ATHERTON HOUSING ELEMENT UPDATE AND ZONING CODE AMENDMENTS AIR QUALITY & GREENHOSE GAS ASSESSMENT

Atherton, California

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Prepared for:

Adam Petersen
Principal Planner
M-Group
1475 S. Bascom Ave, Suite 210
Campbell, CA 95008t

Prepared by:

James A. Reyff
Casey Divine
Jordyn Bauer

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

I&R Project: #23-116

INTRODUCTION

The purpose of this report is to address air quality, health risk, and greenhouse gas (GHG) impacts associated with buildout of the proposed Housing Element Update and resulting zoning code amendments located in Atherton, California. The air quality and GHG impacts from the Housing Element Update would be associated with construction of the new buildings and infrastructure and operation of the project. Air pollutants associated with construction and operation are addressed qualitatively since construction and operational details are not known at the level necessary to predict meaningful quantitative impacts. All analyses were conducted following guidance provided by the Bay Area Air Quality Management District (BAAQMD).[1]

BACKGROUND

The Town of Atherton has an area of approximately 3,600 acres or 5.6 square miles, comprised of 89% residential, 5% parks and open space, and 6% public and private schools and municipal facilities. The Town has been primarily developed with lower density residential uses, with no commercial or industrial uses. The 2023-2031 Housing Element was passed in January 2023.

PROJECT DESCRIPTION

The Project is the proposed update to the Town of Atherton's Housing Element 2023-2031 and the resulting amendment of Title 17 of the Town of Atherton Municipal Code that would apply overlays zones to specific properties located within the Town of Atherton, California. The proposed Project would allow for housing to be constructed on these properties, helping meet the Town's future housing needs at all economic levels. As a policy document, the Housing Element Update and amended municipal code does not result in direct physical changes to the environment but would indirectly lead to physical environmental changes by enabling the potential development of additional housing units within the Town's jurisdiction. Additional housing leads to additional air pollutant and GHG emissions as well as potential localized air quality impacts.

Regional Housing Needs Allocation (RHNA)

In accordance with Government Code § 65584, projected housing needs for each city and county in the San Francisco Bay area region are prepared by the Association of Bay Area Governments (ABAG) and the Metropolitan Transportation Commission (MTC) under a process known as the Regional Housing Needs Assessment (RHNA). The RHNA allocates regional housing needs by income level among member jurisdictions.

California law established the planning period for the current RHNA from 2023 to 2031. ABAG's RHNA allocation for Atherton during this period is 348 units. The 348 units for Atherton are out of the anticipated construction need of 441,176 additional housing units in the ABAG region. Atherton's 348 units are distributed into Very Low Income, Low Income, Moderate Income, and Above Moderate-Income categories. Each category is defined by households falling into a certain percentage of the Area Median Income (AMI) as shown in Table 1.

[1] Bay Area Air Quality Management District, *2022 CEQA Guidelines*, April 2023

Table 1. RHNA Allocation

Income Category	6th Cycle RHNA	10% Buffer Units	Total Units	Percent
Extremely Low / Very Low	94	9	103	26%
Low	54	5	59	16%
Moderate	56	6	62	18%
Above Moderate	144	14	158	40%
Total	**348**	**34**	**382**	**100%**

Comparison of Site Inventory and RHNA

In addition to the proposed goals, objectives, policies, and programs to meet the RHNA, Atherton factored in programs including, but not limited to, a Residential Medium (RM) 10 overlay zone at 23 Oakwood, overlay zones on developed portions of open space sites, including the California Water Service site, the Circus Club, and the Gilmore House and Knox Playschool sites, vacant sites, lot splits (under the 2022 state law for urban lot splits; SB 9), private school sites, and accessory dwelling units (ADUs). The total new housing units needed to achieve the 6th Cycle RHNA are summarized in Table 2.

Table 2. Net RHNA – Projected Dwelling Units

	Very Low & Low 0-80% AMI	Moderate 81-120% AMI	Above Moderate >120% AMI	Total New Housing Units
Projected Dwelling Units				
ADUs	112	56	112	280
Lot Splits (SB 9)	0	0	48	48
Vacant Sites	0	0	9	9
RM 10 (23 Oakwood)	4	0	12	16
PFS (Private Schools)	96	95	0	191
Multi-Family Residential Opportunity Sites	17	34	34	85
Dwelling Unit Total	**229**	**185**	**215**	**629**
Total Net New Units Above or below RHNA	+81	+129	+71	+281

Anticipated Accessory Dwelling Units (ADUs)

The 2016 through 2020 updates to State law – Assembly Bill (AB) 2299 (2016), Senate Bill (SB) 1069 (2016), AB 494 (2017), SB 229 (2017), AB 68 (2019), AB 881 (2019), AB 587 (2019), SB 13 (2019), AB 670 (2019), AB 671 (2019), and AB 3182 (2020) – included changes pertaining to the allowed size of accessory, permitting ADUs by right in at least some areas of a jurisdiction, and limits on parking requirements related to ADUs. More recent bills reduce the time to review and approve ADU applications to 60 days, remove lot size and replacement parking space requirements, and require local jurisdictions to permit junior ADUs (JADUs).

In 2021 and 2022, the Town of Atherton experienced the construction of 44 new ADUs, three (3) JADUs, and seven (7) ADU conversions. Based on this trend, the Town projects an average of 35 new ADUs per year over the next eight (8) years. The Housing Element includes programs to amend the zoning code to facilitate ADU and JADU construction.

SB 9

Senate Bill 9 or SB 9 waives discretionary review and public hearings for building two homes on a parcel in a single-family zone and subdividing a lot into two that can be smaller than the previously required minimum size. In early 2022, the Town adopted an implementing ordinance consistent with state law to provide property owners clarity for the development opportunities under SB 9. The ordinance allows new lots to be created under the provisions of SB 9 to utilize the existing development standards for the base zoning district. A new residence built on a lot created through an SB 9 lot split can use the same setbacks, floor area ratio, building heights and other standards as provided for any existing lot in the same zoning district.

It is projected that approximately 48 new above moderate-income housing units will result from lot splits and new housing development facilitated by the 2021 SB 9 State law (GC section 65852.21) during the 2023-2031 Planning Period. There are 606 lots of an acre or greater in size, and Atherton received six (6) applications in 2022 and an additional six (6) inquiries that would result in a total of 23 new dwelling units.

Vacant Sites

The Town of Atherton surveyed all Town parcels to determine adequate sites for housing. There is little vacant developable land in the Town, and most of the Town's land acreage is developed at existing General Plan densities. However, the Town did identify eight (8) undeveloped sites that it expects would provide single-family housing at the above-moderate income level. These sites are listed in Table 3.

Table 3. Vacant Sites

Site ID	Lot Acres	APN	Address	Current Zoning	Max. Primary Units under current Zoning	Potential Net New Primary Units under SB-9	Reason not selected as Opportunity Site
V1	1.42	070-343-100	97 Santiago Ave.	R-1A	1	4	SB-9 application filed. City Council decision on 7/19/23.
V2	2.12	070-012-270	Polhemus Ave.	R1-A	2	4	City Council decision on 7/19/23. Discussed as part of 290 Polhemus Ave.
V3	1.13	070-180-400	95 Faxon Road	R1-A	1	4	Not fully vacant. Improved with tennis court, landscaping & walkways. Serves as extended rear yard of adjacent property.
V4	0.95	070-180-340	12 Faxon Forest Road	R1-A	1	4	Not located on major road or near public & private services.
V5	0.85	070-180-350	16 Faxon Forest Road	R1-A	1	4	Not located on major road or near public & private services.
V6	1.00	070-180-290	No Address (*Located between 7 & 11 Faxon Forest Rd.)*	R1-A	1	4	Not located on major road or near public & private services.
V7	1.78	070-131-010	15 Monte Vista Ave.	R1-A	1	4	Not fully vacant. Portion occupied by existing house. Part of a larger estate, approx. 12.6 acres.
V8	0.98	070-180-020	25 Monte Vista Ave.	R1-A	1	4	Not fully vacant. Portion occupied by existing house. Part of a larger estate, approx. 12.6 acres.
TOTAL PRIMARY HOUSING UNITS					**9**	**32**	

Residential Sites Inventory

An important component of the Town of Atherton Housing Element is the identification of sites for future housing development, and an evaluation of the adequacy of those sites in fulfilling the Town's share of regional housing needs. To accomplish this, all town parcels were surveyed to determine their development capacity. Due to limited vacant and underutilized sites in Atherton, the Town has selected candidate sites for rezoning. Each site was analyzed in light of the development standards for its proposed zoning designation. All parcels in Atherton were evaluated through a process of elimination based on required criteria set by the State (HCD).

Multi-Family Residential Opportunity Sites

The Town has identified seven (7) sites as multi-family residential opportunity sites, in addition to the ADU, SB 9, and vacant sites identified above. The Town is proposing to either rezone or adopt an overlay zone on these properties to facilitate multi-family housing at a density of up to 10 dwelling units per acre (du/ac). The Housing Element does not institute the rezoning or zoning overlay, but rather these are recommended legislative actions that would be implemented separately and after adoption and certification of the Housing Element. A list of sites for multi-family residential opportunities is identified in Table 4.

The rezoning or zoning overlay allows residential units to be built at a density of 10 dwelling units per acre. Potential units were calculated would yield a total of 68 units on approximately 6.89 acres of land.

Table 4. Multi-Family Residential Opportunity Sites

Site ID	Address	Lot Acres	Existing Zoning	Proposed Zoning Overlay	Proposed Net Residential Units from Zoning Overlay
MFO-1	999 Ringwood Ave.	0.90	R-1A	R-10	9
MFO-2	352 Bay Rd.	0.92	R-1A	R-10	9
MFO-3	318 Bay Rd.	0.94	R-1A	R-10	9
MFO-4	296 Bay Rd.	0.93	R-1A	R-10	9
MFO-5	175 Ravenswood	1.1	R-1A	R-10	11
MFO-6	185 Ravenswood	1.1	R-1A	R-10	11
MFO-7	197 Ravenswood	1	R-1A	R-10	10
	TOTALS	**6.89**			68

Municipal Code Changes

Implementation of the Housing Element would effectuate the following zoning changes to the Atherton Municipal Code:

- **RM-10 Overlay Zone – Public Open Space Sites:** The project proposes an amendment to the Town's Municipal Code of an RM-10 overlay to permit multifamily residential uses by right in the developed areas of properties in the Public Open Space zone. This includes the following: approximately 0.9 acres of Holbrook Palmer Park, occupied by the Gilmore

House; approximately 0.5 acres of developed portions of the Circus Club; and approximately 0.25 acres of portions of the California Water Service site at Bear Gulch Reservoir that are currently developed with offices or an ancillary off-street parking area.

- **RM-10 Overlay Zone – 23 Oakwood:** The project proposes an amendment to the Town's Municipal Code of an RM-10 overlay zone to permit multifamily residential uses by right. Included in the amendment request is a maximum density of 10 dwelling units per acre, building height standards of 40 feet, setbacks to accommodate the density, parking, and objective design standards. The site would yield 16 dwelling units.

- **Menlo College Overlay Zone – 1000 El Camino Real**: Implementation of the Housing Element would institute an overlay zone on three locations of the Menlo College site as described:

    - **Site 1:** The existing O'Brien surface parking lot at the southwest corner of El Camino Real and Alejandra Avenue is approximately 75,000 square feet (1.7 acres) in area. The site is level and currently contains a paved parking lot. The lot is surrounded by mature vegetation. Construction of a multi-family housing building is feasible at this location with podium parking at ground level and three-stories of housing above, or below grade parking. The Town does not have on-site parking requirements. Parking would be replaced to meet the needs of the college. The Town will amend the PFS zone, implementing an overlay zone on this site that permits 40 units per acre by right with objective design standards. The College has expressed interest in developing 60 dwelling units at this site.

    - **Site 2:** There are four residences located on the campus in World War II era houses that are currently utilized for faculty housing. Demolition of these residences would accommodate 30 apartment units, resulting in a net increase of 26 multifamily housing units. The Town will amend the PFS zone, implementing an overlay zone on this site that permits a density of 20 units per acre by right with objective design standards.

    - **Site 3:** The College has identified a site that is viable for a multi-story multi-family development of approximately 40 units. The site, near the Administration Building, is currently used as parking. Additional parking can be developed near the entry to the College off El Camino Real. The Town will amend the PFS zone, implementing an overlay zone on this site that permits 40 units per acre by right with objective design standards.

  Additional actions for all three sites include reducing the minimum front yard setback to 30 feet, amending the height limit to allow up to four-stories or 48 feet, permitting multi-family housing by right with objective design standards.

- **Menlo School Overlay Zone – 50 Valparaiso Avenue:** Implementation of the Housing Element would implement an overlay zone at two locations on the Menlo School as described below:

- **Site 1:** A surface parking located at the southwest corner of the campus with frontage on Valparaiso Avenue and the school entry drive, approximately 56,000 square feet (sf.) would have an overlay zone that permits 20 dwelling units per acre by right with objective design standards. This site would yield 25 dwelling units.

- **Site 2:** An approximately 44,000 sf. surface parking lot located at the southeast corner of the campus, with a frontage on Valparaiso Avenue and the school entry drive. With an overlay zone that permits 20 dwelling units per acre by right with objective design standards, this site could yield approximately 20 dwelling units.

To accommodate the new housing development, the zoning will be amended as follows:

- Reduce the minimum front yard setback to 30 feet (along Valparaiso Road).

- Amend the height limit to allow four-stories or 48 feet.

- Permit multifamily housing by right with objective design standards.

- **Sacred Heart Overlay Zone – 150 Valparaiso Avenue:** There are currently five (5) apartment units on the campus and housing for retired Nuns at Oakwood. The school anticipates this facility being renovated in the future to accommodate faculty housing which would be allowed under the PFS Zoning with an amendment for a density of 20 units per acre. The site would yield approximately 20 units.

- Implementation of the Housing Element would amend the ADU provisions of the Atherton Municipal Code, permitting the following:

  - Second story ADUs above detached garages, increasing the allowable height to 18 feet.

  - Two ADUs to be constructed on properties two-acres or greater in area; the first ADU is exempt from floor area limitations and the second ADU will be included in the ADU floor area.

  - Allow pool housing and guest houses to be rented as ADUs.

  - Waiving fees for all new ADUs.

  - Eliminating the owner occupancy limitation on ADUs, including guest and pool houses.

Further, implementation of the Housing Element would result in the following amendments to the Atherton Municipal Code:

- Allowing Permanent Supportive Housing by-right in use zones where multi-family and mixed-uses are permitted; and a by-right allowance for 100% affordable housing that has 25%, or 12 units, of permanent supportive housing where multi-family or mixed-use housing is permitted.

- Permitting Low Barrier Navigation Centers in zones where multi-family and mixed uses are permitted.

- Permitting mobile homes and manufactured housing on a permanent foundation under the same manner as single-family homes.

- Allowing group homes for seven (7) or more residents in any district where residential uses are permitted.

- Permitting shelters, and amending their parking requirements, without discretionary action.

- Amending the minimum lot size in the R-1B and subdivision ordinance allowing one-third (0.33) acre lots for the subject zone.

REGULATORY FRAMEWORK

Air pollutants are governed by multiple federal and state standards to regulate and mitigate health impacts. The pollutants regulated by the US EPA include" criteria" pollutants and 188 air toxics referred to as hazardous air pollutants (HAPs). Considering all the HAPs, the EPA has identified nine compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers or contributors and non-hazard contributors. These are 1,3-butadiene, acetaldehyde, acrolein, benzene, diesel particulate matter (DPM), ethylbenzene, formaldehyde, naphthalene, and polycyclic organic matter.

The State of California also regulates criteria pollutants, which include the federal list but also adds pollutants specific to certain industries, such as hydrogen sulfide and vinyl chloride. The State also regulates HAPs, which are referred to as TACs. The common pollutants, their potential sources, and effects are summarized in Table 5.

Table 5. Health Effects of Air Pollutants

Pollutants	Sources	Primary Effects
Carbon Monoxide (CO)	• Incomplete combustion of fuels and other carbon-containing substances, such as motor exhaust. • Natural events, such as decomposition of organic matter.	• Reduced tolerance for exercise. • Impairment of mental function. • Impairment of fetal development. • Death at high levels of exposure. • Aggravation of some heart diseases (angina).
Nitrogen Dioxide (NO_2)	• Motor vehicle exhaust. • High temperature stationary combustion. • Atmospheric reactions.	• Aggravation of respiratory illness. • Reduced visibility. • Reduced plant growth. • Formation of acid rain.
Ozone (O_3)	• Atmospheric reaction of organic gases with nitrogen oxides in sunlight.	• Aggravation of respiratory and cardiovascular diseases. • Irritation of eyes. • Impairment of cardiopulmonary function. • Plant leaf injury.
Lead (Pb)	• Contaminated soil.	• Impairment of blood functions and nerve con-struction. • Behavioral and hearing problems in children.
Suspended Particulate Matter ($PM_{2.5}$ and PM_{10})	• Stationary combustion of solid fuels. • Construction activities. • Industrial processes. • Atmospheric chemical reactions.	• Reduced lung function. • Aggravation of the effects of gaseous pollutants. • Aggravation of respiratory and cardiorespiratory diseases. • Increased cough and chest discomfort. • Soiling. • Reduced visibility.
Sulfur Dioxide (SO_2)	• Combustion of sulfur-containing fossil fuels. • Smelting of sulfur-bearing metal ores. • Industrial processes.	• Aggravation of respiratory diseases (asthma, emphysema). • Reduced lung function. • Irritation of eyes. • Reduced visibility. • Plant injury. • Deterioration of metals, textiles, leather, finishes, coatings, etc.
Toxic Air Contaminants	• Cars and trucks, especially diesel engines. • Industrial sources such as chrome platers. • Neighborhood businesses such as dry cleaners and service stations. • Building materials and product.	• Cancer. • Chronic eye, lung, or skin irritation. • Neurological and reproductive disorders.

Source: CARB, 2009. ARB Fact Sheet: Air Pollution and Health, see: https://www.arb.ca.gov/research/health/fs/fs1/fs1.htm

Federal Air Quality Regulations

At the federal level, the EPA has been charged with implementing national air quality programs. EPA's air quality mandates are drawn primarily from the Federal Clean Air Act (FCAA), which was enacted in 1963. The FCAA was amended in 1970, 1977, and 1990. Pursuant to the FCAA of 1970, the EPA established National Ambient Air Quality Standards (NAAQS) for the following criteria pollutants:

Ozone (O_3) -Ozone is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving reactive organic gases (ROG) and oxides of nitrogen (NO_X). The main sources of ROG and NO_X, often referred to as ozone precursors, are combustion processes (including combustion in motor vehicle engines) and the evaporation of solvents, paints, and fuels. In the Bay Area, automobiles are the single largest source of ozone precursors. Ozone is referred to as a regional air pollutant because its precursors are transported and diffused by wind concurrently with ozone production through the photochemical reaction process. Ozone is a powerful oxidant that is harmful to public health at high concentrations. Ozone, at high levels, can damage the tissues of the lungs and respiratory tract. High concentrations of ozone irritate the nose, throat, and respiratory system and constrict the airways.[2] Ozone also can aggravate other respiratory conditions such as asthma, bronchitis, and emphysema, causing increased hospital admissions. Repeated exposure to high ozone levels can make people more susceptible to respiratory infection and lung inflammation and permanently damage lung tissue. Ozone can also have negative cardiovascular impacts, including chronic hardening of the arteries and acute triggering of heart attacks.

Carbon Monoxide - Carbon monoxide (CO) is an odorless, colorless gas usually formed as the result of the incomplete combustion of fuels. The single largest source of CO is motor vehicles. While CO transport is limited, it disperses with distance from the source under normal meteorological conditions. However, under certain extreme meteorological conditions, CO concentrations near congested roadways or intersections may reach unhealthful levels that adversely affect local sensitive receptors (e.g., residents, schoolchildren, the elderly, hospital patients, etc.). Typically, high CO concentrations are associated with roadways or intersections operating at unacceptable levels of service (LOS) or with extremely high traffic volumes. Exposure to high concentrations of CO reduces the oxygen-carrying capacity of the blood and can cause headaches, nausea, dizziness, fatigue, impair central nervous system function, and induce angina (chest pain) in persons with serious heart disease. Very high levels of CO can be fatal.

Nitrogen Dioxide - Nitrogen Dioxide (NO_2) is a reddish-brown gas that is a byproduct of combustion processes. Automobiles and industrial operations are the main sources of NO_2. Aside from its contribution to ozone formation, NO_2 also contributes to other pollution problems, including a high concentration of fine particulate matter, poor visibility, and acid deposition. NO_2 may be visible as a coloring component on high pollution days, especially in conjunction with high ozone levels. NO_2 decreases lung function and may reduce resistance to infection.

Sulfur Dioxide - Sulfur dioxide (SO_2) is a colorless, irritating gas formed primarily from incomplete combustion of fuels containing sulfur. Industrial facilities also contribute to gaseous SO_2 levels in the region. SO_2 irritates the respiratory tract, can injure lung tissue when combined with fine particulate matter, and reduces visibility and the level of sunlight.

[2] See: California Air Resource Board, Web: https://ww2.arb.ca.gov/resources/ozone-and-health

Particulate Matter - Particulate matter is the term used for a mixture of solid particles and liquid droplets found in the air. Coarse particles are those that are larger than 2.5 microns but smaller than 10 microns (PM_{10}). $PM_{2.5}$ refers to fine suspended particulate matter with an aerodynamic diameter of 2.5 microns or less that is not readily filtered out by the lungs. Nitrates, sulfates, dust, and combustion particulates are major components of PM_{10} and $PM_{2.5}$. These small particles can be directly emitted into the atmosphere as by-products of fuel combustion, through abrasion, such as tire or brake lining wear, or through fugitive dust (wind or mechanical erosion of soil). They can also be formed in the atmosphere through chemical reactions. Particulates may transport carcinogens and other toxic compounds that adhere to the particle surfaces and can enter the human body through the lungs.

Lead - Lead is a metal found naturally in the environment as well as in manufactured products. The major sources of lead emissions have historically been mobile and industrial sources. As a result of the phase-out of leaded gasoline in the 1990's, metal processing is currently the primary source of lead emissions. The highest levels of lead emissions are generally found near lead smelters. Other stationary sources are waste incinerators, utilities, and lead-acid battery manufactures.

NAAQS include both primary and secondary standards. Primary standards set limits to protect public health, including the health of sensitive populations such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings.[3] Areas (i.e., air basins) that do not meet the NAAQS, or nonattainment areas, are required to develop State Implementation Plans (SIPs) that are designed to bring them into attainment of the NAAQS by specific dates.

The FCAA Amendments of 1990 changed deadlines for attaining NAAQS as well as the remedial actions required of areas of the nation that exceed the standards. Conformity with an area's SIP requirements satisfy the FCAA requirements for a given project.

