68 WILLOW ROAD CONSTRUCTION EMISSIONS AND HEALTH RISK ASSESSMENT

Menlo Park, California

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Introduction

The purpose of this report is to address the potential construction air quality and health risk impacts associated with the proposed residential development located at 68 Willow Road in Menlo Park, California. Air quality impacts from this project would be associated with demolition and the construction of the new townhomes. Air pollutants associated with construction of the project were estimated using appropriate computer models. In addition, the potential project health risks and the impacts of existing toxic air contaminant (TAC) sources affecting nearby and proposed sensitive receptors were evaluated. The analysis was conducted following guidance provided by the Bay Area Air District (Air District).[1] The Bay Area Air Quality Management District, or BAAQMD, formally changed their name to the Bay Area Air District in early 2025 and prefers to be referred to as the Air District. The Air District and BAAQMD are synonymous. For informational purposes, this report also provides analysis of TAC sources on future project residents.

Project Description

The 2.5-acre project site is currently developed with an existing office building and associated surface parking lot. The project proposes to demolish the existing use to construct a 50-unit townhome development consisting of eight three-story buildings, which include Zipper Townhomes and Traditional townhomes totaling approximately 121,252 square feet (sf). There will be two guest parking spaces. Construction is expected to begin in January of 2026.

This project will be subject to the mitigation measures found in the City of Menlo Park Housing Element Update Program Subsequent Environmental Impact Report, as discussed below.

Menlo Park Housing Element Update

In January 2023, the City of Menlo Park certified the City of Menlo Park Housing Element Update (HEU) Subsequent Environmental Impact Report (SEIR)[2] and adopted the HEU. The HEU amended the City's General Plan (ConnectMenlo) to provide goals, policies, and implementing programs to address housing needs citywide. This project, after accounting for Density Bonus Law, is consistent with the project site's General Plan land use designation (put in place by ConnectMenlo) and zoning.

The ConnectMenlo General Plan Update in 2016 enabled opportunities for over 5,000 new housing units in the City, including housing on the project site. The HEU SEIR evaluated the potential for housing sites sufficient to accommodate 4,000 new dwelling units, as well as accounting for General Plan growth, pipeline projects and potential accessory dwelling units (ADUs) to consider a maximum build-out and cumulative scenarios. Specifically, the HEU SEIR began with the 2015 baseline data from ConnectMenlo and updated it to a 2021 baseline by incorporating approved and constructed housing units, estimated population, and estimated jobs added since the adoption of

[1] Bay Area Air District, *2022 CEQA Guidelines*, April 2023
[2] City of Menlo Park, URL: https://menlopark.gov/files/sharedassets/public/v/1/community-development/documents/projects/housing-element-update/menlo-park-housing-element-update-draft-seir.pdf

ConnectMenlo in 2016. In addition to 4,000 new housing units that could be developed through zoning changes as part of the HEU, the SEIR accounted for 2,733 new residential units from projects that have been submitted and are currently under review, 85 anticipated accessory dwelling units, and an additional 299 units of cumulative development.

The following air quality impacts and mitigation measures were identified in the HEU SEIR:

Impact AQ-1: Implementation of the HEU would not conflict with or obstruct implementation of the applicable air quality plan. (*Less than Significant)*

Impact AQ-2: Implementation of the HEU would result in a cumulatively considerable net increase of criteria pollutants for which the project region is in non-attainment under an applicable federal or state ambient air quality standard. (*Significant and Unavoidable Impact, with Mitigation)*

Mitigation Measure AQ-2: Emission Reduction Measures

The following mitigation measures are recommended to reduce criteria air pollutant emissions from multi-family housing developments under the HEU. These measures are also required under the City's municipal code section 16.02.070 that states all applicable development within the city shall comply and implement the mitigation measures in the ConnectMenlo General Plan EIR and HEU EIR.

a) As part of the City's development approval process, the City shall require applicants for future development projects to comply with current Bay Area Air Quality Management District's basic control measures for reducing construction emissions of PM_{10}.

b) Prior to issuance of building permits, development project applicants that are subject to CEQA and exceed the screening sizes in the BAAQMD's CEQA Guidelines shall prepare and submit to the City of Menlo Park a technical assessment evaluating potential project construction-related air quality impacts. This project does not exceed the BAAQMD screening sizes. The evaluation shall be prepared in conformance with the BAAQMD methodology in assessing air quality impacts. If construction-related criteria air pollutants are determined to have the potential to exceed the BAAQMD thresholds of significance, as identified in the BAAQMD CEQA Guidelines, the City of Menlo Park shall require that applicants for new development projects incorporate emission reduction measures to reduce air pollutant emissions during construction activities to below the thresholds of significance. These identified measures shall be incorporated into all appropriate construction documents submitted to the City and shall be verified by the City's Building Division and/or Planning Division.

c) In the event that a project-specific analysis finds that the project could result in significant construction criteria air pollutant emissions that exceed significance thresholds, the project sponsor shall implement the following emission reduction measures to the degree necessary to reduce the impact to less than significance thresholds, and shall implement other feasible measures as needed to reduce the impact to less than the significance thresholds.

1) Diesel off-road equipment shall have engines that meet the Tier 4 Final off-road emission standards, as certified by CARB, as required to reduce the emissions to less than the thresholds of significance shown in Table 2-1 of the BAAQMD CEQA Guidelines (BAAQMD, 2017b). This requirement shall be verified through submittal of an equipment inventory that includes the following information: (1) Type of Equipment, (2) Engine Year and Age, (3) Number of Years Since Rebuild of Engine, (4) Type of Fuel Used, (5) Engine HP, (6) Verified Diesel Emission Control Technology (VDECS) information if applicable and other related equipment data. A Certification Statement is also required to be made by the Contractor for documentation of compliance and for future review by the BAAQMD as necessary. The Certification Statement must state that the Contractor agrees to compliance and acknowledges that a violation of this requirement shall constitute a material breach of contract.

   The City may waive the equipment requirement above only under the following unusual circumstances: if a particular piece of off-road equipment with Tier 4 Final standards is technically not feasible or not commercially available; the equipment would not produce desired emissions reduction due to expected operating modes; installation of the equipment would create a safety hazard or impaired visibility for the operator; or there is a compelling emergency need to use other alternate off-road equipment. If the City grants the waiver, the contractor shall use the next cleanest piece of off-road equipment available.

2) The project sponsor shall require the idling time for off-road and on-road equipment be limited to no more than 2 minutes, except as provided in exception to the applicable state regulations regarding idling for off-road and on-road equipment. Legible and visible signs shall be posted in multiple languages (English, Spanish, Chinese) in

designated queuing areas and at the construction site to remind operators of the 2-minute idling limit.

d) Prior to issuance of building permits, development project applicants that are subject to CEQA and exceed the screening sizes in the BAAQMD CEQA Guidelines shall prepare and submit to the City of Menlo Park a technical assessment evaluating potential project operation-phase-related air quality impacts. The evaluation shall be prepared in conformance with the BAAQMD methodology in assessing air quality impacts. If operational-related criteria pollutants are determined to have the potential to exceed the BAAQMD thresholds of significance, as identified in BAAQMD's CEQA Guidelines, the City of Menlo Park Community Development Department shall require that applicants for new development projects incorporate emission reduction measures to reduce air pollutant emissions during operational activities to below the thresholds of significance.

Impact AQ-3: Implementation of the HEU would not expose sensitive receptors to substantial pollutant concentrations. (*Less than Significant with Mitigation*).

Mitigation Measure AQ-3: Health Risk Reduction Measures.

a) Applicants for residential and other sensitive land use projects (e.g., hospitals, nursing homes, day care centers) in Menlo Park within 1,000 feet of major sources of toxic air contaminants (TACs) (e.g., warehouses, industrial areas, freeways, and roadways with traffic volumes over 10,000 vehicles per day), as measures from the property line of the project to the property line of the source/edge of the nearest travel lane, shall submit a health risk assessment (HRA) to the City of Menlo Park prior to future discretionary Project approval. The HRA shall be prepared in accordance with policies and procedures of State Office of Environmental Health Hazard Assessment (OEHAA) and the Bay Area Air Quality Management District. The latest OEHHA guidelines shall be used for the analysis, including age sensitivity factors, breathing rates, and body weights appropriate for children ages 0 to 16 years. If the HRA shows that the incremental cancer risk exceeds ten in one million ($10E^{06}$), $PM_{2.5}$ concentrations exceed 0.3 $\mu g/m^3$, or the appropriate noncancer hazard index exceeds 1.0, including appropriate enforcement mechanisms. Measures to reduce risk include but are not limited to: Air intakes located away from high volume roadways and/or truck loading zones; Heating, ventilation, and air conditioning systems of the buildings provided with appropriately sized maximum efficiency rating value (MERV) filters. Measures identified in the HRA shall be included in the environmental document and/or incorporated into the site development plan as a

component of the proposed project. The air intake design and MERV filter requirements shall be noted and/or reflected on all building plans submitted to the City and shall be verified by the City's Building Division and/or Planning Division.

Project sponsors proposing multifamily development projects within 1,000 feet of sensitive receptors, including residences, schools, day care centers, and hospitals, shall prepare a project-level health risk assessment at the time the project is proposed. In lieu of a project-level health risk assessment, a comparison of the project with other similar-sized projects located a similar distance from receptors and with a similar type of development (e.g., bedroom counts) where a quantitative analysis has been conducted and were found to not exceed the BAAQMD health risk thresholds can be used to demonstrate health risk impacts that are less than significant. The selection of comparison projects shall be subject to preapproval by the City. If the comparison does not show the project will have the same or less impact, a project-level health risk assessment is required.

In the event that a project-level health risk assessment finds that the project could result in health risks that exceed significance thresholds, the project sponsor shall implement the clean construction equipment requirement of Mitigation Measure AQ-2(c) to the degree necessary to reduce the impact to less than significance thresholds, and shall implement other feasible measures as needed to reduce the impacts to less than significant.

Impact AQ-4: Implementation of the HEU would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people. (*Less than Significant*)

Impact AQ-5: Implementation of the HEU, in conjunction with cumulative sources, would not result in exposure of sensitive receptors to a cumulatively considerable increase in levels of fine particulate matter ($PM_{2.5}$) and TACs under cumulative conditions. (*Less than Significant*)

Impact AQ-6: Implementation of the HEU, when combined with other past, present, or reasonably foreseeable projects, would not combine with other sources of odors that would adversely affect a substantial number of people. (*Less than Significant*).

Air Quality Setting

Ambient Air Quality Standards

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}), sulfur dioxide (SO_2), and lead (Pb). In 1997, The Environmental Protection Agency (EPA) added fine particulate matter ($PM_{2.5}$) as a criteria pollutant. 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, lead concentrations have decreased dramatically since it was removed from motor vehicle fuels. The Bay Area has attained the CO standard and monitoring 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 that are downwind of air pollutant sources. High ozone concentrations aggravate respiratory and cardiovascular diseases, reduced lung function, and increase coughing and chest discomfort.

Particulate matter is another problematic air pollutant in the air basin. Particulate matter is assessed and measured in terms of respirable particulate matter or particles that have a diameter of 10 micrometers or less (PM_{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 in the Air District's current CEQA guidance.[3]

$PM_{2.5}$ emissions can include TACs. Due to the adverse health effects caused by $PM_{2.5}$ exposure even at low concentrations, Air District developed assessing methods and health risk thresholds to address exposure to increased concentrations caused by project $PM_{2.5}$ emissions.[4]

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 small children are the most sensitive receptors, since they are more susceptible to cancer causing TACs. Residential locations are assumed to include infants and small children. The closest sensitive receptors are the single and multi-family residences surrounding the project site. This project would introduce new sensitive receptors (i.e., residents) to the area.

Project Air Quality Conditions

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

Bay Area Air District

The 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

[3] 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.
[4] Bay Area Air District, 2022 CEQA Air Quality Guidelines, Appendix A, p40.

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 National Ambient Air Quality Standards and California Ambient Air Quality Standards. The District also has permit authority over most types of stationary equipment utilized for the proposed project. The 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.[5] 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 not within any CARE areas.

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.[6] The Air District has identified several overburdened areas within its boundaries. The project site is not within an overburdened area as the Project site is scored at the 8th percentile on CalEnviroScreen.[7]

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

[5] See Bay Area Air District: https://www.baaqmd.gov/community-health/community-health-protection-program/community-air-risk-evaluation-care-program.
[6] 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.
[7] OEHAA, CalEnviroScreen 4.0 Maps https://experience.arcgis.com/experience/11d2f52282a54ceebcac7428e6184203/page/CalEnviroScreen-4_0/

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 *California Environmental Quality Act* (*CEQA) Air Quality Guidelines* that include significance thresholds to assist in the evaluation of air quality impacts of projects and plans proposed within the Bay Area. The current 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 and air toxics emissions as shown in Table 1.[8] 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.

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

Table 1. Air District CEQA Significance Thresholds

Criteria Air Pollutant	Construction Thresholds			
	Average Daily Emissions (lbs./day)			
ROG	54			
NO_x	54			
PM_{10}	82 (Exhaust)			
$PM_{2.5}$	54 (Exhaust)			
CO	Not Applicable			
Fugitive Dust (PM_{10}/$PM_{2.5}$)	Best Management Practices (BMPs)*			
Health Risks and Hazards	**Single Sources/ Individual Project**		**Combined Sources (Cumulative from all sources within 1000-foot zone of influence)**	
Excess Cancer Risk	>10 in a million	OR Compliance with Qualified Community Risk Reduction Plan	>100 in a million	OR Compliance with Qualified Community Risk Reduction Plan
Hazard Index	>1.0		>10.0	
Incremental annual $PM_{2.5}$	>0.3 µg/m^3		>0.8 µg/m^3	

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

* 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

City of Menlo Park General Plan

The City of Menlo Park General Plan or ConnectMenlo, adopted November 29, 2016, includes goals, policies, and programs to reduce exposure of the City's sensitive population to exposure of air pollution and toxic air contaminants or TACs. The following goals, policies, and programs are applicable to the proposed project and this assessment:

Land Use Element

Goal LU-7 Promote the implementation and maintenance of sustainable development, facilities, and services to meet the needs of Menlo Park's residents, businesses, workers, and visitors.

Applicable Policies – Land Use Element

Policy LU-7.9 Green Building. Support sustainability and green building best practices through the orientation, design, and placement of buildings and facilities to optimize their energy efficiency in preparation of State zero-net energy requirements for residential construction in 2020 and commercial construction in 2030.

