 2. Summary of Project Land Use Inputs

Project Land Uses	Size	Units	Square Feet (sf)	Acreage
Apartments Mid Rise	356	Dwelling Unit	376,551	2.34
Enclosed Parking with Elevator	283	Parking Spaces	112,165	

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 defaults for a project of this type and size. The construction schedule assumed that the earliest start date would be January 2026 and would be built over a period of approximately 19 months or 404 construction workdays. The earliest full year of operation was assumed to be 2028.

Construction Truck Traffic Emissions

Construction would produce traffic in the form of worker trips and truck traffic. The traffic-related emissions are based on worker and vendor trip estimates produced by CalEEMod and haul trips that were computed based on provided building and estimate pavement demolition materials to be exported, estimated soil imported and/or exported to the site, and the estimated amount of asphalt and cement 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 were estimated by CalEEMod using the provided building demolition and the estimated pavement demolition and soil import/export values volumes. The provided amount of asphalt/concrete was converted to daily one-way trips, assuming two trips per delivery. These values are shown in the project construction equipment worksheet included in *Attachment 1.*

Summary of Computed Construction Emissions

Average daily emissions were annualized for each year of construction by dividing the annual construction emissions by the number of active workdays during that year. Table 3 shows the annualized average daily construction emissions of ROG, NO_X, PM_{10} exhaust, and $PM_{2.5}$ exhaust during construction of the project with the COA. As indicated in Table 3, the predicted annualized average project construction emissions with the COA would not exceed the Air District significance thresholds during any year of construction.

Table 3. Construction Period Emissions – With COA

Year	ROG	NOx	PM_{10} Exhaust	$PM_{2.5}$ Exhaust
Construction Emissions Per Year (Tons)				
2026	0.15	1.77	0.02	0.02
2027	2.72	0.71	0.01	0.01
Average Daily Construction Emissions Per Year (pounds/day)				
2026 (261 construction workdays)	1.19	13.55	0.16	0.15
2027 (143 construction workdays)	38.07	9.86	0.12	0.11
Bay Area Air District Thresholds (pounds per day)	*54* lbs./day	*54* lbs./day	*82* lbs./day	*54* lbs./day
Exceed Threshold?	No	No	No	No

Fugitive Dust Policies and Air District Recommendations

Construction activities, particularly during site preparation and grading, would temporarily generate fugitive dust in the form of PM_{10} and $PM_{2.5}$. Sources of fugitive dust include disturbed soils at the construction site and trucks carrying uncovered loads of soils. Unless properly controlled, vehicles leaving the site deposit mud on local streets, which is an additional source of airborne dust after it dries. The Air District recommends all projects include a "basic" set of best management practices (BMPs) to manage fugitive dust and considers impacts from dust (i.e., fugitive PM_{10} and $PM_{2.5}$) to be less-than-significant if BMPs are implemented to reduce these emissions. The Project would be required to implement the City of Alameda's General Plan Health and Safety Policy HS-65 Action A, Policy HS-69 Action A, and the Air District basic BMPs during construction, as described above.

Effectiveness of General Plan Policy HS-65 Action A and HS-69 Action A

The General Plan Policy HS-65 Action A and HS-69 Action A measures are consistent with the Air District-recommended basic BMPs for reducing fugitive dust contained in the Air District CEQA Air Quality Guidelines. For this analysis, only the basic set of BMPs are required as the Project emissions and $PM_{2.5}$ impacts were below the Air District thresholds. Enhanced BMPs would be required as control measures if air quality impacts were found to be significant.

Operational Period Emissions

ROG, PM, and NO_X emissions from the project would be generated primarily from autos driven by future residents. Evaporative emissions from architectural coatings and maintenance products (classified as consumer products) are also typical ROG emission sources from these types of land uses. CalEEMod was used to estimate emissions from operation of the proposed project assuming full build-out.

CalEEMod Inputs

Land Uses

The project land uses were input to CalEEMod as described above for the construction period modeling.

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 full operation would be 2028 if construction begins in 2026. Emissions associated with build-out later than 2028 would be lower.

Traffic Information

CalEEMod allows the user to enter specific vehicle trip generation rates. Therefore, the project-specific daily trip generation rate provided by the traffic consultant was entered into the model.[13] The project would produce approximately 1,640 daily trips. When accounting for the reduction of trips from the removal of the existing office uses of the site, the project would then produce 1,245 net new daily trips. The daily trip generation was calculated by the Traffic Consultant using the 11th Edition ITE trip generation rates and the size of the project land uses. The Saturday and Sunday trip rates were derived by multiplying the ratio of the CalEEMod default rates for Saturday and Sunday trips to the default weekday rate with the project-specific daily weekday trip rate. 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. These defaults are conservative, as the Project would need to meet the more stringent and latest 2022 or 2025 Title 24 Building Standards. The electricity produced emission rate was modified in CalEEMod. An emission factor of 105 pounds of CO_2 per megawatt of electricity produced was entered into CalEEMod, which is based on Alameda Municipal Power's (AMP) 2023 residential emissions rate.[14]

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

[13] Fehrs & Peers, *Draft Memorandum 2433 Mariner Square Drive Project – Transportation Impact Analysis*. November 26, 2024

[14] Alameda Municipal Power, Power Content Label. Web: https://alamedamp.com/336/Power-Content-Label

prohibited by the Air District Regulation 6, Rule 3.[15] Therefore, the number of woodstoves and fireplaces in CalEEMod were set to zero.

Other Inputs

Default model assumptions for emissions associated with solid waste generation and water use were applied to the project. Wastewater treatment was estimated to be 100 percent aerobic conditions to represent City wastewater treatment plant conditions. The project site would not send wastewater to on-site septic tanks or facultative lagoons.

Existing Uses

CalEEMod was used to estimate the emissions generated by operation of the existing office buildings. The 37,400-sf office buildings generate approximately 405 daily trips as estimated by the traffic consultant.[16] CalEEMod defaults were used to estimate energy use emissions, including emissions from natural gas usage, and solid waste generation. Emissions from wastewater use were based on 100 percent aerobic treatment to represent wastewater treatment plant conditions. The CalEEMod model inputs and output for the existing facility are included in *Attachment 1*.

Summary of Computed Operational Emissions

Annual emissions were predicted using CalEEMod and daily emissions were estimated assuming 365 days of operation. Table 4 shows net average daily operational emissions of ROG, NO_X, total PM_{10}, and total $PM_{2.5}$ during operation of the project. Operational period emissions would not exceed the Air District significance thresholds.

Table 4. Operational Period Emissions

Scenario	ROG	NOx	PM_{10}	$PM_{2.5}$
2028 Annual Project Operational Emissions (*tons/year*)	2.78	0.85	1.58	0.42
Existing Use Emissions *(tons/year)*	0.37	0.21	0.32	0.09
Net Operational Emissions (*tons/year*)	2.41	0.64	1.26	0.33
Bay Area Air District Thresholds (tons /year)	*10 tons*	*10 tons*	*15 tons*	*10 tons*
Exceed Thresholds?	*No*	*No*	*No*	*No*
2028 Daily Project Operational Emissions (*pounds/day*)[1]	13.18	3.53	6.89	1.81
Bay Area Air District Thresholds (pounds/day)	*54* lbs.	*54* lbs.	*82* lbs.	*54* lbs.
Exceed Threshold?	*No*	*No*	*No*	*No*
Notes: [1]Assumes 365-day operation.				

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

Project impacts related to increased health risk can occur by generating emissions of TACs and air pollutants. This project would introduce new sources of TACs during construction (e.g., on-site construction and truck hauling emissions) and operation (e.g., stationary and mobile sources).

[15] Bay Area Air District, https://www.baaqmd.gov/~/media/dotgov/files/rules/regulation-6-rule-3/documents/20191120_r0603_final-pdf.pdf?la=en
[16] Fehrs & Peers, *Draft Memorandum 2433 Mariner Square Drive Project – Transportation Impact Analysis*. November 26, 2024

Project construction activity would generate dust and equipment exhaust that would affect nearby sensitive receptors. The project would not include any diesel-powered stationary sources but would generate some traffic consisting of mostly light-duty gasoline-powered vehicles, which would produce TAC and air pollutant emissions.

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 existing sources of TACs was assessed in terms of the cumulative risk which includes the project contribution.

Health Risk Methodology

Health risk impacts were addressed by predicting increased cancer risk, the increase in annual $PM_{2.5}$ concentrations, and by computing the Hazard Index (HI) for non-cancer health risks. The risk impacts from the project are the combination of risks from construction and operation sources. These sources include on-site construction activity, construction truck hauling, and increased traffic from the project. To evaluate the increased cancer risks from the project, a 30-year exposure period was used, per the Air District guidance,[17] with the sensitive receptors being exposed to both project construction and operation emissions during this timeframe.

The project increased cancer risk is computed by summing the project construction cancer risk and operation cancer risk contributions. Unlike the increased maximum cancer risk, the annual $PM_{2.5}$ 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(s) that is most impacted by the project's construction and operation.

The methodology for computing health risks impacts is contained in Appendix E of the Air District CEQA Guidelines. TAC and $PM_{2.5}$ 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 closest to the project would be present for extended periods of time (i.e., chronic exposures). This includes the nearby residences, assisted living facilities, and preschool, as shown in Figure 1. Residential receptors were assumed to include all receptor groups (i.e., third trimester, infants, children, and adults) with almost continuous exposure to project emissions, while child receptors were assumed at the preschool and adult only receptors were assumed at the assisted living facilities. $PM_{2.5}$ concentrations were also calculated at worker receptors near the project site. 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.

[17] Bay Area Air District, Appendix E of the 2022 *CEQA Guidelines*, April 2023

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., $PM_{2.5}$) DPM poses both 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 $PM_{2.5}$.[18] 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.

Construction Emissions

The CalEEMod model provided total annual PM_{10} exhaust emissions (assumed to be DPM) for the off-road construction equipment and for exhaust emissions from on-road vehicles with the COA and the City's General Plan Policies/basic BMPs included in the totals. Total DPM emissions were estimated to be 0.03 tons (50 pounds) and fugitive dust emissions ($PM_{2.5}$) were estimated to be 0.05 tons (98 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 half-a-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 $PM_{2.5}$ concentrations at sensitive receptors (i.e., residences) in the vicinity of the project construction area. The AERMOD dispersion model is an Air District-recommended model for use in modeling analysis of these types of emission activities for CEQA projects.[19] Emission sources for the construction site were grouped into two categories: exhaust emissions of DPM and fugitive $PM_{2.5}$ dust emissions.

Construction Sources

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

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[18] DPM is identified by California as a toxic air contaminant due to the potential to cause cancer.
[19] Bay Area Air District, Appendix E of the 2022 *CEQA Guidelines*, April 2023
[20] 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

For modeling fugitive $PM_{2.5}$ emissions, a near-ground level release height of 7 feet (2 meters) was used for the area source. Fugitive dust emissions at construction sites come from a variety of sources, including truck and equipment travel, grading activities, truck loading (with loaders) and unloading (rear or bottom dumping), loaders and excavators moving and transferring soil and other materials, etc. All of these activities result in fugitive dust emissions at various heights at the point(s) of generation. Once generated, the dust plume will tend to rise as it moves downwind across the site and exit the site at a higher elevation than when it was generated. For all these reasons, a 7-foot release height was used as the average release height across the construction site. Emissions from the construction equipment and on-road vehicle travel were distributed throughout the modeled area sources. Figure 1 shows the project construction site and receptors.

AERMOD Inputs and Meteorological Data

The modeling used a five-year meteorological data set (2013-2017) from the Oakland International Airport prepared for use with the AERMOD model by the Air District. Construction emissions were modeled as occurring Monday through Friday between 7:00 a.m. to 7:00 p.m. when the majority of construction is expected to occur. Annual DPM and $PM_{2.5}$ concentrations from construction activities during the 2026-2027 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 multi-family residences, assisted living facilities, and worker receptors. [21] Receptor heights of 3 feet (1 meter) was used to represent the breathing height of children at the nearby preschool.

Health Risks from Project Operation

Diesel stationary equipment that could emit substantial TACs (e.g., emergency generator or fire pump) are not planned for this project. The Project would include an electrically powered fire pump, which would not be considered a TAC source and was therefore not included in the analysis. Diesel powered vehicles are the primary concern with local traffic-generated TAC impacts. This project would generate 1,245 net daily trips[22] with most of the trips being from light-duty gasoline-powered vehicles (i.e., passenger cars). In addition, the project is not anticipated to generate large amounts of truck trips that would involve diesel vehicles. Therefore, this is not a project of concern for mobile sources. Emissions from project traffic are considered negligible and not included within this analysis.

Summary of Project-Related Health Risks at the Off-Site MEIs

The maximum increased cancer risks were calculated using the modeled TAC concentrations combined with the Air District 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, while child exposures were assumed at the

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[21] Bay Area Air District, *Appendix E of the 2022 CEQA Guidelines.* April 2023

[22] Fehrs & Peers, *Draft Memorandum 2433 Mariner Square Drive Project – Transportation Impact Analysis*. November 26, 2024

preschool and adults only exposures was assumed at the assisted living facilities and at the worker receptors.

Non-cancer health hazards and maximum $PM_{2.5}$ concentrations were also calculated. The maximum modeled annual $PM_{2.5}$ concentration was calculated based on combined exhaust and fugitive concentrations. The maximum computed HI value was based on the ratio of the maximum DPM concentration modeled and the chronic inhalation DPM reference exposure level of 5 $\mu g/m^3$. The annual $PM_{2.5}$ concentration and HI values are based on an annual maximum risk for the entirety of the project.

The modeled maximum annual DPM and $PM_{2.5}$ concentrations were identified at nearby sensitive receptors to find the MEI. Results of this assessment indicated that the construction MEIs were located at two different receptors (i.e., one for cancer risk and the other for annual $PM_{2.5}$ concentration). The cancer risk MEI was located on the first floor (5 feet above the ground) of a multi-family unit west of the project site. The annual $PM_{2.5}$ MEI was located at a worker receptor east of the site, opposite Mariner Square Drive.

Additionally, modeling was conducted to predict the cancer risks, non-cancer health hazards, and maximum $PM_{2.5}$ concentrations associated with construction activities at the nearby preschool, assisted living facilities, and worker receptors. The maximum increased cancer risks were adjusted using child exposure parameters at the preschool and adult exposure parameters at the senior living facilities and worker receptors.

The location of the MEIs and nearby receptors are shown in Figure 1. Table 5 summarizes the maximum cancer risks, $PM_{2.5}$ concentrations, and health hazard indexes for project related construction activities. *Attachment 2* to this report includes the emission calculations used for the construction modeling and the cancer risk calculations.

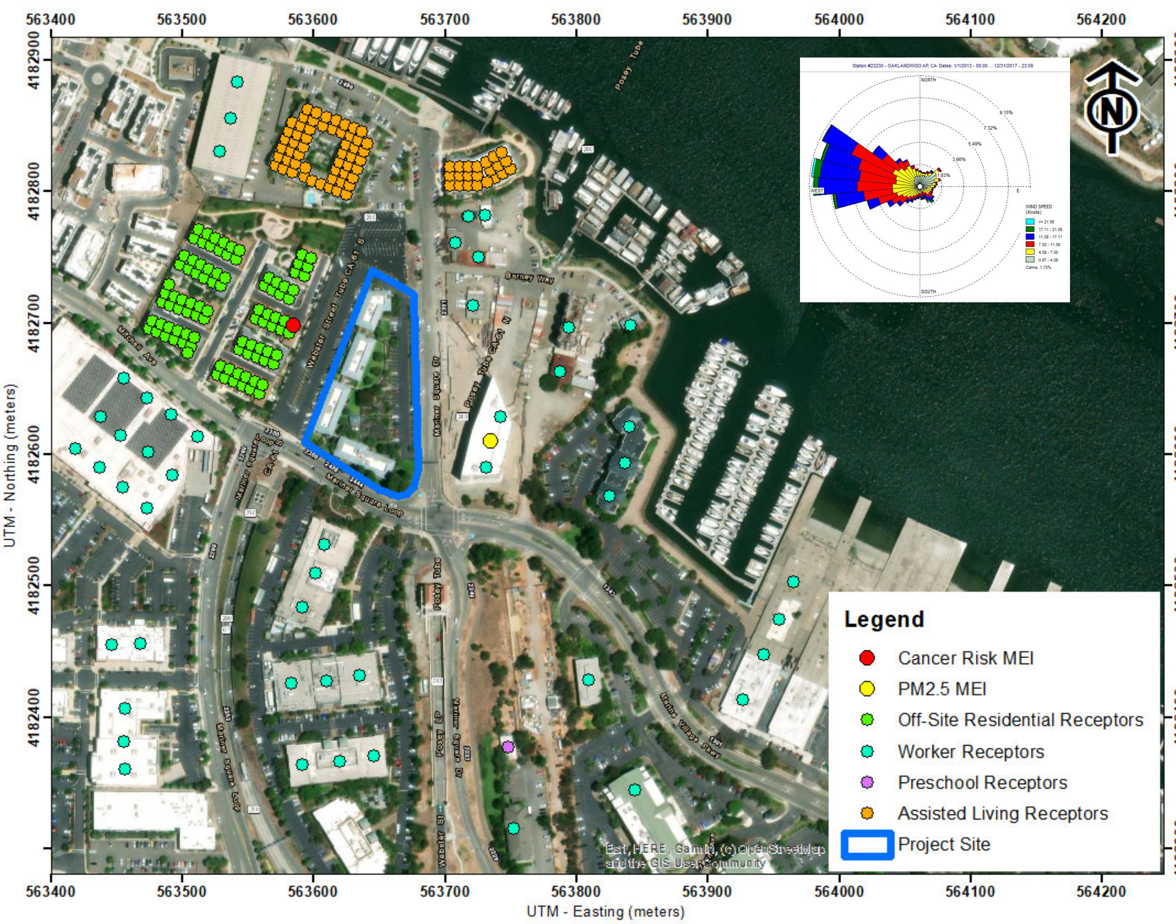
Health risk impacts are shown in Table 5. As shown in Table 5, with the incorporation of *Condition of Approval AQ-1* and City's General Plan Policies/basic BMPs for dust control (as described above), the Project's cancer risk, annual $PM_{2.5}$ concentration, and HI due to construction activities do not exceed their respective Air District single-source significance thresholds at the residential and worker MEI receptors.