State Air Quality Regulations

California Clean Air Act

In 1988, the CCAA established its own, more stringent ambient air quality standards, known as California Ambient Air Quality Standards (CAAQS). The CCAA requires that all air basins in the state endeavor to achieve and maintain CAAQS for CO, O_3, SO_2, and NO_2 by the earliest practical date. The CCAA establishes local air districts and provides them with authority to regulate indirect sources and mandates that air quality districts focus particular attention on reducing emissions from transportation and area-wide emission sources. Each nonattainment area in the State is required to adopt a plan to achieve a 5 percent annual reduction, averaged over consecutive 3-year periods, for each nonattainment pollutant or its precursors. A Clean Air Plan is a SIP that shows how a district would reduce emissions to achieve air quality standards.

[3] See: U.S. Environmental Protection Agency, Web: https://www.epa.gov/criteria-air-pollutants/naaqs-table, Accessed 13 August 2020

California Air Resources Board

The California Air Resources Board (CARB) is the agency responsible for coordination with the EPA and developing SIPs to achieve and maintain both the NAAQS and CAAQS. As a result, it has oversight of the state's air pollution control programs. Other CARB duties include monitoring air quality (in conjunction with air monitoring networks maintained by air pollution control and air quality management districts), determining and updating area designations and maps, and setting emissions standards for new mobile sources, consumer products, small utility engines, and off-road vehicles.

California Air Resources Board Handbook

In 1998, CARB identified particulate matter from diesel-fueled engines (i.e., DPM) as a toxic air contaminant. CARB has completed a risk management process that identified potential cancer risks for a range of activities using diesel-fueled engines.[4] CARB subsequently developed an Air Quality and Land Use Handbook[5] (Handbook) in 2005 that is intended to serve as a general reference guide for evaluating and reducing air pollution impacts associated with new projects that go through the land use decision-making process. The 2005 CARB Handbook recommends that planning agencies consider proximity to air pollution sources when considering new locations for "sensitive" land uses, such as residences, medical facilities, daycare centers, schools, and playgrounds.

Air pollution sources of concern include freeways, rail yards, ports, refineries, distribution centers, chrome plating facilities, dry cleaners, and large gasoline service stations. Key recommendations in the Handbook relative to the Plan Area include taking steps to consider or avoid siting new, sensitive land uses:

- Within 500 feet of a freeway, urban roads with 100,000 vehicles/day or rural roads with 50,000 vehicles/day.
- Within 300 feet of gasoline fueling stations (note that new fueling stations utilize enhanced vapor recovery systems that substantially reduce emissions).
- Within 300 feet of dry-cleaning operations (note that dry cleaning with TACs is being phased out and will be prohibited in 2023).

Advanced Clean Cars

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

[4] California Air Resources Board, 2000. *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*. October.
[5] California Air Resources Board, 2005. *Air Quality and Land Use Handbook: A Community Health Perspective.* April.

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

On-road Heavy-Duty Diesel Vehicle Regulations

CARB is actively enforcing on-road heavy-duty diesel vehicle regulations that require fleets to replace or retrofit older heavy-duty diesel vehicles. As of January 1, 2020, the DMV cannot register any vehicle that does not meet the diesel engine replace/retrofit requirements. Other CARB diesel programs affecting heavy-duty diesel vehicles include:

- Idling limits of no more than 5 minutes with special exceptions.
- Emission Control Labels must be affixed to engines of all commercial heavy-duty diesel vehicles, and must be legible as proof the engine, at minimum, meets U.S. federal emissions standards for the engine model year.
- The Periodic Smoke Inspection Program requires owners of California-based fleets of two or more diesel vehicles to perform annual smoke opacity tests and to keep records for at least two years for each vehicle.
- The Heavy-Duty Vehicle Inspection Program uses random roadside inspections to verify that diesel engines do not smoke excessively and are tamper-free.

Advanced Clean Trucks (ACT)

California's Advanced Clean Trucks (ACT) rule increases the percentage of medium and heavy-duty trucks sold as ZEVs beginning in 2024. By 2035, 40 to 75 percent of new trucks sold, depending on size, would have to meet ZEV requirements. In addition, large employers including retailers, manufacturers, brokers, and others are required to report about their existing fleet operations and report information about shipments and shuttle services with 50 or more trucks,.

Off-Road Vehicle and Equipment Regulations

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

Fleet owners must report the vehicle and engine information for all vehicles within their fleets operating in California. Fleet owners must also report owner information using DOORS, which is

CARB's online reporting tool. CARB issues a unique Equipment Identification Number (EIN) that is assigned to each vehicle. The fleet owner must label their vehicles with the EIN.

Other CARB diesel programs affecting off-road vehicles and equipment include:

- Idling limits of no more than 5 minutes with special exceptions.
- Portable engines 50 hp or greater may require a permit or registration to legally operate.

Bay Area Air Quality Management District

The BAAQMD is the local air quality management authority charged with attainment of the NAAQS/CAAQS and maintenance of air quality in the San Francisco Bay Area Air Basin (SFBAAB). They do this through a comprehensive program of planning, regulation, enforcement, technical innovation, and education. The BAAQMD also inspects stationary sources and responds to citizen complaints, monitors ambient air quality and meteorological conditions, and implements programs and regulations required by law.

Clean Air Plan

The BAAQMD is responsible for developing a Clean Air Plan which guides the region's air quality planning efforts to attain the NAAQS and CAAQS. The BAAQMD's *2017 Clean Air Plan* is the latest air quality plan which contains district-wide control measures to reduce ozone precursor emissions (i.e., ROG and NO_X), particulate matter, and greenhouse gas (GHG) emissions. The *2017 Clean Air Plan*, which was adopted on April 19, 2017 by the BAAQMD's board of directors:

- Updates the Bay Area 2010 Clean Air Plan in accordance with the requirements of the CCAA to implement "all feasible measures" to reduce ozone;
- Provides a control strategy to reduce ozone, particulate matter, air toxics, and GHGs in a single, integrated plan;
- Reviews progress in improving air quality in recent years; and
- Continues and updates emission control measures.

Planning Healthy Places

BAAQMD developed a guidebook that provides air quality and public health information intended to assist local governments in addressing potential air quality issues related to exposure of sensitive receptors to exposure of emissions from local sources of air pollutants. The guidance provides tools and recommends best practices that can be implemented to reduce exposures. The information is provided as recommendations to develop policies and measures in city or county General Plans, neighborhood or specific plans, land use development ordinances, or into projects.

BAAQMD California Environmental Quality Act Air Quality Guidelines

The BAAQMD California Environmental Quality Act (CEQA) Air Quality Guidelines[6] were prepared to assist in the evaluation of air quality impacts of projects and plans proposed within the Bay Area. The guidelines provide recommended procedures for evaluating potential air impacts during the environmental review process consistent with CEQA requirements including thresholds of significance, mitigation measures, and background air quality information. They also include assessment methodologies for TACs, odors, and GHG emissions. In June 2010, the BAAQMD's Board of Directors adopted CEQA thresholds of significance and an update of their CEQA Guidelines. In May 2011, the updated BAAQMD CEQA Air Quality Guidelines were amended to include a health risk and hazards threshold for new receptors and modify procedures for assessing impacts related to TAC impacts. The Guidelines were then updated in May 2017 and again in April 2023, and this version serves as the Air District's most recent CEQA guidance. The updated 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 air toxins, odors, and GHG emissions.

Per Appendix G of the CEQA Guidelines, air quality and GHG impacts are considered significant if implementation of the General Plan (or specific area plan) would:

1) Conflict with or obstruct implementation of an applicable air quality plan.
2) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard.
3) Expose sensitive receptors to substantial pollutant concentrations.
4) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.
5) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.
6) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Additionally, specific projects within a planning area that have TAC emissions that could adversely affect sensitive receptors must prepare a health risk assessment to quantify the potential risks to the community and, if appropriate, identify mitigation measures to reduce impacts.

The BAAQMD's current significance thresholds are listed in Table 6 and Table 7. Though not necessarily a CEQA issue, the effect of existing TAC sources on future sensitive receptors (e.g., residences) is requested by BAAQMD to comply with the 2017 Clean Air Plan's key goal of reducing population TAC exposure and protecting public health in the Bay Area.

[6] Bay Area Air Quality Management District, *2022 CEQA Guidelines*, April 2023

Table 6. BAAQMD Plan-Level Air Quality Significance Thresholds

Pollutant/ Contaminant	Construction	Operational
Criteria Air Pollutants and Precursors	None	1. Consistency with Current Air Quality Plan control measures. 2. Projected vehicle miles traveled (VMT) or vehicle trip increase is less than or equal to projected population increase.
Risks and Hazards	None	1. Overlay zones around existing and planned sources of TACs (including adopted Risk Reduction Plan areas). 2. Overlay zones of at least 500 feet from all freeways and high-volume roadways. For this analysis – overlay zones are based on potential for sources to result in the following impacts: 1. Excess cancer risk >10.0 chances per million 2. Annual $PM_{2.5}$ Concentration > 0.3 $\mu g/m^3$ 3. Hazard Index >1.0
Odors	None	Identify the location, and include policies to reduce the impacts, of existing or planned sources of odors
Greenhouse gases	None	1. Meet State's goals to reduce emissions to 40% below 1990 levels by 2030 and carbon neutrality by 2045; **OR** 2. Be consistent with a local GHG reduction strategy that meets the criteria under State CEQA Guidelines Section 15183.5(b)

Table 7. BAAQMD Project-Level Air Quality Significance Thresholds

Criteria Air Pollutant	Construction Thresholds		Operational Thresholds	
	Average Daily Emissions (lbs./day)		Average Daily Emissions (lbs./day)	Annual Average Emissions (tons/year)
ROG	54		54	10
NO_X	54		54	10
PM_{10}	82 (Exhaust)		82	15
$PM_{2.5}$	54 (Exhaust)		54	10
CO	Not Applicable		9.0 ppm (8-hour average) or 20.0 ppm (1-hour average)	
Fugitive Dust	Construction Dust Ordinance or other Best Management Practices (BMPs)*		Not Applicable	
Health Risks and Hazards	**Single Sources/ Individual Project**		**Combined Sources (Cumulative from all sources within 1000-foot zone of influence)**	
Excess Cancer Risk	>10 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	
Greenhouse Gas Emissions				
Land Use Projects – (Must Include A or B)	A. Projects must include, at a minimum, the following project design elements: 1. Buildings a. The project will not include natural gas appliances or natural gas plumbing (in both residential and nonresidential development). b. The project will not result in any wasteful, inefficient, or unnecessary energy usage as determined by the analysis required under CEQA Section 21100(b)(3) and Section 15126.2(b) of the State CEQA Guidelines. 2. Transportation a. Achieve a reduction in project-generated VMT below the regional average consistent with the current version of the California Climate Change Scoping Plan (currently 15 percent) or meet a locally adopted Senate Bill 743 VMT target, reflecting the recommendations provided in the Governor's Office of Planning and Research's Technical Advisory on Evaluating Transportation Impacts in CEQA: i. Residential projects: 15 percent below the existing VMT per capita ii. Office projects: 15 percent below the existing VMT per employee iii. Retail projects: no net increase in existing VMT b. Achieve compliance with off-street electric vehicle requirements in the most recently adopted version of CALGreen Tier 2. B. Be consistent with a local GHG reduction strategy that meets the criteria under State CEQA Guidelines Section 15183.5(b).			

Note: ROG = reactive organic gases, NO_X = nitrogen oxides, PM_{10} = course particulate matter or particulates with an aerodynamic diameter of 10 micrometers (µm) or less, $PM_{2.5}$ = fine particulate matter or particulates with an aerodynamic diameter of 2.5µm or less. GHG = greenhouse gases.
* BAAQMD strongly recommends implementing all feasible fugitive dust management practices especially when construction projects are located near sensitive communities, including schools, residential areas, or other sensitive land uses.

Source: Bay Area Air Quality Management District, 2022

The BAAQMD recommends all projects include a "basic" set of best management practices (BMPs) to manage fugitive dust and consider impacts from dust (i.e., fugitive PM_{10} and $PM_{2.5}$) to be less than significant if BMPs are implemented.

Basic Best Management Practices: **Include measures to control dust and exhaust during construction.**

During any construction period ground disturbance, the applicant shall ensure that the project contractor implement measures to control dust and exhaust. Implementation of the measures recommended by BAAQMD and listed below would reduce the air quality impacts associated with grading and new construction to a less-than-significant level. The contractor shall implement the following BMPs that are required of all projects:

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

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

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

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

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

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

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

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

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

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

- Limit the simultaneous occurrence of excavation, grading, and ground-disturbing construction activities.

- Install wind breaks (e.g., trees, fences) on the windward side(s) of actively disturbed areas of construction. Wind breaks should have at maximum 50 percent air porosity.

- Plant vegetative ground cover (e.g., fast-germinating native grass seed) in disturbed areas as soon as possible and watered appropriately until vegetation is established.

- Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent.

- Minimize the amount of excavated material or waste materials stored at the site.

- Hydroseed or apply non-toxic soil stabilizers to construction areas, including previously graded areas, that are inactive for at least 10 calendar days.

CARE Program

The BAAQMD's Community Air Risk Evaluation (CARE) program was initiated in 2004 to evaluate and reduce health risks associated with exposures to outdoor TACs in the Bay Area.[7] The program examines TAC emissions from point sources, area sources, and on-road and off-road mobile sources with an emphasis on diesel exhaust, which is a major contributor to airborne health risk in California. The CARE program is an on-going program that encourages community involvement and input. The technical analysis portion of the CARE program has been implemented in three phases that includes an assessment of the sources of TAC emissions, modeling and measurement programs to estimate concentrations of TAC, and an assessment of exposures and health risks. Throughout the program, information derived from the technical analyses has been used to focus emission reduction measures in areas with high TAC exposures and high density of sensitive populations. Risk reduction activities associated with the CARE program are focused on the most at-risk communities in the Bay Area. The BAAQMD has identified six communities as impacted: Concord, Richmond/San Pablo, Western Alameda County, San José, Redwood City/East Palo Alto, and Eastern San Francisco.

Overburdened Communities Program

To address localized health impacts in Bay Area communities, BAAQMD staff met with community advocacy organizations to develop concepts and recommendations on how the air district could be more health protective. Through a series of public workshops and a public comment period, BAAQMD amended Rule 2 (i.e., Regulation 2-1-24) in 2021. It identifies an *overburdened* community as an area located (i) within a census tract identified by the California Office of Environmental Health Hazard Assessment's (OEHHA's) Communities Environmental Health Screening Tool (CalEnviroScreen), Version 4.0, as having an overall score at or above the 70th percentile, or (ii) within 1,000 feet of any such census tract. Projects in overburdened communities must conduct specific public involvement activities and stationary sources are subject to specific permitting requirements. The entire Town of Atherton fall under the 10th percentile in CalEnviroScreen.

[7] See BAAQMD: https://www.baaqmd.gov/community-health/community-health-protection-program/community-air-risk-evaluation-care-program.

Atherton General Plan

The Atherton General Plan, adopted in November 2002 and updated in 2019, includes goals, objectives, policies, and actions to reduce exposure of the Town's sensitive population to exposure of air pollution and toxic air contaminants or TACs. The following objectives, goals, policies, and actions relevant to air quality are contained in the *Land Use, Circulation, and Open Space & Conservation* Elements.

Land Use.

Goal LU-1 To preserve the Town's character as a scenic, semi-rural, thickly-wooded residential area with abundant open space.

Policies:

LU-1.5: Proposed residential subdivisions as well as proposals to replace existing homes, shall adhere to the following design criteria:

a. Maintenance of existing neighborhood environments shall be promoted by the design of the subdivision and subdivision improvements. Designs shall be visually harmonious and compatible with neighborhood character.
b. Adequate drainage and off-street parking shall be provided. Street lighting shall be kept to a minimum. Temporary or guest on-street parking areas shall be minimized,
c. Uniformity of lot design should be avoided by using such techniques as meandering streets.
d. Trees shall be preserved to the maximum extent feasible while allowing for construction within established parameters for setbacks and lot coverage in accordance with the Municipal Code chapter regulating removal of and damage to heritage trees.
e. Residential land uses shall be designed in accordance with the density, floor area ratio, height, bulk, and other standards established by the Town.
f. All utilities installed in conjunction with new subdivisions shall be placed underground.
g. Residential land uses shall be consistent with the goals, objectives, and policies of the Atherton General Plan Housing Element.
h. *Accessory* dwelling units are permitted when consistent with adopted standards.
i. Privacy is a factor which shall be incorporated into subdivision, subdivision improvements and home design.
j. The Town allows minimum lot size subdivisions only where such minimum lot sizes do not significantly degrade established levels of privacy, wooded areas, and/or the open space environment.
k. Residential improvements shall follow the model policies developed for the San Mateo Countrywide Stormwater Pollution Prevention program and the Town's Green Infrastructure Plan to minimize the discharge of pollutants into the waterways.

LU-1.7: Land uses which diminish the open space character of the Town, such as commercial and high-density residential uses, shall be prohibited.

LU-1.8: Maximize preservation of heritage trees and existing trees within a development site to the greatest degree feasible, consistent with the Heritage Tree Ordinance and Tree Preservation Standards and Specifications. Require new development to comply with the Town's requirements for tree protection, removal, and replacement.

Circulation.

Goal CIR-1 To develop a circulation system that is compatible with the needs of various land uses planned within the Town of Atherton.

Policies:

CIR-1.7: Paving for temporary on-street parking within the roadway right-of-way will be prohibited.

CIR-1.13: On-street and visible off-street parking shall be preserved to the extent consistent with traffic safety.

Goal CIR-4 To achieve a balanced, multi-modal transportation network that meets the needs of all users of Atheron streets and highways for safe and convenient travel in a manner that is suitable to the semi-rural context of the general plan.

Policies:

CIR-4.1: To incorporate, over time and where feasible, the principles of Complete Streets in future roadway projects. Complete Streets are streets and facilities that accommodate all users including bicyclists, children, persons with disabilities, motorists, movers of commercial goods, pedestrians, users of public transportation, and seniors.

CIR-4.2: Bicycle paths separating bicycles from vehicular traffic are considered desirable.

Goal CIR-5 To achieve a high quality of roadway operation on all Atherton streets.

Policies:

CIR-5.6: The Town shall support the continued operation and upgrading of passenger rail service operated over the Joint Powers Board right-of-way between Gilroy and San Francsico.

Open Space and Conservation.

Goal OSC-1 Protect both publicly and privately held open space lands from deterioration of their semi-rural charm, scenic value and environmental equilibrium.

Action

OSC-1.1: Minimum lot sizes, setback restrictions, height limitations, tree protection and preservation, and sign regulations shall be employed to accomplish open space and conversation objections.

Goal OSC-2 Protect and enhance the existing Coastal Oak Woodland character of the Town.

Policies

OSC-2.1: Trees shall be preserved where practical. This policy shall be explicitly considered during the development and subdivision process.

OSC-2.2: Wherever possible, drought tolerant native species trees shall be used for new and replacement planting and be tolerant of seasonal water inundation where used in or adjacent to green infrastructure facilities.

OSC-2.3: Enforce the Heritage Tree Ordinance and Tree Preservation Guidelines and Standards, or equal document.

Goal OSC-3 Minimize the impacts of flooding on health, safety, and property damage.

Actions

OSC-3.2: The Town will encourage property owners to incorporate water conservation techniques into their landscaping to reduce water usage and use green infrastructure techniques to capture and/or treat rainfall and stormwater runoff at its source, as feasible.

Goal OSC-5 Implement the GHG programs in the Atheron Climate Action Plan related to energy efficiency, community waste generation, and reduced water consumption.

SETTING AND EXISTING AIR QUALITY CONDITIONS

The project is located in San Mateo County, which is part of the San Francisco Bay Area Air Basin. The Air Basin includes the counties of San Francisco, Santa Clara, San Mateo, Marin, Napa, Contra Costa, and Alameda, along with the southeast portion of Sonoma County and the southwest portion of Solano County.

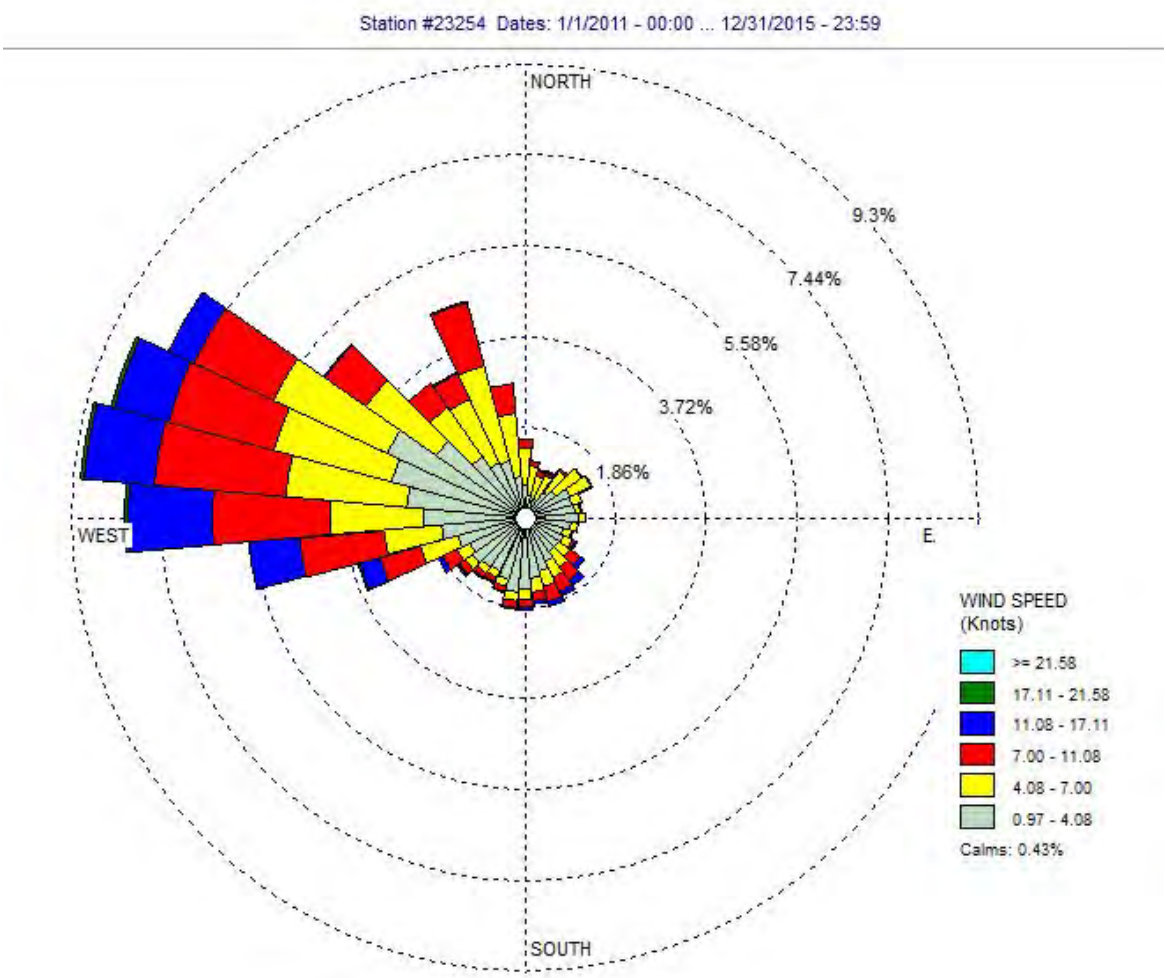
This Project is within the jurisdiction of the BAAQMD. Air quality conditions in the San Francisco Bay Area have improved significantly since the BAAQMD was created in 1955. Ambient concentrations of air pollutants, and the number of days during which the region exceeds air quality standards, have fallen dramatically. Exceedances of air quality standards occur primarily during meteorological conditions conducive to high pollution levels, such as cold, windless winter nights or hot, sunny summer afternoons.