Applicable Programs – Land Use Element

Policy LU-7.A Green Building Operation and Maintenance. Employ green building and operation and maintenance best practices, including increased energy efficiency, use of renewable energy and reclaimed water, and install drought-tolerant landscaping for all projects.

Policy LU-7.D Performance Standards. Establish performance standards in the Zoning Ordinance that requires new development to employ environmentally friendly technology and design to conserve energy and water and minimize the generation of indoor and outdoor pollutants.

Circulation Element

Goal CIRC-3 Increase mobility options to reduce traffic congestion, greenhouse gas emissions, and commute travel time.

Goal CIRC-5 Support local and regional transit that is efficient, frequent, convenient, and safe.

Goal CIRC-6 Provide a range of transportation choices for the Menlo Park community.

Goal CIRC-7 Utilize innovative strategies to provide efficient and adequate vehicle parking.

Applicable Policies – Circulation Element

Policy CIRC-3.1 Vehicle-Miles Traveled. Support development and transportation improvements that help reduce per service population (or other efficiency metric) vehicle miles traveled.

Policy CIRC-5.7 New Development. Ensure that new nonresidential, mixed-use, and multiple-dwelling residential development provides associated needed transit service, improvements and amenities in proportion with demand attributable to the type and scale of the proposed development.

Policy CIRC-7.1 Parking and New Development. Ensure new development provides appropriate parking ratios, including application of appropriate minimum and/or maximum ratios, unbundling, shared parking, electric car charging, car sharing, and Green Trip Certified strategies to accommodate residents, employees, customers and visitors.

Applicable Programs – Circulation Element

Program CIRC-6.C Transportation Impact Fee. Require new and expanded development to pay a transportation impact fee, and update the fee periodically to ensure that development is paying its fair share of circulation system improvement costs for all modes of transportation.

Open Space/Conservation Element

Goal OSC-4 Promote sustainability and climate action planning. Promote a sustainable energy supply and implement the City's Climate Action Plan to reduce greenhouse gas emissions and improve the sustainability of actions by City government, residents, and businesses in Menlo Park. This includes promoting land use patterns that reduce the number and length of motor vehicle trips, and encouraging recycling, reduction and reuse programs.

Goal OSC-5 Ensure healthy air and water quality. Enhance and preserve air quality in accord with State and regional standards, and encourage the coordination of total water quality management including both supply and wastewater treatment.

Applicable Policies – Open Space/Conservation Element

Policy OSC-4.2 Sustainable Building. Promote and/or establish environmentally sustainable building practices or standards in new development that would conserve water and energy, prevent stormwater pollution, reduce landfilled waste, and reduce fossil fuel consumption from transportation and energy activities.

Policy OSC-4.3 Renewable Energy. Promote the installation of renewable energy technology, such as, on residences and businesses through education, social marketing methods, establishing standards and/or providing incentives.

Policy OSC-4.5 Energy Standards in Residential and Commercial Construction. Encourage projects to achieve a high level of energy conservation exceeding standards set forth in the California Energy Code for Residential and Commercial development.

Policy OSC-5.1 Air and Water Quality Standards. Continue to apply standards and policies established by the Bay Area Air Quality Management District (BAAQMD), San Mateo Countywide Water Pollution Prevention Program (SMCWPPP), and City of Menlo Park Climate Action Plan through the California Environmental Quality Act (CEQA) process and other means as applicable.

Construction Period Emissions

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

CalEEMod Modeling

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
Condo/High Mid Rise	50	Dwelling Unit	121,252	2.50
Parking Lot	2	Parking Spaces	-	

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 information provided by the project applicant (included in *Attachment 1*). The construction schedule assumed that the earliest possible start date would be January 2026, and the project would be built out over a period of approximately 20 months, or 427 construction workdays.

Construction Truck Traffic Emissions

Construction would produce traffic in the form of worker trips and truck traffic. The traffic-related emissions are based on worker and vendor trip estimates produced by CalEEMod and haul trips that were computed based on the amount of demolition material to be exported, soil imported and/or exported to the site, and the amount of concrete and asphalt truck trips to and from the site. CalEEMod provides daily estimates of worker and vendor trips for each applicable phase. Daily haul trips for demolition and grading were developed by CalEEMod using the provided demolition and soil import/export volumes. The number of total concrete/asphalt round haul trips were provided for the project and 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 Period 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 unmitigated annualized average daily construction emissions of ROG, NO_X, PM_{10} exhaust, and $PM_{2.5}$ exhaust during construction of the project. As indicated in Table 3, predicted unmitigated annualized project construction emissions would not exceed the Air District significance thresholds during any year of construction.

Table 3. Construction Period Emissions - Unmitigated

Year	ROG	NOx	PM_{10} Exhaust	$PM_{2.5}$ Exhaust
Construction Emissions Per Year (Tons)				
2026	0.11	0.91	0.03	0.03
2027	0.92	0.52	0.01	0.01
Average Daily Construction Emissions Per Year (pounds/day)				
2026 (261 construction workdays)	0.80	6.96	0.23	0.21
2027 (166 construction workdays)	11.14	6.32	0.16	0.14
Air District Thresholds (pounds per day)	*54* lbs./day	*54* lbs./day	*82* lbs./day	*54* lbs./day
Exceed Threshold?	No	No	No	No

Construction activities, particularly during site preparation and grading, would temporarily generate fugitive dust in the form of PM_{10} and $PM_{2.5}$. Sources of fugitive dust would include disturbed soils at the construction site and trucks carrying uncovered loads of soils. Unless properly controlled, vehicles leaving the site would deposit mud on local streets, which could be an additional source of airborne dust after it dries. General Plan Policy OSC-5.1, Air and Water Quality Standards, and HEU SEIR Mitigation Measure AQ-2a requires projects to apply standards and policies established by the Air District. 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 when BMPs are implemented.

Menlo Park General Plan Policy OSC-5.1 & HEU SEIR Mitigation Measure AQ-2a:
Best Management Practices for Construction Dust Suppression.

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

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

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

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

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

6. All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph.

7. All trucks and equipment, including their tires, shall be washed off prior to leaving the site.

8. Unpaved roads providing access to site located 100 feet of further from a paved road shall be treated with a 6- to 12-inch layer of compacted layer of wood chips, mulch, or gravel.

9. Publicly visible signs shall be posted with the telephone number and name of the person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's General Air Pollution Complaints number shall be visible to ensure compliance with applicable regulations.

Effectiveness of Menlo Park General Plan Policy OSC-5.1 & HEU SEIR Mitigation Measure AQ-2a

General Plan Policy OSC-5.1 and *HEU SEIR Mitigation Measure AQ-2a* are consistent with Air District-recommended basic BMPs for reducing fugitive dust contained in the Bay Area Air District CEQA Air Quality Guidelines and is a uniformly applied development standard in the City. Only the basic set of BMPs are required as the unmitigated fugitive dust emissions from construction are below the Air District single-source threshold.

Additional measures under HEU SEIR Mitigation Measure AQ-2c are not necessary because the project does not have criteria air pollutant emissions that exceed criteria pollutant significance thresholds during the construction period.

Operational Period Emissions

The Project would result in emissions mostly from vehicle travel, evaporative ROG from consumer products, and other minor miscellaneous sources. The Bay Area Air District CEQA Air Quality Guidelines consider land use projects, such as this project, to have significant criteria pollutant emissions if they are larger than the screening levels contained in *Chapter 4, Table 4-1* of the guidelines. The project size is 50 townhomes/condos, which is well below the screening level of 637 Condo-Townhouse units for significant operational emissions. Therefore, the criteria air pollutant emissions generated by the project would not be significant.

Construction Health Risk Impacts

Project impacts related to increased health risk can occur by generating emissions of TACs and 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. Construction equipment and associated heavy-duty truck traffic generates diesel exhaust, which is a known TAC. These exhaust emissions pose health risks for sensitive receptors such as surrounding residents, school students, and daycare infants/children. The primary health risk impact issues associated with construction emissions are cancer risk and exposure to $PM_{2.5}$. A health risk assessment of the project construction activities was conducted that evaluated potential health effects to nearby sensitive receptors from construction emissions of DPM and $PM_{2.5}$.[9] This assessment included dispersion modeling to predict the offsite and onsite concentrations resulting from project construction, so that lifetime cancer risks and non-cancer health effects could be evaluated. The project maximally exposed individual (MEI) is identified as the sensitive receptor that is most impacted by the project's construction.

[9] DPM is identified by California as a toxic air contaminant due to the potential to cause cancer.

The methodology for computing health risks impacts is contained in Appendix E of the Bay Area 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

According to the Bay Area Air District CEQA Guidelines, Appendix E, sensitive receptors are individuals more susceptible to poor air quality (i.e., children, the elderly, and those with preexisting serious health problems affected by air quality). Land uses where sensitive individuals are most likely to spend time include schools and schoolyards, parks and playgrounds, daycare centers and preschools, hospices, dormitories, correctional facilities, nursing homes, hospitals, and residential communities. Students at K–12 schools are considered sensitive receptors for any project proposed within 1,000 feet of the school property. The Air District recommends that a student scenario be included in the HRA when a school is located within 1,000 feet of the project. Receptors for this assessment included locations where sensitive populations would be present for extended periods of time (i.e., chronic exposures). This includes the existing residences near the project site as shown in Figure 1. Residential receptors are assumed to include all receptor groups (i.e., third trimester, infants, children, and adults) with almost continuous exposure to project emissions. While there are additional sensitive receptors within 1,000 feet of the project site, the receptors chosen are adequate to identify maximum impacts from the project. No schools are located within 1,000 feet of the project site.

The Air District defines worker receptors as off-site locations where people work, including indoor and outdoor areas and commercial/industrial areas currently zoned or planned to be zoned for manufacturing, light or heavy industry, office, or retail activity. There are two nearby office building where workers work inside and unlike residential receptors, would not spend substantial time outdoors. Worker receptors are far less sensitive to TACs because they are considered to be adults with lower per weight breathing rates and sensitivity to cancer causing contaminant exposure. However, worker receptors were included to ensure that the analysis is sufficiently health protective of the most vulnerable populations and captures the location where an individual will receive the highest exposure of TAC and $PM_{2.5}$ emissions from the project.

Construction Emissions

The CalEEMod model provided total annual PM_{10} exhaust emissions (assumed to be DPM) for the off-road construction equipment mix submitted by the applicant and for exhaust emissions from on-road vehicles, with total emissions from all construction stages being 0.04 tons (86 pounds). Emissions from onroad vehicle travel on and near the site were also modeled as area sources at the project site. The onroad vehicle emissions are a result of haul truck travel on-site during demolition and grading activities, worker travel on-site, and vendor travel on-site during construction. A trip length of one-half mile was used to represent vehicle travel while at or near the construction site. Fugitive $PM_{2.5}$ dust emissions were calculated by CalEEMod as 0.02 tons (42 pounds) for the overall construction period.

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.[10] 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 16.4 feet (5 meters).[11] The project is located within the Bay Area Air Management District's air basin, but the Air District does not provide specific guidance for release heights of exhaust or fugitive emissions. Instead, Sacramento Metropolitan Air Quality Management District guidance was utilized for release height specifics. Their guidance specifies use of a 5-meter release height. It should be noted that AERMOD does not calculate plume rise for an area source, so this release height is intended to mimic the height of the DPM plume after daytime temperature induced buoyancy effects end and the plume has reached equilibrium with the surrounding atmosphere.

For modeling fugitive $PM_{2.5}$ emissions, an area source with a near-ground level release height of 0 feet (0 meters) was used. This follows the previously mentioned Sacramento Metropolitan Air Quality Management District's CEQA guidance. 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.

AERMOD Inputs and Meteorological Data

The modeling used a five-year data set (2013 - 2017) of hourly meteorological data from the Moffett Field Airport prepared for use with the AERMOD model by the Air District. Construction emissions were modeled as occurring Monday through Friday between 8:00 a.m. to 6:00 p.m., based on the applicant's provided construction schedule. 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 heights on the first and second floors of nearby single and multi-family residences.[12] Those same breathing heights were used for the worker receptors as well.

Summary of Construction Health Risk Impacts

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

[10] Bay Area Air District 2023, *Appendix E of the 2022 BAAQMD CEQA Guidelines.* April.
[11] 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
[12] Bay Area Air District, 2023, *Appendix E of the 2022 BAAQMD CEQA Guidelines.* April.

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. The first year of construction emissions modeling were extended to include third trimester and one whole year to conservatively predict cancer risk and added to the effects of the full second year of exposure.

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 refence exposure level of 5 $\mu g/m^3$.

The modeled maximum annual DPM and $PM_{2.5}$ concentrations were identified at nearby sensitive receptors (as shown in Figure 1) to find the maximally exposed individuals (MEI). Results of this assessment indicated that the construction MEI was located at two different receptors. The cancer risk MEI was located southeast of the project site on the first floor (5 feet above the ground) of a multi-family residence. The annual $PM_{2.5}$ concentration was located on the first floor (5 feet above the ground) at a business south of the project site. Table 4 summarizes the maximum cancer risks, $PM_{2.5}$ concentrations, and HI for project related construction activities affecting the construction MEIs. *Attachment 2* to this report includes the emission calculations used for the construction modeling and the cancer risk calculations.

Construction risk impacts are shown in Table 4. The maximum cancer risks and annual $PM_{2.5}$ concentration from construction activities at the construction MEIs are above their Air District single-source significance threshold. However, with the incorporation of *HEU SEIR Mitigation Measure AQ-2c,* discussed below, the project would no longer exceed the Air District single-source significance threshold for both cancer risk and annual $PM_{2.5}$ concentration. The HI from construction activities would be below the single-source significance thresholds with and without mitigation.