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

Source		Cancer Risk[1] (per million)	Annual $PM_{2.5}$[1] (µg/m^3)	Hazard Index
Maximum Residential Impact – Maximum Cancer Risk Impact				
Project Construction	With COA[2]	2.84 (infant)	0.06	<0.01
Bay Area Air District Single-Source Threshold		***>10.0***	***>0.3***	***>1.0***
Exceed Threshold?	With COA[2]	*No*	*No*	*No*
Maximum Worker Impact - Maximum Annual $PM_{2.5}$ Concentration Impact				
Project Construction	With COA[2]	0.34 (adult)	0.21	0.01
Bay Area Air District Single-Source Threshold		***>10.0***	***>0.3***	***>1.0***
Exceed Threshold?	With COA[2]	*No*	*No*	*No*
Maximum Assisted Living Impact – Oakmont of Mariner Point Assisted Living				
Project Construction	With COA[2]	0.09 (adult)	0.04	<0.01
Bay Area Air District Single-Source Threshold		***>10.0***	***>0.3***	***>1.0***
Exceed Threshold?	With COA[2]	*No*	*No*	*No*
Maximum School Impact – Sugar & Spice Preschool				
Project Construction	With COA[2]	0.44 (child)	0.01	<0.01
Bay Area Air District Single-Source Threshold		***>10.0***	***>0.3***	***>1.0***
Exceed Threshold?	With COA[2]	*No*	*No*	*No*

Notes: [1] The maximum cancer risk and $PM_{2.5}$ concentration occur at different receptor locations.
[2] Construction equipment with Tier 4 Interim engines and basic BMPs as COAs.

Figure 1. Locations of Project Construction Site, Off-Site Receptors, Maximum TAC Impact Locations (MEIs), and Oakland Airport Wind Rose



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

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

A review of the project area using the Air District's geographic information systems (GIS) screening maps identified the existing health risks from nearby roadways and stationary sources at the MEIs. The Webster Street/Tube and Posey Tube (State Route 260) and four stationary sources were identified as TAC sources with the potential to affect the project MEIs. Figure 2 shows the sources affecting the MEIs. Health risk impacts from these sources upon the MEIs are reported in Table 6. Details of the cumulative screening, modeling, and health risk calculations are included in *Attachment 3.*

Figure 2. Locations of Project Site, MEIs, and Nearby TAC and $PM_{2.5}$ Sources

Local Roadways – Webster Street/Tube and Posey Tube (State Route 260)

The construction MEIs are located near the Webster Street/Tube and Posey Tube, also known as State Route 260 (SR-260). A refined analysis of potential health impacts from vehicle traffic on the Webster Street/Tube and Posey Tube (SR-260) was conducted since this roadway was identified as having high cancer risk and $PM_{2.5}$ concentration impacts on the Air District screening maps. The refined analysis involved predicting emissions for the traffic volume and mix of vehicle types on the Webster Street/Tube and Posey Tube (SR-260) near the project site and using an atmospheric dispersion model to predict exposure to TACs. The associated cancer risks are then computed based on the modeled exposures.

A review of the traffic information reported by Caltrans indicates that the Webster Street/Tube and Posey Tube (SR-260) traffic includes 62,000 vehicles per day (based on an annual average).[23] Traffic is composed of mostly light-duty vehicles with about 2.4 percent trucks, of which 0.7 percent are considered diesel heavy duty trucks and 1.7 percent are medium duty trucks.[24]

Emission Rates

This analysis involved the calculation of DPM, organic TACs, and $PM_{2.5}$ emissions for traffic on the Webster Street/Tube and Posey Tube (SR-260) using the Caltrans version of the EMFAC2021 emissions model, known as CT-EMFAC2021. CT-EMFAC2021 provides emission factors for mobile source criteria pollutants and TACs, including DPM. Emission processes modeled include running exhaust for DPM, $PM_{2.5}$ and total organic compounds (e.g., TOG), running evaporative losses for TOG, tire and brake wear, and fugitive road dust for $PM_{2.5}$. All $PM_{2.5}$ emissions from all vehicles were used, rather than just the $PM_{2.5}$ fraction from diesel powered vehicles, because all vehicle types (i.e., gasoline and diesel powered) produce $PM_{2.5}$. Additionally, $PM_{2.5}$ emissions from vehicle tire and brake wear and from re-entrained roadway dust were included. DPM emissions are projected to decrease in the future and are reflected in the CT-EMFAC2021 emissions data. Inputs to the model include region (i.e., Alameda County), type of road (i.e., major/collector), Caltrans estimated local truck mix on SR-260 (2.4 percent), year of analysis (2026 – construction start year), and season (annual).

In order to estimate TAC and $PM_{2.5}$ emissions over the 30-year exposure period used for calculating the increased cancer risks for sensitive receptors at the MEIs, the CT-EMFAC2021 model was used to develop vehicle emission factors for the year 2026. Emissions associated with vehicle travel depend on the year of analysis because emission control technology requirements are phased-in over time. Therefore, the earlier the year analyzed in the model, the higher the emission rates utilized by CT-EMFAC2021. Year 2026 emissions were conservatively assumed as being representative of future conditions over the time period that cancer risks are evaluated.

The traffic information reported by Caltrans for the Webster Street/Tube and Posey Tube (SR-260) was increased 1 percent per year due to overall regional growth; therefore, the Webster

[23] Caltrans. 2025. *2022 Traffic Volumes California State Highways.* Web: https://dot.ca.gov/programs/traffic-operations/census

[24] Caltrans. 2025. *2022 Annual Average Daily Truck Traffic on the California State Highway System.* Web: https://dot.ca.gov/programs/traffic-operations/census.

Street/Tube and Posey Tube (SR-260) traffic included 64,480 annual average vehicles per day with about 2.4 percent trucks (as explained above). Hourly traffic distributions were obtained from Caltrans Performance Measurement System (PeMS). PeMS data are collected in real-time from nearly 40,000 individual detectors spanning the freeway system across all major metropolitan areas of California.[25] Hourly traffic distributions for the Webster Street/Tube and Posey Tube (SR-260) were estimated from the average distributions of traffic on northbound and southbound Interstate 880 near Webster Street. This location is the closest roadway nearby where such data exists. The average fraction of daily traffic volume each hour was calculated for Interstate 880 and applied to the daily traffic volume on the Webster Street/Tube and Posey Tube (SR-260) to estimate hourly traffic emission rates. For all hours of the day, an average speed of 45 mph on the Webster Street/Tube and Posey Tube (SR-260) was assumed for all vehicles based on posted speed limit signs.

Dispersion Modeling

Dispersion modeling of TAC and $PM_{2.5}$ emissions was conducted using the EPA AERMOD air quality dispersion model, which is recommended by the Air District for this type of analysis.[26] TAC and $PM_{2.5}$ emissions from traffic on the Webster Street/Tube and Posey Tube (SR-260) were modeled. Because of the complex roadway that includes a substantial portion underground, two modeling techniques were employed:

- Open Roadways: For the open street portions of the Webster Street/Tube and Posey Tube (SR-260) south of the site, pollutant emissions on these roadways within 1,000 feet of the project site were evaluated as R-Line sources in AERMOD for the opposing travel directions. The R-Line source widths were set to 43.5 feet (13.3 meters) and release heights were set to 10.4 feet (3.16 meters) for DPM emissions and 4 feet (1.21 meters) for PM and TOG emissions. Emissions from traffic were distributed along the R-Line links.

- Tunneled Roadways: To represent the source of emissions from the tunnel portions of the Webster Street/Tube and Posey Tube (SR-260), volume sources in AERMOD were used. The volume source parameters were based on tunnel portal measurements from Google Earth, which included side lengths of 25 feet (7.6 meters) and release heights of 42 feet (12.8 meters). Emissions were computed for the entire lengths of each tunnel with half of those emissions assumed to be released from the two portals near the project site.

The same meteorological data and off-site sensitive receptor locations used in the previous construction dispersion modeling were used in the roadway modeling. Other inputs to the model included road geometry and hourly traffic emissions. Annual TAC and $PM_{2.5}$ concentrations using 2026 emissions from traffic on the Webster Street/Tube and Posey Tube (SR-260) were calculated. Concentrations were calculated at the MEIs with a receptor height of 5 feet (1.5 meter) to represent the breathing heights on the first floor of the residential and worker MEI receptor locations.

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[25] Caltrans PeMS, Web: https://dot.ca.gov/programs/traffic-operations/mpr/pems-source

[26] Bay Area Air District, *Appendix E of the* 2022 *CEQA Guidelines*, April 2023.

Computed Cancer and Non-Cancer Health Impacts

Maximum increased lifetime cancer risks and annual $PM_{2.5}$ concentrations for the Project receptors were computed using modeled TAC and $PM_{2.5}$ concentrations and the Air District methods and exposure parameters described in their CEQA guidance document.[27] The traffic-related cancer risk, $PM_{2.5}$ concentration, and HI impacts from the Webster Street/Tube and Posey Tube (SR-260) on the construction MEIs are shown in Table 6. Figure 2 shows the roadway links used for the modeling and receptor locations where concentrations were calculated. Details of the emission calculations, dispersion modeling, and cancer risk calculations for the MEI receptors from the Webster Street/Tube and Posey Tube (SR-260) traffic are provided in *Attachment 3.*

Bay Area Air District Permitted Stationary Sources

Permitted stationary sources of air pollution near the project site were identified using the Air District's *Permitted Stationary Sources 2022* GIS website, which identifies the location of nearby stationary sources and their estimated risk and hazard impacts, including emissions and adjustments to account for OEHHA guidance.[28] Four sources were identified using this tool; all emergency diesel generators. The Air District GIS website provided screening risks and hazards for the diesel generators, therefore a stationary source information request was not submitted.

The screening risk and hazard levels provided by the Air District for the stationary sources were adjusted for distance using the Air District's *Distance Adjustment Multiplier Tool for Diesel Internal Combustion Engines*. Health risk impacts from the stationary sources upon the MEI are reported in Table 6.

Summary of Cumulative Risks at the Off-Site MEIs

Table 6 reports both the project and cumulative health risk impacts at the sensitive receptors most affected by project construction (i.e., the MEIs). As shown in Table 6, with the incorporation of *Condition of Approval AQ-1* and City's General Plan Policies/basic BMPs for dust*,* the Project's cancer risk, annual $PM_{2.5}$ concentration, and HI do not exceed their respective Air District single-source or cumulative-source significance thresholds at the residential and worker MEI receptors.

[27] Bay Area Air District, *Appendix E of the* 2022 *CEQA Guidelines*, April 2023.
[28] Bay Area Air District, https://baaqmd.maps.arcgis.com/apps/webappviewer/index.html?id=845658c19eae4594b9f4b805fb9d89a3

Table 6. Cumulative Health Risk Impacts at the Project MEIs

Source		Cancer Risk[1] (per million)	Annual $PM_{2.5}$[1] ($\mu g/m^3$)	Hazard Index
Project Impacts				
Project Construction	With COA	2.84 (infant)	0.21	<0.01
Bay Area Air District Single-Source Threshold		***>10.0***	***>0.3***	***>1.0***
Exceed Threshold?	With COA	*No*	*No*	*No*
Cumulative Impacts				
Webster Street/Tube and Posey Tube, ADT 64,480		0.54	0.10	<0.01
City of Alameda Northside Pump Station (Facility ID #20438, Generator), MEIs at +1,000 feet		0.10	-	-
Target Store T2829 (Facility ID #21790, Generator), MEIs at 330 feet		<0.01	-	-
Checkerspot Inc. (Facility ID #202567, Generator), MEIs at +1,000 feet		0.03	-	-
Sila Nanotechnologies Inc (Facility ID#23904, Generator), MEIs at 815 feet		0.28	<0.01	-
Combined Sources	With COA	<3.80	<0.32	<0.02
Bay Area Air District Cumulative Source Threshold		***>100***	***>0.8***	***>10.0***
Exceed Threshold?	With COA	*No*	*No*	*No*

Notes: [1] The maximum cancer risk and $PM_{2.5}$ concentration occur at different receptor locations.

Supporting Documentation

Attachment 1 includes the CalEEMod output for project construction and operational criteria air pollutant emissions. Also included are any modeling assumptions.

Attachment 2 includes the health risk assessment. The AERMOD dispersion modeling files, which are quite voluminous, are available upon request and would be provided in digital format.

Attachment 3 includes the cumulative health risk screening, calculations, and modeling results from sources affecting the MEIs.

Attachment 1: CalEEMod Modeling Inputs and Outputs

COA Construction Criteria Air Pollutants							
Unmitigated	ROG	NOX	PM10 Exhaust	PM2.5 Exhaust	PM2.5 Fugitive	**CO2e**	
Year	Tons					MT	
Construction Equipment							
2026	0.15	1.77	0.02	0.02	0.12	767.47	
2027	2.72	0.71	0.01	0.01	0.04	321.28	
	Total Construction Emissions						
Tons	2.88	2.47	0.03	0.03		1088.75	
Pounds/Workdays	*Average Daily Emissions*					Workdays	
2026	1.19	13.55	0.16	0.15			**261**
2027	38.07	9.86	0.12	0.11			**143**
Threshold - lbs/day	**54.0**	**54.0**	**82.0**	**54.0**			
	Total Construction Emissions						
Pounds	5753.43	4947.99	57.64	54.60		0.00	
Average	14.24	12.25	0.14	0.14		0.00	404.00
Threshold - lbs/day	**54.0**	**54.0**	**82.0**	**54.0**			

Operational Criteria Air Pollutants				
Unmitigated	ROG	NOX	Total PM10	Total PM2.5
Year	Tons			
Total	2.78	0.86	1.58	0.42
	Existing Use Emissions			
Total	0.37	0.21	0.32	0.09
	Net Annual Operational Emissions			
Tons/year	2.41	0.64	1.26	0.33
Threshold - Tons/year	**10.0**	**10.0**	**15.0**	**10.0**
	Average Daily Emissions			
Pounds Per Day	13.18	3.53	6.89	1.81
Threshold - lbs/day	**54.0**	**54.0**	**82.0**	**54.0**

Category	**CO2e**			
	Project	Existing		
Mobile	1484.48	320.90		
Area	6.07	0.55		
Energy	245.82	85.69		
Water	11.74	6.17		
Waste	82.19	10.86		
Refrig.	0.45	0.02		
TOTAL	1830.74	424.19	0.00	0.00
Net GHG Emissions		1406.55		0.00

Number of Days Per Year				
2026	1/1/2026	12/31/26	365	261
2027	1/1/27	7/19/2027	200	143
			565	**405** ***Total Workdays***

Phase	Start Date	End Date	Days/Week	Workdays
Demolition	1/1/2026	1/29/2026	5	20
Site Preparation	1/30/2026	2/13/2026	5	10
Grading	2/14/2026	3/28/2026	5	30
Building Construction	3/29/2026	5/23/2027	5	300
Paving	6/22/2027	7/19/2027	5	20
Architectural Coating	5/24/2027	6/18/2027	5	20
Trenching	2/14/2026	3/28/2026	5	30

Air Quality/Noise Construction Information Data Request

Project Name: **2433 Mariner Square Loop, Alameda DEFAULTS**

Complete ALL Portions in Yellow

See Equipment Type TAB for type, horsepower and load factor

Project Size	**356 Dwelling Units**	**2.34 total project acres disturbed**	
	376,551 s.f. residential		**Pile Driving? Y/N? Yes**
	s.f. retail		**Project include on-site GENERATOR OR FIRE PUMP during project OPERATION (not construction)? Y/N? ____Yes**
	s.f. office/commercial		
	s.f. other, specify:		**IF YES (if BOTH separate values) -->**
	112,165 s.f. parking garage	**283 spaces**	**Kilowatts/Horsepower: _________**
	s.f. parking lot	**spaces**	**Fuel Type: ___Electric_________**
Construction Days (i.e, M-F)	**to**		**Location in project (Plans Desired if Available):**
Construction Hours	**am to**	**pm**	

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

Quantity	Description	HP	Load Factor	Hours/day	Total Work Days	Avg. Hours per day	HP Annual Hours	Comments
	Demolition	**Start Date:**	**1/1/2026**	**Total phase:**	**20**			**Overall Import/Export Volumes**
		End Date:	**1/29/2026**					
1	Concrete/Industrial Saws	33	0.73	8	20	8	3854	**Demolition Volume**
3	Excavators	36	0.38	8	20	8	6566	Square footage of buildings to be demolished
2	Rubber-Tired Dozers	367	0.4	8	20	8	46976	(*or* total tons to be hauled)
	Tractors/Loaders/Backhoes	84	0.37			0	0	_37,400_ square feet *or*
	Other Equipment?							_?_ Hauling volume (tons)
								Any pavement demolished and hauled? _Est. 26,000 square feet.
	Site Preparation	**Start Date:**	**1/30/2026**	**Total phase:**	**10**			
		End Date:	**2/13/2026**					
	Graders	148	0.41			0	0	
3	Rubber Tired Dozers	367	0.4	8	10	8	35232	
4	Tractors/Loaders/Backhoes	84	0.37	8	10	8	9946	
	Other Equipment?							
	Grading / Excavation	**Start Date:**	**2/14/2026**	**Total phase:**	**30**			
		End Date:	**3/28/2026**					**Soil Hauling Volume**
2	Excavators	36	0.38	8	30	8	6566	Export volume = _Est. 500_ cubic yards?
1	Graders	148	0.41	8	30	8	14563	Import volume = _Est. 500_ cubic yards?
1	Rubber Tired Dozers	367	0.4	8	30	8	35232	
	Concrete/Industrial Saws	33	0.73			0	0	
2	Tractors/Loaders/Backhoes	84	0.37	8	30	8	14918	
2	*Other Equipment?* Scrapers	423	0.48	8	30	8	97459	
	Trenching/Foundation	**Start Date:**	**2/14/2026**	**Total phase:**	**30**			
		End Date:	**3/28/2026**					
1	Tractor/Loader/Backhoe	84	0.37	8	30	8	7459	
1	Excavators	36	0.38	8	30	8	3283	
	Other Equipment?							
	Building - Exterior	**Start Date:**	**3/29/2026**	**Total phase:**	**300**			**Cement Trucks? _Est. 360_ Total Round-Trips**
		End Date:	**5/23/2027**					
1	Cranes	367	0.29	7	300	7	223503	Electric? (Y/N) ___ Otherwise assumed diesel
3	Forklifts	82	0.2	8	300	8	118080	Liquid Propane (LPG)? (Y/N) ___ Otherwise Assumed diesel
1	Generator Sets	14	0.74	8	300	8	24864	Or temporary line power? (Y/N) ___
3	Tractors/Loaders/Backhoes	84	0.37	7	300	7	195804	
1	Welders	46	0.45	8	300	8	49680	
	Other Equipment?							
Building - Interior/Architectural Coating		**Start Date:**	**5/24/2027**	**Total phase:**	**20**			
		End Date:	**6/21/2027**					
1	Air Compressors	37	0.48	6	20	6	2131	
	Aerial Lift	46	0.31			0	0	
	Other Equipment?							
	Paving	**Start Date:**	**6/22/2027**	**Total phase:**	**20**			
		Start Date:	**7/20/2027**					
	Cement and Mortar Mixers	10	0.56			0	0	
2	Pavers	81	0.42	8	20	8	10886	**Asphalt? ___ cubic yards or _Est. 3___ round trips?**
2	Paving Equipment	89	0.36	8	20	8	10253	
2	Rollers	36	0.38	8	20	8	4378	
	Tractors/Loaders/Backhoes	84	0.37			0	0	
	Other Equipment?							
	Additional Phases	**Start Date:**		**Total phase:**				
		Start Date:						
						#DIV/0!	0	
						#DIV/0!	0	
						#DIV/0!	0	
						#DIV/0!	0	
						#DIV/0!	0	

Equipment types listed in "Equipment Types" worksheet tab.