Air quality is a function of both local climate and local sources of air pollution. Air quality is the balance of the natural dispersal capacity of the atmosphere and emissions of air pollutants from human uses of the environment. Climate and topography are major influences on air quality.

Climate and Meteorology

During the summer, mostly clear skies result in warm daytime temperatures and cool nights in the Santa Clara Valley. Winter temperatures are mild, except for very cool but generally frost-less mornings. Further inland where the moderating effect of the bay is not as strong, temperature extremes are greater. Rainfall amounts are modest, ranging from 13 inches in the lowlands to 20 inches in the hills. Wind patterns are influenced by local terrain, with a northwesterly breeze in response to the sea breeze infiltrating San Francisco Bay typically developing during the daytime. Winds are usually stronger in the spring and summer. The southerly winds experienced are more common in late fall and winter. The wind rose shown in Figure 1 describes the patterns and frequency of winds at the San Carlos Airport near the Town. Wind data was collected from 2011 through 2015.

Figure 1. Windrose for San Carlos Airport Years 2011-2015



Notes: Based on data provided by BAAQMD

NAAQS and CAAQS Status

Both the US EPA and CARB designate air basins as attainment, nonattainment, or unclassified based on ambient monitoring data. An "attainment" designation for an area signifies that pollutant concentrations did not violate the standard for that pollutant in that area. A "nonattainment" designation indicates that a pollutant concentration violated the standard at least once, excluding those occasions when a violation was caused by an exceptional event, as defined in the criteria. An "unclassified" designation signifies that data does not support either an attainment or nonattainment status, or that monitoring data were not available. Table 8 shows the state and federal standards for criteria pollutants and provides a summary of the attainment status for the San Francisco Bay Area.

Table 8. NAAQS and CAAQS and Air Basin Attainment Status

Pollutant	Averaging Time	State		Federal	
		Standard	Status	Standard	Status
Carbon Monoxide (CO)	8-Hour	9 ppm (10 mg/m^3)	Attainment	9 ppm (10 mg/m^3)	Attainment
	1-Hour	20 ppm (23 mg/m^3)	Attainment	35 ppm (40 mg/m^3)	Attainment
Nitrogen Dioxide (NO_2)	Annual Mean	0.030 ppm (57 mg/m^3)	Attainment	0.053 ppm (100 µg/m^3)	Attainment
	1-Hour	0.18 ppm (338 µg/m^3)	Attainment	0.100 ppm	Unclassified
Ozone (O_3)	8-Hour	0.07 ppm (137 µg/m^3)	Nonattainment	0.070 ppm	Nonattainment
	1-Hour	0.09 ppm (180 µg/m^3)	Nonattainment	Not Applicable	Not Applicable
Suspended Particulate Matter (PM_{10})	Annual Mean	20 µg/m^3	Nonattainment	Not Applicable	Not Applicable
	24-Hour	50 µg/m^3	Nonattainment	150 µg/m^3	Unclassified
Suspended Particulate Matter ($PM_{2.5}$)	Annual Mean	12 µg/m^3	Nonattainment	12 µg/m^3	Attainment
	24-Hour	Not Applicable	Not Applicable	35 µg/m^3	Nonattainment
Sulfur Dioxide (SO_2)	Annual Mean	Not Applicable	Not Applicable	80 µg/m^3 (0.03 ppm)	Attainment
	24-Hour	0.04 ppm (105 µg/m^3)	Attainment	365 µg/m^3 (0.14 ppm)	Attainment
	1-Hour	0.25 ppm (655 µg/m^3)	Attainment	0.075 ppm (196 µg/m^3)	Attainment
Lead (Pb) is not listed in the above table because it has attained the NAAQS/CAAQS since the 1980s. ppm = parts per million, mg/m^3 = milligrams per cubic meter, µg/m^3 = micrograms per cubic meter					

Source: Bay Area Air Quality Management District, 2017. *Air Quality Standards and Attainment Status.* January 5.

Criteria Pollutant Concentrations

BAAQMD monitors air pollution at various sites within the airshed. The closest air monitoring station is approximately 2 miles northwest of the Town in the City of Redwood City (897 Barron

Ave). This station monitors O_3, CO, NO_2, and $PM_{2.5}$ over the past 5 years (2018 through 2022). The data shows over the past few years, the general plan area has exceeded the state and/or federal O_3 and $PM_{2.5}$ ambient air quality standards. Table 9 lists air quality trends in data collected for the past 5 years and published by the BAAQMD and CARB for the Redwood City monitoring location, which is the most recent time-period available. Note that some of these concentrations were influenced by smoke from wildfires.

Table 9. Ambient Air Quality Concentrations for Redwood City from 2018-2022

Pollutant	Standard	2018	2019	2020	2021	2022
O_3, Ozone						
Max 1-hr concentration		67 ppb	83 ppb	98 ppb	85 ppb	79 ppb
No. days exceeded: CAAQS	90 ppb	0	0	1	0	0
Max 8-hr concentration		49 ppb	77 ppb	78 ppb	64 ppb	62 ppb
No. days exceeded: CAAQS	70 ppb	0	2	1	0	0
NAAQS	70 ppb	0	2	1	0	0
CO, Carbon Monoxide						
Max 1-hr concentration		2.5 ppm	2.0 ppm	--	--	--
No. days exceeded: CAAQS	0	0	0	--	--	--
NAAQS	0	0	0	--	--	--
Max 8-hr concentration		1.7 ppm	1.1 ppm	--	--	--
No. days exceeded: CAAQS	0	0	0	--	--	--
NAAQS	0	0	0	--	--	--
$PM_{2.5}$						
Max 24-hr concentration		120.9µg/m^3	29.5 µg/m^3	124.1 µg/m^3	30.1 µg/m^3	27.4 µg/m^3
No. days exceeded: NAAQS	>35 µg/m^3	13	0	9	0	0
Annual Concentration		10.3µg/m^3	7.0µg/m^3	9.8µg/m^3	6.0µg/m^3	6.8µg/m^3
No. days exceeded: CAAQS	>12 µg/m^3	-	-	-	-	-
NAAQS	>12 µg/m^3	-	-	-	-	-
NO_2, Nitrogen Dioxide						
Max 1-hr concentration		77 ppb	55 ppb	--	--	--
No. days exceeded: CAAQS	0.18 ppm	0	0	--	--	--
NAAQS	0.100 ppm	0	0	--	--	--

Note: Monitoring of CO and NO_2 discontinued in 2020.
Source: Bay Area Air Quality Management District, Web: https://www.baaqmd.gov/about-air-quality/air-quality-measurement/air-quality-summaries.
California Air Resource Board, Web: https://arb.ca.gov/adam/select8/sc8start.php

Ozone and $PM_{2.5}$, are the major regional air pollutants of concern in the San Francisco Bay Area. Elevated concentrations of PM_{10} and $PM_{2.5}$ are the result of both region-wide (or cumulative) emissions and localized emissions. Understanding and controlling ozone and $PM_{2.5}$ pollution is described in BAAQMD's most recent Clean Air Plan.[8] These descriptions are summarized below.

High ozone levels are caused by the cumulative emissions of ROG and NO_X. Controlling the emissions of these precursor pollutants is the focus of BAAQMD's attempts to reduce ozone levels. The highest ozone levels in the Bay Area occur in the eastern and southern inland valleys that are downwind of air pollutant sources. Ozone frequently forms on hot summer days when the prevailing seasonal northerly winds carry ozone precursors southward across the county.

[8] Bay Area Air Quality Management District, 2017. *Spare the Air Cool the Climate Final 2017 Clean Air Plan*. April. Web: https://www.baaqmd.gov/~/media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf?la=en

Because emissions in one part of the region can impact air quality miles downwind, efforts to reduce ozone levels focus on reducing emissions of ROG and NOx throughout the region. The relationship between ROG and NOx in ozone formation is complex; the ratio between the precursor pollutants influences how ozone forms. BAAQMD's ozone modeling indicates that the Bay Area is "ROG-limited" for ozone formation. This means that reducing ROG emissions in the Bay Area will be more productive in reducing ozone, at least in the near term. However, modeling also suggests that large reductions in NOx emissions will be needed to achieve the ozone reductions required to attain the current health-based ozone standards. A certain amount of ozone formation occurs naturally, even in the absence of anthropogenic emissions of ROG and NOx.

$PM_{2.5}$ concentrations are from direct and indirect emissions. Fossil fuel combustion and wood burning are the primary contributors of directly-emitted $PM_{2.5}$. Formation of $PM_{2.5}$ occurs in the atmosphere by complex chemical processes with precursors such as NOx, ammonia, and sulfur dioxide. According to BAAQMD, particulate matter concentrations vary considerably in composition and in spatial distribution both on a daily basis and on a seasonal basis in response to changes in weather and emissions. The Bay Area generally experiences its highest $PM_{2.5}$ concentrations in the winter, with exceedances of the 24-hour standard mostly between November and February. High and very high $PM_{2.5}$ episodes from wildfire smoke are typically regional in scale, affecting the area mostly in late summer and fall. On an annual average basis, $PM_{2.5}$ levels in the Bay Area are relatively low.

With the exception of smoke from wildfires, the Bay Area currently meets $PM_{2.5}$ standards, but has yet to attain the state annual and 24-hour standards for PM_{10}. BAAQMD efforts to reduce $PM_{2.5}$ and PM_{10} concentrations are focused on reducing woodburning, cooking emissions, and NOx emissions. BAAQMD, along with CARB and U.S. EPA have efforts to reduce particulate matter emissions from combustion engines associated with stationary and mobile sources.

Existing Sources of TACs and Sensitive Receptors

Atherton is primarily a residential area with no industries or substantial sources of air pollution. Primary emission sources are traffic and diesel-powered locomotives using the CalTrain rail line. The primary substantial roadway within the Town is El Camino Real. The CalTrain line services diesel-powered commuter trains and some freight trains. CalTrain is currently being modernized and will mostly serve electric-powered trains in the future; although some commuter trains and freight trains will still be powered by diesel.

There are groups of people more affected by air pollution than others. CARB has identified the following people who are most likely to be affected by air pollution: children under 16, the elderly over 65, athletes, and people with cardiovascular and chronic respiratory diseases. These groups are classified as sensitive receptors. Locations that may contain a high concentration of these sensitive population groups include residential areas, hospitals, daycare facilities, elder care facilities, and elementary schools. For cancer risk assessments, children are the most sensitive receptors, since they are more susceptible to cancer causing TACs. Residential locations are assumed to include infants and small children. Sensitive receptors in Atherton include residences,

schools and daycare facilities. The proposed Housing Element Update and resulting zoning code amendments would include new residential dwellings that are considered sensitive receptors.

The proposed lots and surrounding community are not considered to be in an overburdened community. According to CalEnviroScreen, the census tracts representative of the project sites and environs within 1,000 feet of the project have an overall percentile scores of 10th or less. Note that Oakwood Boulevard portion adjacent to Redwood City would be near the 40th percentile.

AIR QUALITY IMPACTS AND PROPOSED ZONE CODE AMENDMENT POLICIES

Air pollutant emissions and associated health risks were predicted using emissions and dispersion models. The methodology for computing health risks impacts is contained in Appendix E of the BAAQMD CEQA Guidelines.[9] The latest version of the California Emissions Estimator Model (CalEEMod) Version 2022 was used to compute annual emissions. The model output from CalEEMod along with inputs are included as *Attachment 1*.

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

BAAQMD, with assistance from Association of Bay Area Governments (ABAG) and the Metropolitan Transportation Commission (MTC), has prepared and implements specific plans to meet the applicable laws, regulations, and programs. The most recent and comprehensive of which is the *Bay Area 2017 Clean Air Plan.*[10] The BAAQMD has also developed CEQA guidelines to assist lead agencies in evaluating the significance of air quality impacts. In formulating compliance strategies, BAAQMD relies on planned land uses established by local general plans. Land use planning affects vehicle travel, which in turn affects region-wide emissions of air pollutants and GHGs.

Consistency of the proposed Project with Clean Air Plan control measures is demonstrated by assessing whether the proposed zoning implements the applicable Clean Air Plan control measures. The 2017 Clean Air Plan includes control measures that are intended to reduce air pollutant emissions in the Bay Area either directly or indirectly. The control measures are divided into five categories that include:

- 40 measures to reduce stationary and area sources;
- 8 mobile source measures;
- 23 transportation control measures (including land use strategies);
- 4 building sector measures;
- 2 energy sector measures;
- 4 agriculture sector measures;
- 3 natural and working lands measures;
- 4 waste sector measures;

[9] BAAQMD, 2022. Appendix E of the *BAAQMD CEQA Guidelines*. April 2023.
[10] Bay Area Air Quality Management District (BAAQMD), 2017. *Final 2017 Clean Air Plan.*

- 2 water sector measures; and
- 3 super-GHG pollutants measures.

In developing the control measures, BAAQMD identified the full range of tools and resources available, both regulatory and non-regulatory, to develop each one. This approach relies upon lead agencies to assist in implementing some of the control measures. A key tool for local agency implementation is the development of land use policies and implementing measures that address new development or redevelopment in local communities. To address this impact, the proposed Project's effect on implementing the Clean Air Plan is evaluated based on consistency with Clean Air Planning projections (i.e., rate of increase in population versus vehicle travel).

Consistency with Clean Air Plan Projections

The BAAQMD, with assistance from ABAG and MTC, has prepared and implemented the Clean Air Plan to meet the applicable laws, regulations, and programs. The primary goals of the Clean Air Plan are to attain air quality standards, reduce population exposure and protect public health, and reduce GHG emissions and protect the climate. The BAAQMD has also developed CEQA guidelines to assist lead agencies in evaluating the significance of air quality impacts. In formulating compliance strategies, BAAQMD relies on planned land uses established by local general plans. Land use planning affects vehicle travel, which in turn affects region-wide emissions of air pollutants and GHG.

The BAAQMD CEQA Guidelines recommend comparing the increase in the rate of population compared to the rate of traffic increase that is based on vehicle miles travelled (VMT) or trips. Table 10 provides population and traffic conditions for existing and future build out conditions with the Housing Element Update developed. The Housing Element Update identified 332 potential new single-family and 292 multi-family housing opportunities that could be developed. This could increase the population by 2,048 people or 31 percent over existing conditions. Daily vehicle trips for this build out in housing were provided by the project traffic consultant. Using "Existing" as a baseline condition (estimated at 17,644 trips), daily trips attributable to the Project are anticipated to increase 29 percent at build-out with the Housing Element Update (22,750 trips). The VMT per population is anticipated to decrease from 18.35 miles per capita to 17.99 miles with the Project. In summary, the Project increases population and traffic. The rate of increase in traffic, measured as the rate of trips or VMT, would be less than increase in population.

Table 10. Atherton Housing Element Update Traffic and Population Projections

Scenario	Population	Dwelling Units	Daily Trips	VMT per Population
Existing Conditions (Dept. of Finance 2023)	6,678	2,547	17,644	18.35
Year 2031 Additional	2,048	Single fam. 337 Multi Fam. 292	5,106	--
2031 Conditions	8,726		22,750	17.99
2031 Project - Exist	+31%		+29%	-2%

Source: Project Description and Hexagon Transportation Consultants, per email from Adam Peterson (M Group), dated Nov. 20, 2023.

Consistency with Clean Air Plan Control Measures

The BAAQMD CEQA Air Quality Guidelines establish criteria for determining consistency with the Clean Air Plan control measures. In general, a plan is considered consistent if a) the plan supports the primary goals of the Clean Air Plan; b) includes control measures; and c) does not interfere with implementation of the Clean Air Plan measures. Growth under the Housing Element Update changes is considered sustainable since it is a plan for infill development. Atherton is served by local and regional transit and is located near a mix of uses that include employment and services located in adjacent jurisdictions. The Town of Atherton relies on strategies in its adopted Climate Action Plan to guide new development to meet GHG reduction goals. These goals are also in line with Clean Air Plan control measures. The development in the Town under the proposed Amendment changes is consistent with the Town's General Plan and would generally be consistent with Clean Air Plan measures intended to reduce automobile and energy use. Table 11 lists those Clean Air Plan measures relevant to the Amendment changes and indicates consistency between the Town's General Plan, Climate Action Plan, and the Clean Air Plan.

Table 11. BAAQMD Control Strategy Measures from the Clean Air Plan

Applicable BAAQMD Control Strategy Measures	Consistency
Transportation Control Measures	
TR1: Clean Air Teleworking Initiative	Consistent Supported by CAP Goal 3.2.1 Measure TRM2.
TR2: Trip Reduction Programs	Consistent Supported by CAP Goal 3.2.1 Measure TRM3.
TR 5: Transit Efficiency and Use	Consistent Supported by Circulation Element Goal CIR-5 Policy CIR-5.6 and Goal CIR-6 Objective CIR-6.2.
TR7: Safe Routes to Schools and Safe Routes to Transit	Consistent Supported by Cap Goal 3.2.1 Measure TRC2.
TR8: Ridesharing, Last-Mile Connection	Consistent Supported by CAP Goal 3.2.1 Measure TRM3.
TR9: Bicycle and Pedestrian Access and Facilities	Consistent Supported by General Plan Circulation Element Goal CIR-4 Objectives CIR-4.1 and 4.2. Also supported by CAP Goal 3.2.1 Measure TRC1.
TR10: Land Use Strategies	Consistent Supported by General Plan Land Use Element Goal LU-1 Policies LU-1.5 and 1.7. Also supported by Cap Goal 3.2.1 Measure TRC1.
TR13: Parking Policies	Consistent Supported by General Plan Circulation Element Goal CIR-1 Policies CIR-1.7 and 1.13 as well as Land Use Element Goal LU-1 Policy LU-1.5.
Building Control Measures	

Applicable BAAQMD Control Strategy Measures	Consistency
BL1: Green Buildings	Consistent Supported by General Plan Open Space and Conservation Element Goal OSC-5. Also supported by CAP Goal 3.1.1 Measures EC1, EC2, EC4, EC5, EC6, EM2, EM3, EM4.
BL2: Decarbonize Buildings	Consistent Supported by General Plan Open Space and Conservation Element Goal OSC-5. Also supported by CAP Goal 3.1.1 Measures EC1, EC2, EC4, EC5, EC6, EM2, EM3, EM4.
BL4: Urban Heat Island Mitigation	Consistent Supported by CAP Goal 3.1.1 Measure EC3.
Natural and Working Lands Control Measures	
NW2: Urban Tree Planting	Consistent Supported by General Plan Land Use Element Goal LU-1 Policies LU 1.5 and 1.8, Open Space and Conservation Element Goal OSC-1 Policy OSC-1.1 and Goal OSC-2 Policies 2.1, 2.2, and 2.3. Also supported by CAP Goal 3.1.1 Measure EC3.
Waste Management Control Measures	
WA4: Recycling and Waste Reduction	Consistent Supported by General Plan Open Space and Conservation Element Goal OSC-5. Also supported by CAP Goal 3.3.1 Measures WC1, WC2, WC3, WM1, WM2, and WM3.
Water Control Measures	
WR2: Support Water Conservation	Consistent Supported by General Plan Open Space and Conservation Element Goal OSC-3 Action OSC-3.2 and Goal OSC-5. Also supported by CAP Goal 3.1.1 Measures WTRC1, WTRC2, and WTRC3.

As indicated in Table 11, the Town's General Plan and CAP includes implementing policies and measures that are consistent with the applicable Clean Air Plan control measures. As a result, this impact is less-than-significant.

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

The Bay Area is considered a nonattainment area for ozone and $PM_{2.5}$ under both the NAAQS and the CAAQS and nonattainment for PM_{10} under the CAAQS only. The area has attained the NAAQS and CAAQS for CO. As part of an effort to attain and maintain the NAAQS/CAAQS for ozone and PM_{10}, the BAAQMD has established CEQA thresholds of significance for these air pollutants and their precursors (ROG, NO_X, PM_{10}, and $PM_{2.5}$). These thresholds apply to both

construction period and operational period impacts. The quantified thresholds identified by BAAQMD apply only to projects.

Construction Emissions

Build-out of the proposed Project housing sites would result in temporary emissions from construction activities associated with subsequent development, including site grading, asphalt paving, building construction, and architectural coating. Emissions commonly associated with construction activities include fugitive dust from soil disturbance, fuel combustion from mobile heavy-duty diesel- and gasoline-powered equipment, portable auxiliary equipment, and worker commute trips.

Fugitive dust, the dominant source of PM_{10} and $PM_{2.5}$ emissions during construction, is generated through the ground disturbances by equipment and vehicles. Sources of fugitive dust include disturbed soils at the construction site and trucks carrying uncovered loads of soils. Unless properly controlled, vehicles leaving the site would deposit mud on local streets, which could be an additional source of airborne dust after it dries. Uncontrolled dust from construction activities can become a nuisance and potential health hazard to those living and working nearby.

Exhaust emissions include those from construction equipment (i.e., off-road) and traffic (on-road vehicles and trucks). Off-road construction equipment is often diesel-powered and can be a substantial source of NO_X emissions, in addition to PM_{10} and $PM_{2.5}$ emissions. Architectural coatings and application of asphalt pavement are dominant sources of ROG emissions. The potential health risk impacts from construction are addressed under Impact 3.

Emissions associated with all of the projects that would be constructed under the proposed zoning amendments may have levels that exceed the significance thresholds. However, the pollutant emissions thresholds for construction activities contained in BAAQMD's CEQA Air Quality Guidelines would apply to specific housing projects and not this action of adopting zoning code amendments. Buildout would consist of numerous construction projects that would occur at various times over many years.

The BAAQMD CEQA Air Quality Guidelines include project size screening levels to determine if there is a potential for projects to exceed the emission-based significance thresholds. Projects constructed would range from a single ADU up to about 60 multi-family units. The project-level screening size ranges from 254 single-family homes to 416 apartment units. Construction of individual residential projects affected by the proposed Project would not exceed these screening levels.