Table 4. Construction Risk Impacts at the Off-Site MEIs

Source		Cancer Risk[1] (per million)	Annual $PM_{2.5}$[1] ($\mu g/m^3$)	Hazard Index
Project Impact				
Project Construction	Unmitigated	**16.51 (infant)**	**0.35**	0.01
	Mitigated	2.32 (infant)	0.21	<0.01
Air District Single-Source Threshold		***>10.0***	***>0.3***	***>1.0***
Exceed Threshold?	Unmitigated	***Yes***	***Yes***	*No*
	Mitigated	*No*	*No*	*No*

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

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

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

Cumulative health risk assessments look at all substantial sources of TACs located within 1,000 feet of a project site (i.e., influence area) that can affect sensitive receptors. These sources include rail lines, highways, busy surface streets, and stationary sources identified by 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 roadway and stationary sources at the MEI. Local roadways were identified with the potential to affect the construction MEI. There are no existing stationary sources of TACs nor railroads near the project site with the potential to affect the construction MEI. Figure 2 shows the locations of the sources affecting the MEI within the influence area. Health risk impacts from these sources upon the MEI are reported in Table 5. Details of the screening, modeling, and health risk calculations are included in *Attachment 3.*

Figure 2. Project Site and Nearby TAC and $PM_{2.5}$ Sources

Nearby Local Roadways

The project site is located near multiple intersecting streets. Cancer risk, $PM_{2.5}$ concentrations, and HI associated with traffic on the nearby roadways were estimated using Air District screening values provided via GIS data files (i.e., raster files).[13] The Air District raster files provide screening-level cancer risk, $PM_{2.5}$ concentrations, and HI for roadways within the Bay Area and were produced using AERMOD and 20x20-meter emissions grid. The raster file uses EMFAC2021 data for vehicle emissions and fleet mix for roadways and includes Appendix E of the Air District's CEQA Air Quality Guidance for risk assessment assumptions. These estimates represent conservative risks reflective of 2022 conditions and are meant to provide a conservative estimate of future conditions, which do not reflect the increased proportion of zero emission motor vehicles that will result in lower future emissions.[14] These screening values are considered higher than values that would be obtained with refined modeling methods. These raster data are based on region-wide emissions rather than just those that occur within 1,000 feet of the project. More information regarding the assumptions used to develop the screening layers can be found in

[13] https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/ceqa-tools/health-risk-screening-and-modeling

[14] Bay Area Air District, 2022. *BAAQMD CEQA Air Quality Guidelines Appendix E*, Section 9. April 2023

Sections 6 and 7 in Appendix E of the Bay Area Air District 2022 CEQA guidance.[15] Screening-level cancer risk, $PM_{2.5}$ concentration, and HI for the cumulative roadway impacts at the construction MEI are listed in Table 5.

Air District Permitted Stationary Sources

The Air District's *Permitted Stationary Sources 2022* GIS website[16] is a mapping tool that identifies the location of nearby stationary sources and their estimated risk and hazard impacts. There were no identified sources within the project's 1,000-foot influence area found using this tool.

Summary of Cumulative Health Risk Impacts

Table 5 reports both the project and cumulative health risk impacts. The cumulative annual cancer risk, maximum $PM_{2.5}$ concentration and HI values would not exceed the Air District's cumulative source health risk thresholds

Table 5. Impacts from Combined Sources at Construction MEI

Source		Cancer Risk (per million)	Annual $PM_{2.5}$ ($\mu g/m^3$)	Hazard Index
Project Impacts				
Project Construction	Unmitigated	**16.51 (infant)**	**0.35**	0.01
	Mitigated	2.32 (infant)	0.21	<0.01
Air District Single-Source Threshold		***>10.0***	***>0.3***	***>1.0***
Exceed Threshold?	Unmitigated	***Yes***	***Yes***	*No*
	Mitigated	*No*	*No*	*No*
Cumulative Impacts				
Cumulative Roadways – Air District GIS Screening Data		6.68	0.16	0.03
Cumulative Total	Unmitigated	23.19	0.51	0.04
	Mitigated[1]	9.00	0.37	<0.04
Air District Cumulative Source Threshold		***>100***	***>0.8***	***>10.0***
Exceed Threshold?	Unmitigated	*No*	*No*	*No*
	Mitigated[1]	*No*	*No*	*No*

[1] Implementation of HEU SEIR Mitigation Measure AQ-2c

[15] Bay Area Air District, 2022. Bay Area Air District CEQA Air Quality Guidelines Appendix E. April 2023. https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-guidelines-2022/appendix-e-recommended-methods-for-screening-and-modeling-local-risks-and-hazards_final-pdf.pdf?la=en

[16] Bay Area Air District, *Stationary Source Screening Map*, 2023. Web: https://baaqmd.maps.arcgis.com/apps/webappviewer/index.html?id=845658c19eae4594b9f4b805fb9d89a3

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

Implement a feasible plan to reduce diesel particulate matter emissions by at least 40 percent such that increased cancer risk from construction would be reduced below TAC significance levels as follows:

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

Effectiveness of HEU SEIR Mitigation Measure AQ-2c

CalEEMod was used to compute emissions associated with HEU SEIR Mitigation Measure AQ-2c assuming that all construction equipment met U.S. EPA Tier 4 final engine standards. With these implemented, the project's cancer risk would be reduced by 86 percent to 2.32 per million. As a result, the project's construction risks and hazards would be reduced below the Air District single-source thresholds. No additional measures are necessary.

Non-CEQA: On-site Health Risk Assessment of TAC Sources - New Sensitive Receptors

A health risk assessment was completed to assess the effect that existing TAC sources would have on the new sensitive receptors (i.e., residents) introduced by the project. The same TAC sources identified above were used in this assessment.[17] The Air District's recommended thresholds for health risks and hazards, shown in Table 1, are used to evaluate on-site exposure. Results are listed in Table 6. *Attachment 3* includes dispersion modeling results and risk calculations for TAC source impacts upon the proposed on-site sensitive receptors.

Nearby Local Roadways

The roadway screening impacts were conducted in the same manner as described above for the cumulative analysis. Note that the cumulative impacts are greater than the single source thresholds adjacent to Willow Road. However, the cumulative levels are made up of impacts from all roadways in the Air District's model. The contribution from Willow Road alone would not exceed the single-source thresholds. Table 6 includes the health risk screening results for the nearby roadways at the project site.

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

Stationary Sources

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

Summary of Cumulative Health Risks at the Project Site

Health risks from the existing TAC sources upon the project site are reported in Table 6. The risks from individual TAC sources are compared against the Air District single-source thresholds. The risks from all the sources are then combined and compared against the Air District cumulative-source thresholds. As shown and discussed above, there are no nearby existing stationary sources that would affect the project site. For this project, impacts from stationary sources are the only source type that would classify as single-source impacts. For cumulative impacts, the only nearby existing sources are the cumulative impacts from the nearby roadways that do not exceed the Air District cumulative-source thresholds.

Table 6. Impacts from Cumulative Sources to Project Site Receptors

Source	Cancer Risk (per million)	Annual $PM_{2.5}$ ($\mu g/m^3$)	Hazard Index
Single-Source Impacts			
No Nearby Existing Stationary Sources	-	-	-
Cumulative-Source Impacts			
Cumulative Roadways – Air District GIS Screening Data	6.40 to 11.00	0.16 to 0.32	0.02 to 0.04
Air District Cumulative Source Threshold	***>100***	***>0.8***	***>10.0***
Exceed Threshold?	*No*	*No*	*No*

Supporting Documentation

Attachment 1 includes the CalEEMod output for project construction emissions. Also included are any modeling assumptions.

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

Attachment 3 includes the cumulative health screening and modeling results from sources affecting the construction MEI and project site receptors.

Attachment 1: CalEEMod Modeling Inputs and Outputs

Air Quality/Noise Construction Information Data Request

Project Name: 68 Willow Road, Menlo Park

Complete ALL Portions in Yellow

See Equipment Type TAB for type, horsepower and load factor

Project Size	50	Dwelling Units	2.5	total project acres disturbed
	121,252	s.f. residential		
		s.f. retail		
		s.f. office/commercial		
		s.f. other, specify:		
		s.f. parking garage		spaces
		s.f. parking lot	2	spaces
Construction Days (i.e, M-F)	Monday	to	Friday	
Construction Hours	8	am to	6	pm

Pile Driving? No

Project include on-site GENERATOR OR FIRE PUMP during project OPERATION (not construction)? Y/N? No

IF YES (if BOTH separate values) -->

Kilowatts/Horsepower: _____

Fuel Type: _____

Location in project (Plans Desired if Available):

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

Quantity	Description	HP	Load Factor	Hours/day	Total Work Days	Avg. Hours per day	HP Annual Hours	Comments
	Demolition	**Start Date:**	1/1/2026	**Total phase:**	22			**Overall Import/Export Volumes**
		End Date:	2/2/2026					
1	Concrete/Industrial Saws	33	0.73	8	5	1.8	964	**Demolition Volume**
2	Excavators	36	0.38	8	22	8	4,815	Square footage of buildings to be demolished
1	Rubber-Tired Dozers	367	0.4	2	22	2	6,459	(*or* total tons to be hauled)
2	Tractors/Loaders/Backhoes	84	0.37	8	15	5.5	7,459	**27,500** square feet *of building to be demolished*
2	*Skid Steer*	71	0.37	8	22	8	9,247	
								Any pavement demolished and hauled? **Approximately 450 Cubic Yards**
	Site Preparation	**Start Date:**	2/3/2026	**Total phase:**	10			
		End Date:	2/17/2026					
1	Graders	148	0.41	8	6	4.8	2,913	
1	Rubber Tired Dozers	367	0.4	8	8	6.4	9,395	
1	Tractors/Loaders/Backhoes	84	0.37	8	10	8	2,486	
	Other Equipment?							
	Grading / Excavation / Underground Utilities	**Start Date:**	2/18/2026	**Total phase:**	130			
		End Date:	8/19/2026					**Soil Hauling Volume**
2	Excavators	36	0.38	8	80	4.9	17,510	Export volume = **+/- 500** cubic yards
1	Graders	148	0.41	8	20	1.2	9,709	Import volume = **0** cubic yards
1	Rubber Tired Dozers	367	0.4	4	40	1.2	23,488	
2	Plate Compactors	8	0.43	8	100	6.2	5,504	
3	Tractors/Loaders/Backhoes	84	0.37	8	130	8	96,970	
	Other Equipment?							
	Trenching/Foundation	**Start Date:**	8/20/2026	**Total phase:**	35			
		End Date:	10/8/2026					
1	Tractor/Loader/Backhoe	84	0.37	8	35	8	8,702	
1	Trenchers	40	0.5	8	35	8	5,600	
	Other Equipment?							
	Building - Exterior	**Start Date:**	9/10/2026	**Total phase:**	200			**Concrete Trucks +/- 60 Total Round-Trips**
		End Date:	6/17/2027					
0	Cranes	367	0.29	0	0	0	0	Crane trucks deliver and set roof trusses
2	Forklifts	82	0.2	8	180	7.2	47,232	Liquid Propane (LPG)? (Y/N) **No** Otherwise Assumed diesel
0	Generator Sets	14	0.74	0	0	0	0	No generators, will be using temp power from power poles
3	Tractors/Loaders/Backhoes	84	0.37	7	30	1.05	19,580	
4	Air Compressors	37	0.48	8	200	8	113,664	
1	*Aerial Lifts*	46	0.31	4	150	3	8,556	
Building - Interior/Architectural Coating		**Start Date:**	1/11/2027	**Total phase:**	160			
		End Date:	8/23/2027					
2	Air Compressors	37	0.48	6	160	6	34,099	
0	Aerial Lift	46	0.31			0	0	
	Other Equipment?							
	Paving	**Start Date:**	8/20/2026	**Total phase:**	20			
		Start Date:	9/17/2026					
2	Cement and Mortar Mixers	10	0.56	8	10	4	896	
1	Pavers	81	0.42	8	10	4	2,722	**Asphalt +/- 300 cubic yards**
2	Paving Equipment	89	0.36	6	10	3	3,845	
2	Rollers	36	0.38	6	10	3	1,642	
1	Tractors/Loaders/Backhoes	84	0.37	8	20	8	4,973	
	Other Equipment?							

Equipment types listed in "Equipment Types" worksheet tab.

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

It is assumed that water trucks would be used during grading

Add or subtract phases and equipment, as appropriate

Modify horsepower or load factor, as appropriate

Complete one sheet for each project component

Construction Criteria Air Pollutants							
Unmitigated	ROG	NOX	PM10 Exhaust	PM2.5 Exhaust	PM2.5 Fugitive	**CO2e**	
Year	Tons					MT	
Construction Equipment							
2026	0.11	0.91	0.03	0.03	0.03	215.28	
2027	0.92	0.52	0.01	0.01	0.01	111.75	
	Total Construction Emissions						
Tons	1.03	1.43	0.04	0.04		327.03	
Pounds/Workdays	*Average Daily Emissions*					Workdays	
2026	0.80	6.96	0.23	0.21			**261**
2027	11.14	6.32	0.16	0.14			**166**
Threshold - lbs/day	**54.0**	**54.0**	**82.0**	**54.0**			
	Total Construction Emissions						
Pounds	2058.52	2865.90	86.57	79.60		0.00	
Average	4.82	6.71	0.20	0.19		0.00	427.00
Threshold - lbs/day	**54.0**	**54.0**	**82.0**	**54.0**			

25-005 68 Willow Rd, Menlo Park BMPs T4F 2028 Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	25-005 68 Willow Rd, Menlo Park BMPs T4F 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)	4.20
Precipitation (days)	18.8
Location	68 Willow Rd, Menlo Park, CA 94025, USA
County	San Mateo
City	Menlo Park
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	1270
EDFZ	1
Electric Utility	Peninsula Clean Energy
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
Condo/Townhouse High Rise	50.0	Dwelling Unit	2.50	121,252	28,982	—	144	—

Parking Lot	2.00	Space	0.00	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-5	Use Advanced Engine Tiers
Construction	C-11	Limit Vehicle Speeds on Unpaved Roads

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.	11.8	12.9	0.41	0.62	1.03	0.38	0.25	0.53	3,424
Mit.	11.0	6.74	0.07	0.62	0.69	0.06	0.25	0.29	3,424
% Reduced	7%	48%	84%	—	34%	83%	—	46%	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Unmit.	11.8	9.54	0.42	2.23	2.65	0.39	1.08	1.46	3,292
Mit.	11.0	6.87	0.05	2.23	2.26	0.05	1.08	1.11	3,292
% Reduced	7%	28%	89%	—	15%	88%	—	24%	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—
Unmit.	5.06	4.98	0.17	0.48	0.65	0.15	0.16	0.31	1,300
Mit.	4.78	2.22	0.03	0.48	0.51	0.03	0.16	0.18	1,300
% Reduced	6%	55%	84%	—	22%	83%	—	41%	—
Annual (Max)	—	—	—	—	—	—	—	—	—
Unmit.	0.92	0.91	0.03	0.09	0.12	0.03	0.03	0.06	215

Mit.	0.87	0.40	< 0.005	0.09	0.09	< 0.005	0.03	0.03	215
% Reduced	6%	55%	84%	—	22%	83%	—	41%	—