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

Complete one sheet for each project component

It is assumed that water trucks would be used during grading

Add or subtract phases and equipment, as appropriate

Modify horsepower or load factor, as appropriate

Traffic Consultant Trip Gen						CalEEMod Default		
Land Use		Size	Daily Trips	New Trips	Weekday Trip Gen	Weekday	Sat	Sun
Apartments Mid Rise	DU	356	1640	1640	***4.61***	5.44	4.91	4.09
						Rev	***4.16***	***3.46***
Existing								
General Office Building	ksf	37.4	405	405	***10.83***	9.74	2.21	0.7
						Rev	***2.46***	***0.78***

Table 1: Automobile Trip Generation

Use	Size[1]	Daily Trips	Weekday AM Peak Hour			Weekday PM Peak Hour		
			In	Out	Total	In	Out	Total
Proposed Use								
Multifamily Residential[2]	356 DU	1,640	33	112	145	85	54	139
Existing Use to be Demolished								
General Office[3]	-37.4 KSF	-405	-50	-7	-57	-9	-45	-54
Net New Project Trips		**1,245**	**-17**	**105**	**88**	**76**	**9**	**85**

Notes:

1. KSF = 1,000 square feet; DU = dwelling units
2. *ITE Trip Generation Manual (11th Edition)* land use category 221 (Multifamily Housing (Mid-Rise), General Urban/Suburban setting, Not Close to Rail Transit):
   Daily: T = 4.77 * X – 46.46
   AM Peak Hour: T = 0.44 * X – 11.61
   PM Peak Hour: T = 0.39 * X + 0.34
3. *ITE Trip Generation Manual (11th Edition)* land use category 710 (General Office Building, General Urban/Suburban setting):
   Daily: T = 10.84 * X
   AM Peak Hour: T = 1.52 * X
   PM Peak Hour: T = 1.44 * X

Source: Fehr & Peers, 2024.

25-010 2433 Mariner Square Loop, Alameda BMPs T4i 2028 Custom Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	25-010 2433 Mariner Square Loop, Alameda BMPs T4i 2028
Construction Start Date	1/1/2026
Operational Year	2028
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.90
Precipitation (days)	1.20
Location	2433 Mariner Square Loop, Alameda, CA 94501, USA
County	Alameda
City	Alameda
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	1458
EDFZ	1
Electric Utility	Alameda Power & Telecom
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.29

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
Apartments Mid Rise	356	Dwelling Unit	2.34	376,551	0.00	—	1,004	—

Enclosed Parking with Elevator	283	Space	0.00	112,165	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, Summer (Max)	—	—	—	—	—	—	—	—	—
Unmit.	265	12.5	0.40	2.95	3.35	0.37	0.71	1.08	6,745
Mit.	265	12.1	0.14	2.95	3.09	0.14	0.71	0.85	6,745
% Reduced	< 0.5%	3%	65%	—	8%	63%	—	22%	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Unmit.	3.32	29.5	1.24	7.81	9.05	1.14	3.97	5.12	7,555
Mit.	1.34	22.1	0.23	7.81	7.91	0.22	3.97	4.07	7,555
% Reduced	60%	25%	81%	—	13%	81%	—	20%	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—
Unmit.	15.1	11.3	0.40	2.27	2.67	0.37	0.64	1.01	4,636
Mit.	14.9	9.69	0.11	2.27	2.39	0.11	0.64	0.75	4,636
% Reduced	1%	15%	72%	—	11%	71%	—	26%	—
Annual (Max)	—	—	—	—	—	—	—	—	—
Unmit.	2.76	2.07	0.07	0.42	0.49	0.07	0.12	0.18	767

Mit.	2.72	1.77	0.02	0.42	0.44	0.02	0.12	0.14	767
% Reduced	1%	15%	72%	—	11%	71%	—	26%	—

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)	—	—	—	—	—	—	—	—	—
2026	1.37	12.1	0.14	2.95	3.09	0.14	0.71	0.85	6,745
2027	265	12.0	0.14	2.95	3.09	0.14	0.71	0.85	6,663
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—
2026	1.34	22.1	0.23	7.81	7.91	0.22	3.97	4.07	7,555
2027	1.30	12.3	0.14	2.95	3.09	0.14	0.71	0.85	6,472
Average Daily	—	—	—	—	—	—	—	—	—
2026	0.85	9.69	0.11	2.27	2.39	0.11	0.64	0.75	4,636
2027	14.9	3.86	0.05	0.86	0.91	0.04	0.21	0.25	1,941
Annual	—	—	—	—	—	—	—	—	—
2026	0.15	1.77	0.02	0.42	0.44	0.02	0.12	0.14	767
2027	2.72	0.71	0.01	0.16	0.17	0.01	0.04	0.05	321

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.	17.0	4.64	0.14	8.99	9.13	0.13	2.28	2.41	12,071
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—

Unmit.	14.3	5.01	0.12	8.99	9.11	0.12	2.28	2.40	11,436
Average Daily (Max)	—	—	—	—	—	—	—	—	—
Unmit.	15.2	4.69	0.13	8.54	8.67	0.12	2.16	2.29	11,058
Annual (Max)	—	—	—	—	—	—	—	—	—
Unmit.	2.78	0.86	0.02	1.56	1.58	0.02	0.40	0.42	1,831

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	4.89	3.62	0.06	8.99	9.05	0.06	2.28	2.33	9,942
Area	12.1	0.23	0.02	—	0.02	0.01	—	0.01	74.3
Energy	0.05	0.79	0.06	—	0.06	0.06	—	0.06	1,485
Water	—	—	—	—	—	—	—	—	70.9
Waste	—	—	—	—	—	—	—	—	496
Refrig.	—	—	—	—	—	—	—	—	2.70
Total	17.0	4.64	0.14	8.99	9.13	0.13	2.28	2.41	12,071
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Mobile	4.69	4.22	0.06	8.99	9.05	0.06	2.28	2.33	9,382
Area	9.51	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Energy	0.05	0.79	0.06	—	0.06	0.06	—	0.06	1,485
Water	—	—	—	—	—	—	—	—	70.9
Waste	—	—	—	—	—	—	—	—	496
Refrig.	—	—	—	—	—	—	—	—	2.70
Total	14.3	5.01	0.12	8.99	9.11	0.12	2.28	2.40	11,436
Average Daily	—	—	—	—	—	—	—	—	—

Mobile	4.40	3.78	0.06	8.54	8.59	0.05	2.16	2.22	8,966
Area	10.8	0.11	0.01	—	0.01	0.01	—	0.01	36.7
Energy	0.05	0.79	0.06	—	0.06	0.06	—	0.06	1,485
Water	—	—	—	—	—	—	—	—	70.9
Waste	—	—	—	—	—	—	—	—	496
Refrig.	—	—	—	—	—	—	—	—	2.70
Total	15.2	4.69	0.13	8.54	8.67	0.12	2.16	2.29	11,058
Annual	—	—	—	—	—	—	—	—	—
Mobile	0.80	0.69	0.01	1.56	1.57	0.01	0.40	0.40	1,484
Area	1.97	0.02	< 0.005	—	< 0.005	< 0.005	—	< 0.005	6.07
Energy	0.01	0.14	0.01	—	0.01	0.01	—	0.01	246
Water	—	—	—	—	—	—	—	—	11.7
Waste	—	—	—	—	—	—	—	—	82.2
Refrig.	—	—	—	—	—	—	—	—	0.45
Total	2.78	0.86	0.02	1.56	1.58	0.02	0.40	0.42	1,831

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	4.89	3.62	0.06	8.99	9.05	0.06	2.28	2.33	9,942
Area	12.1	0.23	0.02	—	0.02	0.01	—	0.01	74.3
Energy	0.05	0.79	0.06	—	0.06	0.06	—	0.06	1,485
Water	—	—	—	—	—	—	—	—	70.9
Waste	—	—	—	—	—	—	—	—	496
Refrig.	—	—	—	—	—	—	—	—	2.70
Total	17.0	4.64	0.14	8.99	9.13	0.13	2.28	2.41	12,071

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Mobile	4.69	4.22	0.06	8.99	9.05	0.06	2.28	2.33	9,382
Area	9.51	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Energy	0.05	0.79	0.06	—	0.06	0.06	—	0.06	1,485
Water	—	—	—	—	—	—	—	—	70.9
Waste	—	—	—	—	—	—	—	—	496
Refrig.	—	—	—	—	—	—	—	—	2.70
Total	14.3	5.01	0.12	8.99	9.11	0.12	2.28	2.40	11,436
Average Daily	—	—	—	—	—	—	—	—	—
Mobile	4.40	3.78	0.06	8.54	8.59	0.05	2.16	2.22	8,966
Area	10.8	0.11	0.01	—	0.01	0.01	—	0.01	36.7
Energy	0.05	0.79	0.06	—	0.06	0.06	—	0.06	1,485
Water	—	—	—	—	—	—	—	—	70.9
Waste	—	—	—	—	—	—	—	—	496
Refrig.	—	—	—	—	—	—	—	—	2.70
Total	15.2	4.69	0.13	8.54	8.67	0.12	2.16	2.29	11,058
Annual	—	—	—	—	—	—	—	—	—
Mobile	0.80	0.69	0.01	1.56	1.57	0.01	0.40	0.40	1,484
Area	1.97	0.02	< 0.005	—	< 0.005	< 0.005	—	< 0.005	6.07
Energy	0.01	0.14	0.01	—	0.01	0.01	—	0.01	246
Water	—	—	—	—	—	—	—	—	11.7
Waste	—	—	—	—	—	—	—	—	82.2
Refrig.	—	—	—	—	—	—	—	—	0.45
Total	2.78	0.86	0.02	1.56	1.58	0.02	0.40	0.42	1,831

3. Construction Emissions Details

3.2. Demolition (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	0.41	11.9	0.20	—	0.20	0.19	—	0.19	3,438
Demolition	—	—	—	1.94	1.94	—	0.29	0.29	—
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	0.65	0.01	—	0.01	0.01	—	0.01	188
Demolition	—	—	—	0.11	0.11	—	0.02	0.02	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.12	< 0.005	—	< 0.005	< 0.005	—	< 0.005	31.2
Demolition	—	—	—	0.02	0.02	—	< 0.005	< 0.005	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.00	0.12	0.12	0.00	0.03	0.03	120
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.04	2.12	0.03	0.45	0.49	0.02	0.12	0.15	1,765

Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.01	0.01	0.00	< 0.005	< 0.005	6.62
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.11	< 0.005	0.02	0.03	< 0.005	0.01	0.01	96.8
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	1.10
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	16.0

3.4. Site Preparation (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	0.64	14.7	0.10	—	0.10	0.10	—	0.10	5,316
Dust From Material Movement	—	—	—	7.67	7.67	—	3.94	3.94	—
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	0.40	< 0.005	—	< 0.005	< 0.005	—	< 0.005	146
Dust From Material Movement	—	—	—	0.21	0.21	—	0.11	0.11	—
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	0.07	< 0.005	—	< 0.005	< 0.005	—	< 0.005	24.1
Dust From Material Movement	—	—	—	0.04	0.04	—	0.02	0.02	—
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	140
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	3.86
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	0.64
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

3.6. Grading (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	0.80	19.4	0.18	—	0.18	0.18	—	0.18	6,621
Dust From Material Movement	—	—	—	3.59	3.59	—	1.43	1.43	—
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	1.60	0.01	—	0.01	0.01	—	0.01	544
Dust From Material Movement	—	—	—	0.30	0.30	—	0.12	0.12	—
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	0.29	< 0.005	—	< 0.005	< 0.005	—	< 0.005	90.1
Dust From Material Movement	—	—	—	0.05	0.05	—	0.02	0.02	—
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	0.06	0.06	0.00	0.17	0.17	0.00	0.04	0.04	160
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	0.36	0.01	0.08	0.08	< 0.005	0.02	0.02	301
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.01	0.01	0.00	< 0.005	< 0.005	13.2
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	24.7

Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	2.19
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	4.09

3.8. 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)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.41	9.53	0.12	—	0.12	0.11	—	0.11	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.41	9.53	0.12	—	0.12	0.11	—	0.11	2,405
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	0.23	5.18	0.06	—	0.06	0.06	—	0.06	1,309
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.95	0.01	—	0.01	0.01	—	0.01	217
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Worker	0.91	0.65	0.00	2.51	2.51	0.00	0.59	0.59	2,618

Vendor	0.05	1.76	0.02	0.40	0.42	0.02	0.11	0.13	1,548
Hauling	< 0.005	0.20	< 0.005	0.04	0.05	< 0.005	0.01	0.01	173
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.87	0.85	0.00	2.51	2.51	0.00	0.59	0.59	2,425
Vendor	0.04	1.86	0.02	0.40	0.42	0.02	0.11	0.13	1,546
Hauling	< 0.005	0.21	< 0.005	0.04	0.05	< 0.005	0.01	0.01	173
Average Daily	—	—	—	—	—	—	—	—	—
Worker	0.47	0.41	0.00	1.36	1.36	0.00	0.32	0.32	1,329
Vendor	0.02	0.99	0.01	0.22	0.23	0.01	0.06	0.07	841
Hauling	< 0.005	0.11	< 0.005	0.02	0.03	< 0.005	0.01	0.01	94.3
Annual	—	—	—	—	—	—	—	—	—
Worker	0.09	0.07	0.00	0.25	0.25	0.00	0.06	0.06	220
Vendor	< 0.005	0.18	< 0.005	0.04	0.04	< 0.005	0.01	0.01	139
Hauling	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	15.6

3.10. Building Construction (2027) - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.41	9.53	0.12	—	0.12	0.11	—	0.11	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.41	9.53	0.12	—	0.12	0.11	—	0.11	2,405
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	0.12	2.67	0.03	—	0.03	0.03	—	0.03	673
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.49	0.01	—	0.01	0.01	—	0.01	111
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Worker	0.87	0.57	0.00	2.51	2.51	0.00	0.59	0.59	2,569
Vendor	0.05	1.69	0.02	0.40	0.42	0.02	0.11	0.13	1,519
Hauling	< 0.005	0.19	< 0.005	0.04	0.05	< 0.005	0.01	0.01	170
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.84	0.76	0.00	2.51	2.51	0.00	0.59	0.59	2,380
Vendor	0.04	1.80	0.02	0.40	0.42	0.02	0.11	0.13	1,517
Hauling	< 0.005	0.20	< 0.005	0.04	0.05	< 0.005	0.01	0.01	170
Average Daily	—	—	—	—	—	—	—	—	—
Worker	0.23	0.19	0.00	0.70	0.70	0.00	0.16	0.16	671
Vendor	0.01	0.49	0.01	0.11	0.12	0.01	0.03	0.04	425
Hauling	< 0.005	0.06	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	47.5
Annual	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.00	0.13	0.13	0.00	0.03	0.03	111
Vendor	< 0.005	0.09	< 0.005	0.02	0.02	< 0.005	0.01	0.01	70.3
Hauling	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	7.86

3.12. Paving (2027) - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	7.21	0.09	—	0.09	0.08	—	0.08	1,516
Paving	0.00	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.39	< 0.005	—	< 0.005	< 0.005	—	< 0.005	83.1
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	0.07	< 0.005	—	< 0.005	< 0.005	—	< 0.005	13.8
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)	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.00	0.12	0.12	0.00	0.03	0.03	127
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.02	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	21.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.01	0.01	0.00	< 0.005	< 0.005	6.49

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	1.16
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	1.08
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	0.19

3.14. Architectural Coating (2027) - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	1.07	0.03	—	0.03	0.03	—	0.03	134
Architectural Coatings	265	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.06	< 0.005	—	< 0.005	< 0.005	—	< 0.005	7.34
Architectural Coatings	14.5	—	—	—	—	—	—	—	—
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	1.22
Architectural Coatings	2.65	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Worker	0.17	0.11	0.00	0.50	0.50	0.00	0.12	0.12	514
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.00	0.03	0.03	0.00	0.01	0.01	26.3
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	0.01	0.01	0.00	< 0.005	< 0.005	4.35
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 (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	0.07	2.28	0.04	—	0.04	0.03	—	0.03	433
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	0.19	< 0.005	—	< 0.005	< 0.005	—	< 0.005	35.6
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	0.03	< 0.005	—	< 0.005	< 0.005	—	< 0.005	5.90
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	0.04	0.04	0.00	0.01	0.01	40.0
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	3.31
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	0.55
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.1. 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)	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	4.89	3.62	0.06	8.99	9.05	0.06	2.28	2.33	9,942
Enclosed Parking with Elevator	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	4.89	3.62	0.06	8.99	9.05	0.06	2.28	2.33	9,942
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	4.69	4.22	0.06	8.99	9.05	0.06	2.28	2.33	9,382
Enclosed Parking with Elevator	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	4.69	4.22	0.06	8.99	9.05	0.06	2.28	2.33	9,382
Annual	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	0.80	0.69	0.01	1.56	1.57	0.01	0.40	0.40	1,484
Enclosed Parking with Elevator	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.80	0.69	0.01	1.56	1.57	0.01	0.40	0.40	1,484