However, the BAAQMD's CEQA Air Quality Guidelines The BAAQMD recommends all projects include a "basic" set of best management practices (BMPs) to manage fugitive dust and considers impacts from dust (i.e., fugitive PM_{10} and $PM_{2.5}$) to be less-than-significant if BMPs are implemented to reduce these emissions. *Mitigation Measure AQ-1* would implement BAAQMD's basic BMPs.

***Mitigation Measure AQ-1*: Include measures to control dust and exhaust during construction.**

During any construction period ground disturbance, the project contractor shall implement measures to control dust and exhaust. Implementation of the measures listed below would reduce the air quality impacts associated with grading and new construction to a less-than-significant level. The contractor shall implement the following BMPs that are required of all projects:

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

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

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

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

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

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

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

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

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

Operational Emissions

Similar to construction, the BAAQMD CEQA Guidelines have project-level screening sizes for operational emissions. Those would be the emissions associated with new residential units that include the projections of increased traffic. The screening size ranges from 421 single-family homes to 638 apartment units. Development of individual residential projects affected by the proposed Project would not exceed these screening levels.

Conclusion: The individual project sizes are below screening sizes for both construction and operational criteria pollutant emissions. The implementation of *Mitigation Measure AQ-1* to include BAAQMD's basic BMPs during construction would reduce construction pollutant levels,

such that they would be consistent with BAAQMD requirements. Therefore, emissions of construction and operational related air pollutants would be less than significant.

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

To address exposure of sensitive receptors to substantial pollutant levels, the BAAQMD CEQA Guidelines developed thresholds that address health risks. These include increased cancer risk, non-cancer hazards, and increased annual concentrations of $PM_{2.5}$. Diesel particulate matter (DPM) is the predominant TAC in the area. The thresholds apply to impacts from plans and individual projects.

The BAAQMD CEQA Guidelines recommend that plan-level assessments identify overlay zones around existing and planned sources of TACs (including adopted Risk Reduction Plan areas) and develop risk reduction measures to avoid exposures.

Individual projects within the Town may introduce new sources of TACs with the potential to adversely affect existing sensitive receptors in the vicinity of the House Element Update areas or by significantly exacerbating existing cumulative TAC impacts. Construction activity would generate dust and equipment exhaust that would affect nearby sensitive receptors.

TAC Buffer Zones

The proposed Project may lead to the introduction of new sensitive receptors (i.e., residents) that may be exposed to substantial levels of air pollutants or TACs. Substantial sources of air pollution can adversely affect sensitive receptors proposed as part of new projects. BAAQMD recommends using buffer zones of at least 500 feet between highways or high-volume roadways and sensitive receptors. BAAQMD provides screening level TAC exposures for roadways, train lines, and stationary sources. BAAQMD recommends that lead agencies should use the significance thresholds for local risk and hazards when siting new sensitive thresholds near TAC sources.

Major TAC sources within the Town were identified for the Project using BAAQMD screening tools. The primary large volume roadway in Atherton is El Camino Real. The CalTrain line also runs through Atherton which could affect residential sites. There are several stationary sources identified within the Town limits using the BAAQMD's stationary source GIS mapping tool.[11] Emissions from most of these sources do not cause substantial risk beyond their facility boundaries. Screening risk levels are shown in Table 12 for sources that present potential health risk issues. Figure 2 shows the Town limits and locations of the TAC sources. Details of the nearby TAC sources screening calculations are included in *Attachment 2.*

Mitigation Measure AQ-2: **Require Future Residential Projects Affected by TAC sources to Perform a Health Risk Assessment.**

Residential projects proposed that are potentially affected by existing TAC sources (see Table 12 and Figure 2) shall prepare a site-specific health risk assessment (HRA). If the HRA demonstrates,

[11] BAAQMD, Website: https://baaqmd.maps.arcgis.com/apps/webappviewer/index.html?id=2387ae674013413f987b1071715daa65

to the satisfaction of the Town, that the health risk exposures for sensitive receptors will be less than BAAQMD project-level thresholds, then additional mitigation would be unnecessary. However, if the HRA demonstrates that health risks would exceed BAAQMD project level thresholds, additional feasible on- and off-site mitigation shall be analyzed by the applicant to help reduce risks to the greatest extent practicable. Such measures to be evaluated may include enhanced ventilation systems with filtration capable of reducing TAC exposure such that health risks are reduced to acceptable levels.

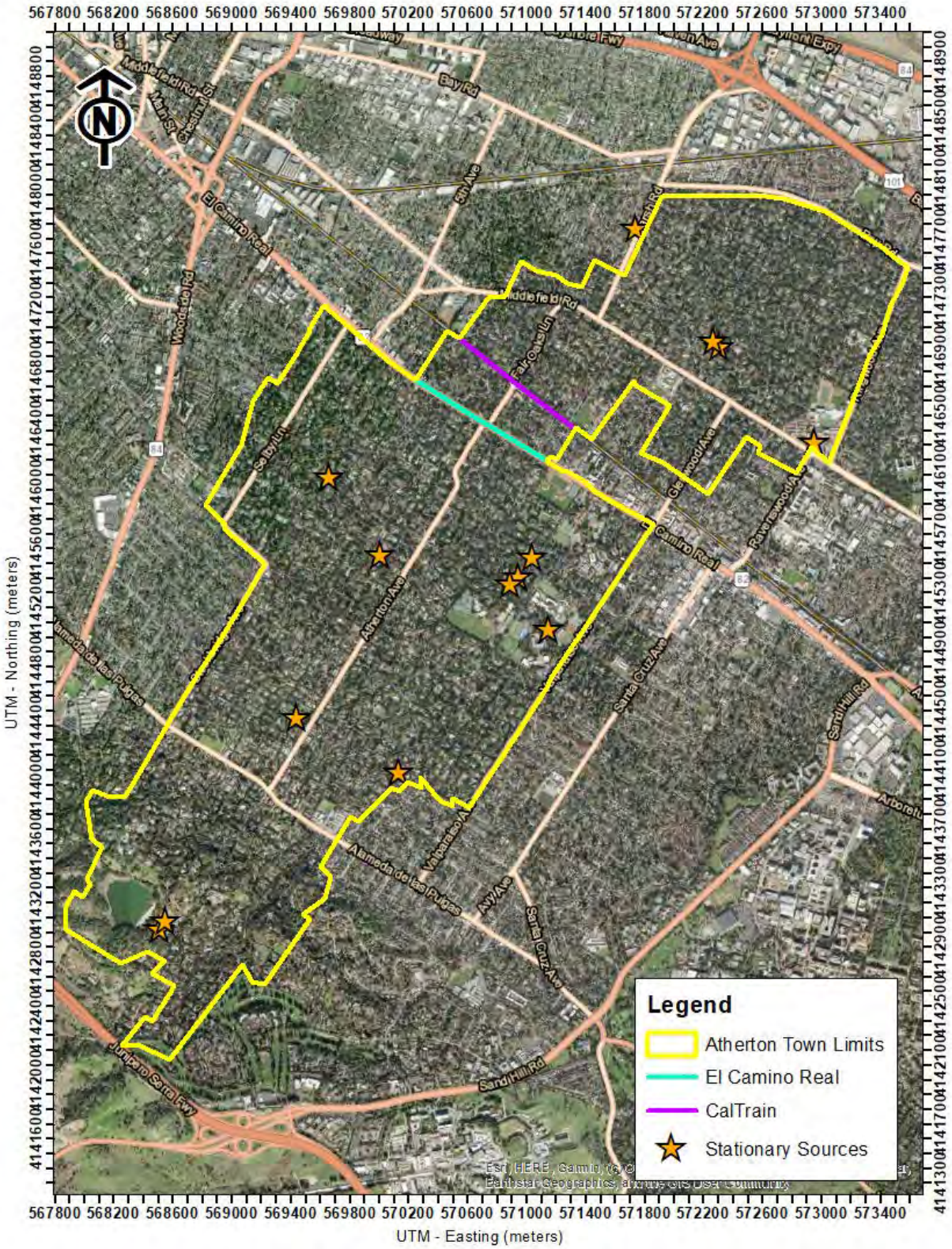
Table 12. Screening Distances from Existing Air Pollutant and TAC Sources

Source Description	Distance to Screening Threshold[1]			Sites Potentially Affected
	Cancer Risk	Hazard Index	Annual $PM_{2.5}$	
Roadway: El Camino Real	300 ft	0[2]	400 ft	Menlo College
Caltrain[1]	2,500 ft north 2,000 ft south	0[2]	0[2]	--
Stationary: #0 California Water Service Company – Gas Dispensing Facility	0[2]	0[2]	--	Cal Water
Stationary: #7852 California Water Service Company – Generic Source	0[2]	0[2]	0[2]	Cal Water
Stationary: #15362 George Roberts – Generator	0[2]	0[2]	0[2]	15 and 25 Monte Vista Ave
Stationary: #19395 Religious of Sacred Heart Oakwood – Generator	0[2]	--	0[2]	Sacred Heart, Circus Club, Menlo School
Stationary: #19442 Sequoia Union High School District – Generator	200 ft	0[2]	0[2]	175, 185, and 197 Ravenswood Ave
Stationary: #23128 Linden Residence – Generator	0[2]	--	--	--
Stationary: #23631 Residence of Dr Joe Donahue – Generic Source	0[2]	--	--	--
Stationary: #23730 John B Rohrer Private Residence – Generator	--	--	--	--
Stationary: #23862 130 Britton LLCI – Generic Source	0[2]	--	0[2]	Circus Club and Sacred Heart
Stationary: #23926 142 Britton Avenue LLC – Generator	0[2]	--	--	Circus Club and Sacred Heart
Stationary: #24244 Nevitt Magruder Residence – Generator	0[2]	--	--	--
Stationary: #24280 John Freund Atherton Residence – Generator	--	--	--	--
Stationary: #110721 Marsh Road Shell – Gas Dispensing Facility	0[2]	--	--	--
Stationary: #201322 Pink Sunset – Generator	200 ft	0[2]	0[2]	--

[1] Note CalTrain will transition most diesel-powered trains to electric powered beginning in 2024. The screening distances predicted by BAAQMD do not reflect the modernization of this program and therefore, predict greater screening distances for CalTrain.

[2] Extent of risk within source boundaries.

Figure 2. Town Limits and Nearby TAC and $PM_{2.5}$ Sources



Health Risks from Construction of Residential Projects

Construction of residential projects could emit TACs. Most housing sites are located near sensitive receptors that include residences and/or schools. Construction equipment and associated heavy-duty truck traffic generates diesel exhaust, which is a known TAC. The construction exhaust emissions may pose health risks for sensitive receptors such as nearby residents. The primary health risks associated with construction emissions are cancer, exposure to $PM_{2.5}$, and non-cancer health hazards. Diesel exhaust (i.e., DPM) poses both a potential health risk and nuisance impact to nearby receptors. Most new residential construction would not have significant impacts because these projects involve reconstructing existing structures or building accessory dwelling units or single structures. This type of construction does not require extensive use of diesel equipment over extended periods (e.g., over 6 months). The construction of new multi-family developments may have localized impacts due to TACs because they would require more extensive construction. A health risk assessment for multi-family developments was performed.

The health risk assessment was performed for two different sized multi-family projects of 20 units (Menlo School Site 2) and 60 units (Menlo College Site 1), which are the smallest and largest number of multi-family units proposed. CalEEMod was used to develop construction emissions of TACs and $PM_{2.5}$ for each size project using the model's default construction assumptions. Emissions were then input to the U.S. EPA's AERMOD dispersion model to compute potential exposures to TACs and $PM_{2.5}$ near construction sites. Emission sources for the construction site were grouped into two categories: exhaust emissions of DPM and fugitive $PM_{2.5}$ dust emissions.

Construction Sources

To represent the construction equipment exhaust emissions, an area source was used with an emission release height of 20 feet (6 meters).[12] The release height incorporates both the physical release height from the construction equipment (i.e., the height of the exhaust pipe) and plume rise after it leaves the exhaust pipe. Plume rise is due to both the high temperature of the exhaust and the high velocity of the exhaust gas. It should be noted that when modeling an area source, plume rise is not calculated by the AERMOD dispersion model as it would do for a point source (exhaust stack). Therefore, the release height from an area source used to represent emissions from sources with plume rise, such as construction equipment, was based on the height the exhaust plume is expected to achieve, not just the height of the top of the exhaust pipe.

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

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

AERMOD Inputs and Meteorological Data

The modeling used a five-year data set (2011 - 2015) of hourly meteorological data from San Carlos Airport prepared for use with the AERMOD model by BAAQMD. Construction emissions were modeled as occurring daily between 8:00 a.m. to 5:00 p.m. when the majority of construction activities would occur. Annual DPM and $PM_{2.5}$ concentrations from construction activities were calculated at nearby sensitive receptors using the model. Receptors were placed in 33 feet (10 meters) spacing surrounding the two construction sites with receptor heights of 5 feet (1.5 meters) used to represent the breathing heights at the nearby residences.[13]

Summary of Construction Health Risk Impacts

The maximum increased cancer risks were calculated using the modeled TAC concentrations combined with the BAAQMD CEQA guidance for age sensitivity factors and exposure parameters. Age-sensitivity factors reflect the greater sensitivity of infants and small children to cancer causing TACs. Third trimester, infant, child, and adult exposures were assumed to occur at all residences during the entire construction period. Non-cancer health hazards and maximum $PM_{2.5}$ 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 µg/m^3. *Attachment 3* to this report includes the emission calculations used for the construction modeling and the cancer risk calculations.

Conclusion: The modeled maximum annual DPM and $PM_{2.5}$ concentrations were identified at nearby sensitive receptors and are shown in Table 13. The unmitigated maximum cancer risks from construction activities at the most impacted off-site receptors would exceed the single-source significance threshold at both the 60-unit and 20-unit multi-family housing. However, with the incorporation of *Mitigation Measure AQ-1 (basic BMPs) and Mitigation Measure AQ-3 (use of Tier 4 engines)*, the mitigated risks would no longer exceed the significance threshold. The annual $PM_{2.5}$ concentration and HI from construction activities would be below the single-source significance thresholds.

Table 13. Maximum Construction Risk Impacts at the Off-Site Receptors

Source		Cancer Risk (per million)	Annual $PM_{2.5}$ (µg/m^3)	Hazard Index
Multi-Family Construction - <20 Units	Unmitigated	<10.0	<0.30	<1.0
Multi-Family Construction - 20 Units	Unmitigated	**12.05 (infant)**	0.10	0.01
	Mitigated*	1.43 (infant)	0.02	<0.01
Multi-Family Construction - 60 Units	Unmitigated	**33.73 (infant)**	0.29	0.04
	Mitigated*	5.80 (infant)	0.07	0.01
BAAQMD Single-Source Threshold		***>10.0***	***>0.3***	***>1.0***
Exceed Threshold?	Unmitigated	***Yes***	*No*	*No*
	Mitigated*	*No*	*No*	*No*

* Construction equipment with Tier 4 engines and basic BMPs as Mitigation Measures.

[13] BAAQMD, *Appendix E of the 2022 BAAQMD CEQA Guidelines.* April 202.3

***Mitigation Measure AQ-3*: Require Future Construction Projects Located within 1,000 Feet of Sensitive Receptors to Perform a Health Risk Assessment.**

Multi-unit residential projects, larger than 10 units, and within 1,000 feet of existing sensitive receptors as defined by the BAAQMD (e.g., residential, daycares, schools) shall prepare a project-specific construction health risk assessment (HRA). If the HRA demonstrates, to the satisfaction of the Town, that the health risk exposures for adjacent receptors will be less than BAAQMD project-level thresholds, then additional mitigation would be unnecessary. However, if the HRA demonstrates that health risks would exceed BAAQMD project level thresholds, additional feasible mitigation shall be analyzed to further reduce risks to the greatest extent practicable.

Measures to avoid significant construction health risks impacts that could be included in projects, depending on the results of an HRA could include the following:

1. Use Tier 4 engines for all off-road equipment greater than 50 horsepower (hp) and operating for more than 20 total hours over the entire duration of construction activities.

2. Use diesel trucks with 2010 or later compliant model year engines during construction.

3. Use renewable diesel during construction.

4. Implement enhanced measures to control dust emissions, as recommended by BAAQMD.

5. Use portable electrical equipment where commercially available and practicable to complete construction. Construction contractors shall utilize electrical grid power instead of diesel generators when (1) grid power is available at the construction site; (2) when construction of temporary power lines are not necessary in order to provide power to portions of the site distant from existing utility lines; (3) when use of portable extension lines is practicable given construction safety and operational limitations; and (4) when use of electrical grid power does not compromise construction schedules.

GREENHOUSE GAS EMISSIONS

Setting

Gases that trap heat in the atmosphere, GHGs, regulate the earth's temperature. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate. The most common GHGs are carbon dioxide (CO_2) and water vapor but there are also several others, most importantly methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). These are released into the earth's atmosphere through a variety of natural processes and human activities. Sources of GHGs are generally as follows:

- CO_2, CH_4, and N_2O are byproducts of fossil fuel combustion.
- N_2O is associated with agricultural operations such as fertilization of crops.
- CH_4 is commonly created by off-gassing from agricultural practices (e.g., keeping livestock) and landfill operations.
- Chlorofluorocarbons (CFCs) were widely used as refrigerants, propellants, and cleaning solvents but their production has been stopped by international treaty.
- HFCs are now used as a substitute for CFCs in refrigeration and cooling.
- PFCs and sulfur hexafluoride emissions are commonly created by industries such as aluminum production and semi-conductor manufacturing.

Each GHG has its own potency and effect upon the earth's energy balance. This is expressed in terms of a global warming potential (GWP), with CO_2 being assigned a value of 1 and sulfur hexafluoride being several orders of magnitude stronger. In GHG emission inventories, the weight of each gas is multiplied by its GWP and is measured in units of CO_2 equivalents (CO_2e).

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

Federal and Statewide GHG Emissions

The U.S. EPA reported that in 2022, total gross nationwide GHG emissions were 5,215.6 million metric tons (MMT) carbon dioxide equivalent (CO_2e).[14] These emissions were lower than peak levels of 7,416 MMT that were emitted in 2007. CARB updates the statewide GHG emission

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

inventory on an annual basis where the latest inventory includes 2000 through 2020 emissions.[15] In 2020, GHG emissions from statewide emitting activities were 369.2 MMT CO_2e. The 2020 emissions have decreased by 25 percent since peak levels in 2004 and are 35.3 MMT CO_2e lower than 2019 emissions level and almost 62 MMT CO_2e below the State's 2020 GHG limit of 431 MMT CO_2e. Per capita GHG emissions in California have dropped from a 2001 peak of 13.8 MT CO_2e per person to 9.3 MT CO_2e per person in 2020.

Recent Regulatory Actions for GHG Emissions

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

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

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

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

The first Scoping Plan for AB 32 was adopted by CARB in December 2008. Its most recent update was completed in December of 2022[16]. It contains the State's main strategies to achieve carbon neutrality by 2045. This plan extends and expands upon the earlier versions with a target of reducing anthropogenic emissions to 85 percent below 1990 levels by 2045. It also takes the step of adding carbon neutrality as a science-based guide and touchstone for California's climate work. Measures to achieve carbon neutrality include rapidly moving to zero emission vehicles (ZEV), removing natural gas as an option for space conditioning, increasing the number of solar arrays and wind turbines, and scaling up renewable hydrogen for hard-to-electrify end uses.

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

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

[15] CARB. 2022. *California Greenhouse Gas Emission for 2000 to 2020*. Web: https://ww2.arb.ca.gov/sites/default/files/classic/cc/inventory/2000-2020_ghg_inventory_trends.pdf
[16] CARB. 2022. Final 2022 Scoping Plan Update and Appendices. Web: https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/2022-scoping-plan-documents

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

Senate Bill 350 - Renewable Portfolio Standards

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

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

In April 2015, Governor Brown signed EO B-30-15, which extended the goals of AB 32, setting a GHG emissions target at 40 percent of 1990 levels by 2030. On September 8, 2016, Governor Brown signed Senate Bill (SB) 32, which legislatively established the GHG reduction target of 40 percent of 1990 levels by 2030. In November 2017, CARB issued *California's 2017 Climate Change Scoping Plan*. [17] While the State is on track to exceed the AB 32 scoping plan 2020 targets, this plan is an update to reflect the enacted SB 32 reduction target.

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

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

[17] California Air Resource Board, 2017. *California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Targets.* November. Web: https://ww2.arb.ca.gov/sites/default/files/classic//cc/scopingplan/scoping_plan_2017.pdf

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

The Scoping Plan was updated in 2022 and lays out how the state can get to carbon neutrality by 2045 or earlier. It is the first Scoping Plan that adds carbon neutrality as a science-based guide and touchstone beyond statutorily established emission reduction targets.[18]

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

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

SB 743 Transportation Impacts

Senate Bill 743 required lead agencies to abandon the old "level of service" metric for evaluating a project's transportation impacts, which was based solely on the amount of delay experienced by motor vehicles. In response, the Governor's Office of Planning and Research (OPR) developed a VMT metric that considered other factors such as reducing GHG emissions and developing multimodal transportation[19]. A VMT-per-capita metric was adopted into the CEQA Guidelines Section 15064.3 in November 2017. Given current baseline per-capita VMT levels computed by CARB in the 2030 Scoping Plan of 22.24 miles per day for light-duty vehicles and 24.61 miles per day for all vehicle types, the reductions needed to achieve the 2050 climate goal are 16.8 percent for light-duty vehicles and 14.3 percent for all vehicle types combined. Based on this analysis (as well as other factors), OPR recommended using a 15-percent reduction in per capita VMT as an appropriate threshold of significance for evaluating transportation impacts.

[18] https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/2022-scoping-plan-documents
[19] Governor's Office of Planning and Research. 2018. *Technical Advisory on Evaluating Transportation Impacts in CEQA*. December.

Executive Order B-55-18 – Carbon Neutrality

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

Senate Bill 100 – Current Renewable Portfolio Standards

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

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

The California Green Building Standards Code (CALGreen Code) is part of the California Building Standards Code under Title 24, Part 11.[20] The CALGreen Code encourages sustainable construction standards that involve planning/design, energy efficiency, water efficiency resource efficiency, and environmental quality. These green building standard codes are mandatory statewide and are applicable to residential and non-residential developments. The most recent CALGreen Code (2022 California Building Standard Code) was effective as of January 1, 2023.