2.2. Construction Emissions by Year, Unmitigated

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

Year	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—
2026	1.58	12.9	0.41	0.62	1.03	0.38	0.25	0.53	3,424
2027	11.8	8.20	0.20	0.41	0.61	0.19	0.10	0.28	1,974
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—
2026	1.12	9.54	0.42	2.23	2.65	0.39	1.08	1.46	3,292
2027	11.8	8.23	0.20	0.41	0.61	0.19	0.10	0.28	1,954
Average Daily	—	—	—	—	—	—	—	—	—
2026	0.58	4.98	0.17	0.48	0.65	0.15	0.16	0.31	1,300
2027	5.06	2.87	0.07	0.14	0.21	0.06	0.03	0.10	675
Annual	—	—	—	—	—	—	—	—	—
2026	0.11	0.91	0.03	0.09	0.12	0.03	0.03	0.06	215
2027	0.92	0.52	0.01	0.03	0.04	0.01	0.01	0.02	112

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	0.49	6.74	0.07	0.62	0.69	0.06	0.25	0.29	3,424
2027	11.0	5.51	0.03	0.41	0.43	0.03	0.10	0.12	1,974

Daily - Winter (Max)	—	—	—	—	—	—	—	—	—
2026	0.31	6.87	0.05	2.23	2.26	0.05	1.08	1.11	3,292
2027	11.0	5.54	0.03	0.41	0.43	0.03	0.10	0.12	1,954
Average Daily	—	—	—	—	—	—	—	—	—
2026	0.18	2.22	0.03	0.48	0.51	0.03	0.16	0.18	1,300
2027	4.78	1.95	0.01	0.14	0.15	0.01	0.03	0.04	675
Annual	—	—	—	—	—	—	—	—	—
2026	0.03	0.40	< 0.005	0.09	0.09	< 0.005	0.03	0.03	215
2027	0.87	0.36	< 0.005	0.03	0.03	< 0.005	0.01	0.01	112

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.	3.95	0.49	0.02	1.18	1.20	0.02	0.30	0.32	1,487
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Unmit.	3.69	0.53	0.02	1.18	1.20	0.01	0.30	0.31	1,425
Average Daily (Max)	—	—	—	—	—	—	—	—	—
Unmit.	3.77	0.50	0.02	1.11	1.13	0.02	0.28	0.30	1,373
Annual (Max)	—	—	—	—	—	—	—	—	—
Unmit.	0.69	0.09	< 0.005	0.20	0.21	< 0.005	0.05	0.05	227

2.5. Operations Emissions by Sector, Unmitigated

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

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

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Mobile	0.63	0.35	0.01	1.18	1.19	0.01	0.30	0.31	1,257
Area	3.31	0.03	< 0.005	—	< 0.005	< 0.005	—	< 0.005	7.61
Energy	0.01	0.11	0.01	—	0.01	0.01	—	0.01	145
Water	—	—	—	—	—	—	—	—	7.02
Waste	—	—	—	—	—	—	—	—	69.7
Refrig.	—	—	—	—	—	—	—	—	0.87
Total	3.95	0.49	0.02	1.18	1.20	0.02	0.30	0.32	1,487
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Mobile	0.62	0.42	0.01	1.18	1.19	0.01	0.30	0.31	1,202
Area	3.06	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Energy	0.01	0.11	0.01	—	0.01	0.01	—	0.01	145
Water	—	—	—	—	—	—	—	—	7.02
Waste	—	—	—	—	—	—	—	—	69.7
Refrig.	—	—	—	—	—	—	—	—	0.87
Total	3.69	0.53	0.02	1.18	1.20	0.01	0.30	0.31	1,425
Average Daily	—	—	—	—	—	—	—	—	—
Mobile	0.58	0.37	0.01	1.11	1.12	0.01	0.28	0.29	1,146
Area	3.18	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	3.75
Energy	0.01	0.11	0.01	—	0.01	0.01	—	0.01	145
Water	—	—	—	—	—	—	—	—	7.02
Waste	—	—	—	—	—	—	—	—	69.7
Refrig.	—	—	—	—	—	—	—	—	0.87
Total	3.77	0.50	0.02	1.11	1.13	0.02	0.28	0.30	1,373
Annual	—	—	—	—	—	—	—	—	—
Mobile	0.11	0.07	< 0.005	0.20	0.20	< 0.005	0.05	0.05	190
Area	0.58	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.62

Energy	< 0.005	0.02	< 0.005	—	< 0.005	< 0.005	—	< 0.005	24.0
Water	—	—	—	—	—	—	—	—	1.16
Waste	—	—	—	—	—	—	—	—	11.5
Refrig.	—	—	—	—	—	—	—	—	0.14
Total	0.69	0.09	< 0.005	0.20	0.21	< 0.005	0.05	0.05	227

2.6. Operations Emissions by Sector, Mitigated

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

Sector	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Mobile	0.63	0.35	0.01	1.18	1.19	0.01	0.30	0.31	1,257
Area	3.31	0.03	< 0.005	—	< 0.005	< 0.005	—	< 0.005	7.61
Energy	0.01	0.11	0.01	—	0.01	0.01	—	0.01	145
Water	—	—	—	—	—	—	—	—	7.02
Waste	—	—	—	—	—	—	—	—	69.7
Refrig.	—	—	—	—	—	—	—	—	0.87
Total	3.95	0.49	0.02	1.18	1.20	0.02	0.30	0.32	1,487
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Mobile	0.62	0.42	0.01	1.18	1.19	0.01	0.30	0.31	1,202
Area	3.06	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Energy	0.01	0.11	0.01	—	0.01	0.01	—	0.01	145
Water	—	—	—	—	—	—	—	—	7.02
Waste	—	—	—	—	—	—	—	—	69.7
Refrig.	—	—	—	—	—	—	—	—	0.87
Total	3.69	0.53	0.02	1.18	1.20	0.01	0.30	0.31	1,425
Average Daily	—	—	—	—	—	—	—	—	—
Mobile	0.58	0.37	0.01	1.11	1.12	0.01	0.28	0.29	1,146

Area	3.18	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	3.75
Energy	0.01	0.11	0.01	—	0.01	0.01	—	0.01	145
Water	—	—	—	—	—	—	—	—	7.02
Waste	—	—	—	—	—	—	—	—	69.7
Refrig.	—	—	—	—	—	—	—	—	0.87
Total	3.77	0.50	0.02	1.11	1.13	0.02	0.28	0.30	1,373
Annual	—	—	—	—	—	—	—	—	—
Mobile	0.11	0.07	< 0.005	0.20	0.20	< 0.005	0.05	0.05	190
Area	0.58	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.62
Energy	< 0.005	0.02	< 0.005	—	< 0.005	< 0.005	—	< 0.005	24.0
Water	—	—	—	—	—	—	—	—	1.16
Waste	—	—	—	—	—	—	—	—	11.5
Refrig.	—	—	—	—	—	—	—	—	0.14
Total	0.69	0.09	< 0.005	0.20	0.21	< 0.005	0.05	0.05	227

3. Construction Emissions Details

3.1. Demolition (2026) - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.72	7.16	0.24	—	0.24	0.22	—	0.22	1,577
Demolition	—	—	—	1.31	1.31	—	0.20	0.20	—
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	0.04	0.43	0.01	—	0.01	0.01	—	0.01	95.1
Demolition	—	—	—	0.08	0.08	—	0.01	0.01	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.08	< 0.005	—	< 0.005	< 0.005	—	< 0.005	15.7
Demolition	—	—	—	0.01	0.01	—	< 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	0.17	0.17	0.00	0.04	0.04	155
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.03	2.34	0.02	0.36	0.38	0.02	0.10	0.12	1,561
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.01	0.01	0.00	< 0.005	< 0.005	9.35
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.14	< 0.005	0.02	0.02	< 0.005	0.01	0.01	94.1
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	1.55
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	15.6

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	0.21	4.49	0.03	—	0.03	0.03	—	0.03	1,577
Demolition	—	—	—	1.31	1.31	—	0.20	0.20	—
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	0.27	< 0.005	—	< 0.005	< 0.005	—	< 0.005	95.1
Demolition	—	—	—	0.08	0.08	—	0.01	0.01	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.05	< 0.005	—	< 0.005	< 0.005	—	< 0.005	15.7
Demolition	—	—	—	0.01	0.01	—	< 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	0.17	0.17	0.00	0.04	0.04	155
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.03	2.34	0.02	0.36	0.38	0.02	0.10	0.12	1,561
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.01	0.01	0.00	< 0.005	< 0.005	9.35
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	< 0.005	0.14	< 0.005	0.02	0.02	< 0.005	0.01	0.01	94.1
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	1.55
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	15.6

3.3. Site Preparation (2026) - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.03	9.33	0.42	—	0.42	0.39	—	0.39	1,740
Dust From Material Movement	—	—	—	2.17	2.17	—	1.06	1.06	—
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	0.03	0.26	0.01	—	0.01	0.01	—	0.01	47.7
Dust From Material Movement	—	—	—	0.06	0.06	—	0.03	0.03	—
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	0.05	< 0.005	—	< 0.005	< 0.005	—	< 0.005	7.89

Dust From Material Movement	—	—	—	0.01	0.01	—	0.01	0.01	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.00	0.06	0.06	0.00	0.01	0.01	57.9
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
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	1.59
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	0.26
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

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	0.16	0.85	0.03	—	0.03	0.03	—	0.03	1,740

Dust From Material Movement	—	—	—	2.17	2.17	—	1.06	1.06	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	< 0.005	—	< 0.005	< 0.005	—	< 0.005	47.7
Dust From Material Movement	—	—	—	0.06	0.06	—	0.03	0.03	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	7.89
Dust From Material Movement	—	—	—	0.01	0.01	—	0.01	0.01	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.00	0.06	0.06	0.00	0.01	0.01	57.9
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
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	1.59
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	0.26

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

3.5. Grading (2026) - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.66	6.15	0.23	—	0.23	0.21	—	0.21	1,395
Dust From Material Movement	—	—	—	0.41	0.41	—	0.20	0.20	—
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	0.66	6.15	0.23	—	0.23	0.21	—	0.21	1,395
Dust From Material Movement	—	—	—	0.41	0.41	—	0.20	0.20	—
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	2.19	0.08	—	0.08	0.07	—	0.07	497
Dust From Material Movement	—	—	—	0.15	0.15	—	0.07	0.07	—
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	0.40	0.01	—	0.01	0.01	—	0.01	82.2
Dust From Material Movement	—	—	—	0.03	0.03	—	0.01	0.01	—
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	0.05	0.04	0.00	0.19	0.19	0.00	0.04	0.04	183
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.06	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	39.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.00	0.19	0.19	0.00	0.04	0.04	174
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.06	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	39.1
Average Daily	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.00	0.07	0.07	0.00	0.02	0.02	62.2
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	14.0
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.01	0.01	0.00	< 0.005	< 0.005	10.3
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	2.31

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)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.19	1.77	0.04	—	0.04	0.04	—	0.04	1,395
Dust From Material Movement	—	—	—	0.41	0.41	—	0.20	0.20	—
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	0.19	1.77	0.04	—	0.04	0.04	—	0.04	1,395
Dust From Material Movement	—	—	—	0.41	0.41	—	0.20	0.20	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.63	0.01	—	0.01	0.01	—	0.01	497
Dust From Material Movement	—	—	—	0.15	0.15	—	0.07	0.07	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.12	< 0.005	—	< 0.005	< 0.005	—	< 0.005	82.2
Dust From Material Movement	—	—	—	0.03	0.03	—	0.01	0.01	—
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	0.05	0.04	0.00	0.19	0.19	0.00	0.04	0.04	183

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.06	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	39.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.00	0.19	0.19	0.00	0.04	0.04	174
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.06	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	39.1
Average Daily	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.00	0.07	0.07	0.00	0.02	0.02	62.2
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	14.0
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.01	0.01	0.00	< 0.005	< 0.005	10.3
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	2.31

3.7. Building Construction (2026) - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.82	6.46	0.20	—	0.20	0.18	—	0.18	1,160
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	0.82	6.46	0.20	—	0.20	0.18	—	0.18	1,160
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	0.18	1.43	0.04	—	0.04	0.04	—	0.04	257
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.26	0.01	—	0.01	0.01	—	0.01	42.5
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	0.08	0.06	0.00	0.30	0.30	0.00	0.07	0.07	292
Vendor	0.01	0.21	< 0.005	0.04	0.04	< 0.005	0.01	0.01	158
Hauling	< 0.005	0.07	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	48.6
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.08	0.08	0.00	0.30	0.30	0.00	0.07	0.07	278
Vendor	< 0.005	0.22	< 0.005	0.04	0.04	< 0.005	0.01	0.01	158
Hauling	< 0.005	0.07	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	48.5
Average Daily	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.00	0.07	0.07	0.00	0.02	0.02	61.8
Vendor	< 0.005	0.05	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	34.9
Hauling	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	10.7
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.01	0.01	0.00	< 0.005	< 0.005	10.2
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	5.78
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	1.78

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	0.16	3.90	0.02	—	0.02	0.02	—	0.02	1,160
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	0.16	3.90	0.02	—	0.02	0.02	—	0.02	1,160
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	0.03	0.86	< 0.005	—	< 0.005	< 0.005	—	< 0.005	257
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	0.16	< 0.005	—	< 0.005	< 0.005	—	< 0.005	42.5
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	0.08	0.06	0.00	0.30	0.30	0.00	0.07	0.07	292
Vendor	0.01	0.21	< 0.005	0.04	0.04	< 0.005	0.01	0.01	158
Hauling	< 0.005	0.07	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	48.6
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.08	0.08	0.00	0.30	0.30	0.00	0.07	0.07	278
Vendor	< 0.005	0.22	< 0.005	0.04	0.04	< 0.005	0.01	0.01	158

Hauling	< 0.005	0.07	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	48.5
Average Daily	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.00	0.07	0.07	0.00	0.02	0.02	61.8
Vendor	< 0.005	0.05	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	34.9
Hauling	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	10.7
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.01	0.01	0.00	< 0.005	< 0.005	10.2
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	5.78
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	1.78