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)	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	4.89	3.62	0.06	8.99	9.05	0.06	2.28	2.33	9,942
Enclosed Parking with Elevator	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	4.89	3.62	0.06	8.99	9.05	0.06	2.28	2.33	9,942

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	4.69	4.22	0.06	8.99	9.05	0.06	2.28	2.33	9,382
Enclosed Parking with Elevator	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	4.69	4.22	0.06	8.99	9.05	0.06	2.28	2.33	9,382
Annual	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	0.80	0.69	0.01	1.56	1.57	0.01	0.40	0.40	1,484
Enclosed Parking with Elevator	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.80	0.69	0.01	1.56	1.57	0.01	0.40	0.40	1,484

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)	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	356
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	121
Total	—	—	—	—	—	—	—	—	477
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	356
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	121

Total	—	—	—	—	—	—	—	—	477
Annual	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	59.0
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	20.1
Total	—	—	—	—	—	—	—	—	79.1

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)	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	356
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	121
Total	—	—	—	—	—	—	—	—	477
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	356
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	121
Total	—	—	—	—	—	—	—	—	477
Annual	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	59.0
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	20.1
Total	—	—	—	—	—	—	—	—	79.1

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)	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	0.05	0.79	0.06	—	0.06	0.06	—	0.06	1,007
Enclosed Parking with Elevator	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Total	0.05	0.79	0.06	—	0.06	0.06	—	0.06	1,007
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	0.05	0.79	0.06	—	0.06	0.06	—	0.06	1,007
Enclosed Parking with Elevator	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Total	0.05	0.79	0.06	—	0.06	0.06	—	0.06	1,007
Annual	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	0.01	0.14	0.01	—	0.01	0.01	—	0.01	167
Enclosed Parking with Elevator	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Total	0.01	0.14	0.01	—	0.01	0.01	—	0.01	167

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)	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	0.05	0.79	0.06	—	0.06	0.06	—	0.06	1,007

Enclosed Parking with Elevator	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Total	0.05	0.79	0.06	—	0.06	0.06	—	0.06	1,007
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	0.05	0.79	0.06	—	0.06	0.06	—	0.06	1,007
Enclosed Parking with Elevator	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Total	0.05	0.79	0.06	—	0.06	0.06	—	0.06	1,007
Annual	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	0.01	0.14	0.01	—	0.01	0.01	—	0.01	167
Enclosed Parking with Elevator	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Total	0.01	0.14	0.01	—	0.01	0.01	—	0.01	167

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	8.06	—	—	—	—	—	—	—	—
Architectural Coatings	1.45	—	—	—	—	—	—	—	—
Landscape Equipment	2.56	0.23	0.02	—	0.02	0.01	—	0.01	74.3
Total	12.1	0.23	0.02	—	0.02	0.01	—	0.01	74.3

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Consumer Products	8.06	—	—	—	—	—	—	—	—
Architectural Coatings	1.45	—	—	—	—	—	—	—	—
Total	9.51	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	1.47	—	—	—	—	—	—	—	—
Architectural Coatings	0.27	—	—	—	—	—	—	—	—
Landscape Equipment	0.23	0.02	< 0.005	—	< 0.005	< 0.005	—	< 0.005	6.07
Total	1.97	0.02	< 0.005	—	< 0.005	< 0.005	—	< 0.005	6.07

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	8.06	—	—	—	—	—	—	—	—
Architectural Coatings	1.45	—	—	—	—	—	—	—	—
Landscape Equipment	2.56	0.23	0.02	—	0.02	0.01	—	0.01	74.3
Total	12.1	0.23	0.02	—	0.02	0.01	—	0.01	74.3

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Consumer Products	8.06	—	—	—	—	—	—	—	—
Architectural Coatings	1.45	—	—	—	—	—	—	—	—
Total	9.51	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	1.47	—	—	—	—	—	—	—	—
Architectural Coatings	0.27	—	—	—	—	—	—	—	—
Landscape Equipment	0.23	0.02	< 0.005	—	< 0.005	< 0.005	—	< 0.005	6.07
Total	1.97	0.02	< 0.005	—	< 0.005	< 0.005	—	< 0.005	6.07

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)	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	70.9
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	70.9
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—

Apartments Mid Rise	—	—	—	—	—	—	—	—	70.9
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	70.9
Annual	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	11.7
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	11.7

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)	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	70.9
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	70.9
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	70.9
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	70.9
Annual	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	11.7

Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	11.7

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)	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	496
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	496
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	496
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	496
Annual	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	82.2
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	82.2

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)	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	496
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	496
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	496
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	496
Annual	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	82.2
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	82.2

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)	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	2.70
Total	—	—	—	—	—	—	—	—	2.70

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	2.70
Total	—	—	—	—	—	—	—	—	2.70
Annual	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	0.45
Total	—	—	—	—	—	—	—	—	0.45

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)	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	2.70
Total	—	—	—	—	—	—	—	—	2.70
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	2.70
Total	—	—	—	—	—	—	—	—	2.70
Annual	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	0.45
Total	—	—	—	—	—	—	—	—	0.45

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	1/1/2026	1/29/2026	5.00	20.0	—
Site Preparation	Site Preparation	1/30/2026	2/13/2026	5.00	10.0	—
Grading	Grading	2/14/2026	3/28/2026	5.00	30.0	—
Building Construction	Building Construction	3/29/2026	5/23/2027	5.00	300	—
Paving	Paving	6/22/2027	7/19/2027	5.00	20.0	—
Architectural Coating	Architectural Coating	5/24/2027	6/18/2027	5.00	20.0	—
Trenching	Trenching	2/14/2026	3/28/2026	5.00	30.0	—

5.2. Off-Road Equipment

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	2.00	8.00	367	0.40

Demolition	Excavators	Diesel	Tier 4 Interim	3.00	8.00	36.0	0.38
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	4.00	8.00	84.0	0.37
Site Preparation	Rubber Tired Dozers	Diesel	Tier 4 Interim	3.00	8.00	367	0.40
Grading	Graders	Diesel	Tier 4 Interim	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Tier 4 Interim	1.00	8.00	367	0.40
Grading	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	2.00	8.00	84.0	0.37
Grading	Excavators	Diesel	Tier 4 Interim	2.00	8.00	36.0	0.38
Grading	Scrapers	Diesel	Tier 4 Interim	2.00	8.00	423	0.48
Building Construction	Cranes	Diesel	Tier 4 Interim	1.00	7.00	367	0.29
Building Construction	Forklifts	Diesel	Tier 4 Interim	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	3.00	7.00	84.0	0.37
Building Construction	Welders	Diesel	Tier 4 Interim	1.00	8.00	46.0	0.45
Paving	Pavers	Diesel	Tier 4 Interim	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Tier 4 Interim	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Tier 4 Interim	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Tier 4 Interim	1.00	6.00	37.0	0.48
Trenching	Tractors/Loaders/Backhoes	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

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	15.0	11.7	LDA,LDT1,LDT2

Demolition	Vendor	—	8.40	HHDT,MHDT
Demolition	Hauling	24.4	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	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	20.0	11.7	LDA,LDT1,LDT2
Grading	Vendor	—	8.40	HHDT,MHDT
Grading	Hauling	4.17	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	303	11.7	LDA,LDT1,LDT2
Building Construction	Vendor	56.4	8.40	HHDT,MHDT
Building Construction	Hauling	2.40	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	11.7	LDA,LDT1,LDT2
Paving	Vendor	—	8.40	HHDT,MHDT
Paving	Hauling	0.30	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	60.7	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	762,516	254,172	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	37,400	—
Site Preparation	—	—	15.0	0.00	—
Grading	500	500	90.0	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
Apartments Mid Rise	—	0%
Enclosed Parking with Elevator	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
2026	0.00	453	0.03	< 0.005
2027	0.00	453	0.03	< 0.005

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
Apartments Mid Rise	1,641	1,481	1,232	569,323	12,733	11,490	9,557	4,417,226
Enclosed Parking with Elevator	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
Apartments Mid Rise	1,641	1,481	1,232	569,323	12,733	11,490	9,557	4,417,226
Enclosed Parking with Elevator	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)
Apartments Mid Rise	—
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)
Apartments Mid Rise	—
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)
762515.775	254,172	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)
Apartments Mid Rise	1,214,477	105	0.0330	0.0040	3,134,249
Enclosed Parking with Elevator	414,049	105	0.0330	0.0040	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)

Apartments Mid Rise	1,214,477	105	0.0330	0.0040	3,134,249
Enclosed Parking with Elevator	414,049	105	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Apartments Mid Rise	12,641,863	0.00
Enclosed Parking with Elevator	0.00	0.00

5.12.2. Mitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Apartments Mid Rise	12,641,863	0.00
Enclosed Parking with Elevator	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Apartments Mid Rise	263	—
Enclosed Parking with Elevator	0.00	—

5.13.2. Mitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Apartments Mid Rise	263	—
Enclosed Parking with Elevator	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
Apartments Mid Rise	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Apartments Mid Rise	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
Apartments Mid Rise	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Apartments Mid Rise	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	5.62	annual days of extreme heat
Extreme Precipitation	6.50	annual days with precipitation above 20 mm
Sea Level Rise	0.76	meters of inundation depth
Wildfire	7.25	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (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.

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	3.12
AQ-PM	43.5
AQ-DPM	97.6
Drinking Water	4.27
Lead Risk Housing	10.4
Pesticides	0.00
Toxic Releases	48.4
Traffic	58.6
Effect Indicators	—
CleanUp Sites	97.7
Groundwater	100.0
Haz Waste Facilities/Generators	96.8
Impaired Water Bodies	87.0
Solid Waste	80.0
Sensitive Population	—
Asthma	74.0
Cardio-vascular	51.8
Low Birth Weights	82.3
Socioeconomic Factor Indicators	—
Education	48.8
Housing	32.3

Linguistic	47.1
Poverty	58.3
Unemployment	87.4

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	46.49044014
Employed	20.45425382
Median HI	35.46772745
Education	—
Bachelor's or higher	75.55498524
High school enrollment	100
Preschool enrollment	70.24252534
Transportation	—
Auto Access	26.17733864
Active commuting	90.90209162
Social	—
2-parent households	36.17348903
Voting	57.15385602
Neighborhood	—
Alcohol availability	78.36519954
Park access	43.39792121
Retail density	49.89092776
Supermarket access	42.92313615
Tree canopy	54.44629796
Housing	—

Homeownership	25.08661619
Housing habitability	58.73219556
Low-inc homeowner severe housing cost burden	74.6439112
Low-inc renter severe housing cost burden	91.47953291
Uncrowded housing	58.74502759
Health Outcomes	—
Insured adults	78.05723085
Arthritis	94.7
Asthma ER Admissions	29.3
High Blood Pressure	97.2
Cancer (excluding skin)	85.3
Asthma	51.9
Coronary Heart Disease	95.4
Chronic Obstructive Pulmonary Disease	86.1
Diagnosed Diabetes	91.2
Life Expectancy at Birth	32.0
Cognitively Disabled	35.0
Physically Disabled	63.7
Heart Attack ER Admissions	38.2
Mental Health Not Good	57.3
Chronic Kidney Disease	95.6
Obesity	83.6
Pedestrian Injuries	19.6
Physical Health Not Good	78.6
Stroke	88.3
Health Risk Behaviors	—
Binge Drinking	22.7
Current Smoker	52.6

No Leisure Time for Physical Activity	62.9
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	8.2
Children	23.1
Elderly	88.2
English Speaking	26.5
Foreign-born	50.2
Outdoor Workers	84.5
Climate Change Adaptive Capacity	—
Impervious Surface Cover	37.3
Traffic Density	35.6
Traffic Access	54.9
Other Indices	—
Hardship	43.8
Other Decision Support	—
2016 Voting	38.4

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	77.0
Healthy Places Index Score for Project Location (b)	58.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
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
Land Use	Total lot acreage, number of units/parking spaces and square footages from provided plans.
Construction: Construction Phases	Defaults based on provided land uses with added trenching. Reviewed and confirmed by applicant.
Construction: Off-Road Equipment	Defaults - added trenching. Reviewed and confirmed by applicant.
Characteristics: Utility Information	Alameda Power & Telecom is now called Alameda Municipal Power. Alameda Municipal Power rate = 105 lb/MWh.
Construction: Trips and VMT	Demolition = Est. 26,000 sf of pavement demo'ed and hauled (2.9 trips/day), Building Construction = Est. 360 concrete truck round trips (2.4 trips/day), Paving = Est. 3 asphalt truck round trips (0.3 trips/day).
Construction: On-Road Fugitive Dust	Air district BMPs = 15 mph. Required by Alameda GP.
Operations: Vehicle Data	Provided trip generation (2433 Mariner Sq TIA_20241126).
Operations: Hearths	No hearths.
Operations: Water and Waste Water	Wastewater treatment 100% aerobic - no septic tanks or lagoons.

25-010 2433 Mariner Square, Alameda Existing Detailed Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	25-010 2433 Mariner Square, Alameda Existing
Operational Year	2025
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.90
Precipitation (days)	1.20
Location	2433 Mariner Square Loop, Alameda, CA 94501, USA
County	Alameda
City	Alameda
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	1458
EDFZ	1
Electric Utility	Alameda Power & Telecom
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.29

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
General Office Building	37.4	1000sqft	0.86	37,400	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

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.	2.58	1.34	0.04	2.31	2.35	0.04	0.59	0.62	3,328
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Unmit.	2.25	1.52	0.04	2.31	2.35	0.03	0.59	0.62	3,166
Average Daily (Max)	—	—	—	—	—	—	—	—	—
Unmit.	2.05	1.16	0.03	1.75	1.78	0.03	0.44	0.47	2,562
Annual (Max)	—	—	—	—	—	—	—	—	—
Unmit.	0.37	0.21	0.01	0.32	0.32	0.01	0.08	0.09	424

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	1.39	1.09	0.02	2.31	2.33	0.02	0.59	0.60	2,701
Area	1.17	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	6.71
Energy	0.01	0.24	0.02	—	0.02	0.02	—	0.02	518
Water	—	—	—	—	—	—	—	—	37.3

Waste	—	—	—	—	—	—	—	—	65.6
Refrig.	—	—	—	—	—	—	—	—	0.09
Total	2.58	1.34	0.04	2.31	2.35	0.04	0.59	0.62	3,328
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Mobile	1.33	1.28	0.02	2.31	2.33	0.02	0.59	0.60	2,545
Area	0.91	—	—	—	—	—	—	—	—
Energy	0.01	0.24	0.02	—	0.02	0.02	—	0.02	518
Water	—	—	—	—	—	—	—	—	37.3
Waste	—	—	—	—	—	—	—	—	65.6
Refrig.	—	—	—	—	—	—	—	—	0.09
Total	2.25	1.52	0.04	2.31	2.35	0.03	0.59	0.62	3,166
Average Daily	—	—	—	—	—	—	—	—	—
Mobile	0.99	0.91	0.01	1.75	1.76	0.01	0.44	0.46	1,938
Area	1.04	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	3.31
Energy	0.01	0.24	0.02	—	0.02	0.02	—	0.02	518
Water	—	—	—	—	—	—	—	—	37.3
Waste	—	—	—	—	—	—	—	—	65.6
Refrig.	—	—	—	—	—	—	—	—	0.09
Total	2.05	1.16	0.03	1.75	1.78	0.03	0.44	0.47	2,562
Annual	—	—	—	—	—	—	—	—	—
Mobile	0.18	0.17	< 0.005	0.32	0.32	< 0.005	0.08	0.08	321
Area	0.19	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.55
Energy	< 0.005	0.04	< 0.005	—	< 0.005	< 0.005	—	< 0.005	85.7
Water	—	—	—	—	—	—	—	—	6.17
Waste	—	—	—	—	—	—	—	—	10.9
Refrig.	—	—	—	—	—	—	—	—	0.02
Total	0.37	0.21	0.01	0.32	0.32	0.01	0.08	0.09	424

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)	—	—	—	—	—	—	—	—	—
General Office Building	1.39	1.09	0.02	2.31	2.33	0.02	0.59	0.60	2,701
Total	1.39	1.09	0.02	2.31	2.33	0.02	0.59	0.60	2,701
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
General Office Building	1.33	1.28	0.02	2.31	2.33	0.02	0.59	0.60	2,545
Total	1.33	1.28	0.02	2.31	2.33	0.02	0.59	0.60	2,545
Annual	—	—	—	—	—	—	—	—	—
General Office Building	0.18	0.17	< 0.005	0.32	0.32	< 0.005	0.08	0.08	321
Total	0.18	0.17	< 0.005	0.32	0.32	< 0.005	0.08	0.08	321

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)	—	—	—	—	—	—	—	—	—
General Office Building	—	—	—	—	—	—	—	—	232

Total	—	—	—	—	—	—	—	—	232
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
General Office Building	—	—	—	—	—	—	—	—	232
Total	—	—	—	—	—	—	—	—	232
Annual	—	—	—	—	—	—	—	—	—
General Office Building	—	—	—	—	—	—	—	—	38.4
Total	—	—	—	—	—	—	—	—	38.4

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)	—	—	—	—	—	—	—	—	—
General Office Building	0.01	0.24	0.02	—	0.02	0.02	—	0.02	285
Total	0.01	0.24	0.02	—	0.02	0.02	—	0.02	285
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
General Office Building	0.01	0.24	0.02	—	0.02	0.02	—	0.02	285
Total	0.01	0.24	0.02	—	0.02	0.02	—	0.02	285
Annual	—	—	—	—	—	—	—	—	—
General Office Building	< 0.005	0.04	< 0.005	—	< 0.005	< 0.005	—	< 0.005	47.3
Total	< 0.005	0.04	< 0.005	—	< 0.005	< 0.005	—	< 0.005	47.3

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)	—	—	—	—	—	—	—	—	—
Consumer Products	0.80	—	—	—	—	—	—	—	—
Architectural Coatings	0.11	—	—	—	—	—	—	—	—
Landscape Equipment	0.27	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	6.71
Total	1.17	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	6.71
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Consumer Products	0.80	—	—	—	—	—	—	—	—
Architectural Coatings	0.11	—	—	—	—	—	—	—	—
Total	0.91	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—
Consumer Products	0.15	—	—	—	—	—	—	—	—
Architectural Coatings	0.02	—	—	—	—	—	—	—	—
Landscape Equipment	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.55
Total	0.19	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.55