The California Building Energy Efficiency Standards (California Energy Code) is under Title 24, Part 6 and is overseen by the California Energy Commission (CEC). This code includes design requirements to conserve energy in new residential and non-residential developments, while being cost effective for homeowners. This Energy Code is enforced and verified by cities during the planning and building permit process. The current energy efficiency standards (2022 Energy Code) replaced the 2019 Energy Code as of January 1,2023. Under the 2019 standards, single-family homes are predicted to be 53 percent more efficient than homes built under the 2016 standard due more stringent energy-efficiency standards and mandatory installation of solar photovoltaic systems. For nonresidential developments, it is predicted that these buildings will use 30 percent less energy due to lightening upgrades.[21]

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

[20] See: https://www.dgs.ca.gov/BSC/Resources/Page-Content/Building-Standards-Commission-Resources-List-Folder/CALGreen#:~:text=CALGreen%20is%20the%20first%2Din,to%201990%20levels%20by%202020.
[21] See: https://www.energy.ca.gov/sites/default/files/2020-03/Title_24_2019_Building_Standards_FAQ_ada.pdf

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

CEC studies have identified the most aggressive electrification scenario as putting the building sector on track to reach the carbon neutrality goal by 2045.[22] Installing new natural gas infrastructure in new buildings will interfere with this goal. To meet the State's goal, communities have been adopting "Reach" codes that prohibit natural gas connections in new and remodeled buildings.

Advanced Clean Cars

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

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

Peninsula Clean Energy

The default electricity provider in Atherton is Peninsula Clean Energy. Residential customers could opt out for PG&E or choose carbon-free option. The default choice of ECOplus is 100 percent renewable and cost-competitive with PG&E. The CO_2 intensity rate for Peninsula Clean Energy's ECOplus was 9 pounds of CO_2e per megawatt of delivered electricity.[23]

Atherton Climate Action Plan

The Atherton Climate Action Plan, adopted in November 2016, includes goals and measures to reduce exposure of the Town's sensitive population to exposure of air pollution and toxic air contaminants or TACs. The Climate Action Plan is designed to place Atherton on a path to achieve

[22] California Energy Commission. 2021. F*inal Commission Report: California Building Decarbonization Assessment. Publication Number CEC-400-2021-006-CMF*.August

[23] 2022 CO_2 Intensity Rate reported by Peninsula Clean Energy: Power mix - Peninsula Clean Energy

at least a 17% reduction in emissions below 2005 levels by 2020. While the Climate Action Plan in its current form does not put Atherton on course to achieve a 49% reduction in emissions below 2005 levels by 2030 in accordance with the State's goal, the Town will continue to explore new measures over the coming years that work towards achieving this ultimate goal. The following goals and measures relevant to air quality are contained in Sections *3.1.1, 3.2.1, and 3.3.1*.

Section 3.1.1 Goal: Increase residential and commercial energy efficiency and reduce water consumption to meet AB 32 emission reduction target.

Measures:

EC1. Voluntary residential green building ordinance for new construction- Promote voluntary building code of zero net energy for new residential buildings. Encourage achievement of CALGreen Tier 2 energy performance and the CALGreen recommendation to install electric vehicle supply equipment. Encourage planting of shade trees for new construction with eastern, southern or western exposure, when feasible.

EC2. Incorporate available Energy Upgrade programs and similar rebate - The City will consider a Residential Energy Conservation Program to increase energy efficiency and water conservation through professional home energy audits. The Program may include recognition awards, a Residential Energy and Water Efficiency Checklist, public outreach, and expanded promotion of rebates/programs funded through PG&E and other organizations among other features.

EC3. Implement program for residential shade trees- Education and outreach to encourage existing homes to plant deciduous shade trees for houses with eastern, western or southern exposures that heat up during the summer and create alternatives as to not conflict with the priority installation of solar panels. Leverage the services of the Atherton Tree Committee to assist in planting of trees.

EC4. Voluntary commercial green building ordinance for new construction and major additions - Encourage use of green building code to achieve higher building performance in new commercial buildings or major additions to commercial buildings. Promote achievement of Net Zero Energy standards.

EC5. Promote PG&E commercial energy efficiency/demand response programs - The Town will promote and assist with marketing and outreach for PG&E energy efficiency and demand response programs. Leverage existing rebates/add additional rebates for energy efficient retrofits.

EC6. Community Choice Aggregation (CCA) - The Town is part of the Peninsula Clean Energy (PCE) Community Choice Aggregation (CCA) Program. Enabled by California legislation (AB117), Community Choice Aggregation (CCA) allows local governments to purchase and generate power to sell to residential and business customers. The Town has opted for the ECO100 option (100% renewable energy) for all Town facilities.

EM2. Environmentally preferred purchasing policy – Energy – Implement a sustainable purchasing policy that emphasizes ENERGY STAR equipment.

EM3. Renewable energy installation on municipal property - Review and consider installation of solar or other renewable energy projects at Town facilities. Implement where practical and financially feasible. Consider installation of electric car charging stations at Town facilities and provide plug-in areas, where feasible. Conduct an initial feasibility study to set a goal for on-site renewable projects.

EM4. Energy efficiency in municipal buildings - Encourage all new Town facilities be built to Net Zero Energy if financially feasible and where practical. Audit older Town facilities for energy efficiency opportunities and implement energy efficient retrofits if financially feasible. Town participate in San Mateo County Energy Watch and leverage benchmarking to identify opportunities for EE upgrades and tracking energy performance. Leverage other programs that provide funding.

WTRC1. Water conservation incentives - Make concerted effort to promote and expand the distribution of existing and/or new rebates for water efficient appliances and fixtures. Encourage landscape/irrigation professionals to participate in community landscape conservation and water efficient landscaping workshops.

WTRC2. Water conservation ordinance - Adopt Bay Area Water Supply and Conservation Agency (BAWSCA) Indoor Ordinance and Outdoor Ordinance if haven't already and enhance BAWSCA Outdoor Ordinance (all cities required to adopt).

WTRC3. Voluntary water conservation programs - Make concerted effort to promote and educate the community on water recapture efforts and how to implement them such as rain barrels, permeable pavement and gray water systems.

Section 3.2.1 Goal: Allow for changes in the traditional transportation system to reduce vehicle miles traveled and the modes of transportation types to meet AB 32 emission reduction target.

Measures:

TRC1. Implement the Town's Bike Pedestrian Master Plan to create a walkable/bikeable street landscape - Remake sub-urban landscape to make walking and biking more desirable. Bike lanes, bike parking, traffic calming, beautification, etc. Install new bicycle racks outside Town Hall.

TRC2. Fund and implement Bike Master Plan priorities and make having safe routes to school a Town priority - Work with Safe Routes to Schools program to ensure that our plan to develop safe bike and pedestrian routes will work; provide bike safety programs to encourage active transportation for students where practical and feasible.

TRM2. Flexible schedules - Where feasible, establish alternative work schedules and telecommuting to reduce employee commute. Continue to support housing options to encourage off-duty police officers or other Town employees to stay overnight near the Town Center, where feasible and need dependent.

TRM3. Explore Town participation in County-wide rideshare or bus program – Explore Town participation in county-wide ride share or bus program for public employee commuting.

Section 3.3.1 Goal: Reduce the total amount of community waste generated and sent to landfills to meet AB 32 emission reduction target.

Measures:

WC1. Set higher community waste diversion goal - Increase participation in recycling programs and ensure weekly collection of recyclables and organic waste to achieve 86% diversion rate (increase from 71.8% diversion rate in 2010).

WC2. Require commercial recycling through mandatory ordinance - Provide outreach, education and training to commercial customers and schools to support recycling habits and understanding. All businesses and entities that generate four or more cubic yards of garbage per weeks are required to recycle under California law. Commercial customers subscribed to Recology's garage collection services receive recycling and compost collection for no additional cost.

WC3. Promotion of recycling/diversion of yard waste - Encourage the recycling/diversion of yard waste by landscapers and landscape maintenance businesses. Comply with updates to the California Integrated Waste Management Act requiring businesses to recycle organic waste by 2016. Provide residents, businesses and private schools with food scraps collection. Explore incentives for local composting of these organics.

WM1. Create Sustainable Vendor Policy for public events - Encourage recycling at major public events (including at schools) of cardboard, paper, containers and food/organics. Encourage use of recyclable silverware and food take-out packaging. Ensure provision of proper landfill, recycling and organic bins.

WM2. Environmentally preferred purchasing policy – Waste reduction - Implement a sustainable purchasing policy that emphasizes recycled materials.

WM3. Approach a zero waste policy in government operations – Government Policy to improve diversion in Town operations by 2020/2030.

BAAQMD GHG Significance Thresholds

On April 20, 2022, BAAQMD adopted new thresholds of significance for operational GHG emissions from land use projects for projects beginning the CEQA process. The current thresholds of significance are:

A. Projects must include, at a minimum, the following project design elements:
   a. Buildings
      i. The project will not include natural gas appliances or natural gas plumbing (in both residential and non-residential development).
      ii. The project will not result in any wasteful, inefficient, or unnecessary energy usage as determined by the analysis required under CEQA Section 21100(b)(3) and Section 15126.2(b) of the State CEQA Guidelines.
   b. Transportation
      i. Achieve a reduction in project-generated vehicle miles traveled (VMT) below the regional average consistent with the current version of the California Climate Change Scoping Plan (currently 15 percent) or meet a locally adopted Senate Bill 743 VMT target, reflecting the recommendations provided in the Governor's Office of Planning and Research's Technical Advisory on Evaluating Transportation Impacts in CEQA:
         1. Residential Projects: 15 percent below the existing VMT per capita
         2. Office Projects: 15 percent below the existing VMT per employee
         3. Retail Projects: no net increase in existing VMT
      ii. Achieve compliance with off-street electric vehicle requirements in the most recently adopted version of CALGreen Tier 2.

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

New land use projects are required to meet either section A or B from the above list, not both, to be considered less than significant.

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

While the proposed Housing Element Update and resulting zoning code amendments will not result in the direct construction of housing, development of specific projects could occur as a result of the project and are considered under CEQA for air quality and GHG impacts. GHG emissions associated with development of the proposed projects built under the Housing Element would occur over the short-term from construction activities, consisting primarily of emissions from equipment exhaust and worker and vendor trips. There would also be long-term emissions associated with vehicular traffic within the project vicinity, energy and water usage, and solid waste disposal. GHG emissions for the Housing Element Update buildout are discussed below and were analyzed using the methodology recommended in the BAAQMD CEQA Air Quality Guidelines.

CalEEMod Modeling

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

Buildout Emissions

The CalEEMod model along with the vehicle trip generation rates and VMT for the Housing Element Update were used to estimate daily emissions. As shown in Table 14, the net annual emissions resulting from build-out of new housing are predicted to be 27,604 MT of CO_2e when the buildout scenario is completed in 2031. In terms of GHG per capita emissions, there would be a decrease.

The emissions forecast presented in Table 14 are based on current accepted modeling methods that include use of EMFAC2021 mobile emission factors, current solid waste generation rates and processing, and current emissions associated with energy and water usage.

Mobile emissions are currently modeled to make up about 67 percent of existing emissions and 69 percent in 2031. The modeling of these emissions are based on the use of EMFAC2021 that does not include California's latest Advanced Clean Cars and Advanced Clean Trucks regulations. These regulations along with future reformulated fuel standards will reduce mobile emissions substantially. Additionally, new rules and regulations are likely to be adopted in the future, prior to 2035, that would reduce mobile emissions.

Energy is the second highest source of GHG emissions, at about 27 percent of future emissions. These emissions were predicted based on the current emission factor rate of 100 pounds of CO_2 per megawatt of electricity produced which is based on Peninsula Clean Energy 2022 emissions rate assigned by CalEEMod. The CO_2 intensity rate for Peninsula Clean Energy's ECOplus is 9 pounds of CO_2e per megawatt of delivered electricity and both rates are predicted to be near zero in the future.[24]

Solid waste is the third highest source of GHG emissions, at about 3 percent of future emissions. These emissions were predicted based on current rates assigned by CalEEMod. GHG emissions associated with solid waste generation are predicted based on the transportation and processing of the waste stream. New measures to reduce solid waste, reducing emissions from hauling of solid waste and reuse of methane generated can greatly reduce these emissions.

Emissions associated with water usage make up about 1 percent of total GHG emissions. These emissions are likely to be reduced through greater water conservation efforts, use of recycled water available in the area for outdoor water usage, and the use of electricity generated from carbon-free sources.

[24] 2022 CO_2 Intensity Rate reported by Peninsula Clean Energy: Power mix - Peninsula Clean Energy

There are no quantified thresholds for GHG emissions adopted by the Town or BAAQMD for evaluation of plan level GHG emissions. BAAQMD in their latest adopted GHG thresholds recommend that the significance of project level GHG emissions be evaluated based on consistency with a qualified GHG reduction plan or meet design elements that are critical in reducing GHG emissions.

Table 14. Annual Plan GHG Emissions (CO_2e) in Metric Tons and Per Capita

Source Category	Existing 2023	Housing Element Increase in 2031	Housing Element Update Buildout in 2031
Mobile[1]	15,779	5,683	18,999
Area	75	11	87
Energy Consumption	6,993	562	7,554
Water Usage	153	39	193
Solid Waste Generation	565	209	771
Net Total (MT CO_{2e}/year)	23,566	6,502	27,604
Per Capita Emissions (MT CO_{2e}/year/capita)	3.53	3.17	3.16

[*] Does not include effects of *Advanced Clean Cars II* that will phase out the sale of combustion emission vehicles by 2035.

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

Plan Consistency

The Housing Element Update and resulting zoning amendments would allow the addition of more housing. BAAQMD has thresholds that address both Projects and long-range plans, such as General Plans. Projects constructed under the proposed Housing Element Update and resulting zoning code amendments would have to meet BAAQMD project-level significance thresholds or meet State's goals to reduce emissions to 40% below 1990 levels by 2030 and carbon neutrality by 2045. Note that the Town has not adopted a GHG reduction strategy that is consistent with current State goals or that meets the criteria under State CEQA Guidelines Section 15183.5(b).

To meet the BAAQMD's GHG thresholds, residential projects would be required to demonstrate the following:

1. Avoid construction of new natural gas connections:
   Project does not conform – the Town does not have measures or building code sections prohibiting new natural gas infrastructure in new or remodeled residences.
2. Avoid wasteful or inefficient use of electricity:
   Project Conforms – the new housing projects would be required would meet CALGreen Building Standards Code requirements that are considered to be energy efficient.
3. Include electric vehicle (EV) charging infrastructure that meets current Building Code CALGreen Tier 2 compliance,
   Project does not conform – the Town does not have measures that require new residential projects to include electric vehicle charging infrastructure that meets or exceeds current Building Code CALGreen Tier 2 compliance.

4. Reduce VMT or meet a locally adopted Senate Bill 743 VMT target that reflects the recommendations provided in the Governor's Office of Planning and Research's (OPR) Technical Advisory: *Evaluating Transportation Impacts in CEQA*.

   Projects not applicable to VMT threshold or meet the threshold

   The Town of Atherton has not formally adopted a VMT policy, therefore, the Town's VMT analysis is based on OPR's guidelines. These guidelines include screening criteria. Most housing sites would generate new vehicle trips below the screening threshold of 110 trip per day. Projects that screen out include:

   - ADUs,
   - SB 9 units,
   - Vacant Sites,
   - 23 Oakwood Blvd.,
   - 150 Valparaiso,
   - Gilmore House, and
   - CA Water Service.

   The multi-family sites that could generate more than 110 trips per day are within ½ mile of a CalTrain station, which is considered a "high quality transit corridor" and would meet OPR screening criteria include:

   - 1000 El Camino Real and
   - 50 Valparaiso.

   Proposed projects at 175, 185, and 197 Ravenswood Ave are in an area with low VMT. The VMT per resident for those parcels is 7.7 to 10.4 VMT per resident, which is less than the Bay Area regional threshold of 12.4 daily VMT per resident.

   Projects that do Not Screen Out

   Projects proposed at 999 Ringwood Avenue, 352, 318, and 296 Bay Road are located in an area where the existing VMT is 13.0 daily VMT per resident, which is above the established threshold of 12.4 daily VMT per resident and would not meet the VMT criteria.

Conclusion: The zoning amendment projects do not fully comply with requirements of BAAQMD's GHG thresholds but are currently only anticipated to conform with one requirement. This would lead to a significant impact for the Amendment's GHG emissions. The implementation of *Mitigation Measure GHG-1* would require the housing projects under the proposed Amendment to conform to the requirements, therefore leading to a less than significant GHG impact.

***Mitigation Measure GHG-1*:**

1. Require all new or remodeled housing to use all-electric appliances and have no natural gas infrastructure.

2. Require all new housing to include electric vehicle charging infrastructure that meets or exceeds current Building Code CALGreen Tier 2 compliance.

3. Implement the VMT Mitigation measure for proposed projects in the "high-VMT area" that do not meet other screening requirements (i.e., generate less than 110 trips per day or located within a high-quality transit corridor). The TDM measure is described in the *Atherton HEU Transportation Analysis,* prepared by Hexagon, dated February 13, 2024.

Supporting Documentation

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

Attachment 2 includes the cumulative health risk screening impacts from sources affecting the proposed future Amendment areas.

Attachment 3 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 1: CalEEMod Modeling Inputs and Outputs

Existing 2023 Operational Criteria Air Pollutants				
Unmitigated	ROG	NOX	Total PM10	Total PM2.5
Year	Tons			
Total	28.11	12.90	16.11	4.49
	Net Annual Operational Emissions			
Tons/year	28.11	12.90	16.11	4.49
Threshold - Tons/year	**10.0**	**10.0**	**15.0**	**10.0**
	Average Daily Emissions			
Pounds Per Day	154.05	70.71	88.29	24.60
Threshold - lbs/day	**54.0**	**54.0**	**82.0**	**54.0**
Category	**CO2e**			
	Project			
Mobile	15779.47			
Area	75.49			
Energy	6992.76			
Water	153.44			
Waste	564.57			
Refrig.	4.43			
TOTAL	23570.17	0.00	0.00	0.00
Net GHG Emissions		23570.17		0.00

Housing Element 2031 Operational Criteria Air Pollutants				
Unmitigated	ROG	NOX	Total PM10	Total PM2.5
Year	Tons			
Total	9.02	1.83	6.36	1.63
	Net Annual Operational Emissions			
Tons/year	9.02	1.83	6.36	1.63
Threshold - Tons/year	**10.0**	**10.0**	**15.0**	**10.0**
	Average Daily Emissions			
Pounds Per Day	49.44	10.01	34.83	8.94
Threshold - lbs/day	**54.0**	**54.0**	**82.0**	**54.0**
Category	**CO2e**			
	Project			
Mobile	5682.65			
Area	11.30			
Energy	561.70			
Water	39.27			
Waste	206.75			
Refrig.	1.50			
TOTAL	6503.17	0.00	0.00	0.00
Net GHG Emissions		6503.17		0.00

Housing Element 2031 + Existing Operational Criteria Air Pollutants				
Unmitigated	ROG	NOX	Total PM10	Total PM2.5
Year	Tons			
Total	34.31	11.60	21.69	5.90
	Net Annual Operational Emissions			
Tons/year	34.31	11.60	21.69	5.90
Threshold - Tons/year	**10.0**	**10.0**	**15.0**	**10.0**
	Average Daily Emissions			
Pounds Per Day	188.02	63.59	118.84	32.30
Threshold - lbs/day	**54.0**	**54.0**	**82.0**	**54.0**
Category	**CO2e**			
	Project			
Mobile	18998.85			
Area	86.78			
Energy	7554.46			
Water	192.71			
Waste	771.33			
Refrig.	5.93			
TOTAL	27610.06	0.00	0.00	0.00
Net GHG Emissions		27610.06		0.00

23-116 Atherton Existing 2023 Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	23-116 Atherton Existing 2023
Operational Year	2023
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	4.20
Precipitation (days)	18.8
Location	Atherton, CA, USA
County	San Mateo
City	Atherton
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	1277
EDFZ	1
Electric Utility	Peninsula Clean Energy
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.21

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
Single Family Housing	2,547	Dwelling Unit	827	3,740,000	29,832,647	—	7,335	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.4. Operations Emissions Compared Against Thresholds

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

Un/Mit.	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Unmit.	163	75.6	3.76	86.3	90.0	3.70	21.9	25.6	157,332
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Unmit.	149	80.6	3.68	86.3	90.0	3.64	21.9	25.5	152,321
Average Daily (Max)	—	—	—	—	—	—	—	—	—
Unmit.	154	70.7	3.05	85.2	88.3	3.00	21.6	24.6	142,365
Annual (Max)	—	—	—	—	—	—	—	—	—
Unmit.	28.1	12.9	0.56	15.6	16.1	0.55	3.94	4.49	23,570

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	53.2	36.0	0.60	86.3	86.9	0.55	21.9	22.4	99,607
Area	108	9.91	0.76	—	0.76	0.74	—	0.74	11,125
Energy	1.74	29.7	2.40	—	2.40	2.40	—	2.40	42,237
Water	—	—	—	—	—	—	—	—	927

Waste	—	—	—	—	—	—	—	—	3,410
Refrig.	—	—	—	—	—	—	—	—	26.8
Total	163	75.6	3.76	86.3	90.0	3.70	21.9	25.6	157,332
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Mobile	52.1	42.5	0.60	86.3	86.9	0.55	21.9	22.4	94,984
Area	95.0	8.45	0.68	—	0.68	0.68	—	0.68	10,737
Energy	1.74	29.7	2.40	—	2.40	2.40	—	2.40	42,237
Water	—	—	—	—	—	—	—	—	927
Waste	—	—	—	—	—	—	—	—	3,410
Refrig.	—	—	—	—	—	—	—	—	26.8
Total	149	80.6	3.68	86.3	90.0	3.64	21.9	25.5	152,321
Average Daily	—	—	—	—	—	—	—	—	—
Mobile	51.2	40.1	0.60	85.2	85.8	0.55	21.6	22.1	95,309
Area	101	0.93	0.06	—	0.06	0.05	—	0.05	456
Energy	1.74	29.7	2.40	—	2.40	2.40	—	2.40	42,237
Water	—	—	—	—	—	—	—	—	927
Waste	—	—	—	—	—	—	—	—	3,410
Refrig.	—	—	—	—	—	—	—	—	26.8
Total	154	70.7	3.05	85.2	88.3	3.00	21.6	24.6	142,365
Annual	—	—	—	—	—	—	—	—	—
Mobile	9.34	7.31	0.11	15.6	15.7	0.10	3.94	4.04	15,779
Area	18.5	0.17	0.01	—	0.01	0.01	—	0.01	75.5
Energy	0.32	5.42	0.44	—	0.44	0.44	—	0.44	6,993
Water	—	—	—	—	—	—	—	—	153
Waste	—	—	—	—	—	—	—	—	565
Refrig.	—	—	—	—	—	—	—	—	4.43
Total	28.1	12.9	0.56	15.6	16.1	0.55	3.94	4.49	23,570

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)	—	—	—	—	—	—	—	—	—
Single Family Housing	53.2	36.0	0.60	86.3	86.9	0.55	21.9	22.4	99,607
Total	53.2	36.0	0.60	86.3	86.9	0.55	21.9	22.4	99,607
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Single Family Housing	52.1	42.5	0.60	86.3	86.9	0.55	21.9	22.4	94,984
Total	52.1	42.5	0.60	86.3	86.9	0.55	21.9	22.4	94,984
Annual	—	—	—	—	—	—	—	—	—
Single Family Housing	9.34	7.31	0.11	15.6	15.7	0.10	3.94	4.04	15,779
Total	9.34	7.31	0.11	15.6	15.7	0.10	3.94	4.04	15,779