3.9. Building Construction (2027) - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.78	6.21	0.16	—	0.16	0.15	—	0.15	1,160
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	0.78	6.21	0.16	—	0.16	0.15	—	0.15	1,160
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	0.25	2.03	0.05	—	0.05	0.05	—	0.05	379
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.05	0.37	0.01	—	0.01	0.01	—	0.01	62.8
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	0.08	0.05	0.00	0.30	0.30	0.00	0.07	0.07	287
Vendor	0.01	0.20	< 0.005	0.04	0.04	< 0.005	0.01	0.01	154
Hauling	< 0.005	0.07	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	47.4
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.00	0.30	0.30	0.00	0.07	0.07	270
Vendor	< 0.005	0.21	< 0.005	0.04	0.04	< 0.005	0.01	0.01	154
Hauling	< 0.005	0.07	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	47.3
Average Daily	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.00	0.10	0.10	0.00	0.02	0.02	88.7
Vendor	< 0.005	0.07	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	50.4
Hauling	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	15.5
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.02	0.02	0.00	< 0.005	< 0.005	14.7
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	8.35
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	2.56

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	0.16	3.90	0.02	—	0.02	0.02	—	0.02	1,160
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	0.16	3.90	0.02	—	0.02	0.02	—	0.02	1,160
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	0.05	1.27	0.01	—	0.01	0.01	—	0.01	379
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	0.23	< 0.005	—	< 0.005	< 0.005	—	< 0.005	62.8
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	0.08	0.05	0.00	0.30	0.30	0.00	0.07	0.07	287
Vendor	0.01	0.20	< 0.005	0.04	0.04	< 0.005	0.01	0.01	154
Hauling	< 0.005	0.07	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	47.4
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.00	0.30	0.30	0.00	0.07	0.07	270
Vendor	< 0.005	0.21	< 0.005	0.04	0.04	< 0.005	0.01	0.01	154
Hauling	< 0.005	0.07	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	47.3
Average Daily	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.00	0.10	0.10	0.00	0.02	0.02	88.7
Vendor	< 0.005	0.07	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	50.4
Hauling	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	15.5

Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.02	0.02	0.00	< 0.005	< 0.005	14.7
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	8.35
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	2.56

3.11. Paving (2026) - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.41	3.74	0.15	—	0.15	0.14	—	0.14	837
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	0.02	0.20	0.01	—	0.01	0.01	—	0.01	45.9
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	0.04	< 0.005	—	< 0.005	< 0.005	—	< 0.005	7.59
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	0.05	0.04	0.00	0.17	0.17	0.00	0.04	0.04	162
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	0.41	< 0.005	0.07	0.07	< 0.005	0.02	0.02	291
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.01	0.01	0.00	< 0.005	< 0.005	8.50
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	15.9
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	1.41
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	2.64

3.12. Paving (2026) - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	1.24	0.03	—	0.03	0.03	—	0.03	837
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	0.07	< 0.005	—	< 0.005	< 0.005	—	< 0.005	45.9
Paving	0.00	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	7.59
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	0.05	0.04	0.00	0.17	0.17	0.00	0.04	0.04	162
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	0.41	< 0.005	0.07	0.07	< 0.005	0.02	0.02	291
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.01	0.01	0.00	< 0.005	< 0.005	8.50
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	15.9
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	1.41
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	2.64

3.13. Architectural Coating (2027) - Unmitigated

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

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

Off-Road Equipment	0.23	1.66	0.04	—	0.04	0.04	—	0.04	268
Architectural Coatings	10.7	—	—	—	—	—	—	—	—
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	0.23	1.66	0.04	—	0.04	0.04	—	0.04	268
Architectural Coatings	10.7	—	—	—	—	—	—	—	—
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	0.10	0.73	0.02	—	0.02	0.02	—	0.02	117
Architectural Coatings	4.68	—	—	—	—	—	—	—	—
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	0.13	< 0.005	—	< 0.005	< 0.005	—	< 0.005	19.4
Architectural Coatings	0.85	—	—	—	—	—	—	—	—
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	0.02	0.01	0.00	0.06	0.06	0.00	0.01	0.01	57.3
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—

Worker	0.02	0.01	0.00	0.06	0.06	0.00	0.01	0.01	54.0
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	0.01	0.01	0.00	0.03	0.03	0.00	0.01	0.01	23.8
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	3.94
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.14. Architectural Coating (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	0.04	1.29	< 0.005	—	< 0.005	< 0.005	—	< 0.005	268
Architectural Coatings	10.7	—	—	—	—	—	—	—	—
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	0.04	1.29	< 0.005	—	< 0.005	< 0.005	—	< 0.005	268
Architectural Coatings	10.7	—	—	—	—	—	—	—	—
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	0.57	< 0.005	—	< 0.005	< 0.005	—	< 0.005	117
Architectural Coatings	4.68	—	—	—	—	—	—	—	—
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	0.10	< 0.005	—	< 0.005	< 0.005	—	< 0.005	19.4
Architectural Coatings	0.85	—	—	—	—	—	—	—	—
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	0.02	0.01	0.00	0.06	0.06	0.00	0.01	0.01	57.3
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.00	0.06	0.06	0.00	0.01	0.01	54.0
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	0.01	0.01	0.00	0.03	0.03	0.00	0.01	0.01	23.8
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	3.94
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.15. Trenching (2026) - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.20	1.86	0.06	—	0.06	0.05	—	0.05	433
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	0.20	1.86	0.06	—	0.06	0.05	—	0.05	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	0.02	0.18	0.01	—	0.01	0.01	—	0.01	41.6
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	6.88
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	0.01	0.01	0.00	0.04	0.04	0.00	0.01	0.01	40.6
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)	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.00	0.04	0.04	0.00	0.01	0.01	38.6

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	3.72
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	0.62
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)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.81	0.01	—	0.01	0.01	—	0.01	433
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	0.05	0.81	0.01	—	0.01	0.01	—	0.01	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	< 0.005	0.08	< 0.005	—	< 0.005	< 0.005	—	< 0.005	41.6
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	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	6.88
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	0.01	0.01	0.00	0.04	0.04	0.00	0.01	0.01	40.6
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)	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.00	0.04	0.04	0.00	0.01	0.01	38.6
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	3.72
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	0.62
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)	—	—	—	—	—	—	—	—	—
Condo/Townhouse High Rise	0.63	0.35	0.01	1.18	1.19	0.01	0.30	0.31	1,257
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.63	0.35	0.01	1.18	1.19	0.01	0.30	0.31	1,257
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse High Rise	0.62	0.42	0.01	1.18	1.19	0.01	0.30	0.31	1,202
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.62	0.42	0.01	1.18	1.19	0.01	0.30	0.31	1,202
Annual	—	—	—	—	—	—	—	—	—
Condo/Townhouse High Rise	0.11	0.07	< 0.005	0.20	0.20	< 0.005	0.05	0.05	190
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.11	0.07	< 0.005	0.20	0.20	< 0.005	0.05	0.05	190

4.1.2. Mitigated

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

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse High Rise	0.63	0.35	0.01	1.18	1.19	0.01	0.30	0.31	1,257
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.63	0.35	0.01	1.18	1.19	0.01	0.30	0.31	1,257

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse High Rise	0.62	0.42	0.01	1.18	1.19	0.01	0.30	0.31	1,202
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.62	0.42	0.01	1.18	1.19	0.01	0.30	0.31	1,202
Annual	—	—	—	—	—	—	—	—	—
Condo/Townhouse High Rise	0.11	0.07	< 0.005	0.20	0.20	< 0.005	0.05	0.05	190
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.11	0.07	< 0.005	0.20	0.20	< 0.005	0.05	0.05	190

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

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

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse High Rise	—	—	—	—	—	—	—	—	3.75
Parking Lot	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	3.75
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse High Rise	—	—	—	—	—	—	—	—	3.75
Parking Lot	—	—	—	—	—	—	—	—	0.00

Total	—	—	—	—	—	—	—	—	3.75
Annual	—	—	—	—	—	—	—	—	—
Condo/Townhouse High Rise	—	—	—	—	—	—	—	—	0.62
Parking Lot	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	0.62

4.2.2. Electricity Emissions By Land Use - Mitigated

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

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse High Rise	—	—	—	—	—	—	—	—	3.75
Parking Lot	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	3.75
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse High Rise	—	—	—	—	—	—	—	—	3.75
Parking Lot	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	3.75
Annual	—	—	—	—	—	—	—	—	—
Condo/Townhouse High Rise	—	—	—	—	—	—	—	—	0.62
Parking Lot	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	0.62

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

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

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse High Rise	0.01	0.11	0.01	—	0.01	0.01	—	0.01	141
Parking Lot	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Total	0.01	0.11	0.01	—	0.01	0.01	—	0.01	141
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse High Rise	0.01	0.11	0.01	—	0.01	0.01	—	0.01	141
Parking Lot	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Total	0.01	0.11	0.01	—	0.01	0.01	—	0.01	141
Annual	—	—	—	—	—	—	—	—	—
Condo/Townhouse High Rise	< 0.005	0.02	< 0.005	—	< 0.005	< 0.005	—	< 0.005	23.4
Parking Lot	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Total	< 0.005	0.02	< 0.005	—	< 0.005	< 0.005	—	< 0.005	23.4

4.2.4. Natural Gas Emissions By Land Use - Mitigated

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

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse High Rise	0.01	0.11	0.01	—	0.01	0.01	—	0.01	141

Parking Lot	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Total	0.01	0.11	0.01	—	0.01	0.01	—	0.01	141
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse High Rise	0.01	0.11	0.01	—	0.01	0.01	—	0.01	141
Parking Lot	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Total	0.01	0.11	0.01	—	0.01	0.01	—	0.01	141
Annual	—	—	—	—	—	—	—	—	—
Condo/Townhouse High Rise	< 0.005	0.02	< 0.005	—	< 0.005	< 0.005	—	< 0.005	23.4
Parking Lot	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Total	< 0.005	0.02	< 0.005	—	< 0.005	< 0.005	—	< 0.005	23.4

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	2.59	—	—	—	—	—	—	—	—
Architectural Coatings	0.47	—	—	—	—	—	—	—	—
Landscape Equipment	0.25	0.03	< 0.005	—	< 0.005	< 0.005	—	< 0.005	7.61
Total	3.31	0.03	< 0.005	—	< 0.005	< 0.005	—	< 0.005	7.61

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Consumer Products	2.59	—	—	—	—	—	—	—	—
Architectural Coatings	0.47	—	—	—	—	—	—	—	—
Total	3.06	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Consumer Products	0.47	—	—	—	—	—	—	—	—
Architectural Coatings	0.09	—	—	—	—	—	—	—	—
Landscape Equipment	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.62
Total	0.58	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.62

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	2.59	—	—	—	—	—	—	—	—
Architectural Coatings	0.47	—	—	—	—	—	—	—	—
Landscape Equipment	0.25	0.03	< 0.005	—	< 0.005	< 0.005	—	< 0.005	7.61
Total	3.31	0.03	< 0.005	—	< 0.005	< 0.005	—	< 0.005	7.61

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Consumer Products	2.59	—	—	—	—	—	—	—	—
Architectural Coatings	0.47	—	—	—	—	—	—	—	—
Total	3.06	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Consumer Products	0.47	—	—	—	—	—	—	—	—
Architectural Coatings	0.09	—	—	—	—	—	—	—	—
Landscape Equipment	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.62
Total	0.58	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.62

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

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

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse High Rise	—	—	—	—	—	—	—	—	7.02
Parking Lot	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	7.02
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—

Condo/Townhouse High Rise	—	—	—	—	—	—	—	—	7.02
Parking Lot	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	7.02
Annual	—	—	—	—	—	—	—	—	—
Condo/Townhouse High Rise	—	—	—	—	—	—	—	—	1.16
Parking Lot	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	1.16

4.4.2. Mitigated

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

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse High Rise	—	—	—	—	—	—	—	—	7.02
Parking Lot	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	7.02
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse High Rise	—	—	—	—	—	—	—	—	7.02
Parking Lot	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	7.02
Annual	—	—	—	—	—	—	—	—	—
Condo/Townhouse High Rise	—	—	—	—	—	—	—	—	1.16

Parking Lot	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	1.16

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

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

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse High Rise	—	—	—	—	—	—	—	—	69.7
Parking Lot	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	69.7
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse High Rise	—	—	—	—	—	—	—	—	69.7
Parking Lot	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	69.7
Annual	—	—	—	—	—	—	—	—	—
Condo/Townhouse High Rise	—	—	—	—	—	—	—	—	11.5
Parking Lot	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	11.5

4.5.2. Mitigated

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

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse High Rise	—	—	—	—	—	—	—	—	69.7
Parking Lot	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	69.7
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse High Rise	—	—	—	—	—	—	—	—	69.7
Parking Lot	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	69.7
Annual	—	—	—	—	—	—	—	—	—
Condo/Townhouse High Rise	—	—	—	—	—	—	—	—	11.5
Parking Lot	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	11.5

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

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

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse High Rise	—	—	—	—	—	—	—	—	0.87

Total	—	—	—	—	—	—	—	—	0.87
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse High Rise	—	—	—	—	—	—	—	—	0.87
Total	—	—	—	—	—	—	—	—	0.87
Annual	—	—	—	—	—	—	—	—	—
Condo/Townhouse High Rise	—	—	—	—	—	—	—	—	0.14
Total	—	—	—	—	—	—	—	—	0.14

4.6.2. Mitigated

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

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse High Rise	—	—	—	—	—	—	—	—	0.87
Total	—	—	—	—	—	—	—	—	0.87
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse High Rise	—	—	—	—	—	—	—	—	0.87
Total	—	—	—	—	—	—	—	—	0.87
Annual	—	—	—	—	—	—	—	—	—
Condo/Townhouse High Rise	—	—	—	—	—	—	—	—	0.14
Total	—	—	—	—	—	—	—	—	0.14

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	2/1/2026	5.00	22.0	—
Site Preparation	Site Preparation	2/3/2026	2/16/2026	5.00	10.0	—
Grading	Grading	2/18/2026	8/18/2026	5.00	130	—
Building Construction	Building Construction	9/10/2026	6/16/2027	5.00	200	—
Paving	Paving	8/20/2026	9/16/2026	5.00	20.0	—
Architectural Coating	Architectural Coating	1/11/2027	8/20/2027	5.00	160	—
Trenching	Trenching	8/20/2026	10/7/2026	5.00	35.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	1.80	33.0	0.73
Demolition	Rubber Tired Dozers	Diesel	Average	1.00	2.00	367	0.40
Demolition	Tractors/Loaders/Backhoes	Diesel	Average	2.00	5.50	84.0	0.37
Demolition	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Demolition	Skid Steer Loaders	Diesel	Average	2.00	8.00	71.0	0.37
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Site Preparation	Graders	Diesel	Average	1.00	4.80	148	0.41
Site Preparation	Rubber Tired Dozers	Diesel	Average	1.00	6.40	367	0.40
Grading	Graders	Diesel	Average	1.00	1.20	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	1.20	367	0.40
Grading	Tractors/Loaders/Backhoes	Diesel	Average	3.00	8.00	84.0	0.37
Grading	Excavators	Diesel	Average	2.00	4.90	36.0	0.38
Grading	Plate Compactors	Diesel	Average	2.00	6.20	8.00	0.43
Building Construction	Forklifts	Diesel	Average	2.00	7.20	82.0	0.20
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.00	1.05	84.0	0.37
Building Construction	Air Compressors	Diesel	Average	4.00	8.00	37.0	0.48
Building Construction	Aerial Lifts	Diesel	Average	1.00	3.00	46.0	0.31
Paving	Cement and Mortar Mixers	Diesel	Average	2.00	4.00	10.0	0.56
Paving	Pavers	Diesel	Average	1.00	4.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	3.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	3.00	36.0	0.38
Paving	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Architectural Coating	Air Compressors	Diesel	Average	2.00	6.00	37.0	0.48