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)	—	—	—	—	—	—	—	—	—
General Office Building	—	—	—	—	—	—	—	—	37.3
Total	—	—	—	—	—	—	—	—	37.3
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
General Office Building	—	—	—	—	—	—	—	—	37.3
Total	—	—	—	—	—	—	—	—	37.3
Annual	—	—	—	—	—	—	—	—	—
General Office Building	—	—	—	—	—	—	—	—	6.17
Total	—	—	—	—	—	—	—	—	6.17

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)	—	—	—	—	—	—	—	—	—
General Office Building	—	—	—	—	—	—	—	—	65.6
Total	—	—	—	—	—	—	—	—	65.6
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
General Office Building	—	—	—	—	—	—	—	—	65.6
Total	—	—	—	—	—	—	—	—	65.6
Annual	—	—	—	—	—	—	—	—	—

General Office Building	—	—	—	—	—	—	—	—	10.9
Total	—	—	—	—	—	—	—	—	10.9

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)	—	—	—	—	—	—	—	—	—
General Office Building	—	—	—	—	—	—	—	—	0.09
Total	—	—	—	—	—	—	—	—	0.09
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
General Office Building	—	—	—	—	—	—	—	—	0.09
Total	—	—	—	—	—	—	—	—	0.09
Annual	—	—	—	—	—	—	—	—	—
General Office Building	—	—	—	—	—	—	—	—	0.02
Total	—	—	—	—	—	—	—	—	0.02

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	—	—	—	—	—	—	—	—	—

4.8. 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	—	—	—	—	—	—	—	—	—

4.9. 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	—	—	—	—	—	—	—	—	—

4.10. 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	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—

5. Activity Data

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
General Office Building	405	92.0	29.2	111,919	3,273	743	236	904,267

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

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)
0	0.00	56,100	18,700	—

5.10.3. Landscape Equipment

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)
General Office Building	791,707	105	0.0330	0.0040	888,261

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
General Office Building	6,647,242	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
General Office Building	34.8	—

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
General Office Building	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
General Office Building	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0

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

5.16. 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. Biomass Cover Type

5.18.1.1. Unmitigated

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)

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	5.62	annual days of extreme heat
Extreme Precipitation	6.50	annual days with precipitation above 20 mm
Sea Level Rise	0.76	meters of inundation depth
Wildfire	7.25	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (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	3.12
AQ-PM	43.5
AQ-DPM	97.6
Drinking Water	4.27
Lead Risk Housing	10.4
Pesticides	0.00
Toxic Releases	48.4
Traffic	58.6
Effect Indicators	—
CleanUp Sites	97.7
Groundwater	100.0
Haz Waste Facilities/Generators	96.8
Impaired Water Bodies	87.0
Solid Waste	80.0
Sensitive Population	—
Asthma	74.0
Cardio-vascular	51.8
Low Birth Weights	82.3
Socioeconomic Factor Indicators	—
Education	48.8
Housing	32.3
Linguistic	47.1
Poverty	58.3
Unemployment	87.4

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	46.49044014
Employed	20.45425382
Median HI	35.46772745
Education	—
Bachelor's or higher	75.55498524
High school enrollment	100
Preschool enrollment	70.24252534
Transportation	—
Auto Access	26.17733864
Active commuting	90.90209162
Social	—
2-parent households	36.17348903
Voting	57.15385602
Neighborhood	—
Alcohol availability	78.36519954
Park access	43.39792121
Retail density	49.89092776
Supermarket access	42.92313615
Tree canopy	54.44629796
Housing	—
Homeownership	25.08661619
Housing habitability	58.73219556
Low-inc homeowner severe housing cost burden	74.6439112
Low-inc renter severe housing cost burden	91.47953291

Uncrowded housing	58.74502759
Health Outcomes	—
Insured adults	78.05723085
Arthritis	94.7
Asthma ER Admissions	29.3
High Blood Pressure	97.2
Cancer (excluding skin)	85.3
Asthma	51.9
Coronary Heart Disease	95.4
Chronic Obstructive Pulmonary Disease	86.1
Diagnosed Diabetes	91.2
Life Expectancy at Birth	32.0
Cognitively Disabled	35.0
Physically Disabled	63.7
Heart Attack ER Admissions	38.2
Mental Health Not Good	57.3
Chronic Kidney Disease	95.6
Obesity	83.6
Pedestrian Injuries	19.6
Physical Health Not Good	78.6
Stroke	88.3
Health Risk Behaviors	—
Binge Drinking	22.7
Current Smoker	52.6
No Leisure Time for Physical Activity	62.9
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	8.2

Children	23.1
Elderly	88.2
English Speaking	26.5
Foreign-born	50.2
Outdoor Workers	84.5
Climate Change Adaptive Capacity	—
Impervious Surface Cover	37.3
Traffic Density	35.6
Traffic Access	54.9
Other Indices	—
Hardship	43.8
Other Decision Support	—
2016 Voting	38.4

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	77.0
Healthy Places Index Score for Project Location (b)	58.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
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	Alameda Power & Telecom is now called Alameda Municipal Power. Alameda Municipal Power 2023 rate = 105 lb/MWh.
Operations: Vehicle Data	Provided trip gen (2433 Mariner Sq TIA_20241126).
Operations: Water and Waste Water	Wastewater treatment 100% aerobic - no septic tanks or lagoons.

25-010 2433 Mariner Square Loop, Alameda BMPs T4i HRA Custom Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	25-010 2433 Mariner Square Loop, Alameda BMPs T4i HRA
Construction Start Date	1/1/2026
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.90
Precipitation (days)	1.20
Location	2433 Mariner Square Loop, Alameda, CA 94501, USA
County	Alameda
City	Alameda
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	1458
EDFZ	1
Electric Utility	Alameda Power & Telecom
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.29

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
Apartments Mid Rise	356	Dwelling Unit	2.34	376,551	0.00	—	1,004	—

Enclosed Parking with Elevator	283	Space	0.00	112,165	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, Summer (Max)	—	—	—	—	—	—	—	—	—
Unmit.	265	10.7	0.38	0.13	0.51	0.35	0.03	0.38	2,733
Mit.	265	10.4	0.12	0.13	0.25	0.11	0.03	0.15	2,733
% Reduced	< 0.5%	3%	68%	—	51%	67%	—	62%	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Unmit.	3.31	29.2	1.24	7.67	8.91	1.14	3.94	5.08	7,083
Mit.	1.24	21.8	0.22	7.67	7.77	0.21	3.94	4.04	7,083
% Reduced	63%	25%	82%	—	13%	81%	—	21%	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—
Unmit.	15.1	10.2	0.38	0.69	1.07	0.35	0.26	0.61	2,405
Mit.	14.9	8.55	0.10	0.69	0.78	0.09	0.26	0.35	2,405
% Reduced	1%	16%	75%	—	27%	74%	—	43%	—
Annual (Max)	—	—	—	—	—	—	—	—	—
Unmit.	2.75	1.86	0.07	0.13	0.20	0.06	0.05	0.11	398

Mit.	2.72	1.56	0.02	0.13	0.14	0.02	0.05	0.06	398
% Reduced	1%	16%	75%	—	27%	74%	—	43%	—

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)	—	—	—	—	—	—	—	—	—
2026	1.28	10.4	0.12	0.13	0.25	0.11	0.03	0.15	2,733
2027	265	10.4	0.12	0.13	0.25	0.11	0.03	0.15	2,727
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—
2026	1.24	21.8	0.22	7.67	7.77	0.21	3.94	4.04	7,083
2027	1.21	10.5	0.12	0.13	0.25	0.11	0.03	0.15	2,724
Average Daily	—	—	—	—	—	—	—	—	—
2026	0.79	8.55	0.10	0.69	0.78	0.09	0.26	0.35	2,405
2027	14.9	3.37	0.04	0.04	0.08	0.04	0.01	0.05	854
Annual	—	—	—	—	—	—	—	—	—
2026	0.14	1.56	0.02	0.13	0.14	0.02	0.05	0.06	398
2027	2.72	0.61	0.01	0.01	0.01	0.01	< 0.005	0.01	141

3. Construction Emissions Details

3.2. Demolition (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	0.41	11.9	0.20	—	0.20	0.19	—	0.19	3,438
Demolition	—	—	—	1.94	1.94	—	0.29	0.29	—
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	0.65	0.01	—	0.01	0.01	—	0.01	188
Demolition	—	—	—	0.11	0.11	—	0.02	0.02	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.12	< 0.005	—	< 0.005	< 0.005	—	< 0.005	31.2
Demolition	—	—	—	0.02	0.02	—	< 0.005	< 0.005	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.04	0.01	0.00	0.01	0.01	0.00	< 0.005	< 0.005	8.10
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.02	0.41	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	87.2
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.44
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	4.74
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.07
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	0.78

3.4. Site Preparation (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	0.64	14.7	0.10	—	0.10	0.10	—	0.10	5,316
Dust From Material Movement	—	—	—	7.67	7.67	—	3.94	3.94	—
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	0.40	< 0.005	—	< 0.005	< 0.005	—	< 0.005	146
Dust From Material Movement	—	—	—	0.21	0.21	—	0.11	0.11	—
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	0.07	< 0.005	—	< 0.005	< 0.005	—	< 0.005	24.1
Dust From Material Movement	—	—	—	0.04	0.04	—	0.02	0.02	—
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	0.01	0.00	0.01	0.01	0.00	< 0.005	< 0.005	9.44
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	0.26
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

3.6. Grading (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	0.80	19.4	0.18	—	0.18	0.18	—	0.18	6,621
Dust From Material Movement	—	—	—	3.59	3.59	—	1.43	1.43	—
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	1.60	0.01	—	0.01	0.01	—	0.01	544
Dust From Material Movement	—	—	—	0.30	0.30	—	0.12	0.12	—
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	0.29	< 0.005	—	< 0.005	< 0.005	—	< 0.005	90.1
Dust From Material Movement	—	—	—	0.05	0.05	—	0.02	0.02	—
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	0.02	0.00	0.01	0.01	0.00	< 0.005	< 0.005	10.8
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.07	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	14.9
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.88
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	1.21
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.14
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	0.20

3.8. 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)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.41	9.53	0.12	—	0.12	0.11	—	0.11	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.41	9.53	0.12	—	0.12	0.11	—	0.11	2,405
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	0.23	5.18	0.06	—	0.06	0.06	—	0.06	1,309
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.95	0.01	—	0.01	0.01	—	0.01	217
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Worker	0.83	0.20	0.00	0.11	0.11	0.00	0.03	0.03	168
Vendor	0.03	0.62	< 0.005	0.02	0.02	< 0.005	0.01	0.01	151
Hauling	< 0.005	0.04	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	8.46
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.80	0.25	0.00	0.11	0.11	0.00	0.03	0.03	164
Vendor	0.02	0.66	< 0.005	0.02	0.02	< 0.005	0.01	0.01	152

Hauling	< 0.005	0.04	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	8.56
Average Daily	—	—	—	—	—	—	—	—	—
Worker	0.43	0.13	0.00	0.06	0.06	0.00	0.01	0.01	87.9
Vendor	0.01	0.35	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	82.3
Hauling	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	4.62
Annual	—	—	—	—	—	—	—	—	—
Worker	0.08	0.02	0.00	0.01	0.01	0.00	< 0.005	< 0.005	14.6
Vendor	< 0.005	0.06	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	13.6
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.77

3.10. Building Construction (2027) - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.41	9.53	0.12	—	0.12	0.11	—	0.11	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.41	9.53	0.12	—	0.12	0.11	—	0.11	2,405
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	0.12	2.67	0.03	—	0.03	0.03	—	0.03	673
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.02	0.49	0.01	—	0.01	0.01	—	0.01	111
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Worker	0.79	0.19	0.00	0.11	0.11	0.00	0.03	0.03	165
Vendor	0.03	0.61	< 0.005	0.02	0.02	< 0.005	0.01	0.01	148
Hauling	< 0.005	0.04	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	8.31
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.77	0.24	0.00	0.11	0.11	0.00	0.03	0.03	161
Vendor	0.02	0.65	< 0.005	0.02	0.02	< 0.005	0.01	0.01	149
Hauling	< 0.005	0.04	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	8.39
Average Daily	—	—	—	—	—	—	—	—	—
Worker	0.21	0.06	0.00	0.03	0.03	0.00	0.01	0.01	44.4
Vendor	0.01	0.18	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	41.6
Hauling	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	2.33
Annual	—	—	—	—	—	—	—	—	—
Worker	0.04	0.01	0.00	0.01	0.01	0.00	< 0.005	< 0.005	7.35
Vendor	< 0.005	0.03	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	6.89
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.39

3.12. Paving (2027) - Mitigated

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

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

Off-Road Equipment	0.23	7.21	0.09	—	0.09	0.08	—	0.08	1,516
Paving	0.00	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.39	< 0.005	—	< 0.005	< 0.005	—	< 0.005	83.1
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	0.07	< 0.005	—	< 0.005	< 0.005	—	< 0.005	13.8
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)	—	—	—	—	—	—	—	—	—
Worker	0.04	0.01	0.00	0.01	0.01	0.00	< 0.005	< 0.005	8.14
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	1.04
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.43
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	0.06
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.07
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	0.01

3.14. Architectural Coating (2027) - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	1.07	0.03	—	0.03	0.03	—	0.03	134
Architectural Coatings	265	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.06	< 0.005	—	< 0.005	< 0.005	—	< 0.005	7.34
Architectural Coatings	14.5	—	—	—	—	—	—	—	—
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	1.22
Architectural Coatings	2.65	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Worker	0.16	0.04	0.00	0.02	0.02	0.00	0.01	0.01	32.9

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	1.74
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	0.29
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 (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	0.07	2.28	0.04	—	0.04	0.03	—	0.03	433
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	0.19	< 0.005	—	< 0.005	< 0.005	—	< 0.005	35.6
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	0.03	< 0.005	—	< 0.005	< 0.005	—	< 0.005	5.90
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	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	2.70
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

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

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

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

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

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

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

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

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

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

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

—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	1/1/2026	1/29/2026	5.00	20.0	—
Site Preparation	Site Preparation	1/30/2026	2/13/2026	5.00	10.0	—
Grading	Grading	2/14/2026	3/28/2026	5.00	30.0	—
Building Construction	Building Construction	3/29/2026	5/23/2027	5.00	300	—
Paving	Paving	6/22/2027	7/19/2027	5.00	20.0	—

Architectural Coating	Architectural Coating	5/24/2027	6/18/2027	5.00	20.0	—
Trenching	Trenching	2/14/2026	3/28/2026	5.00	30.0	—

5.2. Off-Road Equipment

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	2.00	8.00	367	0.40
Demolition	Excavators	Diesel	Tier 4 Interim	3.00	8.00	36.0	0.38
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	4.00	8.00	84.0	0.37
Site Preparation	Rubber Tired Dozers	Diesel	Tier 4 Interim	3.00	8.00	367	0.40
Grading	Graders	Diesel	Tier 4 Interim	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Tier 4 Interim	1.00	8.00	367	0.40
Grading	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	2.00	8.00	84.0	0.37
Grading	Excavators	Diesel	Tier 4 Interim	2.00	8.00	36.0	0.38
Grading	Scrapers	Diesel	Tier 4 Interim	2.00	8.00	423	0.48
Building Construction	Cranes	Diesel	Tier 4 Interim	1.00	7.00	367	0.29
Building Construction	Forklifts	Diesel	Tier 4 Interim	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	3.00	7.00	84.0	0.37
Building Construction	Welders	Diesel	Tier 4 Interim	1.00	8.00	46.0	0.45
Paving	Pavers	Diesel	Tier 4 Interim	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Tier 4 Interim	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Tier 4 Interim	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Tier 4 Interim	1.00	6.00	37.0	0.48

Trenching	Tractors/Loaders/Back	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

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	15.0	0.50	LDA,LDT1,LDT2
Demolition	Vendor	—	0.50	HHDT,MHDT
Demolition	Hauling	24.4	0.50	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	0.50	LDA,LDT1,LDT2
Site Preparation	Vendor	—	0.50	HHDT,MHDT
Site Preparation	Hauling	0.00	0.50	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	0.50	LDA,LDT1,LDT2
Grading	Vendor	—	0.50	HHDT,MHDT
Grading	Hauling	4.17	0.50	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	303	0.50	LDA,LDT1,LDT2
Building Construction	Vendor	56.4	0.50	HHDT,MHDT
Building Construction	Hauling	2.40	0.50	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—

Paving	Worker	15.0	0.50	LDA,LDT1,LDT2
Paving	Vendor	—	0.50	HHDT,MHDT
Paving	Hauling	0.30	0.50	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	60.7	0.50	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	0.50	HHDT,MHDT
Architectural Coating	Hauling	0.00	0.50	HHDT
Architectural Coating	Onsite truck	—	—	HHDT
Trenching	—	—	—	—
Trenching	Worker	5.00	0.50	LDA,LDT1,LDT2
Trenching	Vendor	—	0.50	HHDT,MHDT
Trenching	Hauling	0.00	0.50	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	762,516	254,172	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	37,400	—
Site Preparation	—	—	15.0	0.00	—
Grading	500	500	90.0	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
Apartments Mid Rise	—	0%
Enclosed Parking with Elevator	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
2026	0.00	453	0.03	< 0.005
2027	0.00	453	0.03	< 0.005

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

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	5.62	annual days of extreme heat
Extreme Precipitation	6.50	annual days with precipitation above 20 mm
Sea Level Rise	0.76	meters of inundation depth
Wildfire	7.25	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (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.