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)	—	—	—	—	—	—	—	—	—

Single Family Housing	—	—	—	—	—	—	—	—	4,402
Total	—	—	—	—	—	—	—	—	4,402
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	4,402
Total	—	—	—	—	—	—	—	—	4,402
Annual	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	729
Total	—	—	—	—	—	—	—	—	729

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)	—	—	—	—	—	—	—	—	—
Single Family Housing	1.74	29.7	2.40	—	2.40	2.40	—	2.40	37,834
Total	1.74	29.7	2.40	—	2.40	2.40	—	2.40	37,834
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Single Family Housing	1.74	29.7	2.40	—	2.40	2.40	—	2.40	37,834
Total	1.74	29.7	2.40	—	2.40	2.40	—	2.40	37,834
Annual	—	—	—	—	—	—	—	—	—
Single Family Housing	0.32	5.42	0.44	—	0.44	0.44	—	0.44	6,264
Total	0.32	5.42	0.44	—	0.44	0.44	—	0.44	6,264

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	0.49	8.45	0.68	—	0.68	0.68	—	0.68	10,737
Consumer Products	80.0	—	—	—	—	—	—	—	—
Architectural Coatings	14.4	—	—	—	—	—	—	—	—
Landscape Equipment	13.5	1.46	0.08	—	0.08	0.06	—	0.06	388
Total	108	9.91	0.76	—	0.76	0.74	—	0.74	11,125
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Hearths	0.49	8.45	0.68	—	0.68	0.68	—	0.68	10,737
Consumer Products	80.0	—	—	—	—	—	—	—	—
Architectural Coatings	14.4	—	—	—	—	—	—	—	—
Total	95.0	8.45	0.68	—	0.68	0.68	—	0.68	10,737
Annual	—	—	—	—	—	—	—	—	—
Hearths	< 0.005	0.04	< 0.005	—	< 0.005	< 0.005	—	< 0.005	43.8
Consumer Products	14.6	—	—	—	—	—	—	—	—
Architectural Coatings	2.63	—	—	—	—	—	—	—	—
Landscape Equipment	1.22	0.13	0.01	—	0.01	0.01	—	0.01	31.7
Total	18.5	0.17	0.01	—	0.01	0.01	—	0.01	75.5

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)	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	927
Total	—	—	—	—	—	—	—	—	927
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	927
Total	—	—	—	—	—	—	—	—	927
Annual	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	153
Total	—	—	—	—	—	—	—	—	153

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)	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	3,410
Total	—	—	—	—	—	—	—	—	3,410

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	3,410
Total	—	—	—	—	—	—	—	—	3,410
Annual	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	565
Total	—	—	—	—	—	—	—	—	565

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)	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	26.8
Total	—	—	—	—	—	—	—	—	26.8
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	26.8
Total	—	—	—	—	—	—	—	—	26.8
Annual	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	4.43
Total	—	—	—	—	—	—	—	—	4.43

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

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

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

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

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

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

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

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

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

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

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

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

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

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

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

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

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

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

5. Activity Data

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Single Family Housing	17,651	17,651	17,651	6,442,509	122,672	122,672	122,672	44,775,439

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Single Family Housing	—
Wood Fireplaces	0
Gas Fireplaces	509
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	2038
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)
7573500	2,524,500	0.00	0.00	—

5.10.3. Landscape Equipment

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

5.11. Operational Energy Consumption

5.11.1. Unmitigated

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

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Single Family Housing	15,752,831	100.0	0.0330	0.0040	117,727,236

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Single Family Housing	92,370,521	302,277,741

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Single Family Housing	1,809	—

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
Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Single Family Housing	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

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

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

5.16.2. Process Boilers

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

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

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

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

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

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	9.82	annual days of extreme heat
Extreme Precipitation	6.25	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	9.53	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

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

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

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

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

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

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	10.6
AQ-PM	12.8
AQ-DPM	41.4
Drinking Water	35.4
Lead Risk Housing	52.9

Pesticides	0.00
Toxic Releases	26.2
Traffic	23.8
Effect Indicators	—
CleanUp Sites	79.7
Groundwater	75.0
Haz Waste Facilities/Generators	72.7
Impaired Water Bodies	0.00
Solid Waste	66.7
Sensitive Population	—
Asthma	1.33
Cardio-vascular	0.65
Low Birth Weights	6.51
Socioeconomic Factor Indicators	—
Education	3.87
Housing	1.05
Linguistic	23.8
Poverty	0.26
Unemployment	40.6

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	97.6774028
Employed	30.82253304
Median HI	99.46105479

Education	—
Bachelor's or higher	99.16591813
High school enrollment	17.87501604
Preschool enrollment	95.7141024
Transportation	—
Auto Access	89.83703323
Active commuting	40.87001155
Social	—
2-parent households	78.6603362
Voting	93.67380983
Neighborhood	—
Alcohol availability	77.22314898
Park access	34.87745413
Retail density	37.26421147
Supermarket access	36.18632106
Tree canopy	97.62607468
Housing	—
Homeownership	99.9101758
Housing habitability	96.03490312
Low-inc homeowner severe housing cost burden	41.01116387
Low-inc renter severe housing cost burden	90.2219941
Uncrowded housing	91.95431798
Health Outcomes	—
Insured adults	99.67919928
Arthritis	0.0
Asthma ER Admissions	95.1
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	99.3
Cognitively Disabled	70.6
Physically Disabled	80.2
Heart Attack ER Admissions	98.4
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	19.6
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	65.5
Elderly	11.5
English Speaking	89.7
Foreign-born	40.9
Outdoor Workers	98.2

Climate Change Adaptive Capacity	—
Impervious Surface Cover	92.9
Traffic Density	25.7
Traffic Access	48.8
Other Indices	—
Hardship	0.0
Other Decision Support	—
2016 Voting	89.5

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	1.00
Healthy Places Index Score for Project Location (b)	99.0
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	Atherton default clean energy provider is Peninsula Clean Energy.
Land Use	2,547 single family homes.
Operations: Vehicle Data	Provided trip rate is 6.93 and provided Mi per trip is 6.95.
Operations: Water and Waste Water	Wastewater treatment 100% aerobic - no septic tanks or lagoons.

23-116 Atherton Housing Element Increase 2031 Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	23-116 Atherton Housing Element Increase 2031
Operational Year	2031
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	4.20
Precipitation (days)	18.8
Location	Atherton, CA, USA
County	San Mateo
City	Atherton
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	1277
EDFZ	1
Electric Utility	Peninsula Clean Energy
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.21

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Apartments Low Rise	572	Dwelling Unit	35.8	606,320	0.00	—	1,647	—

Single Family Housing	337	Dwelling Unit	109	657,150	3,947,233	—	971	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.4. Operations Emissions Compared Against Thresholds

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

Un/Mit.	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Unmit.	52.2	9.25	0.18	35.1	35.3	0.16	8.89	9.05	40,794
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Unmit.	47.5	10.4	0.16	35.1	35.2	0.15	8.89	9.04	39,125
Average Daily (Max)	—	—	—	—	—	—	—	—	—
Unmit.	49.4	10.0	0.17	34.7	34.8	0.16	8.78	8.94	39,280
Annual (Max)	—	—	—	—	—	—	—	—	—
Unmit.	9.02	1.83	0.03	6.33	6.36	0.03	1.60	1.63	6,503

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	15.8	8.77	0.16	35.1	35.2	0.15	8.89	9.04	35,768
Area	36.4	0.48	0.02	—	0.02	0.02	—	0.02	138

Energy	0.00	0.00	0.00	—	0.00	0.00	—	0.00	3,393
Water	—	—	—	—	—	—	—	—	237
Waste	—	—	—	—	—	—	—	—	1,249
Refrig.	—	—	—	—	—	—	—	—	9.05
Total	52.2	9.25	0.18	35.1	35.3	0.16	8.89	9.05	40,794
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Mobile	15.6	10.4	0.16	35.1	35.2	0.15	8.89	9.04	34,238
Area	31.9	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Energy	0.00	0.00	0.00	—	0.00	0.00	—	0.00	3,393
Water	—	—	—	—	—	—	—	—	237
Waste	—	—	—	—	—	—	—	—	1,249
Refrig.	—	—	—	—	—	—	—	—	9.05
Total	47.5	10.4	0.16	35.1	35.2	0.15	8.89	9.04	39,125
Average Daily	—	—	—	—	—	—	—	—	—
Mobile	15.3	9.77	0.16	34.7	34.8	0.15	8.78	8.93	34,324
Area	34.1	0.24	0.01	—	0.01	0.01	—	0.01	68.2
Energy	0.00	0.00	0.00	—	0.00	0.00	—	0.00	3,393
Water	—	—	—	—	—	—	—	—	237
Waste	—	—	—	—	—	—	—	—	1,249
Refrig.	—	—	—	—	—	—	—	—	9.05
Total	49.4	10.0	0.17	34.7	34.8	0.16	8.78	8.94	39,280
Annual	—	—	—	—	—	—	—	—	—
Mobile	2.80	1.78	0.03	6.33	6.35	0.03	1.60	1.63	5,683
Area	6.23	0.04	< 0.005	—	< 0.005	< 0.005	—	< 0.005	11.3
Energy	0.00	0.00	0.00	—	0.00	0.00	—	0.00	562
Water	—	—	—	—	—	—	—	—	39.3
Waste	—	—	—	—	—	—	—	—	207

Refrig.	—	—	—	—	—	—	—	—	1.50
Total	9.02	1.83	0.03	6.33	6.36	0.03	1.60	1.63	6,503

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

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

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Apartments Low Rise	9.94	5.52	0.10	22.1	22.2	0.09	5.59	5.69	22,508
Single Family Housing	5.85	3.25	0.06	13.0	13.1	0.05	3.30	3.35	13,261
Total	15.8	8.77	0.16	35.1	35.2	0.15	8.89	9.04	35,768
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Apartments Low Rise	9.81	6.53	0.10	22.1	22.2	0.09	5.59	5.69	21,544
Single Family Housing	5.78	3.85	0.06	13.0	13.1	0.05	3.30	3.35	12,693
Total	15.6	10.4	0.16	35.1	35.2	0.15	8.89	9.04	34,238
Annual	—	—	—	—	—	—	—	—	—
Apartments Low Rise	1.76	1.12	0.02	3.98	4.00	0.02	1.01	1.03	3,576
Single Family Housing	1.04	0.66	0.01	2.35	2.36	0.01	0.59	0.60	2,107
Total	2.80	1.78	0.03	6.33	6.35	0.03	1.60	1.63	5,683

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

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

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Apartments Low Rise	—	—	—	—	—	—	—	—	1,535
Single Family Housing	—	—	—	—	—	—	—	—	1,858
Total	—	—	—	—	—	—	—	—	3,393
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Apartments Low Rise	—	—	—	—	—	—	—	—	1,535
Single Family Housing	—	—	—	—	—	—	—	—	1,858
Total	—	—	—	—	—	—	—	—	3,393
Annual	—	—	—	—	—	—	—	—	—
Apartments Low Rise	—	—	—	—	—	—	—	—	254
Single Family Housing	—	—	—	—	—	—	—	—	308
Total	—	—	—	—	—	—	—	—	562

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

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

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

Apartments Low Rise	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Single Family Housing	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Total	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Apartments Low Rise	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Single Family Housing	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Total	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Apartments Low Rise	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Single Family Housing	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Total	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00

4.3. 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	27.0	—	—	—	—	—	—	—	—
Architectural Coatings	4.87	—	—	—	—	—	—	—	—

Landscape Equipment	4.46	0.48	0.02	—	0.02	0.02	—	0.02	138
Total	36.4	0.48	0.02	—	0.02	0.02	—	0.02	138
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Consumer Products	27.0	—	—	—	—	—	—	—	—
Architectural Coatings	4.87	—	—	—	—	—	—	—	—
Total	31.9	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	4.93	—	—	—	—	—	—	—	—
Architectural Coatings	0.89	—	—	—	—	—	—	—	—
Landscape Equipment	0.40	0.04	< 0.005	—	< 0.005	< 0.005	—	< 0.005	11.3
Total	6.23	0.04	< 0.005	—	< 0.005	< 0.005	—	< 0.005	11.3

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

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

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Apartments Low Rise	—	—	—	—	—	—	—	—	115
Single Family Housing	—	—	—	—	—	—	—	—	123

Total	—	—	—	—	—	—	—	—	237
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Apartments Low Rise	—	—	—	—	—	—	—	—	115
Single Family Housing	—	—	—	—	—	—	—	—	123
Total	—	—	—	—	—	—	—	—	237
Annual	—	—	—	—	—	—	—	—	—
Apartments Low Rise	—	—	—	—	—	—	—	—	19.0
Single Family Housing	—	—	—	—	—	—	—	—	20.3
Total	—	—	—	—	—	—	—	—	39.3

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

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

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Apartments Low Rise	—	—	—	—	—	—	—	—	797
Single Family Housing	—	—	—	—	—	—	—	—	451
Total	—	—	—	—	—	—	—	—	1,249
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Apartments Low Rise	—	—	—	—	—	—	—	—	797
Single Family Housing	—	—	—	—	—	—	—	—	451

Total	—	—	—	—	—	—	—	—	1,249
Annual	—	—	—	—	—	—	—	—	—
Apartments Low Rise	—	—	—	—	—	—	—	—	132
Single Family Housing	—	—	—	—	—	—	—	—	74.7
Total	—	—	—	—	—	—	—	—	207

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

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

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Apartments Low Rise	—	—	—	—	—	—	—	—	4.34
Single Family Housing	—	—	—	—	—	—	—	—	4.71
Total	—	—	—	—	—	—	—	—	9.05
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Apartments Low Rise	—	—	—	—	—	—	—	—	4.34
Single Family Housing	—	—	—	—	—	—	—	—	4.71
Total	—	—	—	—	—	—	—	—	9.05
Annual	—	—	—	—	—	—	—	—	—
Apartments Low Rise	—	—	—	—	—	—	—	—	0.72
Single Family Housing	—	—	—	—	—	—	—	—	0.78

Total	—	—	—	—	—	—	—	—	1.50

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

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

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

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

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

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

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

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

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

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

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

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

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

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

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

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

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

5. Activity Data

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Apartments Low Rise	4,645	4,645	4,645	1,695,294	31,351	31,351	31,351	11,443,232
Single Family Housing	2,736	2,736	2,736	998,801	18,471	18,471	18,471	6,741,904

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Apartments Low 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
Single Family Housing	—
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)
2558526.75	852,842	0.00	0.00	—

5.10.3. Landscape Equipment

Season	Unit	Value

Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

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

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Apartments Low Rise	5,491,190	100.0	0.0330	0.0040	0.00
Single Family Housing	6,649,403	100.0	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Apartments Low Rise	20,744,381	0.00
Single Family Housing	12,221,777	39,995,133

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Apartments Low Rise	423	—
Single Family Housing	239	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

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

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

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

5.16.2. Process Boilers

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

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

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

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

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

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	9.82	annual days of extreme heat
Extreme Precipitation	6.25	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	9.53	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

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

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A

Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

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

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	10.6
AQ-PM	12.8
AQ-DPM	41.4
Drinking Water	35.4
Lead Risk Housing	52.9
Pesticides	0.00
Toxic Releases	26.2
Traffic	23.8
Effect Indicators	—
CleanUp Sites	79.7

Groundwater	75.0
Haz Waste Facilities/Generators	72.7
Impaired Water Bodies	0.00
Solid Waste	66.7
Sensitive Population	—
Asthma	1.33
Cardio-vascular	0.65
Low Birth Weights	6.51
Socioeconomic Factor Indicators	—
Education	3.87
Housing	1.05
Linguistic	23.8
Poverty	0.26
Unemployment	40.6

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	97.6774028
Employed	30.82253304
Median HI	99.46105479
Education	—
Bachelor's or higher	99.16591813
High school enrollment	17.87501604
Preschool enrollment	95.7141024
Transportation	—

Auto Access	89.83703323
Active commuting	40.87001155
Social	—
2-parent households	78.6603362
Voting	93.67380983
Neighborhood	—
Alcohol availability	77.22314898
Park access	34.87745413
Retail density	37.26421147
Supermarket access	36.18632106
Tree canopy	97.62607468
Housing	—
Homeownership	99.9101758
Housing habitability	96.03490312
Low-inc homeowner severe housing cost burden	41.01116387
Low-inc renter severe housing cost burden	90.2219941
Uncrowded housing	91.95431798
Health Outcomes	—
Insured adults	99.67919928
Arthritis	0.0
Asthma ER Admissions	95.1
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	99.3
Cognitively Disabled	70.6
Physically Disabled	80.2
Heart Attack ER Admissions	98.4
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	19.6
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	65.5
Elderly	11.5
English Speaking	89.7
Foreign-born	40.9
Outdoor Workers	98.2
Climate Change Adaptive Capacity	—
Impervious Surface Cover	92.9
Traffic Density	25.7
Traffic Access	48.8
Other Indices	—

Hardship	0.0
Other Decision Support	—
2016 Voting	89.5

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	1.00
Healthy Places Index Score for Project Location (b)	99.0
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	Atherton default clean energy provider is Peninsula Clean Energy.
Operations: Vehicle Data	Trip rate = 8.12 and Mi per Trip = 6.75.
Operations: Hearths	No hearths.
Operations: Energy Use	Atherton REACH code 4.105.5.1 - all-electric new construction. Convert natural gas to electricity.

Operations: Water and Waste Water	Wastewater treatment 100% aerobic - no septic tanks or lagoons.

23-116 Atherton Existing + Housing Element 2031 Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	23-116 Atherton Existing + Housing Element 2031
Operational Year	2031
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	4.20
Precipitation (days)	18.8
Location	Atherton, CA, USA
County	San Mateo
City	Atherton
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	1277
EDFZ	1
Electric Utility	Peninsula Clean Energy
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.21

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
Single Family Housing	2,547	Dwelling Unit	827	3,740,000	29,832,647	—	7,335	—

Apartments Low Rise	572	Dwelling Unit	35.8	606,320	0.00	—	1,647	—
Single Family Housing	337	Dwelling Unit	109	657,150	3,947,233	—	971	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.4. Operations Emissions Compared Against Thresholds

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

Un/Mit.	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Unmit.	199	69.6	3.71	118	122	3.65	29.9	33.6	183,113
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Unmit.	181	73.2	3.62	118	122	3.58	29.9	33.5	177,439
Average Daily (Max)	—	—	—	—	—	—	—	—	—
Unmit.	188	63.6	2.99	116	119	2.94	29.4	32.3	166,766
Annual (Max)	—	—	—	—	—	—	—	—	—
Unmit.	34.3	11.6	0.55	21.1	21.7	0.54	5.36	5.90	27,610

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	53.5	29.6	0.53	118	119	0.49	29.9	30.4	120,362
Area	144	10.3	0.77	—	0.77	0.75	—	0.75	11,263
Energy	1.74	29.7	2.40	—	2.40	2.40	—	2.40	45,629
Water	—	—	—	—	—	—	—	—	1,164
Waste	—	—	—	—	—	—	—	—	4,659
Refrig.	—	—	—	—	—	—	—	—	35.8
Total	199	69.6	3.71	118	122	3.65	29.9	33.6	183,113
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Mobile	52.8	35.0	0.53	118	119	0.49	29.9	30.4	115,215
Area	127	8.45	0.68	—	0.68	0.68	—	0.68	10,737
Energy	1.74	29.7	2.40	—	2.40	2.40	—	2.40	45,629
Water	—	—	—	—	—	—	—	—	1,164
Waste	—	—	—	—	—	—	—	—	4,659
Refrig.	—	—	—	—	—	—	—	—	35.8
Total	181	73.2	3.62	118	122	3.58	29.9	33.5	177,439
Average Daily	—	—	—	—	—	—	—	—	—
Mobile	51.5	32.8	0.53	116	116	0.49	29.4	29.9	114,754
Area	135	1.11	0.06	—	0.06	0.05	—	0.05	524
Energy	1.74	29.7	2.40	—	2.40	2.40	—	2.40	45,629
Water	—	—	—	—	—	—	—	—	1,164
Waste	—	—	—	—	—	—	—	—	4,659
Refrig.	—	—	—	—	—	—	—	—	35.8
Total	188	63.6	2.99	116	119	2.94	29.4	32.3	166,766
Annual	—	—	—	—	—	—	—	—	—
Mobile	9.40	5.98	0.10	21.1	21.2	0.09	5.36	5.45	18,999
Area	24.6	0.20	0.01	—	0.01	0.01	—	0.01	86.8
Energy	0.32	5.42	0.44	—	0.44	0.44	—	0.44	7,554

Water	—	—	—	—	—	—	—	—	193
Waste	—	—	—	—	—	—	—	—	771
Refrig.	—	—	—	—	—	—	—	—	5.93
Total	34.3	11.6	0.55	21.1	21.7	0.54	5.36	5.90	27,610

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)	—	—	—	—	—	—	—	—	—
Single Family Housing	43.7	24.4	0.44	98.1	98.6	0.41	24.9	25.3	99,986
Apartments Low Rise	9.76	5.18	0.09	19.9	20.0	0.08	5.05	5.13	20,376
Total	53.5	29.6	0.53	118	119	0.49	29.9	30.4	120,362
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Single Family Housing	43.1	28.9	0.44	98.1	98.6	0.41	24.9	25.3	95,704
Apartments Low Rise	9.63	6.13	0.09	19.9	20.0	0.08	5.05	5.13	19,510
Total	52.8	35.0	0.53	118	119	0.49	29.9	30.4	115,215
Annual	—	—	—	—	—	—	—	—	—
Single Family Housing	7.72	4.95	0.08	17.6	17.7	0.07	4.47	4.54	15,839
Apartments Low Rise	1.69	1.03	0.02	3.50	3.52	0.02	0.89	0.90	3,160

Total	9.40	5.98	0.10	21.1	21.2	0.09	5.36	5.45	18,999

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)	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	6,260
Apartments Low Rise	—	—	—	—	—	—	—	—	1,535
Total	—	—	—	—	—	—	—	—	7,795
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	6,260
Apartments Low Rise	—	—	—	—	—	—	—	—	1,535
Total	—	—	—	—	—	—	—	—	7,795
Annual	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	1,036
Apartments Low Rise	—	—	—	—	—	—	—	—	254
Total	—	—	—	—	—	—	—	—	1,291