Trenching	Tractors/Loaders/Back	Diesel	Average	1.00	8.00	84.0	0.37
Trenching	Excavators	Diesel	Average	1.00	8.00	36.0	0.38

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Concrete/Industrial Saws	Diesel	Tier 4 Final	1.00	1.80	33.0	0.73
Demolition	Rubber Tired Dozers	Diesel	Tier 4 Final	1.00	2.00	367	0.40
Demolition	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	5.50	84.0	0.37
Demolition	Excavators	Diesel	Tier 4 Final	2.00	8.00	36.0	0.38
Demolition	Skid Steer Loaders	Diesel	Tier 4 Final	2.00	8.00	71.0	0.37
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	8.00	84.0	0.37
Site Preparation	Graders	Diesel	Tier 4 Final	1.00	4.80	148	0.41
Site Preparation	Rubber Tired Dozers	Diesel	Tier 4 Final	1.00	6.40	367	0.40
Grading	Graders	Diesel	Tier 4 Final	1.00	1.20	148	0.41
Grading	Rubber Tired Dozers	Diesel	Tier 4 Final	1.00	1.20	367	0.40
Grading	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	3.00	8.00	84.0	0.37
Grading	Excavators	Diesel	Tier 4 Final	2.00	4.90	36.0	0.38
Grading	Plate Compactors	Diesel	Average	2.00	6.20	8.00	0.43
Building Construction	Forklifts	Diesel	Tier 4 Final	2.00	7.20	82.0	0.20
Building Construction	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	3.00	1.05	84.0	0.37
Building Construction	Air Compressors	Diesel	Tier 4 Final	4.00	8.00	37.0	0.48
Building Construction	Aerial Lifts	Diesel	Tier 4 Final	1.00	3.00	46.0	0.31
Paving	Cement and Mortar Mixers	Diesel	Average	2.00	4.00	10.0	0.56
Paving	Pavers	Diesel	Tier 4 Final	1.00	4.00	81.0	0.42

Paving	Paving Equipment	Diesel	Tier 4 Final	2.00	3.00	89.0	0.36
Paving	Rollers	Diesel	Tier 4 Final	2.00	3.00	36.0	0.38
Paving	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	8.00	84.0	0.37
Architectural Coating	Air Compressors	Diesel	Tier 4 Final	2.00	6.00	37.0	0.48
Trenching	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	8.00	84.0	0.37
Trenching	Excavators	Diesel	Tier 4 Final	1.00	8.00	36.0	0.38

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	20.0	11.7	LDA,LDT1,LDT2
Demolition	Vendor	—	8.40	HHDT,MHDT
Demolition	Hauling	19.3	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	7.50	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	22.5	11.7	LDA,LDT1,LDT2
Grading	Vendor	—	8.40	HHDT,MHDT
Grading	Hauling	0.48	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—

Building Construction	Worker	36.0	11.7	LDA,LDT1,LDT2
Building Construction	Vendor	5.34	8.40	HHDT,MHDT
Building Construction	Hauling	0.60	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	20.0	11.7	LDA,LDT1,LDT2
Paving	Vendor	—	8.40	HHDT,MHDT
Paving	Hauling	3.60	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	7.20	11.7	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	8.40	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT
Trenching	—	—	—	—
Trenching	Worker	5.00	11.7	LDA,LDT1,LDT2
Trenching	Vendor	—	8.40	HHDT,MHDT
Trenching	Hauling	0.00	20.0	HHDT
Trenching	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	20.0	11.7	LDA,LDT1,LDT2
Demolition	Vendor	—	8.40	HHDT,MHDT
Demolition	Hauling	19.3	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—

Site Preparation	Worker	7.50	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	22.5	11.7	LDA,LDT1,LDT2
Grading	Vendor	—	8.40	HHDT,MHDT
Grading	Hauling	0.48	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	36.0	11.7	LDA,LDT1,LDT2
Building Construction	Vendor	5.34	8.40	HHDT,MHDT
Building Construction	Hauling	0.60	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	20.0	11.7	LDA,LDT1,LDT2
Paving	Vendor	—	8.40	HHDT,MHDT
Paving	Hauling	3.60	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	7.20	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	245,535	81,845	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	27,500	—
Site Preparation	—	—	7.00	0.00	—
Grading	—	500	19.5	0.00	—
Paving	0.00	0.00	0.00	0.00	0.00

5.6.2. Construction Earthmoving Control Strategies

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

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Condo/Townhouse High Rise	—	0%

Parking Lot	0.00	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2026	0.00	100.0	0.03	< 0.005
2027	0.00	100.0	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
Condo/Townhouse High Rise	272	245	205	94,379	1,680	1,516	1,263	582,802
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.9.2. Mitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Condo/Townhouse High Rise	272	245	205	94,379	1,680	1,516	1,263	582,802
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)

Condo/Townhouse High 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)
Condo/Townhouse High 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)
245535.3	81,845	0.00	0.00	—

5.10.3. Landscape Equipment

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

5.10.4. Landscape Equipment - Mitigated

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

5.11. Operational Energy Consumption

5.11.1. Unmitigated

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

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Condo/Townhouse High Rise	170,573	6.00	0.0330	0.0040	440,204
Parking Lot	0.00	6.00	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)
Condo/Townhouse High Rise	170,573	6.00	0.0330	0.0040	440,204
Parking Lot	0.00	6.00	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)
Condo/Townhouse High Rise	1,813,320	293,659
Parking Lot	0.00	0.00

5.12.2. Mitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Condo/Townhouse High Rise	1,813,320	293,659
Parking Lot	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Condo/Townhouse High Rise	37.0	—
Parking Lot	0.00	—

5.13.2. Mitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Condo/Townhouse High Rise	37.0	—
Parking Lot	0.00	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Condo/Townhouse High Rise	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0

Condo/Townhouse High 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
Condo/Townhouse High Rise	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Condo/Townhouse High 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	11.8	annual days of extreme heat
Extreme Precipitation	4.05	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	10.7	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 observedhistoricaldata(32climatemodelensemblefromCal-Adapt,2040–2059averageunderRCP8.5). Eachgridcellis6kilometers(km)by6km,or3.7miles(mi)by3.7mi.
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	10.6
AQ-PM	14.6
AQ-DPM	58.6
Drinking Water	53.5
Lead Risk Housing	64.6
Pesticides	0.00
Toxic Releases	27.0
Traffic	31.5
Effect Indicators	—
CleanUp Sites	95.9
Groundwater	90.6
Haz Waste Facilities/Generators	77.5
Impaired Water Bodies	33.2
Solid Waste	0.00
Sensitive Population	—
Asthma	12.9
Cardio-vascular	3.91
Low Birth Weights	20.9
Socioeconomic Factor Indicators	—
Education	1.77
Housing	49.7
Linguistic	9.46
Poverty	10.4
Unemployment	7.77

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	96.88181702
Employed	86.50070576
Median HI	91.6078532
Education	—
Bachelor's or higher	99.9101758
High school enrollment	100
Preschool enrollment	24.38085461
Transportation	—
Auto Access	59.70742974
Active commuting	92.76273579
Social	—
2-parent households	37.77749262
Voting	89.25959194
Neighborhood	—
Alcohol availability	30.89952521
Park access	81.35506224
Retail density	93.59681766
Supermarket access	65.67432311
Tree canopy	91.68484537
Housing	—
Homeownership	33.85089183
Housing habitability	74.52842294
Low-inc homeowner severe housing cost burden	90.52996279
Low-inc renter severe housing cost burden	67.91992814
Uncrowded housing	67.80443988
Health Outcomes	—

Insured adults	96.85615296
Arthritis	0.0
Asthma ER Admissions	91.9
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	75.3
Cognitively Disabled	96.3
Physically Disabled	91.7
Heart Attack ER Admissions	98.0
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	55.1
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	7.3
Elderly	35.8

English Speaking	63.8
Foreign-born	42.1
Outdoor Workers	98.2
Climate Change Adaptive Capacity	—
Impervious Surface Cover	70.0
Traffic Density	26.5
Traffic Access	71.4
Other Indices	—
Hardship	3.6
Other Decision Support	—
2016 Voting	93.3

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	8.00
Healthy Places Index Score for Project Location (b)	96.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

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

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Characteristics: Utility Information	Menlo Park default clean energy provider is Peninsula Clean Energy. Peninsula Clean Energy 2023 rate = 6 lb/MWh.
Land Use	Total lot acreage, number of units/guest parking, residential square footage, and landscape square footage from provided plans (24-12-31___68 Willow DRB resubmittal set_11x17).
Construction: Construction Phases	Information from provided construction worksheet filled out by applicant.
Construction: Off-Road Equipment	Construction information from provided construction worksheet filled out by applicant.
Construction: Trips and VMT	Demolition = 450-cy of pavement demo'ed and hauled (4.9 trips/day), Building Construction = 60 concrete truck round trips (0.6 trips/day), Paving = 300-cy of asphalt (3.6 trips/day).
Operations: Hearths	No hearths.
Operations: Water and Waste Water	Wastewater treatment 100% aerobic - no septic tanks or lagoons.
Construction: On-Road Fugitive Dust	Air district BMPs = 15 mph. Required by Menlo Park.

2. Emissions Summary - HRA

2.2 Construction Emissions by Year, Unmitigated

Year	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO_2e
Daily - Summer (Max)									
2026	1.5527000	12.224059	0.4076553	0.4226597	0.6491138	0.3750597	0.2022952	0.4106338	2493.1653379264962
2027	11.760032	7.9684101	0.2015831	0.0178399	0.2194231	0.1854080	0.0042726	0.1896807	1467.0525731756252
Daily - Winter (Max)									
2026	1.1038443	9.3362127	0.4191816	2.1710569	2.5902386	0.3856471	1.0646730	1.4503201	1744.0695571903655
2027	11.758935	7.9758379	0.2015831	0.0178399	0.2194231	0.1854080	0.0042726	0.1896807	1466.43604256872
Average Daily									
2026	0.5678997	4.7457935	0.1644150	0.2940883	0.4585033	0.1512668	0.1144005	0.2656674	1002.7006592534734
2027	5.0595831	2.7914779	0.0701290	0.0060420	0.0761711	0.0645028	0.0014448	0.0659477	509.52184178615835
Annual									
2026	0.1036417	0.8661073	0.0300057	0.0536711	0.0836768	0.0276062	0.0208781	0.0484843	166.0085369031932
2027	0.9233739	0.5094447	0.0127985	0.0011026	0.0139012	0.0117717	0.0002636	0.0120354	84.35715554242807

2. Emissions Summary - HRA

2.3 Construction Emissions by Year, Mitigated

Year	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO_2e
Daily - Summer (Max)									
2026	0.4696021	6.1124106	0.0596019	0.4226597	0.4627839	0.0583114	0.2022952	0.2412015	2493.1653379264962
2027	10.957725	5.2803118	0.0256668	0.0178399	0.0435067	0.0256078	0.0042726	0.0298805	1467.0525731756252
Daily - Winter (Max)									
2026	0.2914919	4.8435059	0.0401242	2.1710569	2.2036726	0.0389062	1.0646730	1.0972887	1744.0695571903655
2027	10.956629	5.2877396	0.0256668	0.0178399	0.0435067	0.0256078	0.0042726	0.0298805	1466.43604256872
Average Daily									
2026	0.1695932	1.9870539	0.0240396	0.2940883	0.3181279	0.0235351	0.1144005	0.1379357	1002.7006592534734
2027	4.7768109	1.8716815	0.0089122	0.0060420	0.0149543	0.0088930	0.0014448	0.0103378	509.52184178615835
Annual									
2026	0.0309507	0.3626373	0.0043872	0.0536711	0.0580583	0.0042951	0.0208781	0.0251732	166.0085369031932
2027	0.8717679	0.3415818	0.0016264	0.0011026	0.0027291	0.0016229	0.0002636	0.0018866	84.35715554242807

5.3. Construction Vehicles - HRA

5.3.1 Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition				
Demolition	Worker	20	0.5	LDA,LDT1,LDT2
Demolition	Vendor		0.5	HHDT,MHDT
Demolition	Hauling	19.31818182	0.5	HHDT
Demolition	Onsite truck			HHDT
Site Preparation				
Site Preparation	Worker	7.5	0.5	LDA,LDT1,LDT2
Site Preparation	Vendor		0.5	HHDT,MHDT
Site Preparation	Hauling	0	0.5	HHDT
Site Preparation	Onsite truck			HHDT
Grading				
Grading	Worker	22.5	0.5	LDA,LDT1,LDT2
Grading	Vendor		0.5	HHDT,MHDT
Grading	Hauling	0.4846153846153846	0.5	HHDT
Grading	Onsite truck			HHDT
Building Construction				
Building Construction	Worker	36	0.5	LDA,LDT1,LDT2
Building Construction	Vendor	5.345	0.5	HHDT,MHDT
Building Construction	Hauling	0.6	0.5	HHDT
Building Construction	Onsite truck			HHDT
Paving				
Paving	Worker	20	0.5	LDA,LDT1,LDT2
Paving	Vendor		0.5	HHDT,MHDT
Paving	Hauling	3.6	0.5	HHDT
Paving	Onsite truck			HHDT
Architectural Coating				
Architectural Coating	Worker	7.2	0.5	LDA,LDT1,LDT2
Architectural Coating	Vendor		0.5	HHDT,MHDT
Architectural Coating	Hauling	0	0.5	HHDT
Architectural Coating	Onsite truck			HHDT
Trenching				
Trenching	Worker	5	0.5	LDA,LDT1,LDT2
Trenching	Vendor		0.5	HHDT,MHDT
Trenching	Hauling	0	0.5	HHDT
Trenching	Onsite truck			HHDT