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	3.12
AQ-PM	43.5
AQ-DPM	97.6
Drinking Water	4.27
Lead Risk Housing	10.4
Pesticides	0.00
Toxic Releases	48.4
Traffic	58.6
Effect Indicators	—
CleanUp Sites	97.7
Groundwater	100.0
Haz Waste Facilities/Generators	96.8
Impaired Water Bodies	87.0
Solid Waste	80.0
Sensitive Population	—
Asthma	74.0
Cardio-vascular	51.8
Low Birth Weights	82.3
Socioeconomic Factor Indicators	—

Education	48.8
Housing	32.3
Linguistic	47.1
Poverty	58.3
Unemployment	87.4

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	46.49044014
Employed	20.45425382
Median HI	35.46772745
Education	—
Bachelor's or higher	75.55498524
High school enrollment	100
Preschool enrollment	70.24252534
Transportation	—
Auto Access	26.17733864
Active commuting	90.90209162
Social	—
2-parent households	36.17348903
Voting	57.15385602
Neighborhood	—
Alcohol availability	78.36519954
Park access	43.39792121
Retail density	49.89092776
Supermarket access	42.92313615

Tree canopy	54.44629796
Housing	—
Homeownership	25.08661619
Housing habitability	58.73219556
Low-inc homeowner severe housing cost burden	74.6439112
Low-inc renter severe housing cost burden	91.47953291
Uncrowded housing	58.74502759
Health Outcomes	—
Insured adults	78.05723085
Arthritis	94.7
Asthma ER Admissions	29.3
High Blood Pressure	97.2
Cancer (excluding skin)	85.3
Asthma	51.9
Coronary Heart Disease	95.4
Chronic Obstructive Pulmonary Disease	86.1
Diagnosed Diabetes	91.2
Life Expectancy at Birth	32.0
Cognitively Disabled	35.0
Physically Disabled	63.7
Heart Attack ER Admissions	38.2
Mental Health Not Good	57.3
Chronic Kidney Disease	95.6
Obesity	83.6
Pedestrian Injuries	19.6
Physical Health Not Good	78.6
Stroke	88.3
Health Risk Behaviors	—

Binge Drinking	22.7
Current Smoker	52.6
No Leisure Time for Physical Activity	62.9
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	8.2
Children	23.1
Elderly	88.2
English Speaking	26.5
Foreign-born	50.2
Outdoor Workers	84.5
Climate Change Adaptive Capacity	—
Impervious Surface Cover	37.3
Traffic Density	35.6
Traffic Access	54.9
Other Indices	—
Hardship	43.8
Other Decision Support	—
2016 Voting	38.4

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	77.0
Healthy Places Index Score for Project Location (b)	58.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
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
Land Use	Total lot acreage, number of units/parking spaces and square footages from provided plans.
Construction: Construction Phases	Defaults based on provided land uses with added trenching. Reviewed and confirmed by applicant.
Construction: Off-Road Equipment	Defaults - added trenching. Reviewed and confirmed by applicant.
Characteristics: Utility Information	Alameda Power & Telecom is now called Alameda Municipal Power. Alameda Municipal Power rate = 105 lb/MWh.
Construction: Trips and VMT	Demolition = Est. 26,000 sf of pavement demo'ed and hauled (2.9 trips/day), Building Construction = Est. 360 concrete truck round trips (2.4 trips/day), Paving = Est. 3 asphalt truck round trips (0.3 trips/day). HRA - 0.5 mile trip length for localized emissions.
Construction: On-Road Fugitive Dust	Air district BMPs = 15 mph. Required by Alameda GP.
Operations: Vehicle Data	Provided trip generation (2433 Mariner Sq TIA_20241126).
Operations: Hearths	No hearths.
Operations: Water and Waste Water	Wastewater treatment 100% aerobic - no septic tanks or lagoons.

Attachment 2: Project Construction Emissions and Health Risk Calculations

Construction Health Risk Assessment and Calculations

DPM Construction Emissions and Modeling Emission Rates - With COAs

Construction Year	Activity	DPM (ton/year)	Area Source	DPM Emissions (lb/yr)	(lb/hr)	(g/s)	Modeled Area (m^2)	DPM Emission Rate ($g/s/m^2$)
2026	Construction	0.0177	CON_DPM	35.4	0.01136	1.43E-03	9,487	1.51E-07
2027	Construction	0.0073	CON_DPM	14.6	0.00466	5.88E-04	9,487	6.20E-08
Total		***0.0250***		***50.0***	***0.0160***	***0.0020***		

Construction Hours

hr/day =	12	(Mon - Fri, 7am - 7pm)
days/yr =	260	
hours/year =	3120	

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

Construction Year	Activity	Area Source	PM2.5 Emissions (ton/year)	(lb/yr)	(lb/hr)	(g/s)	Modeled Area (m^2)	PM2.5 Emission Rate $g/s/m^2$
2026	Construction	CON_FUG	0.0473	94.6	0.03031	3.82E-03	9,487	4.03E-07
2027	Construction	CON_FUG	0.0017	3.4	0.00109	1.37E-04	9,487	1.44E-08
Total			***0.0490***	***98.0***	***0.0314***	***0.0040***		

Construction Hours

hr/day =	12	(Mon - Fri, 7am - 7pm)
days/yr =	260	
hours/year =	3120	

2433 Mariner Square, Alameda, CA - Construction Health Impact Summary

Maximum Impacts at Residential MEI Location - With COAs

Emissions Year	Mitigated Emissions					
	Maximum Concentrations		Cancer Risk (per million)		Hazard Index	Maximum Annual PM2.5 Concentration
	Exhaust PM10/DPM ($\mu g/m^3$)	Fugitive PM2.5 ($\mu g/m^3$)	Infant/Child	Adult	(-)	($\mu g/m^3$)
2026	0.0116	0.0475	2.06	0.03	0.002	0.06
2027	0.0048	0.0015	0.78	0.01	0.001	0.01
Total	-	-	**2.84**	**0.05**	-	-
Maximum	0.0116	0.0475	-	-	**0.002**	**0.06**

- Tier 4 Interim Engines and basic BMPs COAs

Maximum Impacts at Worker MEI Location - With Mitigation

Construction Year	Mitigated Emissions				
	Maximum Concentrations		Worker Cancer Risk	Hazard Index	Maximum Annual PM2.5 Concentration
	Exhaust PM10/DPM ($\mu g/m^3$)	Fugitive PM2.5 ($\mu g/m^3$)	(per million)	(-)	($\mu g/m^3$)
2026	0.0475	0.1666	0.24	0.01	0.21
2027	0.0195	0.0060	0.10	0.004	0.03
Total	-	-	**0.34**	-	-
Maximum	0.0475	0.1666	-	**0.01**	**0.21**

- Tier 4 Interim Engines and basic BMPs COAs

Maximum Impacts at Oakmont of Mariner Point Assisted Living

Construction Year	Unmitigated Emissions				
	Maximum Concentrations		Adult Cancer Risk	Hazard Index	Maximum Annual PM2.5 Concentration
	Exhaust PM10/DPM ($\mu g/m^3$)	Fugitive PM2.5 ($\mu g/m^3$)	(per million)	(-)	($\mu g/m^3$)
2026	0.0248	0.0185	0.07	0.005	0.04
2027	0.0072	0.0007	0.02	0.001	0.01
Total	-	-	**0.09**	-	-
Maximum	0.0248	0.0185	-	**0.005**	**0.04**

Maximum Impacts at Sugar & Spice Preschool

Construction Year	Unmitigated Emissions				
	Maximum Concentrations		Child Cancer Risk	Hazard Index	Maximum Annual PM2.5 Concentration
	Exhaust PM10/DPM ($\mu g/m^3$)	Fugitive PM2.5 ($\mu g/m^3$)	(per million)	(-)	($\mu g/m^3$)
2026	0.0065	0.0046	0.34	0.001	0.01
2027	0.0019	0.0002	0.10	0.0004	0.002
Total	-	-	**0.44**	-	-
Maximum	0.0065	0.0046	-	**0.001**	**0.01**

2433 Mariner Square, Alameda, CA - Construction Impacts - With COAs
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at Off-Site MEI Location - 1.5 meter receptor height (1st Floor Level)

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

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

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

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

Values

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

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

			Infant/Child - Exposure Information			Infant/Child	Adult - Exposure Information			Adult		Maximum	
	Exposure				Age	Cancer	Modeled		Age	Cancer			
Exposure	Duration		DPM Conc (ug/m3)		Sensitivity	Risk	DPM Conc (ug/m3)		Sensitivity	Risk	Hazard	Fugitive	Total
Year	(years)	Age	Year	Annual	Factor	(per million)	Year	Annual	Factor	(per million)	Index	PM2.5	PM2.5
0	0.25	-0.25 - 0*	2026	0.0116	10	0.16	2026	0.0116	-	-			
1	1	0 - 1	2026	0.0116	10	1.90	2026	0.0116	1	0.03	0.002	0.05	0.06
2	1	1 - 2	2027	0.0048	10	0.78	2027	0.0048	1	0.01	0.001	0.002	0.01
3	1	2 - 3		0.0000	3	0.00		0.0000	1	0.00			
4	1	3 - 4		0.0000	3	0.00		0.0000	1	0.00			
5	1	4 - 5		0.0000	3	0.00		0.0000	1	0.00			
6	1	5 - 6		0.0000	3	0.00		0.0000	1	0.00			
7	1	6 - 7		0.0000	3	0.00		0.0000	1	0.00			
8	1	7 - 8		0.0000	3	0.00		0.0000	1	0.00			
9	1	8 - 9		0.0000	3	0.00		0.0000	1	0.00			
10	1	9 - 10		0.0000	3	0.00		0.0000	1	0.00			
11	1	10 - 11		0.0000	3	0.00		0.0000	1	0.00			
12	1	11 - 12		0.0000	3	0.00		0.0000	1	0.00			
13	1	12 - 13		0.0000	3	0.00		0.0000	1	0.00			
14	1	13 - 14		0.0000	3	0.00		0.0000	1	0.00			
15	1	14 - 15		0.0000	3	0.00		0.0000	1	0.00			
16	1	15 - 16		0.0000	3	0.00		0.0000	1	0.00			
17	1	16-17		0.0000	1	0.00		0.0000	1	0.00			
18	1	17-18		0.0000	1	0.00		0.0000	1	0.00			
19	1	18-19		0.0000	1	0.00		0.0000	1	0.00			
20	1	19-20		0.0000	1	0.00		0.0000	1	0.00			
21	1	20-21		0.0000	1	0.00		0.0000	1	0.00			
22	1	21-22		0.0000	1	0.00		0.0000	1	0.00			
23	1	22-23		0.0000	1	0.00		0.0000	1	0.00			
24	1	23-24		0.0000	1	0.00		0.0000	1	0.00			
25	1	24-25		0.0000	1	0.00		0.0000	1	0.00			
26	1	25-26		0.0000	1	0.00		0.0000	1	0.00			
27	1	26-27		0.0000	1	0.00		0.0000	1	0.00			
28	1	27-28		0.0000	1	0.00		0.0000	1	0.00			
29	1	28-29		0.0000	1	0.00		0.0000	1	0.00			
30	1	29-30		0.0000	1	0.00		0.0000	1	0.00			
Total Increased Cancer Risk						**2.84**				**0.05**			

* Third trimester of pregnancy

2433 Mariner Square, Alameda, CA - Construction Risks at Adult Worker Receptors
Maximum DPM Cancer Risk and PM2.5 Calculations For Construction Emissions - With COAs
Impacts at Worker MEI Location - 1.5 meter receptor height

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

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

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

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

Values

	Adult Worker
Age -->	**16+**
Parameter	
ASF =	1
CPF =	1.10E+00
DBR* =	230
A =	1
EF =	250
AT =	25
FAH =	0.73

* 95th percentile breathing rates for adults

Construction Cancer Risk by Year - Maximum Impact Worker Receptor Location

		Worker Adult - Exposure Information			Adult
	Exposure	Modeled		Age	Cancer
Exposure	Duration	DPM Conc (ug/m3)		Sensitivity	Risk
Year	(years)	Year	Annual	Factor	(per million)
1	1	2026	0.0475	1	0.24
2	1	2027	0.0195	1	0.10
3	1		0.0000	1	0.00
4	1		0.0000	1	0.00
5	1		0.0000	1	0.00
6	1		0.0000	1	0.00
7	1		0.0000	1	0.00
8	1		0.0000	1	0.00
9	1		0.0000	1	0.00
10	1		0.0000	1	0.00
11	1		0.0000	1	0.00
12	1		0.0000	1	0.00
13	1		0.0000	1	0.00
14	1		0.0000	1	0.00
15	1		0.0000	1	0.00
16	1		0.0000	1	0.00
17	1		0.0000	1	0.00
18	1		0.0000	1	0.00
19	1		0.0000	1	0.00
20	1		0.0000	1	0.00
21	1		0.0000	1	0.00
22	1		0.0000	1	0.00
23	1		0.0000	1	0.00
24	1		0.0000	1	0.00
25	1		0.0000	1	0.00
26	1		0.0000	1	0.00
27	1		0.0000	1	0.00
28	1		0.0000	1	0.00
29	1		0.0000	1	0.00
30	1		0.0000	1	0.00
Total Increased Cancer Risk					**0.34**

	Maximum	
Hazard Index	Fugitive PM2.5	Total PM2.5
0.01	0.17	0.21
0.004	0.01	0.03

2433 Mariner Square, Alameda, CA - Construction Risks at Adult Senior Receptors
Maximum DPM Cancer Risk and PM2.5 Calculations For Construction Emissions
Impacts at Oakmont of Mariner Point Assisted Living - 1.5 meter receptor heights

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

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

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

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

Values

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

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Exposure Year	Exposure Duration (years)	Adult - Exposure Information: Modeled DPM Conc (ug/m3) Year	Annual	Age Sensitivity Factor	Adult Cancer Risk (per million)
1	1	2026	0.0248	1	0.07
2	1	2027	0.0072	1	0.02
3	1		0.0000	1	0.00
4	1		0.0000	1	0.00
5	1		0.0000	1	0.00
6	1		0.0000	1	0.00
7	1		0.0000	1	0.00
8	1		0.0000	1	0.00
9	1		0.0000	1	0.00
10	1		0.0000	1	0.00
11	1		0.0000	1	0.00
12	1		0.0000	1	0.00
13	1		0.0000	1	0.00
14	1		0.0000	1	0.00
15	1		0.0000	1	0.00
16	1		0.0000	1	0.00
17	1		0.0000	1	0.00
18	1		0.0000	1	0.00
19	1		0.0000	1	0.00
20	1		0.0000	1	0.00
21	1		0.0000	1	0.00
22	1		0.0000	1	0.00
23	1		0.0000	1	0.00
24	1		0.0000	1	0.00
25	1		0.0000	1	0.00
26	1		0.0000	1	0.00
27	1		0.0000	1	0.00
28	1		0.0000	1	0.00
29	1		0.0000	1	0.00
30	1		0.0000	1	0.00
Total Increased Cancer Risk					**0.09**

Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.005	0.02	0.04
0.001	0.001	0.01

2433 Mariner Square, Alameda, CA - Construction Risks at Adult Senior Receptors
Maximum DPM Cancer Risk and PM2.5 Calculations For Construction Emissions
Impacts at Oakmont of Mariner Point Assisted Living - 4.5 meter receptor heights

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6
Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}
Where: C_{air} = concentration in air ($\mu g/m^3$)
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

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

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

		Adult - Exposure Information			Adult
	Exposure	Modeled		Age	Cancer
Exposure	Duration	DPM Conc (ug/m3)		Sensitivity	Risk
Year	(years)	Year	Annual	Factor	(per million)
1	1	2026	0.0222	1	0.06
2	1	2027	0.0065	1	0.02
3	1		0.0000	1	0.00
4	1		0.0000	1	0.00
5	1		0.0000	1	0.00
6	1		0.0000	1	0.00
7	1		0.0000	1	0.00
8	1		0.0000	1	0.00
9	1		0.0000	1	0.00
10	1		0.0000	1	0.00
11	1		0.0000	1	0.00
12	1		0.0000	1	0.00
13	1		0.0000	1	0.00
14	1		0.0000	1	0.00
15	1		0.0000	1	0.00
16	1		0.0000	1	0.00
17	1		0.0000	1	0.00
18	1		0.0000	1	0.00
19	1		0.0000	1	0.00
20	1		0.0000	1	0.00
21	1		0.0000	1	0.00
22	1		0.0000	1	0.00
23	1		0.0000	1	0.00
24	1		0.0000	1	0.00
25	1		0.0000	1	0.00
26	1		0.0000	1	0.00
27	1		0.0000	1	0.00
28	1		0.0000	1	0.00
29	1		0.0000	1	0.00
30	1		0.0000	1	0.00
Total Increased Cancer Risk					**0.08**

	Maximum	
Hazard Index	**Fugitive PM2.5**	**Total PM2.5**
0.004	0.02	0.04
0.001	0.001	0.01

2433 Mariner Square, Alameda, CA - Construction Risks at School Receptors
Maximum DPM Cancer Risk and PM2.5 Calculations For Construction Emissions
Impacts at Sugar & Spice Preschool (2-5 years old) - 1 meter receptor heights

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

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

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

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

Values

	Infant	**Child**
Age -->	**0 - <2**	**2 - <16**
Parameter		
ASF =	10	3
DPM CPF =	1.10E+00	1.10E+00
8-Hr BR* =	1200	520
SCHR =	9	9
SHR =	12	12
SDay =	5	5
A =	1	1
EF =	250	250
AT =	70	70
SCAF =	3.15	3.15

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

Construction Cancer Risk by Year - Head Start Center Receptor

Exposure Year	**Exposure Duration (years)**	**Age**	**Child - Exposure Information: DPM Conc (ug/m3) Year**	**DPM Conc (ug/m3) Annual**	**Age* Sensitivity Factor**	**Child Cancer Risk (per million)**	**Maximum Hazard Index**	**Maximum Fugitive PM2.5**	**Maximum Total PM2.5**
1	1	2 - 3	2026	0.00651	3	0.34	0.001	0.005	0.01
2	1	3 - 4	2027	0.00190	3	0.10	0.0004	0.0002	0.002
Total Increased Cancer Risk						**0.44**			

* Children assumed to be 2 years and older during 2 years of construction activities

Attachment 3: Cumulative Health Risk Screening, Modeling, and Calculations

CT-EMFAC2021 Emissions Factors for Alameda County 2026

File Name:	Roadways Mariner Sq - Alameda (SF) - 2026 - Annual.EF
CT-EMFAC2021 Version:	1.0.2.0
Run Date:	3/25/2025 14:07
Area:	Alameda (SF)
Analysis Year:	2026
Season:	Annual

===

Vehicle Category	VMT Fraction Across Category	Diesel VMT Fraction Within Category	Gas VMT Fraction Within Category
Truck 1	0.017	0.397	0.585
Truck 2	0.007	0.926	0.032
Non-Truck	0.976	0.007	0.92

===

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

===

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

Pollutant Name	<= 5 mph	10 mph	15 mph	20 mph	25 mph	30 mph	35 mph	40 mph	45 mph	50 mph	55 mph
PM2.5	0.008161	0.005294	0.003603	0.002581	0.001949	0.00155	0.001299	0.001149	0.001075	0.001062	0.001107
TOG	0.120457	0.077878	0.052616	0.037622	0.028489	0.022704	0.018987	0.016644	0.015288	0.014728	0.014881
Diesel PM	0.000839	0.000665	0.000525	0.000422	0.000352	0.000304	0.000274	0.00026	0.000262	0.000279	0.000311