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)	—	—	—	—	—	—	—	—	—
Single Family Housing	1.74	29.7	2.40	—	2.40	2.40	—	2.40	37,834
Apartments Low Rise	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Total	1.74	29.7	2.40	—	2.40	2.40	—	2.40	37,834
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Single Family Housing	1.74	29.7	2.40	—	2.40	2.40	—	2.40	37,834
Apartments Low Rise	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Total	1.74	29.7	2.40	—	2.40	2.40	—	2.40	37,834
Annual	—	—	—	—	—	—	—	—	—
Single Family Housing	0.32	5.42	0.44	—	0.44	0.44	—	0.44	6,264
Apartments Low Rise	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Total	0.32	5.42	0.44	—	0.44	0.44	—	0.44	6,264

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	0.49	8.45	0.68	—	0.68	0.68	—	0.68	10,737
Consumer Products	107	—	—	—	—	—	—	—	—

Architectural Coatings	19.3	—	—	—	—	—	—	—	—
Landscape Equipment	16.9	1.82	0.09	—	0.09	0.07	—	0.07	526
Total	144	10.3	0.77	—	0.77	0.75	—	0.75	11,263
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Hearths	0.49	8.45	0.68	—	0.68	0.68	—	0.68	10,737
Consumer Products	107	—	—	—	—	—	—	—	—
Architectural Coatings	19.3	—	—	—	—	—	—	—	—
Total	127	8.45	0.68	—	0.68	0.68	—	0.68	10,737
Annual	—	—	—	—	—	—	—	—	—
Hearths	< 0.005	0.04	< 0.005	—	< 0.005	< 0.005	—	< 0.005	43.8
Consumer Products	19.5	—	—	—	—	—	—	—	—
Architectural Coatings	3.52	—	—	—	—	—	—	—	—
Landscape Equipment	1.52	0.16	0.01	—	0.01	0.01	—	0.01	43.0
Total	24.6	0.20	0.01	—	0.01	0.01	—	0.01	86.8

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)	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	1,049

Apartments Low Rise	—	—	—	—	—	—	—	—	115
Total	—	—	—	—	—	—	—	—	1,164
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	1,049
Apartments Low Rise	—	—	—	—	—	—	—	—	115
Total	—	—	—	—	—	—	—	—	1,164
Annual	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	174
Apartments Low Rise	—	—	—	—	—	—	—	—	19.0
Total	—	—	—	—	—	—	—	—	193

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)	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	3,861
Apartments Low Rise	—	—	—	—	—	—	—	—	797
Total	—	—	—	—	—	—	—	—	4,659
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	3,861

Apartments Low Rise	—	—	—	—	—	—	—	—	797
Total	—	—	—	—	—	—	—	—	4,659
Annual	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	639
Apartments Low Rise	—	—	—	—	—	—	—	—	132
Total	—	—	—	—	—	—	—	—	771

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)	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	31.5
Apartments Low Rise	—	—	—	—	—	—	—	—	4.34
Total	—	—	—	—	—	—	—	—	35.8
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	31.5
Apartments Low Rise	—	—	—	—	—	—	—	—	4.34
Total	—	—	—	—	—	—	—	—	35.8
Annual	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	5.21

Apartments Low Rise	—	—	—	—	—	—	—	—	0.72
Total	—	—	—	—	—	—	—	—	5.93

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

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

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

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

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

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

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

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

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

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

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

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

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

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

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

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

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

5. Activity Data

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Single Family Housing	17,651	17,651	17,651	6,442,509	122,672	122,672	122,672	44,775,439
Apartments Low Rise	4,645	4,645	3,861	1,654,432	28,277	28,277	23,506	10,072,292
Single Family Housing	2,736	2,736	2,275	974,727	16,660	16,660	13,849	5,934,200

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)

Single Family Housing	—
Wood Fireplaces	0
Gas Fireplaces	509
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	2038
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
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0
Apartments Low 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)
10132026.75	3,377,342	0.00	0.00	—

5.10.3. Landscape Equipment

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

5.11. Operational Energy Consumption

5.11.1. Unmitigated

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

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Single Family Housing	15,752,831	100.0	0.0330	0.0040	117,727,236
Apartments Low Rise	5,491,190	100.0	0.0330	0.0040	0.00
Single Family Housing	6,649,403	100.0	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)
Single Family Housing	92,370,521	302,277,741

Apartments Low Rise	20,744,381	0.00
Single Family Housing	12,221,777	39,995,133

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Single Family Housing	1,809	—
Apartments Low Rise	423	—
Single Family Housing	239	—

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
Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Single Family Housing	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
Apartments Low Rise	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Apartments Low Rise	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Single Family Housing	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

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

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

5.16.2. Process Boilers

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

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

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

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

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

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	9.82	annual days of extreme heat
Extreme Precipitation	6.25	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	9.53	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score

Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

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

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

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

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	10.6
AQ-PM	12.8
AQ-DPM	41.4
Drinking Water	35.4
Lead Risk Housing	52.9
Pesticides	0.00
Toxic Releases	26.2
Traffic	23.8
Effect Indicators	—
CleanUp Sites	79.7
Groundwater	75.0
Haz Waste Facilities/Generators	72.7
Impaired Water Bodies	0.00
Solid Waste	66.7
Sensitive Population	—
Asthma	1.33
Cardio-vascular	0.65
Low Birth Weights	6.51
Socioeconomic Factor Indicators	—

Education	3.87
Housing	1.05
Linguistic	23.8
Poverty	0.26
Unemployment	40.6

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	97.6774028
Employed	30.82253304
Median HI	99.46105479
Education	—
Bachelor's or higher	99.16591813
High school enrollment	17.87501604
Preschool enrollment	95.7141024
Transportation	—
Auto Access	89.83703323
Active commuting	40.87001155
Social	—
2-parent households	78.6603362
Voting	93.67380983
Neighborhood	—
Alcohol availability	77.22314898
Park access	34.87745413
Retail density	37.26421147

Supermarket access	36.18632106
Tree canopy	97.62607468
Housing	—
Homeownership	99.9101758
Housing habitability	96.03490312
Low-inc homeowner severe housing cost burden	41.01116387
Low-inc renter severe housing cost burden	90.2219941
Uncrowded housing	91.95431798
Health Outcomes	—
Insured adults	99.67919928
Arthritis	0.0
Asthma ER Admissions	95.1
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	99.3
Cognitively Disabled	70.6
Physically Disabled	80.2
Heart Attack ER Admissions	98.4
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	19.6
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	65.5
Elderly	11.5
English Speaking	89.7
Foreign-born	40.9
Outdoor Workers	98.2
Climate Change Adaptive Capacity	—
Impervious Surface Cover	92.9
Traffic Density	25.7
Traffic Access	48.8
Other Indices	—
Hardship	0.0
Other Decision Support	—
2016 Voting	89.5

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	1.00
Healthy Places Index Score for Project Location (b)	99.0
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	Atherton default clean energy provider is Peninsula Clean Energy.
Land Use	2,547 existing single family homes plus housing element increase.
Operations: Vehicle Data	Provided trip rate for existing is 6.93 and provided Mi per trip is 6.95. For housing element increase the trip rate is 8.12 and the trip length is 6.75.
Operations: Water and Waste Water	Wastewater treatment 100% aerobic - no septic tanks or lagoons.
Operations: Hearths	No hearths besides for existing uses.
Operations: Energy Use	Existing energy usage stays the same. For housing element increase - convert natural gas to electricity.

Menlo School Site 2 Construction Defaults Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Menlo School Site 2 Construction Defaults
Construction Start Date	1/1/2025
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	4.20
Precipitation (days)	18.8
Location	50 Valparaiso Ave, Atherton, CA 94027, USA
County	San Mateo
City	Atherton
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	1267
EDFZ	1
Electric Utility	Peninsula Clean Energy
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.21

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Apartments Mid Rise	20.0	Dwelling Unit	0.53	19,200	0.00	—	58.0	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-5	Use Advanced Engine Tiers
Construction	C-10-A	Water Exposed Surfaces
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.	54.2	5.17	0.22	0.01	0.22	0.20	< 0.005	0.20	1,323
Mit.	54.1	2.10	0.06	0.01	0.07	0.06	< 0.005	0.06	1,323
% Reduced	< 0.5%	59%	72%	—	70%	72%	—	71%	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Unmit.	1.10	10.1	0.46	5.31	5.78	0.43	2.57	3.00	1,724
Mit.	0.18	1.47	0.03	2.07	2.11	0.03	1.00	1.03	1,724
% Reduced	84%	85%	93%	61%	64%	92%	61%	65%	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—
Unmit.	0.92	1.68	0.07	0.03	0.10	0.06	0.01	0.08	411
Mit.	0.79	0.27	0.01	0.01	0.02	0.01	0.01	0.01	411
% Reduced	14%	84%	88%	58%	78%	87%	59%	82%	—
Annual (Max)	—	—	—	—	—	—	—	—	—
Unmit.	0.17	0.31	0.01	0.01	0.02	0.01	< 0.005	0.01	68.1

Mit.	0.14	0.05	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	68.1
% Reduced	14%	84%	88%	58%	78%	87%	59%	82%	—

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)	—	—	—	—	—	—	—	—	—
2025	54.2	5.17	0.22	0.01	0.22	0.20	< 0.005	0.20	1,323
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—
2025	1.10	10.1	0.46	5.31	5.78	0.43	2.57	3.00	1,724
Average Daily	—	—	—	—	—	—	—	—	—
2025	0.92	1.68	0.07	0.03	0.10	0.06	0.01	0.08	411
Annual	—	—	—	—	—	—	—	—	—
2025	0.17	0.31	0.01	0.01	0.02	0.01	< 0.005	0.01	68.1

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)	—	—	—	—	—	—	—	—	—
2025	54.1	2.10	0.06	0.01	0.07	0.06	< 0.005	0.06	1,323
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—
2025	0.18	1.47	0.03	2.07	2.11	0.03	1.00	1.03	1,724
Average Daily	—	—	—	—	—	—	—	—	—
2025	0.79	0.27	0.01	0.01	0.02	0.01	0.01	0.01	411

Annual	—	—	—	—	—	—	—	—	—
2025	0.14	0.05	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	68.1

3. Construction Emissions Details

3.1. Demolition (2025) - Unmitigated

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

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

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	5.23
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.14
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.02
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.2. Demolition (2025) - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	1.47	0.02	—	0.02	0.02	—	0.02	855
Demolition	—	—	—	0.00	0.00	—	0.00	0.00	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.04	< 0.005	—	< 0.005	< 0.005	—	< 0.005	23.4
Demolition	—	—	—	0.00	0.00	—	0.00	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	3.88
Demolition	—	—	—	0.00	0.00	—	0.00	0.00	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	5.23
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.14
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.02
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.3. Site Preparation (2025) - Unmitigated

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

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

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.47	4.16	0.21	—	0.21	0.20	—	0.20	862
Dust From Material Movement	—	—	—	0.53	0.53	—	0.06	0.06	—
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	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	2.36
Dust From Material Movement	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.39
Dust From Material Movement	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	2.62
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
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.01
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	< 0.005
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.4. Site Preparation (2025) - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.42	0.02	—	0.02	0.02	—	0.02	862
Dust From Material Movement	—	—	—	0.21	0.21	—	0.02	0.02	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	2.36
Dust From Material Movement	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.39
Dust From Material Movement	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	2.62
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
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.01
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	< 0.005
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.5. Grading (2025) - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.09	10.1	0.46	—	0.46	0.43	—	0.43	1,720
Dust From Material Movement	—	—	—	5.31	5.31	—	2.57	2.57	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.01	0.06	< 0.005	—	< 0.005	< 0.005	—	< 0.005	9.42
Dust From Material Movement	—	—	—	0.03	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
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	1.56
Dust From Material Movement	—	—	—	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	0.02	0.01	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	3.93
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.02
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	< 0.005
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.6. Grading (2025) - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	0.84	0.03	—	0.03	0.03	—	0.03	1,720
Dust From Material Movement	—	—	—	2.07	2.07	—	1.00	1.00	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	9.42
Dust From Material Movement	—	—	—	0.01	0.01	—	0.01	0.01	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	1.56
Dust From Material Movement	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	3.93
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.02
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	< 0.005
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

3.7. Building Construction (2025) - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.52	5.14	0.22	—	0.22	0.20	—	0.20	1,309
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.52	5.14	0.22	—	0.22	0.20	—	0.20	1,309
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	1.41	0.06	—	0.06	0.05	—	0.05	359
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	59.4
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	0.03	0.01	0.00	0.01	0.01	0.00	< 0.005	< 0.005	7.70
Vendor	< 0.005	0.03	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	6.06
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.03	0.01	0.00	0.01	0.01	0.00	< 0.005	< 0.005	7.54
Vendor	< 0.005	0.03	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	6.04
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	2.06
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	1.66
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	0.34
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.27
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.8. Building Construction (2025) - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.64	0.02	—	0.02	0.02	—	0.02	1,309
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.64	0.02	—	0.02	0.02	—	0.02	1,309
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.18	0.01	—	0.01	0.01	—	0.01	359
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	0.03	< 0.005	—	< 0.005	< 0.005	—	< 0.005	59.4
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	0.03	0.01	0.00	0.01	0.01	0.00	< 0.005	< 0.005	7.70
Vendor	< 0.005	0.03	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	6.06
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.03	0.01	0.00	0.01	0.01	0.00	< 0.005	< 0.005	7.54
Vendor	< 0.005	0.03	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	6.04
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	2.06
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	1.66
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	0.34
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.27

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Paving (2025) - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.51	4.37	0.19	—	0.19	0.18	—	0.18	826
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	0.06	< 0.005	—	< 0.005	< 0.005	—	< 0.005	11.3
Paving	0.00	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	1.87
Paving	0.00	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Worker	0.04	0.01	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.13
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.02
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.10. Paving (2025) - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	2.09	0.06	—	0.06	0.06	—	0.06	826
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	< 0.005	0.03	< 0.005	—	< 0.005	< 0.005	—	< 0.005	11.3
Paving	0.00	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	1.87

Paving	0.00	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Worker	0.04	0.01	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.13
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.02
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Architectural Coating (2025) - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.88	0.03	—	0.03	0.03	—	0.03	134
Architectural Coatings	54.1	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	1.84
Architectural Coatings	0.74	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.30
Architectural Coatings	0.14	—	—	—	—	—	—	—	—
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	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	1.54
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.02
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	< 0.005
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

3.12. Architectural Coating (2025) - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.65	< 0.005	—	< 0.005	< 0.005	—	< 0.005	134
Architectural Coatings	54.1	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	1.84
Architectural Coatings	0.74	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.30
Architectural Coatings	0.14	—	—	—	—	—	—	—	—
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	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	1.54
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.02
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	< 0.005
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. 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	1/1/2025	1/15/2025	5.00	10.0	—
Site Preparation	Site Preparation	1/16/2025	1/17/2025	5.00	1.00	—
Grading	Grading	1/18/2025	1/20/2025	5.00	2.00	—
Building Construction	Building Construction	1/21/2025	6/10/2025	5.00	100	—
Paving	Paving	6/11/2025	6/18/2025	5.00	5.00	—
Architectural Coating	Architectural Coating	6/19/2025	6/26/2025	5.00	5.00	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

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

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

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	6.00	84.0	0.37
Demolition	Rubber Tired Dozers	Diesel	Tier 4 Final	1.00	1.00	367	0.40
Demolition	Concrete/Industrial Saws	Diesel	Tier 4 Final	1.00	8.00	33.0	0.73
Site Preparation	Graders	Diesel	Tier 4 Final	1.00	8.00	148	0.41
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	8.00	84.0	0.37
Grading	Graders	Diesel	Tier 4 Final	1.00	6.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Tier 4 Final	1.00	6.00	367	0.40
Grading	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	7.00	84.0	0.37
Building Construction	Cranes	Diesel	Tier 4 Final	1.00	4.00	367	0.29

Building Construction	Forklifts	Diesel	Tier 4 Final	2.00	6.00	82.0	0.20
Building Construction	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	8.00	84.0	0.37
Paving	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	7.00	84.0	0.37
Paving	Cement and Mortar Mixers	Diesel	Average	4.00	6.00	10.0	0.56
Paving	Pavers	Diesel	Tier 4 Final	1.00	7.00	81.0	0.42
Paving	Rollers	Diesel	Tier 4 Final	1.00	7.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Tier 4 Final	1.00	6.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	10.0	0.50	LDA,LDT1,LDT2
Demolition	Vendor	—	0.50	HHDT,MHDT
Demolition	Hauling	0.00	0.50	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	5.00	0.50	LDA,LDT1,LDT2
Site Preparation	Vendor	—	0.50	HHDT,MHDT
Site Preparation	Hauling	0.00	0.50	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	7.50	0.50	LDA,LDT1,LDT2
Grading	Vendor	—	0.50	HHDT,MHDT

Grading	Hauling	0.00	0.50	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	14.4	0.50	LDA,LDT1,LDT2
Building Construction	Vendor	2.14	0.50	HHDT,MHDT
Building Construction	Hauling	0.00	0.50	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	17.5	0.50	LDA,LDT1,LDT2
Paving	Vendor	—	0.50	HHDT,MHDT
Paving	Hauling	0.00	0.50	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	2.88	0.50	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	0.50	HHDT,MHDT
Architectural Coating	Hauling	0.00	0.50	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	10.0	0.50	LDA,LDT1,LDT2
Demolition	Vendor	—	0.50	HHDT,MHDT
Demolition	Hauling	0.00	0.50	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	5.00	0.50	LDA,LDT1,LDT2

Site Preparation	Vendor	—	0.50	HHDT,MHDT
Site Preparation	Hauling	0.00	0.50	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	7.50	0.50	LDA,LDT1,LDT2
Grading	Vendor	—	0.50	HHDT,MHDT
Grading	Hauling	0.00	0.50	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	14.4	0.50	LDA,LDT1,LDT2
Building Construction	Vendor	2.14	0.50	HHDT,MHDT
Building Construction	Hauling	0.00	0.50	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	17.5	0.50	LDA,LDT1,LDT2
Paving	Vendor	—	0.50	HHDT,MHDT
Paving	Hauling	0.00	0.50	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	2.88	0.50	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	0.50	HHDT,MHDT
Architectural Coating	Hauling	0.00	0.50	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

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	38,880	12,960	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 (sq. ft.)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	—	—
Site Preparation	—	—	0.50	0.00	—
Grading	—	—	1.50	0.00	—
Paving	0.00	0.00	0.00	0.00	—

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Apartments Mid Rise	—	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	0.00	100.0	0.03	< 0.005

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	9.82	annual days of extreme heat
Extreme Precipitation	6.25	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	9.53	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

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

Air Quality Degradation	N/A	N/A	N/A	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	N/A	N/A	N/A	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 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	13.0
AQ-DPM	47.8
Drinking Water	50.6
Lead Risk Housing	33.8
Pesticides	60.2
Toxic Releases	25.5
Traffic	29.4
Effect Indicators	—
CleanUp Sites	88.6
Groundwater	80.3
Haz Waste Facilities/Generators	78.4
Impaired Water Bodies	0.00
Solid Waste	59.2
Sensitive Population	—
Asthma	1.30
Cardio-vascular	0.35
Low Birth Weights	1.82
Socioeconomic Factor Indicators	—
Education	5.10
Housing	42.3
Linguistic	0.00
Poverty	9.27
Unemployment	41.8

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	98.25484409
Employed	7.070447838
Median HI	99.98716797
Education	—
Bachelor's or higher	98.84511741
High school enrollment	100
Preschool enrollment	87.03965097
Transportation	—
Auto Access	93.63531374
Active commuting	72.88592326
Social	—
2-parent households	41.76825356
Voting	82.36879251
Neighborhood	—
Alcohol availability	83.90863596
Park access	12.6780444
Retail density	34.23585269
Supermarket access	26.26716284
Tree canopy	97.35660208
Housing	—
Homeownership	96.29154369
Housing habitability	96.54818427
Low-inc homeowner severe housing cost burden	59.66893366
Low-inc renter severe housing cost burden	90.94058771
Uncrowded housing	96.93314513

Health Outcomes	—
Insured adults	98.84511741
Arthritis	0.0
Asthma ER Admissions	95.8
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	94.9
Cognitively Disabled	84.2
Physically Disabled	68.4
Heart Attack ER Admissions	99.3
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	87.3
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	76.4
Elderly	8.4
English Speaking	91.4
Foreign-born	28.4
Outdoor Workers	94.9
Climate Change Adaptive Capacity	—
Impervious Surface Cover	92.2
Traffic Density	33.5
Traffic Access	49.7
Other Indices	—
Hardship	0.2
Other Decision Support	—
2016 Voting	78.1

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	4.00
Healthy Places Index Score for Project Location (b)	99.0
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	PCE = Atherton clean energy provider
Construction: Trips and VMT	HRA = 0.5 mile trip length for localized emissions.