5.3. Construction Vehicles - HRA

5.3.2 Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition				
Demolition	Worker	20	0.5	LDA,LDT1,LDT2
Demolition	Vendor		0.5	HHDT,MHDT
Demolition	Hauling	19.31818182	0.5	HHDT
Demolition	Onsite truck			HHDT
Site Preparation				
Site Preparation	Worker	7.5	0.5	LDA,LDT1,LDT2
Site Preparation	Vendor		0.5	HHDT,MHDT
Site Preparation	Hauling	0	0.5	HHDT
Site Preparation	Onsite truck			HHDT
Grading				
Grading	Worker	22.5	0.5	LDA,LDT1,LDT2
Grading	Vendor		0.5	HHDT,MHDT
Grading	Hauling	0.4846153846153846	0.5	HHDT
Grading	Onsite truck			HHDT
Building Construction				
Building Construction	Worker	36	0.5	LDA,LDT1,LDT2
Building Construction	Vendor	5.345	0.5	HHDT,MHDT
Building Construction	Hauling	0.6	0.5	HHDT
Building Construction	Onsite truck			HHDT
Paving				
Paving	Worker	20	0.5	LDA,LDT1,LDT2
Paving	Vendor		0.5	HHDT,MHDT
Paving	Hauling	3.6	0.5	HHDT
Paving	Onsite truck			HHDT
Architectural Coating				
Architectural Coating	Worker	7.2	0.5	LDA,LDT1,LDT2
Architectural Coating	Vendor		0.5	HHDT,MHDT
Architectural Coating	Hauling	0	0.5	HHDT
Architectural Coating	Onsite truck			HHDT
Trenching				
Trenching	Worker	5	0.5	LDA,LDT1,LDT2
Trenching	Vendor		0.5	HHDT,MHDT
Trenching	Hauling	0	0.5	HHDT
Trenching	Onsite truck			HHDT

Attachment 2: Project Construction Emissions and Health Risk Calculations

68 Willow Road, Menlo Park, CA
Construction Health Impact Summary

Maximum Impacts at MEI Locations - Without Mitigation

Emissions Year	Maximum Concentrations: Exhaust PM10/DPM ($\mu g/m^3$)	Maximum Concentrations: Fugitive PM2.5 ($\mu g/m^3$)	Cancer Risk (per million): Infant/Child	Hazard Index (-)	Maximum Annual PM2.5 Concentration ($\mu g/m^3$)
2026	0.0666	0.1813	11.84	0.01	0.35
2027	0.0284	0.0023	4.67	0.01	0.08
Total	-	-	**16.51**		-
Maximum	0.0666	0.1813	**-**	**0.01**	**0.35**

Maximum Impacts at MEI Locations - With Mitigation

Emissions Year	Maximum Concentrations: Exhaust PM10/DPM ($\mu g/m^3$)	Maximum Concentrations: Fugitive PM2.5 ($\mu g/m^3$)	Cancer Risk (per million): Infant/Child	Hazard Index (-)	Maximum Annual PM2.5 Concentration ($\mu g/m^3$)
2026	0.0097	0.1813	1.73	0.00	0.21
2027	0.0036	0.0023	0.59	0.00	0.01
Total	-	-	**2.32**	-	-
Maximum	0.0097	0.1813	**-**	**0.00**	**0.21**

68 Willow Road, Menlo Park, CA

DPM Emissions and Modeling Emission Rates - Unmitigated

Construction Year	Activity	DPM (ton/year)	Area Source	DPM Emissions (lb/yr)	DPM Emissions (lb/hr)	DPM Emissions (g/s)	Modeled Area (m^2)	DPM Emission Rate ($g/s/m^2$)
2026	Construction	0.0300	CON_DPM	60.0	0.02308	2.91E-03	10,709	2.72E-07
2027	Construction	0.0128	CON_DPM	25.6	0.00985	1.24E-03	10,709	1.16E-07
Total		***0.0428***		***85.6***	***0.0329***	***0.0041***		

Construction Hours

hr/day =	10	(8am - 6pm)
days/yr =	260	
hours/year =	2600	

DPM Construction Emissions and Modeling Emission Rates - With Mitigation

Construction Year	Activity	DPM (ton/year)	Area Source	DPM Emissions (lb/yr)	DPM Emissions (lb/hr)	DPM Emissions (g/s)	Modeled Area (m^2)	DPM Emission Rate ($g/s/m^2$)
2026	Construction	0.0044	CON_DPM	8.8	0.00337	4.25E-04	10,709	3.97E-08
2027	Construction	0.0016	CON_DPM	3.3	0.00125	1.58E-04	10,709	1.47E-08
Total		***0.0060***		***12.0***	***0.0046***	***0.0006***		

Construction Hours

hr/day =	10	(8am - 6pm)
days/yr =	260	
hours/year =	2600	

68 Willow Road, Menlo Park, CA

PM2.5 Fugitive Dust Emissions for Modeling - Unmitigated

Construction Year	Activity	Area Source	PM2.5 Emissions (ton/year)	PM2.5 Emissions (lb/yr)	PM2.5 Emissions (lb/hr)	PM2.5 Emissions (g/s)	Modeled Area (m^2)	PM2.5 Emission Rate $g/s/m^2$
2026	Construction	CON_FUG	0.0209	41.8	0.01606	2.02E-03	10,709	1.89E-07
2027	Construction	CON_FUG	0.0003	0.5	0.00020	2.56E-05	10,709	2.39E-09
Total			***0.0211***	***42.3***	***0.0163***	***0.0020***		

Construction Hours

hr/day =	10	(8am - 6pm)
days/yr =	260	
hours/year =	2600	

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

Construction Year	Activity	Area Source	PM2.5 Emissions (ton/year)	PM2.5 Emissions (lb/yr)	PM2.5 Emissions (lb/hr)	PM2.5 Emissions (g/s)	Modeled Area (m^2)	PM2.5 Emission Rate $g/s/m^2$
2026	Construction	CON_FUG	0.0209	41.8	0.01606	2.02E-03	10,709	1.89E-07
2027	Construction	CON_FUG	0.0003	0.5	0.00020	2.56E-05	10,709	2.39E-09
Total			***0.0211***	***42.3***	***0.0163***	***0.0020***		

Construction Hours

hr/day =	10	(8am - 6pm)
days/yr =	260	
hours/year =	2600	

68 Willow Road, Menlo Park, CA - Construction Impacts - Without Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at Off-Site MEI Location - 4.5 meter receptor height

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

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

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

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

Values

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

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

			Infant/Child - Exposure Information				Adult - Exposure Information				Maximum		
			DPM Conc (ug/m3)				Modeled DPM Conc (ug/m3)						
Exposure Year	**Exposure Duration (years)**	**Age**	**Year**	**Annual**	**Age Sensitivity Factor**	**Infant/Child Cancer Risk (per million)**	**Year**	**Annual**	**Age Sensitivity Factor**	**Adult Cancer Risk (per million)**	**Hazard Index**	**Fugitive PM2.5**	**Total PM2.5**
0	0.25	-0.25 - 0*	2026	0.0604	10	0.82	2026	0.0604	-	-			
1	1	0 - 1	2026	0.0604	10	9.92	2026	0.0604	1	0.17	0.01	0.045	0.11
2	1	1 - 2	2027	0.0258	10	4.23	2027	0.0258	1	0.07	0.01	0.001	0.03
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						**14.97**				**0.25**			

* Third trimester of pregnancy

68 Willow Road, Menlo Park, CA - Construction Impacts - Without Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at Off-Site MEI Location - 1.5 meter receptor height

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

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

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

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

Values

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

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

			Infant/Child - Exposure Information				Adult - Exposure Information				Maximum		
			DPM Conc (ug/m3)				Modeled DPM Conc (ug/m3)						
Exposure Year	**Exposure Duration (years)**	**Age**	**Year**	**Annual**	**Age Sensitivity Factor**	**Infant/Child Cancer Risk (per million)**	**Year**	**Annual**	**Age Sensitivity Factor**	**Adult Cancer Risk (per million)**	**Hazard Index**	**Fugitive PM2.5**	**Total PM2.5**
0	0.25	-0.25 - 0*	2026	0.0666	10	0.91	2026	0.0666	-	-			
1	1	0 - 1	2026	0.0666	10	10.94	2026	0.0666	1	0.19	0.01	0.181	0.35
2	1	1 - 2	2027	0.0284	10	4.67	2027	0.0284	1	0.08	0.01	0.002	0.08
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						**16.51**				**0.27**			

* Third trimester of pregnancy

68 Willow Road, Menlo Park, CA - Construction Impacts - With Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction Impacts at Off-Site MEI Location - 4.5 meter receptor height

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

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

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

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

Values

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

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

			Infant/Child - Exposure Information				Adult - Exposure Information				Maximum		
			DPM Conc (ug/m3)				Modeled DPM Conc (ug/m3)						
Exposure Year	**Exposure Duration (years)**	**Age**	**Year**	**Annual**	**Age Sensitivity Factor**	**Infant/Child Cancer Risk (per million)**	**Year**	**Annual**	**Age Sensitivity Factor**	**Adult Cancer Risk (per million)**	**Hazard Index**	**Fugitive PM2.5**	**Total PM2.5**
0	0.25	-0.25 - 0*	2026	0.0088	10	0.12	2026	0.0088	-	-			
1	1	0 - 1	2026	0.0088	10	1.45	2026	0.0088	1	0.03	0.00	0.045	0.05
2	1	1 - 2	2027	0.0033	10	0.54	2027	0.0033	1	0.01	0.00	0.001	0.00
3	1	2 - 3		0.0000	3	0.00		0.0000	1	0.00			
4	1	3 - 4		0.0000	3	0.00		0.0000	1	0.00			
5	1	4 - 5		0.0000	3	0.00		0.0000	1	0.00			
6	1	5 - 6		0.0000	3	0.00		0.0000	1	0.00			
7	1	6 - 7		0.0000	3	0.00		0.0000	1	0.00			
8	1	7 - 8		0.0000	3	0.00		0.0000	1	0.00			
9	1	8 - 9		0.0000	3	0.00		0.0000	1	0.00			
10	1	9 - 10		0.0000	3	0.00		0.0000	1	0.00			
11	1	10 - 11		0.0000	3	0.00		0.0000	1	0.00			
12	1	11 - 12		0.0000	3	0.00		0.0000	1	0.00			
13	1	12 - 13		0.0000	3	0.00		0.0000	1	0.00			
14	1	13 - 14		0.0000	3	0.00		0.0000	1	0.00			
15	1	14 - 15		0.0000	3	0.00		0.0000	1	0.00			
16	1	15 - 16		0.0000	3	0.00		0.0000	1	0.00			
17	1	16-17		0.0000	1	0.00		0.0000	1	0.00			
18	1	17-18		0.0000	1	0.00		0.0000	1	0.00			
19	1	18-19		0.0000	1	0.00		0.0000	1	0.00			
20	1	19-20		0.0000	1	0.00		0.0000	1	0.00			
21	1	20-21		0.0000	1	0.00		0.0000	1	0.00			
22	1	21-22		0.0000	1	0.00		0.0000	1	0.00			
23	1	22-23		0.0000	1	0.00		0.0000	1	0.00			
24	1	23-24		0.0000	1	0.00		0.0000	1	0.00			
25	1	24-25		0.0000	1	0.00		0.0000	1	0.00			
26	1	25-26		0.0000	1	0.00		0.0000	1	0.00			
27	1	26-27		0.0000	1	0.00		0.0000	1	0.00			
28	1	27-28		0.0000	1	0.00		0.0000	1	0.00			
29	1	28-29		0.0000	1	0.00		0.0000	1	0.00			
30	1	29-30		0.0000	1	0.00		0.0000	1	0.00			
Total Increased Cancer Risk						**2.10**				**0.03**			

* Third trimester of pregnancy

68 Willow Road, Menlo Park, CA - Construction Impacts - With Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction Impacts at Off-Site MEI Location - 1.5 meter receptor height

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

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

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

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

Values

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

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

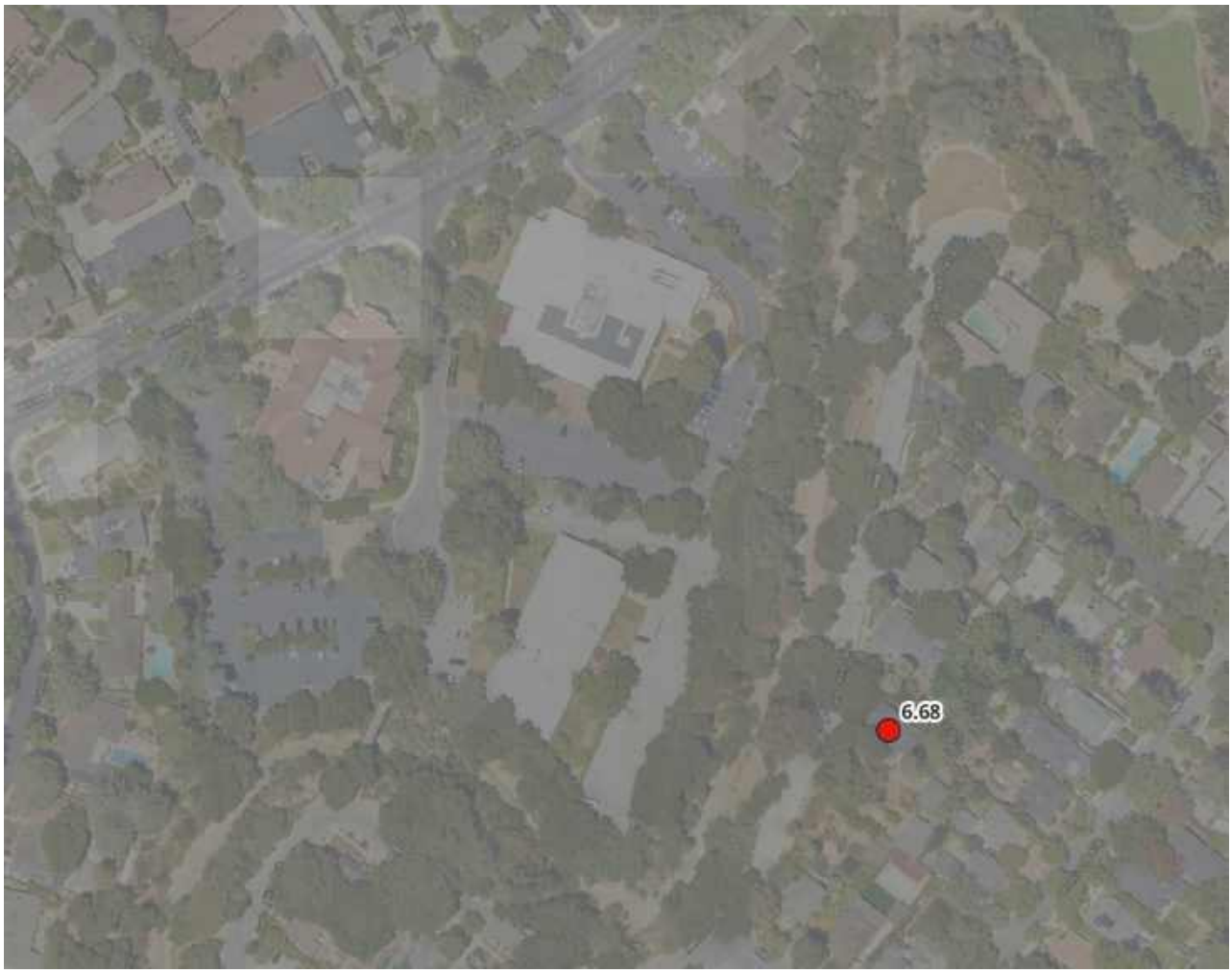
Construction Cancer Risk by Year - Maximum Impact Receptor Location