===

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

Pollutant Name	Emission Factor
TOG	1.05702

===

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

Pollutant Name	Emission Factor
PM2.5	0.002055

===

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

Pollutant Name	<= 5 mph	10 mph	15 mph	20 mph	25 mph	30 mph	35 mph	40 mph	45 mph	50 mph	55 mph
PM2.5	0.00314	0.003692	0.004241	0.004787	0.005097	0.005195	0.005262	0.004793	0.003775	0.002762	0.002112

===

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

Pollutant Name	Emission Factor
PM2.5	0.014088

============================END=====================================

File Name:	Tubes NB Mariner Sq - Alameda (SF) - 2026 - Annual.EM
CT-EMFAC2021 Version:	1.0.2.0
Run Date:	3/31/2025 16:06
Area:	Alameda (SF)
Analysis Year:	2026
Season:	Annual

Vehicle Category	VMT Fraction Across Category	Diesel VMT Fraction Within Category	Gas VMT Fraction Within Category
Truck 1	0.017	0.397	0.585
Truck 2	0.007	0.926	0.032
Non-Truck	0.976	0.007	0.92

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

Road Length:	0.66	miles
Volume:	32,240	vehicles per hour
Number of Hours:	1	hours
VMT:	21278.4	miles

VMT Distribution by Speed Bin (mph):

<= 5 mph	0.00%
10 mph	0.00%
15 mph	0.00%
20 mph	0.00%
25 mph	0.00%
30 mph	0.00%
35 mph	0.00%
40 mph	0.00%
45 mph	100.00%
50 mph	0.00%
55 mph	0.00%
60 mph	0.00%
65 mph	0.00%
70 mph	0.00%
75 mph	0.00%

Summary of Emissions

Pollutant Name	Running Exhaust (grams)	Running Loss (grams)	Tire Wear (grams)	Brake Wear (grams)	Road Dust (grams)	Total (grams)	Total (pounds)	Total (US tons)
PM2.5	22.9	-	43.7	80.3	299.80	446.70	0.985	< 0.001
TOG	325.30	529.20	-	-	-	854.50	1.884	< 0.001
Diesel PM	5.6	-	-	-	-	5.6	0.012	< 0.001

Emissions	Per Tunnel (g/s)
DPM	3.24E-05
PM2.5	1.33E-04
TOG Exhaust	1.88E-03
TOG Evaporative	3.06E-03
Fugitive PM2.5	2.45E-03

==========END==========

File Name:	Tubes SB Mariner Sq - Alameda (SF) - 2026 - Annual.EM
CT-EMFAC2021 Version:	1.0.2.0
Run Date:	3/31/2025 16:07
Area:	Alameda (SF)
Analysis Year:	2026
Season:	Annual

==

Vehicle Category	VMT Fraction Across Category	Diesel VMT Fraction Within Category	Gas VMT Fraction Within Category
Truck 1	0.017	0.397	0.585
Truck 2	0.007	0.926	0.032
Non-Truck	0.976	0.007	0.92

==

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

==

Road Length:	0.65	miles
Volume:	32,240	vehicles per hour
Number of Hours:	1	hours
VMT:	20956	miles

VMT Distribution by Speed Bin (mph):

<= 5 mph	0.00%
10 mph	0.00%
15 mph	0.00%
20 mph	0.00%
25 mph	0.00%
30 mph	0.00%
35 mph	0.00%
40 mph	0.00%
45 mph	100.00%
50 mph	0.00%
55 mph	0.00%
60 mph	0.00%
65 mph	0.00%
70 mph	0.00%
75 mph	0.00%

==

Summary of Emissions

Pollutant Name	Running Exhaust (grams)	Running Loss (grams)	Tire Wear (grams)	Brake Wear (grams)	Road Dust (grams)	Total (grams)	Total (pounds)	Total (US tons)
PM2.5	22.5	-	43.1	79.1	295.20	439.90	0.97	< 0.001
TOG	320.40	521.20	-	-	-	841.60	1.855	< 0.001
Diesel PM	5.5	-	-	-	-	5.5	0.012	< 0.001

Emissions	Per Tunnel (g/s)
DPM	3.18E-05
PM2.5	1.30E-04
TOG Exhaust	1.85E-03
TOG Evaporative	3.02E-03
Fugitive PM2.5	2.42E-03

==END==

Webster Street/Tube and Posey Tube (SR-260) 2026 Traffic Emissions and Health Risk Calculations

Analysis Year = ***2026***

Vehicle Type	2022 Caltrans Vehicles (veh/day)	2026 Vehicles (veh/day)
Total	**62,000**	**64,480**

Increase From 2022	1.04
Vehicles/Direction	**32,240**
Avg Vehicles/Hour/Direction	1,343

Traffic Data Year = ***2022***

2022 Caltrans Traffic and Truck AADT	AADT Total	Total Truck	Trucks by Axle 2	3	4	5
SR-260 at Webster and Posey Tubes	62,000	1,488	1,061	141	27	259
			71.30%	9.50%	1.80%	17.40%
Percent of Total Vehicles		2.40%	1.71%	0.23%	0.04%	0.42%

Traffic Increase per Year (%) = *1.00%*

1,488	Trucks	100%
1.7%	MDT	Truck 1
0.7%	HDT	Truck 2
2.4%	Total	
97.6%	Other	

2433 Mariner Square, Alameda, CA
Cumulative Traffic - Webster Street (SR-260)
DPM Modeling - Roadway Links, Traffic Volumes, and DPM Emissions
Year = 2026

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day	Line Area					
											Area (sq m)	Area (sq ft)	Emission (g/s/m2)	Emission (lb/hr/ft2)	Initial Vertical height (m)	(Sigma z) Initial Vertical Dimension
DPM_NB_WEB	Webster Street Northbound	NB	2	218.7	0.14	13.3	43.7	3.4	45	32,240	2,912	31,345	4.562E-09	3.364E-09	6.8	3.16
DPM_SB_WEB	Webster Street Southbound	SB	2	297.8	0.19	13.3	43.7	3.4	45	32,240	3,965	42,682	4.562E-09	3.364E-09	6.8	3.16
									Total	64,480						

Emission Factors - DPM

Speed Category	1	2	3	4
Travel Speed (mph)	45			
Emissions per Vehicle (g/VMT)	0.00026			

Emisson Factors from CT-EMFAC2021

2026
Hourl

Hour

2026 Hourly Traffic Volumes and DPM Emissions - DPM_NB_WEB

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.98%	637	6.30E-06	9	5.10%	1644	1.63E-05	17	5.42%	1747	1.73E-05
2	1.56%	502	4.96E-06	10	5.31%	1713	1.69E-05	18	5.22%	1684	1.67E-05
3	1.48%	478	4.73E-06	11	5.46%	1760	1.74E-05	19	4.99%	1608	1.59E-05
4	1.64%	530	5.24E-06	12	5.60%	1804	1.78E-05	20	4.58%	1478	1.46E-05
5	2.28%	736	7.28E-06	13	5.61%	1809	1.79E-05	21	4.19%	1352	1.34E-05
6	3.44%	1110	1.10E-05	14	5.66%	1824	1.80E-05	22	3.91%	1260	1.25E-05
7	4.36%	1405	1.39E-05	15	5.71%	1841	1.82E-05	23	3.42%	1103	1.09E-05
8	4.86%	1567	1.55E-05	16	5.55%	1790	1.77E-05	24	2.66%	858	8.49E-06
								Total		32,240	

2026 Hourly Traffic Volumes Per Direction and DPM Emissions - DPM_SB_WEB

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.98%	637	8.58E-06	9	5.10%	1644	2.21E-05	17	5.42%	1747	2.35E-05
2	1.56%	502	6.75E-06	10	5.31%	1713	2.31E-05	18	5.22%	1684	2.27E-05
3	1.48%	478	6.43E-06	11	5.46%	1760	2.37E-05	19	4.99%	1608	2.17E-05
4	1.64%	530	7.13E-06	12	5.60%	1804	2.43E-05	20	4.58%	1478	1.99E-05
5	2.28%	736	9.91E-06	13	5.61%	1809	2.44E-05	21	4.19%	1352	1.82E-05
6	3.44%	1110	1.49E-05	14	5.66%	1824	2.46E-05	22	3.91%	1260	1.70E-05
7	4.36%	1405	1.89E-05	15	5.71%	1841	2.48E-05	23	3.42%	1103	1.49E-05
8	4.86%	1567	2.11E-05	16	5.55%	1790	2.41E-05	24	2.66%	858	1.16E-05
								Total		32,240	

2433 Mariner Square, Alameda, CA
Cumulative Traffic - Webster Street (SR-260)
PM2.5 Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions
Year = 2026

											Line Area					
Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day	Area (sq m)	Area (sq ft)	Emission (g/s/m2)	Emission (lb/hr/ft2)	Initial Vertical height (m)	(Sigma z) Initial Vertical Dimension
PM25_NB_WEB	Webster Street Northbound	NB	2	218.7	0.14	13.3	44	1.3	45	32,240	2,912	31,345	1.872E-08	1.380E-08	2.6	1.21
PM25_SB_WEB	Webster Street Southbound	SB	2	297.8	0.19	13.3	44	1.3	45	32,240	3,965	42,682	1.872E-08	1.380E-08	2.6	1.21
									Total	64,480						

Emission Factors - PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	45			
Emissions per Vehicle (g/VMT)	0.001075			

Emisson Factors from CT-EMFAC2021

2026
Hourl
Hour

2026 Hourly Traffic Volumes and PM2.5 Emissions - PM25_NB_WEB

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.98%	637	2.59E-05	9	5.10%	1644	6.67E-05	17	5.42%	1747	7.09E-05
2	1.56%	502	2.04E-05	10	5.31%	1713	6.95E-05	18	5.22%	1684	6.83E-05
3	1.48%	478	1.94E-05	11	5.46%	1760	7.14E-05	19	4.99%	1608	6.53E-05
4	1.64%	530	2.15E-05	12	5.60%	1804	7.32E-05	20	4.58%	1478	6.00E-05
5	2.28%	736	2.99E-05	13	5.61%	1809	7.34E-05	21	4.19%	1352	5.49E-05
6	3.44%	1110	4.50E-05	14	5.66%	1824	7.40E-05	22	3.91%	1260	5.11E-05
7	4.36%	1405	5.70E-05	15	5.71%	1841	7.47E-05	23	3.42%	1103	4.48E-05
8	4.86%	1567	6.36E-05	16	5.55%	1790	7.27E-05	24	2.66%	858	3.48E-05
								Total		32,240	

2026 Hourly Traffic Volumes Per Direction and PM2.5 Emissions - PM25_SB_WEB

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.98%	637	3.52E-05	9	5.10%	1644	9.08E-05	17	5.42%	1747	9.65E-05
2	1.56%	502	2.77E-05	10	5.31%	1713	9.46E-05	18	5.22%	1684	9.31E-05
3	1.48%	478	2.64E-05	11	5.46%	1760	9.72E-05	19	4.99%	1608	8.89E-05
4	1.64%	530	2.93E-05	12	5.60%	1804	9.97E-05	20	4.58%	1478	8.17E-05
5	2.28%	736	4.06E-05	13	5.61%	1809	9.99E-05	21	4.19%	1352	7.47E-05
6	3.44%	1110	6.13E-05	14	5.66%	1824	1.01E-04	22	3.91%	1260	6.96E-05
7	4.36%	1405	7.77E-05	15	5.71%	1841	1.02E-04	23	3.42%	1103	6.10E-05
8	4.86%	1567	8.66E-05	16	5.55%	1790	9.89E-05	24	2.66%	858	4.74E-05
								Total		32,240	

2433 Mariner Square, Alameda, CA
Cumulative Traffic - Webster Street (SR-260)
TOG Exhaust Modeling - Roadway Links, Traffic Volumes, and TOG Exhaust Emissions
Year = 2026

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day	Line Area: Area (sq m)	Area (sq ft)	Emission (g/s/m2)	Emission (lb/hr/ft2)	Initial Vertical height	(Sigma z) Initial Vertical Dimension
TEXH_NB_WEB	Webster Street Northbound	NB	2	218.7	0.14	13.3	44	1.3	45	32,240	2,912	31,345	2.662E-07	1.963E-07	2.6	1.21
TEXH_SB_WEB	Webster Street Southbound	SB	2	297.8	0.19	13.3	44	1.3	45	32,240	3,965	42,682	2.662E-07	1.963E-07	2.6	1.21
									Total	64,480						

Emission Factors - TOG Exhaust

Speed Category	1	2	3	4
Travel Speed (mph)	45			
Emissions per Vehicle (g/VMT)	0.01529			

Emisson Factors from CT-EMFAC2021

2026
Hourl
Hour

2026 Hourly Traffic Volumes and TOG Exhaust Emissions - TEXH_NB_WEB

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.98%	637	3.68E-04	9	5.10%	1644	9.49E-04	17	5.42%	1747	1.01E-03
2	1.56%	502	2.89E-04	10	5.31%	1713	9.89E-04	18	5.22%	1684	9.72E-04
3	1.48%	478	2.76E-04	11	5.46%	1760	1.02E-03	19	4.99%	1608	9.28E-04
4	1.64%	530	3.06E-04	12	5.60%	1804	1.04E-03	20	4.58%	1478	8.53E-04
5	2.28%	736	4.25E-04	13	5.61%	1809	1.04E-03	21	4.19%	1352	7.80E-04
6	3.44%	1110	6.41E-04	14	5.66%	1824	1.05E-03	22	3.91%	1260	7.27E-04
7	4.36%	1405	8.11E-04	15	5.71%	1841	1.06E-03	23	3.42%	1103	6.37E-04
8	4.86%	1567	9.05E-04	16	5.55%	1790	1.03E-03	24	2.66%	858	4.95E-04
								Total		32,240	

2026 Hourly Traffic Volumes Per Direction and TOG Exhaust Emissions - TEXH_SB_WEB

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.98%	637	5.01E-04	9	5.10%	1644	1.29E-03	17	5.42%	1747	1.37E-03
2	1.56%	502	3.94E-04	10	5.31%	1713	1.35E-03	18	5.22%	1684	1.32E-03
3	1.48%	478	3.75E-04	11	5.46%	1760	1.38E-03	19	4.99%	1608	1.26E-03
4	1.64%	530	4.16E-04	12	5.60%	1804	1.42E-03	20	4.58%	1478	1.16E-03
5	2.28%	736	5.78E-04	13	5.61%	1809	1.42E-03	21	4.19%	1352	1.06E-03
6	3.44%	1110	8.72E-04	14	5.66%	1824	1.43E-03	22	3.91%	1260	9.90E-04
7	4.36%	1405	1.10E-03	15	5.71%	1841	1.45E-03	23	3.42%	1103	8.67E-04
8	4.86%	1567	1.23E-03	16	5.55%	1790	1.41E-03	24	2.66%	858	6.74E-04
								Total		32,240	

2433 Mariner Square, Alameda, CA
Cumulative Traffic - Webster Street (SR-260)
TOG Evaporative Emissions Modeling - Roadway Links, Traffic Volumes, and TOG Evaporative Emissions
Year = 2026

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day	Line Area: Area (sq m)	Line Area: Area (sq ft)	Line Area: Emission (g/s/m2)	Line Area: Emission (lb/hr/ft2)	Line Area: Initial Vertical height	Line Area: (Sigma z) Initial Vertical Dimension
TEVAP_NB_WEB	Webster Street Northbound	NB	2	218.7	0.14	13.3	44	1.3	45	32,240	2,912	31,345	4.090E-07	3.016E-07	2.6	1.21
TEVAP_SB_WEB	Webster Street Southbound	SB	2	297.8	0.19	13.3	44	1.3	45	32,240	3,965	42,682	4.090E-07	3.016E-07	2.6	1.21
									Total	64,480						

Emission Factors - PM2.5 - Evaporative TOG

Speed Category	1	2	3	4
Travel Speed (mph)	45			
Emissions per Vehicle per Hour (g/hour)	1.05702			
Emissions per Vehicle per Mile (g/VMT)	0.02349			

Emisson Factors from CT-EMFAC2021

2026
Hourl

Hour
2.03E+00 1

2026 Hourly Traffic Volumes and TOG Evaporative Emissions - TEVAP_NB_WEB

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.98%	637	5.65E-04	9	5.10%	1644	1.46E-03	17	5.42%	1747	1.55E-03
2	1.56%	502	4.45E-04	10	5.31%	1713	1.52E-03	18	5.22%	1684	1.49E-03
3	1.48%	478	4.24E-04	11	5.46%	1760	1.56E-03	19	4.99%	1608	1.43E-03
4	1.64%	530	4.70E-04	12	5.60%	1804	1.60E-03	20	4.58%	1478	1.31E-03
5	2.28%	736	6.52E-04	13	5.61%	1809	1.60E-03	21	4.19%	1352	1.20E-03
6	3.44%	1110	9.84E-04	14	5.66%	1824	1.62E-03	22	3.91%	1260	1.12E-03
7	4.36%	1405	1.25E-03	15	5.71%	1841	1.63E-03	23	3.42%	1103	9.78E-04
8	4.86%	1567	1.39E-03	16	5.55%	1790	1.59E-03	24	2.66%	858	7.61E-04
								Total		32,240	

2026 Hourly Traffic Volumes Per Direction and TOG Evaporative Emissions - TEVAP_SB_WEB

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.98%	637	7.69E-04	9	5.10%	1644	1.98E-03	17	5.42%	1747	2.11E-03
2	1.56%	502	6.06E-04	10	5.31%	1713	2.07E-03	18	5.22%	1684	2.03E-03
3	1.48%	478	5.77E-04	11	5.46%	1760	2.12E-03	19	4.99%	1608	1.94E-03
4	1.64%	530	6.39E-04	12	5.60%	1804	2.18E-03	20	4.58%	1478	1.78E-03
5	2.28%	736	8.88E-04	13	5.61%	1809	2.18E-03	21	4.19%	1352	1.63E-03
6	3.44%	1110	1.34E-03	14	5.66%	1824	2.20E-03	22	3.91%	1260	1.52E-03
7	4.36%	1405	1.70E-03	15	5.71%	1841	2.22E-03	23	3.42%	1103	1.33E-03
8	4.86%	1567	1.89E-03	16	5.55%	1790	2.16E-03	24	2.66%	858	1.04E-03
								Total		32,240	

2433 Mariner Square, Alameda, CA
Cumulative Traffic - Webster Street (SR-260)
Fugitive Road PM2.5 Modeling - Roadway Links, Traffic Volumes, and Fugitive Road PM2.5 Emissions
Year = 2026

											Line Area					
Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day	Area (sq m)	Area (sq ft)	Emission (g/s/m2)	Emission (lb/hr/ft2)	Initial Vertical height (m)	(Sigma z) Initial Vertical Dimension
FUG_NB_WEB	Webster Street Northbound	NB	2	218.7	0.14	13.3	44	1.3	45	32,240	2,912	31,345	3.468E-07	2.557E-07	2.6	1.21
FUG_SB_WEB	Webster Street Southbound	SB	2	297.8	0.19	13.3	44	1.3	45	32,240	3,965	42,682	3.468E-07	2.557E-07	2.6	1.21
									Total	64,480						

Emission Factors - Fugitive PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	45			
Tire Wear - Emissions per Vehicle (g/VMT)	0.00206			
Brake Wear - Emissions per Vehicle (g/VMT)	0.00378			
Road Dust - Emissions per Vehicle (g/VMT)	0.01409			
Total Fugitive PM2.5 - Emissions per Vehicle (g/VMT)	0.01992			

Emisson Factors from CT-EMFAC2021

2026
Hourl

	Hour
1.72E+00	1
1.36E+00	2
1.29E+00	3

2026 Hourly Traffic Volumes and Fugitive PM2.5 Emissions - FUG_NB_WEB

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.98%	637	4.79E-04	9	5.10%	1644	1.24E-03	17	5.42%	1747	1.31E-03
2	1.56%	502	3.77E-04	10	5.31%	1713	1.29E-03	18	5.22%	1684	1.27E-03
3	1.48%	478	3.59E-04	11	5.46%	1760	1.32E-03	19	4.99%	1608	1.21E-03
4	1.64%	530	3.98E-04	12	5.60%	1804	1.36E-03	20	4.58%	1478	1.11E-03
5	2.28%	736	5.53E-04	13	5.61%	1809	1.36E-03	21	4.19%	1352	1.02E-03
6	3.44%	1110	8.35E-04	14	5.66%	1824	1.37E-03	22	3.91%	1260	9.47E-04
7	4.36%	1405	1.06E-03	15	5.71%	1841	1.38E-03	23	3.42%	1103	8.30E-04
8	4.86%	1567	1.18E-03	16	5.55%	1790	1.35E-03	24	2.66%	858	6.45E-04
								Total		32,240	

2026 Hourly Traffic Volumes Per Direction and Fugitive PM2.5 Emissions - FUG_SB_WEB

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.98%	637	6.52E-04	9	5.10%	1644	1.68E-03	17	5.42%	1747	1.79E-03
2	1.56%	502	5.13E-04	10	5.31%	1713	1.75E-03	18	5.22%	1684	1.72E-03
3	1.48%	478	4.89E-04	11	5.46%	1760	1.80E-03	19	4.99%	1608	1.65E-03
4	1.64%	530	5.42E-04	12	5.60%	1804	1.85E-03	20	4.58%	1478	1.51E-03
5	2.28%	736	7.53E-04	13	5.61%	1809	1.85E-03	21	4.19%	1352	1.38E-03
6	3.44%	1110	1.14E-03	14	5.66%	1824	1.87E-03	22	3.91%	1260	1.29E-03
7	4.36%	1405	1.44E-03	15	5.71%	1841	1.88E-03	23	3.42%	1103	1.13E-03
8	4.86%	1567	1.60E-03	16	5.55%	1790	1.83E-03	24	2.66%	858	8.79E-04
								Total		32,240	

2433 Mariner Square, Alameda, CA
Cumulative Traffic - Webster & Posey Tubes (SR-260)
DPM Modeling - Roadway Links, Traffic Volumes, and DPM Emissions
Year = 2026

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
DPM_NB_PT	Posey Tube Northbound	NB	2	1069.7	0.66	13.3	43.7	3.2	45	32,240
DPM_SB_WT	Webster Tube Southbound	SB	2	1039.7	0.65	13.3	43.7	3.2	45	32,240
									Total	64,480

2433 Mariner Square, Alameda, CA
Cumulative Traffic - Webster & Posey Tubes (SR-260)
PM2.5 Modeling - Roadway Links, Traffic Volumes, and PM2.5, Fugitive Road PM2.5, TOG Exhaust, and TOG Evaporative Emissions
Year = 2026

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
PM25_NB_PT	Posey Tube Northbound	NB	2	1069.7	0.66	13.3	44	1.2	45	32,240
PM25_SB_WT	Webster Tube Southbound	SB	2	1039.7	0.65	13.3	44	1.2	45	32,240
									Total	64,480

2433 Mariner Square, Alameda, CA - Webster Street/Tube and Posey Tube (SR-260) Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
at Construction MEI Receptors, 1.5m receptor height

Emission Year	2026
Receptor Information	Construction MEI receptors
Number of Receptors	2
Receptor Height	1.5 meters
Receptor Distances	At Construction MEI locations
Meteorological Conditions	
BAAD Oakland Airport Met Data	2013-2017
Land Use Classification	Urban
Wind Speed	Variable
Wind Direction	Variable

Project MEI Cancer Risk Maximum Concentrations

Meteorological Data Years	Concentration (μg/m3)		
	DPM	Exhaust TOG	Evaporative TOG
2013-2017	0.0005	0.0320	0.0514

Project MEI PM2.5 Maximum Concentrations

Meteorological Data Years	PM2.5 Concentration (μg/m3)		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013-2017	0.1004	0.0952	0.0051

2433 Mariner Square, Alameda, CA - Webster Street/Tube and Posey Tube (SR-260) Cancer Risk & PM2.5 Impacts at Construction MEIs - 1.5 meter (1st floor) receptor height
30 Year Residential Exposure

Cancer Risk Calculation Method

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

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

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

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

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

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

Values

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

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)			TOTAL
Exposure Year	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	
0	0.25	-0.25 - 0*	2026	10	0.0005	0.0320	0.0514	0.007	0.002	0.0002	0.01
1	1	0 - 1	2026	10	0.0005	0.0320	0.0514	0.085	0.030	0.0028	0.12
2	1	1 - 2	2027	10	0.0005	0.0320	0.0514	0.085	0.030	0.0028	0.12
3	1	2 - 3	2028	3	0.0005	0.0320	0.0514	0.013	0.005	0.0004	0.02
4	1	3 - 4	2029	3	0.0005	0.0320	0.0514	0.013	0.005	0.0004	0.02
5	1	4 - 5	2030	3	0.0005	0.0320	0.0514	0.013	0.005	0.0004	0.02
6	1	5 - 6	2031	3	0.0005	0.0320	0.0514	0.013	0.005	0.0004	0.02
7	1	6 - 7	2032	3	0.0005	0.0320	0.0514	0.013	0.005	0.0004	0.02
8	1	7 - 8	2033	3	0.0005	0.0320	0.0514	0.013	0.005	0.0004	0.02
9	1	8 - 9	2034	3	0.0005	0.0320	0.0514	0.013	0.005	0.0004	0.02
10	1	9 - 10	2035	3	0.0005	0.0320	0.0514	0.013	0.005	0.0004	0.02
11	1	10 - 11	2036	3	0.0005	0.0320	0.0514	0.013	0.005	0.0004	0.02
12	1	11 - 12	2037	3	0.0005	0.0320	0.0514	0.013	0.005	0.0004	0.02
13	1	12 - 13	2038	3	0.0005	0.0320	0.0514	0.013	0.005	0.0004	0.02
14	1	13 - 14	2039	3	0.0005	0.0320	0.0514	0.013	0.005	0.0004	0.02
15	1	14 - 15	2040	3	0.0005	0.0320	0.0514	0.013	0.005	0.0004	0.02
16	1	15 - 16	2041	3	0.0005	0.0320	0.0514	0.013	0.005	0.0004	0.02
17	1	16-17	2042	1	0.0005	0.0320	0.0514	0.001	0.001	0.0000	0.00
18	1	17-18	2043	1	0.0005	0.0320	0.0514	0.001	0.001	0.0000	0.00
19	1	18-19	2044	1	0.0005	0.0320	0.0514	0.001	0.001	0.0000	0.00
20	1	19-20	2045	1	0.0005	0.0320	0.0514	0.001	0.001	0.0000	0.00
21	1	20-21	2046	1	0.0005	0.0320	0.0514	0.001	0.001	0.0000	0.00
22	1	21-22	2047	1	0.0005	0.0320	0.0514	0.001	0.001	0.0000	0.00
23	1	22-23	2048	1	0.0005	0.0320	0.0514	0.001	0.001	0.0000	0.00
24	1	23-24	2049	1	0.0005	0.0320	0.0514	0.001	0.001	0.0000	0.00
25	1	24-25	2050	1	0.0005	0.0320	0.0514	0.001	0.001	0.0000	0.00
26	1	25-26	2051	1	0.0005	0.0320	0.0514	0.001	0.001	0.0000	0.00
27	1	26-27	2052	1	0.0005	0.0320	0.0514	0.001	0.001	0.0000	0.00
28	1	27-28	2053	1	0.0005	0.0320	0.0514	0.001	0.001	0.0000	0.00
29	1	28-29	2054	1	0.0005	0.0320	0.0514	0.001	0.001	0.0000	0.00
30	1	29-30	2055	1	0.0005	0.0320	0.0514	0.001	0.001	0.0000	0.00
Total Increased Cancer Risk								0.39	0.136	0.013	**0.54**

* Third trimester of pregnancy

Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.0001	0.10	0.10

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Risk & Hazard Stationary Source Inquiry Form

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

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

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

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

Table A: Requester Contact Information

Date of Request	**3/24/2025**
Contact Name	Jordyn Bauer
Affiliation	Illingworth & Rodkin, Inc.
Phone	707-794-0400 x106
Email	jbauer@illingworthrodkin.com
Project Name	2433 Mariner Square
Address	2433 Mariner Square
City	Alameda
County	Alameda
Type (residential, commercial, mixed use, industrial, etc.)	Residential
Project Size (# of units or building square feet)	356
Comments:	

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

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

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

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

4. Identify stationary sources within at least a 1000ft radius of project site. Verify that the location of the source on the map matches with the source's address in the Information Table, by using the Google 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 lue section only.

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

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

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

Submit forms, maps, and questions to Matthew Hanson at 415-749-8733, or mhanson@baaqmd.gov

Table B: Google Earth data

Distance from Receptor (feet) or MEI[1]	Plant No.	Facility Name	Address	Cancer Risk[2]	Hazard Risk[2]	$PM_{2.5}$[2]	Source No.[3]	Type of Source[4]	Fuel Code[5]	Status/Comments	Distance Adjustment Multiplier	Adjusted Cancer Risk Estimate	Adjusted Hazard Risk	Adjusted PM2.5
+1000	20438	City of Alameda Northside Pur	1253 Marina Village Pkwy	2.62	--	--		Generator		2022 Dataset	0.04	0.10	#VALUE!	#VALUE!
330	21790	Target Store T2829	2700 5th Street	0.01	--	--		Generator		2022 Dataset	0.22	0.002	#VALUE!	#VALUE!
+1000	202567	Checkerspot Inc.	1250 MARINA VILLAGE PA	0.8	--	--		Generator		2022 Dataset	0.04	0.03	#VALUE!	#VALUE!
815	23904	Sila Nanotechnologies Inc	2450 Mariner Sq Loop	4.7	--	0.01		Generator		2022 Dataset	0.06	0.28	#VALUE!	0.001

Project MEIs

Footnotes:

1. Maximally exposed individual
2. These Cancer Risk, Hazard Index, and PM2.5 columns represent the values in the Google Earth Plant Information Table.
3. Each plant may have multiple permits and sources.
4. Permitted sources include diesel back-up generators, gas stations, dry cleaners, boilers, printers, auto spray booths, etc.
5. Fuel codes: 98 = diesel, 189 = Natural Gas.
6. If a Health Risk Screening Assessment (HRSA) was completed for the source, the application number will be listed here.
7. The date that the HRSA was completed.
8. Engineer who completed the HRSA. For District purposes only.
9. All HRSA completed before 1/5/2010 need to be multiplied by an age sensitivity factor of 1.7.
10. The HRSA "Chronic Health" number represents the Hazard Index.
11. Further information about common sources:
    a. Sources that only include diesel internal combustion engines can be adjusted using the BAAQMD's Diesel Multiplier worksheet.
    b. The risk from natural gas boilers used for space heating when <25 MM BTU/hr would have an estimated cancer risk of one in a million or less, and a chronic hazard index of 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 Mulitplier worksheet.
    f. Unless otherwise noted, exempt sources are considered insignificant. See BAAQMD Reg 2 Rule 1 for a list of exempt sources.
    g. This spray booth is considered to be insignificant.

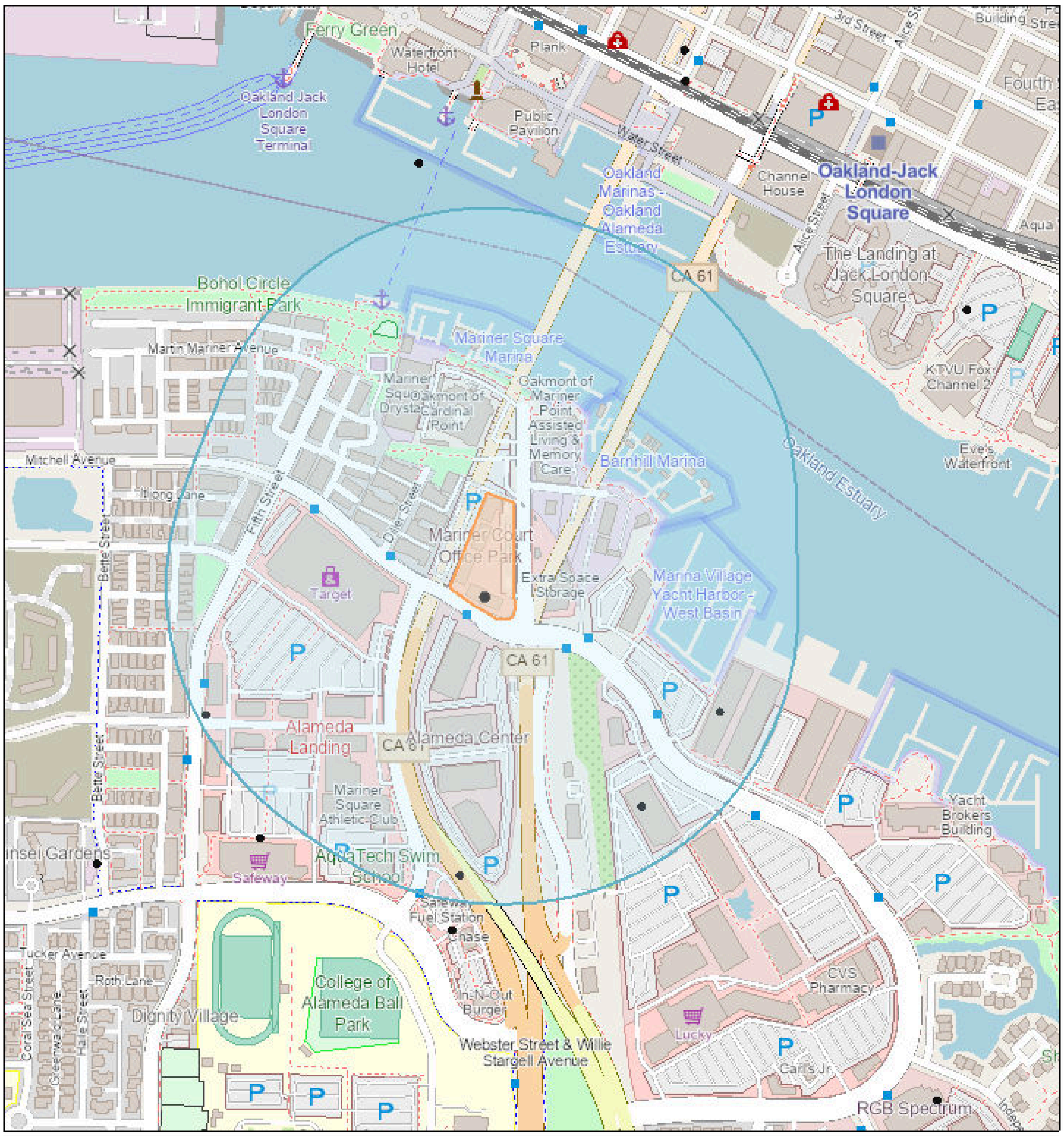
Date last updated:
05/03/2022

Screening Report

Area of Interest (AOI) Information

Area : 6,221,397.26 ft²

Jan 24 2025 13:23:37 Pacific Standard Time



• Permitted Stationary Sources

1:9,028

0 0.05 0.1 0.2 mi

0 0.07 0.15 0.3 km

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

Summary

Name	Count	Area(ft²)	Length(ft)
Permitted Stationary Sources	4	N/A	N/A

Permitted Stationary Sources

#	Address	Cancer_Ris	Chronic_Ha	City	County
1	1253 Marina Village Pkwy	2.62	0.00	Alameda	Alameda
2	2700 5th Street	0.01	0.00	Alameda	Alameda
3	1250 MARINA VILLAGE PARKWAY	0.80	0.00	Alameda	Alameda
4	2450 Mariner Sq Loop	4.70	0.00	Alameda	Alameda

#	Details	Facility_I	Facility_N	Latitude	Longitude
1	Generator	20438	City of Alameda Northside Pump Station	37.79	-122.27
2	Generator	21790	Target Store T2829	37.79	-122.28
3	Generator	202567	Checkerspot Inc.	37.79	-122.27
4	Generator	23904	Sila Nanotechnologies Inc	37.79	-122.28

#	NAICS	NAICS_Indu	NAICS_Sect	NAICS_Subs	PM25
1	221122	Electric Power Distribution	Utilities	Utilities	0.00
2	452112	Discount Department Stores	Retail Trade	General Merchandise Stores	0.00
3	238210	Electrical Contractors and Other Wiring Installation Contractors	Construction	Specialty Trade Contractors	0.00
4	325180	Other Basic Inorganic Chemical Manufacturing	Manufacturing	Chemical Manufacturing	0.01

#	State	Zip	Count
1	CA	94501	1
2	CA	94501	1
3	CA	94501	1
4	CA	94501	1

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