			Infant/Child - Exposure Information				Adult - Exposure Information				Maximum		
			DPM Conc (ug/m3)				Modeled DPM Conc (ug/m3)						
Exposure Year	**Exposure Duration (years)**	**Age**	**Year**	**Annual**	**Age Sensitivity Factor**	**Infant/Child Cancer Risk (per million)**	**Year**	**Annual**	**Age Sensitivity Factor**	**Adult Cancer Risk (per million)**	**Hazard Index**	**Fugitive PM2.5**	**Total PM2.5**
0	0.25	-0.25 - 0*	2026	0.0097	10	0.13	2026	0.0097	-	-			
1	1	0 - 1	2026	0.0097	10	1.60	2026	0.0097	1	0.03	0.00	0.181	0.21
2	1	1 - 2	2027	0.0036	10	0.59	2027	0.0036	1	0.01	0.00	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						**2.32**				**0.04**			

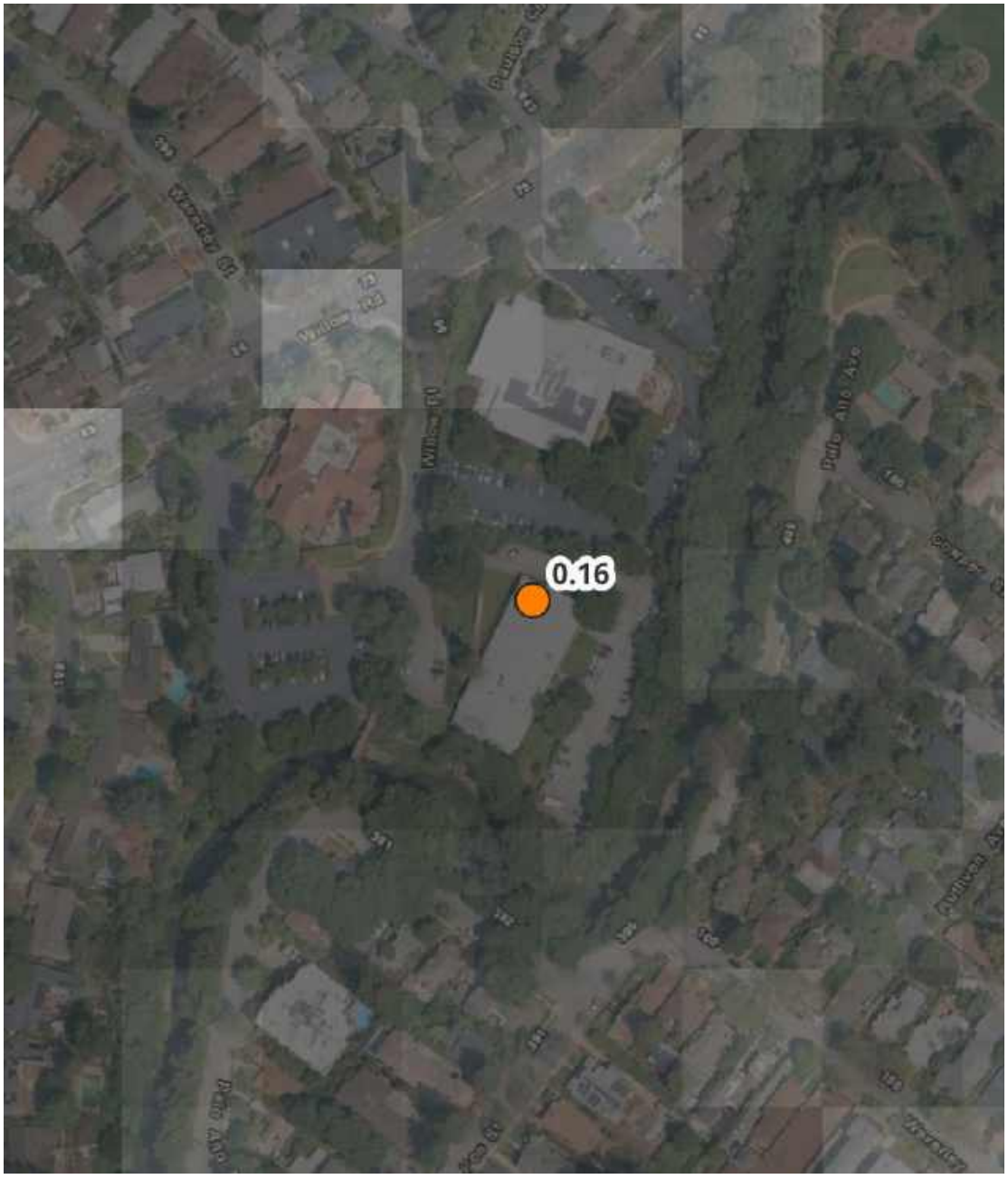
* Third trimester of pregnancy

Attachment 3: Cumulative Screening Information and Modeling Calculations

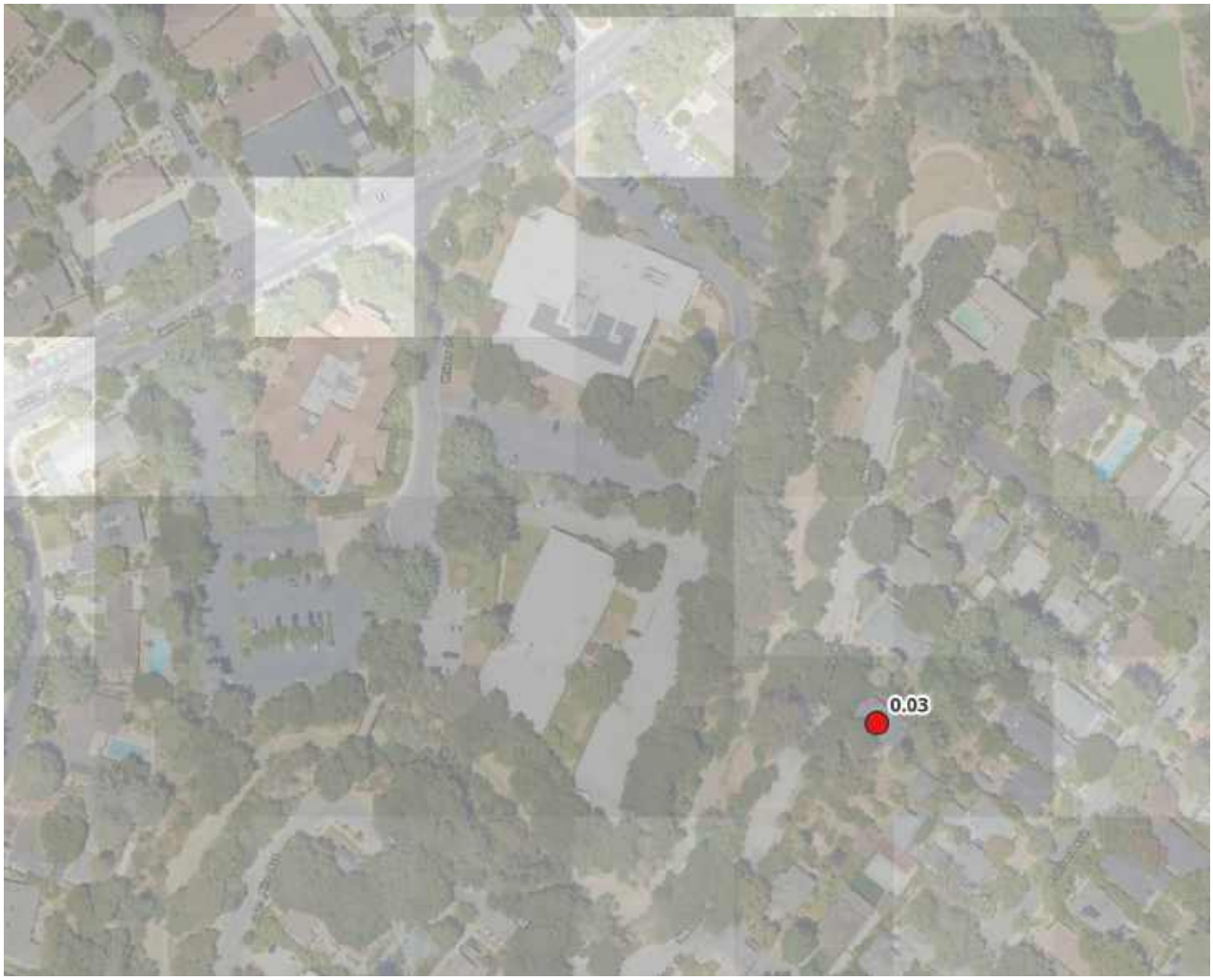
Bay Area Air District Roadway Raster Cancer Risk at MEI



Bay Area Air District Roadway Raster Annual $PM_{2.5}$ Concentration at MEI



Bay Area Air District Roadway Raster Hazard Index at MEI



Bay Area Air District Roadway Raster Cancer Risk at Project Site

Bay Area Air District Roadway Raster Annual $PM_{2.5}$ Concentration at Project Site

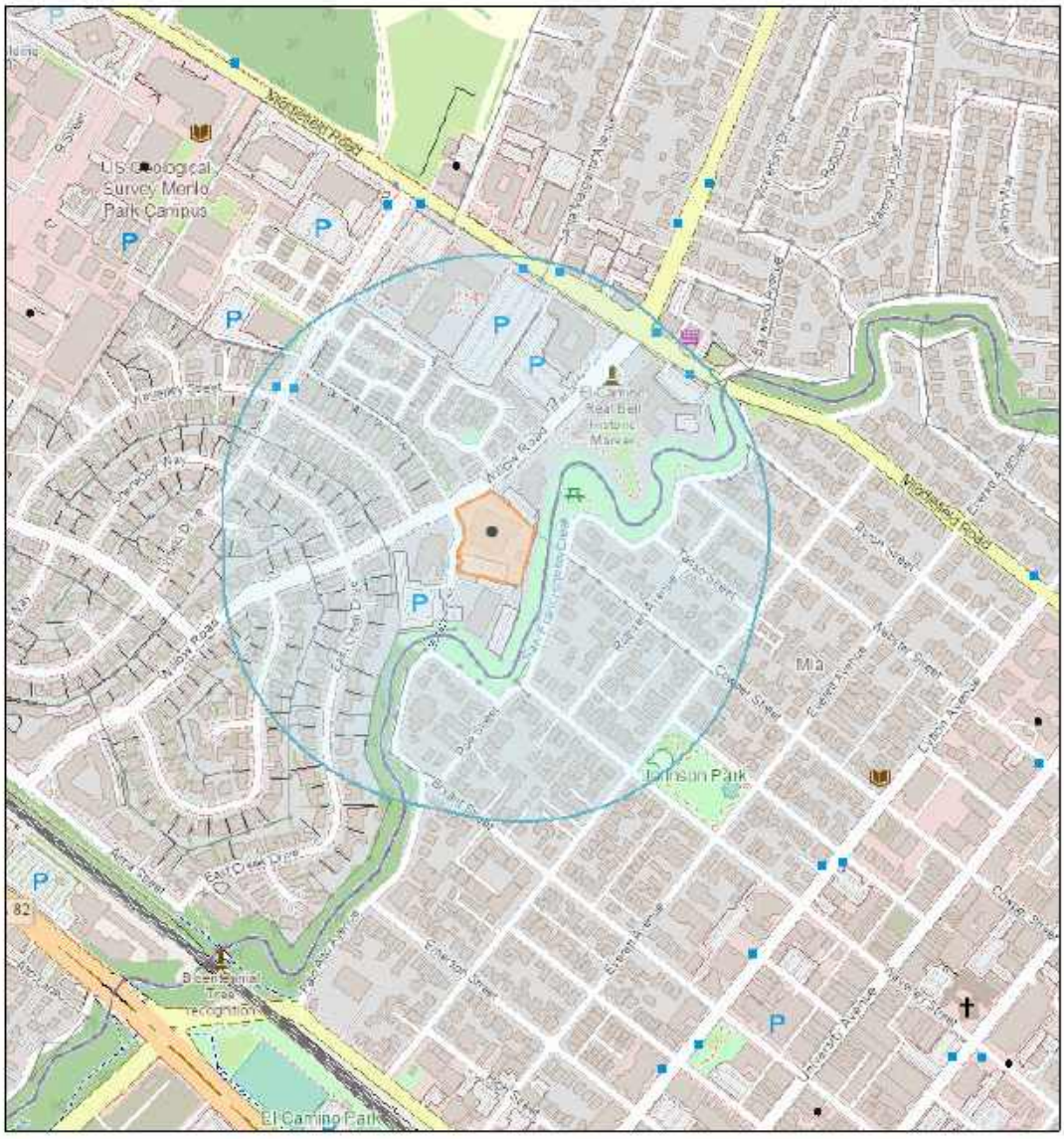
Bay Area Air District Roadway Raster Hazard Index at Project Site

Screening Report

Area of Interest (AOI) Information

Area : 4,428,385.22 ft²

Jan 16 2025 15:50:37 Pacific Standard Time



Summary

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

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