Menlo College Site 1 Construction Defaults Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Menlo College Site 1 Construction Defaults
Construction Start Date	1/1/2025
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	4.20
Precipitation (days)	18.8
Location	1000 El Camino Real, Atherton, CA 94027, USA
County	San Mateo
City	Atherton
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	1267
EDFZ	1
Electric Utility	Peninsula Clean Energy
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.21

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Apartments Mid Rise	60.0	Dwelling Unit	1.58	57,600	0.00	—	173	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-5	Use Advanced Engine Tiers
Construction	C-10-A	Water Exposed Surfaces
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	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—
Unmit.	1.16	9.05	0.33	0.02	0.35	0.30	< 0.005	1,849
Mit.	0.40	4.44	0.06	0.02	0.08	0.06	< 0.005	1,849
% Reduced	66%	51%	81%	—	76%	80%	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—
Unmit.	81.3	14.1	0.64	7.09	7.73	0.59	3.43	2,509
Mit.	81.2	4.44	0.06	2.77	2.81	0.06	1.34	2,509
% Reduced	< 0.5%	68%	90%	61%	64%	90%	61%	—
Average Daily (Max)	—	—	—	—	—	—	—	—
Unmit.	2.98	6.09	0.23	0.12	0.35	0.21	0.06	1,220
Mit.	2.46	2.63	0.04	0.05	0.09	0.04	0.02	1,220
% Reduced	17%	57%	83%	56%	73%	82%	58%	—
Annual (Max)	—	—	—	—	—	—	—	—
Unmit.	0.54	1.11	0.04	0.02	0.06	0.04	0.01	202
Mit.	0.45	0.48	0.01	0.01	0.02	0.01	< 0.005	202

% Reduced	17%	57%	83%	56%	73%	82%	58%	—

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	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—
2025	1.16	9.05	0.33	0.02	0.35	0.30	< 0.005	1,849
Daily - Winter (Max)	—	—	—	—	—	—	—	—
2025	81.3	14.1	0.64	7.09	7.73	0.59	3.43	2,509
Average Daily	—	—	—	—	—	—	—	—
2025	2.98	6.09	0.23	0.12	0.35	0.21	0.06	1,220
Annual	—	—	—	—	—	—	—	—
2025	0.54	1.11	0.04	0.02	0.06	0.04	0.01	202

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	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—
2025	0.40	4.44	0.06	0.02	0.08	0.06	< 0.005	1,849
Daily - Winter (Max)	—	—	—	—	—	—	—	—
2025	81.2	4.44	0.06	2.77	2.81	0.06	1.34	2,509
Average Daily	—	—	—	—	—	—	—	—
2025	2.46	2.63	0.04	0.05	0.09	0.04	0.02	1,220
Annual	—	—	—	—	—	—	—	—
2025	0.45	0.48	0.01	0.01	0.02	0.01	< 0.005	202

3. Construction Emissions Details

3.1. Demolition (2025) - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	CO2e
Onsite	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—
Off-Road Equipment	1.47	13.9	0.57	—	0.57	0.52	—	2,502
Demolition	—	—	—	0.00	0.00	—	0.00	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.76	0.03	—	0.03	0.03	—	137
Demolition	—	—	—	0.00	0.00	—	0.00	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.14	0.01	—	0.01	0.01	—	22.7
Demolition	—	—	—	0.00	0.00	—	0.00	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—
Worker	0.03	0.01	0.00	< 0.005	< 0.005	0.00	< 0.005	6.54
Vendor	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
Average Daily	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.36

Vendor	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
Annual	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.06
Vendor	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

3.2. Demolition (2025) - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	CO2e
Onsite	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—
Off-Road Equipment	0.25	2.27	0.05	—	0.05	0.05	—	2,502
Demolition	—	—	—	0.00	0.00	—	0.00	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.12	< 0.005	—	< 0.005	< 0.005	—	137
Demolition	—	—	—	0.00	0.00	—	0.00	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	< 0.005	—	< 0.005	< 0.005	—	22.7
Demolition	—	—	—	0.00	0.00	—	0.00	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—

Worker	0.03	0.01	0.00	< 0.005	< 0.005	0.00	< 0.005	6.54
Vendor	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
Average Daily	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.36
Vendor	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
Annual	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.06
Vendor	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

3.3. Site Preparation (2025) - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	CO2e
Onsite	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—
Off-Road Equipment	1.31	12.1	0.56	—	0.56	0.52	—	2,072
Dust From Material Movement	—	—	—	6.26	6.26	—	3.00	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.07	< 0.005	—	< 0.005	< 0.005	—	11.4
Dust From Material Movement	—	—	—	0.03	0.03	—	0.02	—
Onsite truck	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	—	1.88
Dust From Material Movement	—	—	—	0.01	0.01	—	< 0.005	—
Onsite truck	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	0.01	0.00	< 0.005	< 0.005	0.00	< 0.005	3.93
Vendor	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
Average Daily	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.02
Vendor	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
Annual	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005
Vendor	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

3.4. Site Preparation (2025) - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	CO2e
Onsite	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—
Off-Road Equipment	0.19	1.01	0.04	—	0.04	0.04	—	2,072
Dust From Material Movement	—	—	—	2.44	2.44	—	1.17	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	< 0.005	—	< 0.005	< 0.005	—	11.4
Dust From Material Movement	—	—	—	0.01	0.01	—	0.01	—
Onsite truck	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	—	1.88
Dust From Material Movement	—	—	—	< 0.005	< 0.005	—	< 0.005	—
Onsite truck	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	0.01	0.00	< 0.005	< 0.005	0.00	< 0.005	3.93
Vendor	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
Average Daily	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.02
Vendor	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
Annual	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005
Vendor	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

3.5. Grading (2025) - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	CO2e
Onsite	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—
Off-Road Equipment	1.51	14.1	0.64	—	0.64	0.59	—	2,463
Dust From Material Movement	—	—	—	7.08	7.08	—	3.42	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.15	0.01	—	0.01	0.01	—	27.0
Dust From Material Movement	—	—	—	0.08	0.08	—	0.04	—
Onsite truck	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	—	4.47
Dust From Material Movement	—	—	—	0.01	0.01	—	0.01	—
Onsite truck	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	0.01	0.00	< 0.005	< 0.005	0.00	< 0.005	5.23
Vendor	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
Average Daily	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.06
Vendor	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

Annual	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.01
Vendor	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

3.6. Grading (2025) - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	CO2e
Onsite	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	1.20	0.05	—	0.05	0.05	—	2,463
Dust From Material Movement	—	—	—	2.76	2.76	—	1.34	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	< 0.005	—	< 0.005	< 0.005	—	27.0
Dust From Material Movement	—	—	—	0.03	0.03	—	0.01	—
Onsite truck	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	—	4.47
Dust From Material Movement	—	—	—	0.01	0.01	—	< 0.005	—
Onsite truck	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	0.01	0.00	< 0.005	< 0.005	0.00	< 0.005	5.23
Vendor	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
Average Daily	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.06
Vendor	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
Annual	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.01
Vendor	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

3.7. Building Construction (2025) - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	CO2e
Onsite	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—
Off-Road Equipment	1.07	8.95	0.33	—	0.33	0.30	—	1,807
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—
Off-Road Equipment	1.07	8.95	0.33	—	0.33	0.30	—	1,807
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—
Off-Road Equipment	0.58	4.90	0.18	—	0.18	0.17	—	990
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.89	0.03	—	0.03	0.03	—	164

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—
Worker	0.09	0.03	0.00	0.02	0.02	0.00	< 0.005	23.1
Vendor	< 0.005	0.08	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	18.2
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—
Worker	0.09	0.03	0.00	0.02	0.02	0.00	< 0.005	22.6
Vendor	< 0.005	0.08	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	18.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—
Worker	0.05	0.02	0.00	0.01	0.01	0.00	< 0.005	12.4
Vendor	< 0.005	0.04	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	9.94
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	2.05
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	1.65
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.8. Building Construction (2025) - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	CO2e
Onsite	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—
Off-Road Equipment	0.30	4.34	0.06	—	0.06	0.06	—	1,807
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—

Off-Road Equipment	0.30	4.34	0.06	—	0.06	0.06	—	1,807
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	2.38	0.03	—	0.03	0.03	—	990
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.43	0.01	—	0.01	0.01	—	164
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—
Worker	0.09	0.03	0.00	0.02	0.02	0.00	< 0.005	23.1
Vendor	< 0.005	0.08	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	18.2
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—
Worker	0.09	0.03	0.00	0.02	0.02	0.00	< 0.005	22.6
Vendor	< 0.005	0.08	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	18.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—
Worker	0.05	0.02	0.00	0.01	0.01	0.00	< 0.005	12.4
Vendor	< 0.005	0.04	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	9.94
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	2.05
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	1.65
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Paving (2025) - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	CO2e
Onsite	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—
Off-Road Equipment	0.49	4.63	0.20	—	0.20	0.19	—	995
Paving	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.13	0.01	—	0.01	0.01	—	27.3
Paving	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	< 0.005	—	< 0.005	< 0.005	—	4.51
Paving	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—
Worker	0.03	0.01	0.00	< 0.005	< 0.005	0.00	< 0.005	6.54
Vendor	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
Average Daily	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.18
Vendor	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
Annual	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.03

Vendor	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

3.10. Paving (2025) - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	CO2e
Onsite	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	1.30	0.03	—	0.03	0.03	—	995
Paving	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.04	< 0.005	—	< 0.005	< 0.005	—	27.3
Paving	0.00	—	—	—	—	—	—	—
Onsite truck	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	—	4.51
Paving	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—
Worker	0.03	0.01	0.00	< 0.005	< 0.005	0.00	< 0.005	6.54
Vendor	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
Average Daily	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.18
Vendor	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
Annual	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.03
Vendor	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

3.11. Architectural Coating (2025) - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	CO2e
Onsite	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.88	0.03	—	0.03	0.03	—	134
Architectural Coatings	81.1	—	—	—	—	—	—	—
Onsite truck	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	—	3.67
Architectural Coatings	2.22	—	—	—	—	—	—	—
Onsite truck	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	—	0.61
Architectural Coatings	0.41	—	—	—	—	—	—	—
Onsite truck	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	0.01	0.00	< 0.005	< 0.005	0.00	< 0.005	4.52
Vendor	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
Average Daily	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.12
Vendor	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
Annual	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.02
Vendor	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

3.12. Architectural Coating (2025) - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	CO2e
Onsite	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.65	< 0.005	—	< 0.005	< 0.005	—	134
Architectural Coatings	81.1	—	—	—	—	—	—	—
Onsite truck	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	—	3.67

Architectural Coatings	2.22	—	—	—	—	—	—	—
Onsite truck	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	—	0.61
Architectural Coatings	0.41	—	—	—	—	—	—	—
Onsite truck	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	0.01	0.00	< 0.005	< 0.005	0.00	< 0.005	4.52
Vendor	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
Average Daily	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.12
Vendor	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
Annual	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.02
Vendor	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

4. Operations Emissions Details

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	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	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	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	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	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	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	1/1/2025	1/29/2025	5.00	20.0	—
Site Preparation	Site Preparation	1/30/2025	2/1/2025	5.00	2.00	—
Grading	Grading	2/2/2025	2/7/2025	5.00	4.00	—
Building Construction	Building Construction	2/8/2025	11/15/2025	5.00	200	—
Paving	Paving	11/16/2025	11/30/2025	5.00	10.0	—
Architectural Coating	Architectural Coating	12/1/2025	12/15/2025	5.00	10.0	—

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	Tractors/Loaders/Backhoes	Diesel	Average	3.00	8.00	84.0	0.37
Demolition	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Site Preparation	Graders	Diesel	Average	1.00	8.00	148	0.41
Site Preparation	Rubber Tired Dozers	Diesel	Average	1.00	7.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	7.00	84.0	0.37
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Building Construction	Cranes	Diesel	Average	1.00	6.00	367	0.29
Building Construction	Forklifts	Diesel	Average	1.00	6.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	1.00	6.00	84.0	0.37
Building Construction	Welders	Diesel	Average	3.00	8.00	46.0	0.45
Paving	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Paving	Pavers	Diesel	Average	1.00	6.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	1.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	1.00	7.00	36.0	0.38
Paving	Cement and Mortar Mixers	Diesel	Average	1.00	6.00	10.0	0.56
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	3.00	8.00	84.0	0.37
Demolition	Rubber Tired Dozers	Diesel	Tier 4 Final	1.00	8.00	367	0.40
Demolition	Concrete/Industrial Saws	Diesel	Tier 4 Final	1.00	8.00	33.0	0.73
Site Preparation	Graders	Diesel	Tier 4 Final	1.00	8.00	148	0.41
Site Preparation	Rubber Tired Dozers	Diesel	Tier 4 Final	1.00	7.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	8.00	84.0	0.37
Grading	Graders	Diesel	Tier 4 Final	1.00	8.00	148	0.41
Grading	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	7.00	84.0	0.37
Grading	Rubber Tired Dozers	Diesel	Tier 4 Final	1.00	8.00	367	0.40
Building Construction	Cranes	Diesel	Tier 4 Final	1.00	6.00	367	0.29
Building Construction	Forklifts	Diesel	Tier 4 Final	1.00	6.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	6.00	84.0	0.37
Building Construction	Welders	Diesel	Tier 4 Final	3.00	8.00	46.0	0.45
Paving	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	8.00	84.0	0.37
Paving	Pavers	Diesel	Tier 4 Final	1.00	6.00	81.0	0.42
Paving	Paving Equipment	Diesel	Tier 4 Final	1.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Tier 4 Final	1.00	7.00	36.0	0.38
Paving	Cement and Mortar Mixers	Diesel	Average	1.00	6.00	10.0	0.56
Architectural Coating	Air Compressors	Diesel	Tier 4 Final	1.00	6.00	37.0	0.48

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	12.5	0.50	LDA,LDT1,LDT2
Demolition	Vendor	—	0.50	HHDT,MHDT
Demolition	Hauling	0.00	0.50	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	7.50	0.50	LDA,LDT1,LDT2
Site Preparation	Vendor	—	0.50	HHDT,MHDT
Site Preparation	Hauling	0.00	0.50	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	10.0	0.50	LDA,LDT1,LDT2
Grading	Vendor	—	0.50	HHDT,MHDT
Grading	Hauling	0.00	0.50	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	43.2	0.50	LDA,LDT1,LDT2
Building Construction	Vendor	6.41	0.50	HHDT,MHDT
Building Construction	Hauling	0.00	0.50	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	12.5	0.50	LDA,LDT1,LDT2
Paving	Vendor	—	0.50	HHDT,MHDT

Paving	Hauling	0.00	0.50	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	8.64	0.50	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	0.50	HHDT,MHDT
Architectural Coating	Hauling	0.00	0.50	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	12.5	0.50	LDA,LDT1,LDT2
Demolition	Vendor	—	0.50	HHDT,MHDT
Demolition	Hauling	0.00	0.50	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	7.50	0.50	LDA,LDT1,LDT2
Site Preparation	Vendor	—	0.50	HHDT,MHDT
Site Preparation	Hauling	0.00	0.50	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	10.0	0.50	LDA,LDT1,LDT2
Grading	Vendor	—	0.50	HHDT,MHDT
Grading	Hauling	0.00	0.50	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	43.2	0.50	LDA,LDT1,LDT2

Building Construction	Vendor	6.41	0.50	HHDT,MHDT
Building Construction	Hauling	0.00	0.50	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	12.5	0.50	LDA,LDT1,LDT2
Paving	Vendor	—	0.50	HHDT,MHDT
Paving	Hauling	0.00	0.50	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	8.64	0.50	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	0.50	HHDT,MHDT
Architectural Coating	Hauling	0.00	0.50	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

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	116,640	38,880	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 (sq. ft.)	Acres Paved (acres)

Demolition	0.00	0.00	0.00	—	—
Site Preparation	—	—	1.88	0.00	—
Grading	—	—	4.00	0.00	—
Paving	0.00	0.00	0.00	0.00	—

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Apartments Mid Rise	—	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	0.00	100.0	0.03	< 0.005

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	9.82	annual days of extreme heat
Extreme Precipitation	6.25	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	9.53	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	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	N/A	N/A	N/A	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 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	13.0
AQ-DPM	47.8
Drinking Water	50.6
Lead Risk Housing	33.8
Pesticides	60.2
Toxic Releases	25.5
Traffic	29.4
Effect Indicators	—
CleanUp Sites	88.6

Groundwater	80.3
Haz Waste Facilities/Generators	78.4
Impaired Water Bodies	0.00
Solid Waste	59.2
Sensitive Population	—
Asthma	1.30
Cardio-vascular	0.35
Low Birth Weights	1.82
Socioeconomic Factor Indicators	—
Education	5.10
Housing	42.3
Linguistic	0.00
Poverty	9.27
Unemployment	41.8

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	98.25484409
Employed	7.070447838
Median HI	99.98716797
Education	—
Bachelor's or higher	98.84511741
High school enrollment	100
Preschool enrollment	87.03965097
Transportation	—

Auto Access	93.63531374
Active commuting	72.88592326
Social	—
2-parent households	41.76825356
Voting	82.36879251
Neighborhood	—
Alcohol availability	83.90863596
Park access	12.6780444
Retail density	34.23585269
Supermarket access	26.26716284
Tree canopy	97.35660208
Housing	—
Homeownership	96.29154369
Housing habitability	96.54818427
Low-inc homeowner severe housing cost burden	59.66893366
Low-inc renter severe housing cost burden	90.94058771
Uncrowded housing	96.93314513
Health Outcomes	—
Insured adults	98.84511741
Arthritis	0.0
Asthma ER Admissions	95.8
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	94.9
Cognitively Disabled	84.2
Physically Disabled	68.4
Heart Attack ER Admissions	99.3
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	87.3
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	76.4
Elderly	8.4
English Speaking	91.4
Foreign-born	28.4
Outdoor Workers	94.9
Climate Change Adaptive Capacity	—
Impervious Surface Cover	92.2
Traffic Density	33.5
Traffic Access	49.7
Other Indices	—

Hardship	0.2
Other Decision Support	—
2016 Voting	78.1

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	4.00
Healthy Places Index Score for Project Location (b)	99.0
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

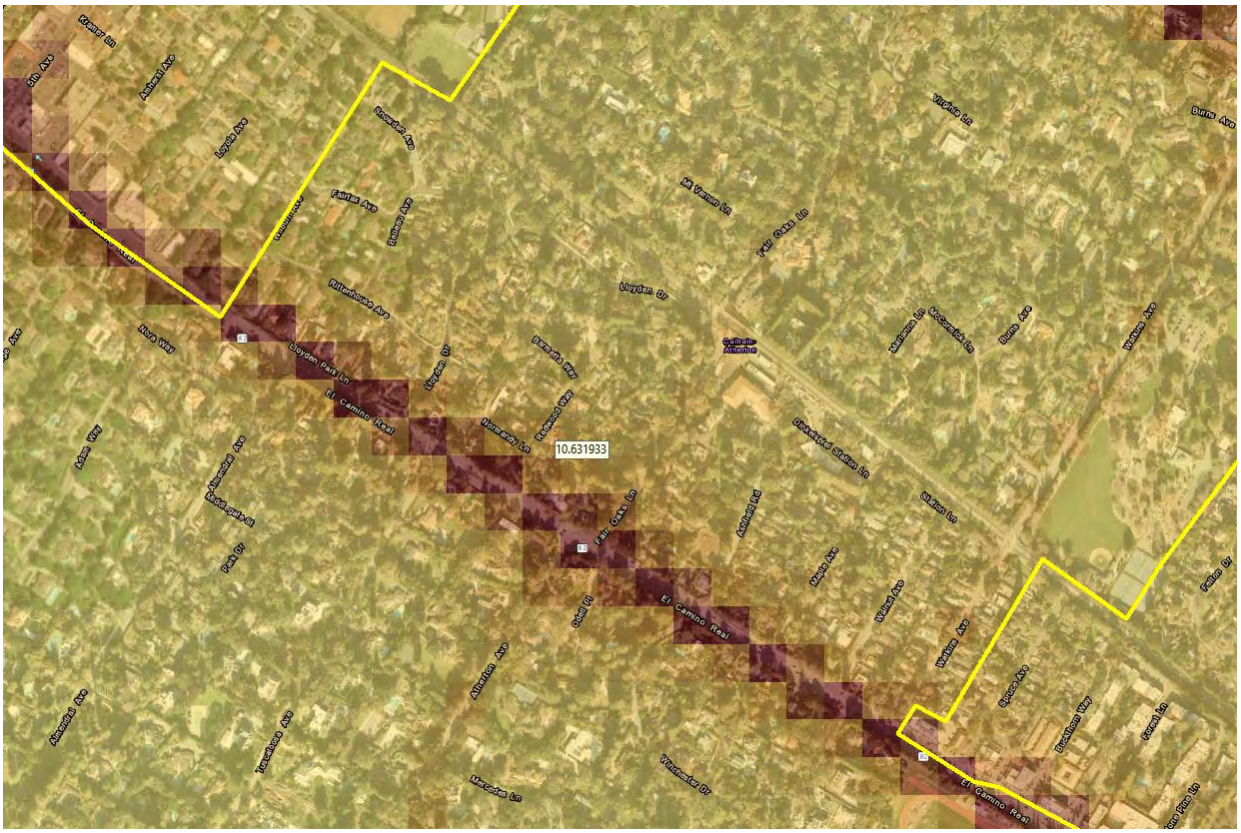
No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Characteristics: Utility Information	PCE in Atherton
Construction: Trips and VMT	HRA = 0.5 mile trip length for localized emissions.

Attachment 2: Cumulative Screening Information

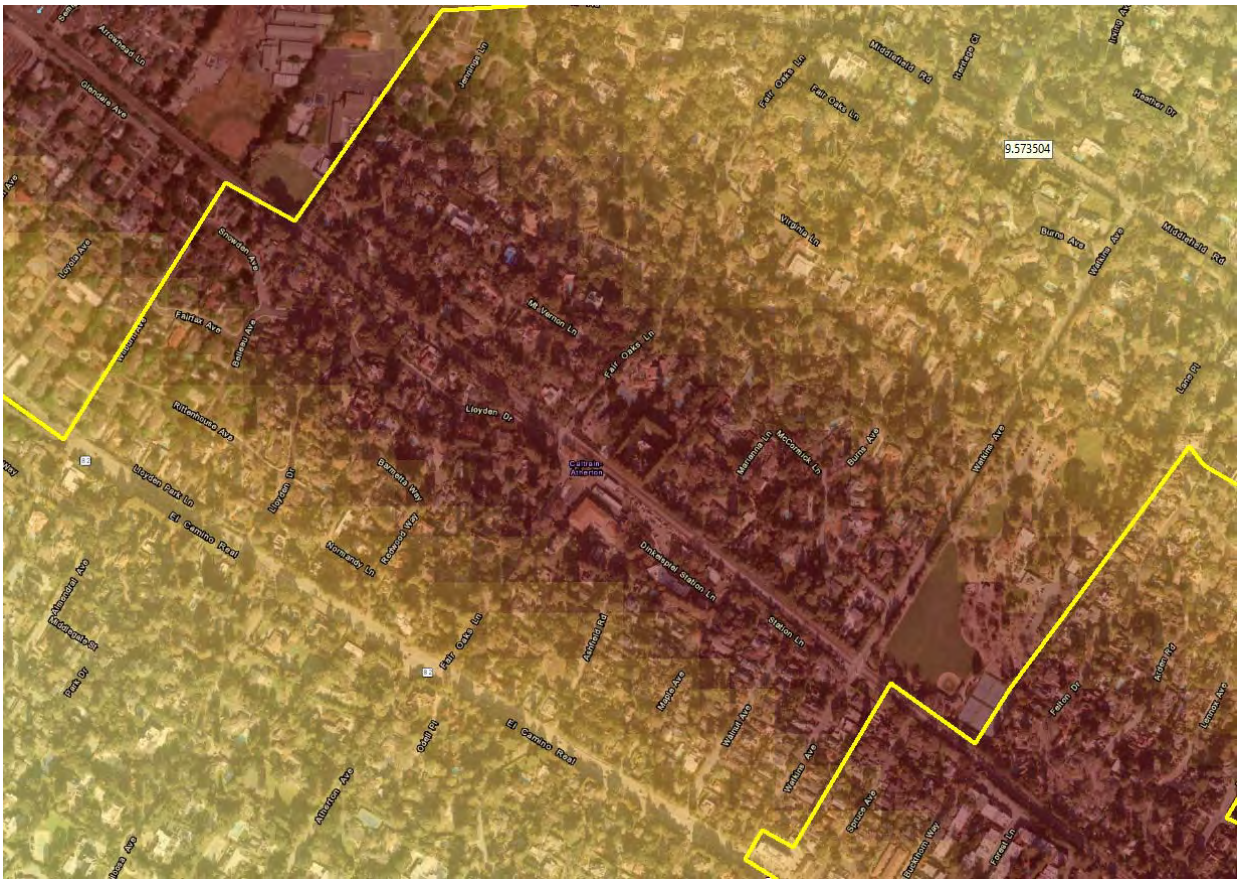
BAAQMD RASTER Screening Data – El Camino Real Cancer Risk Impacts



BAAQMD RASTER Screening Data – El Camino Real $PM_{2.5}$ Concentration Impacts

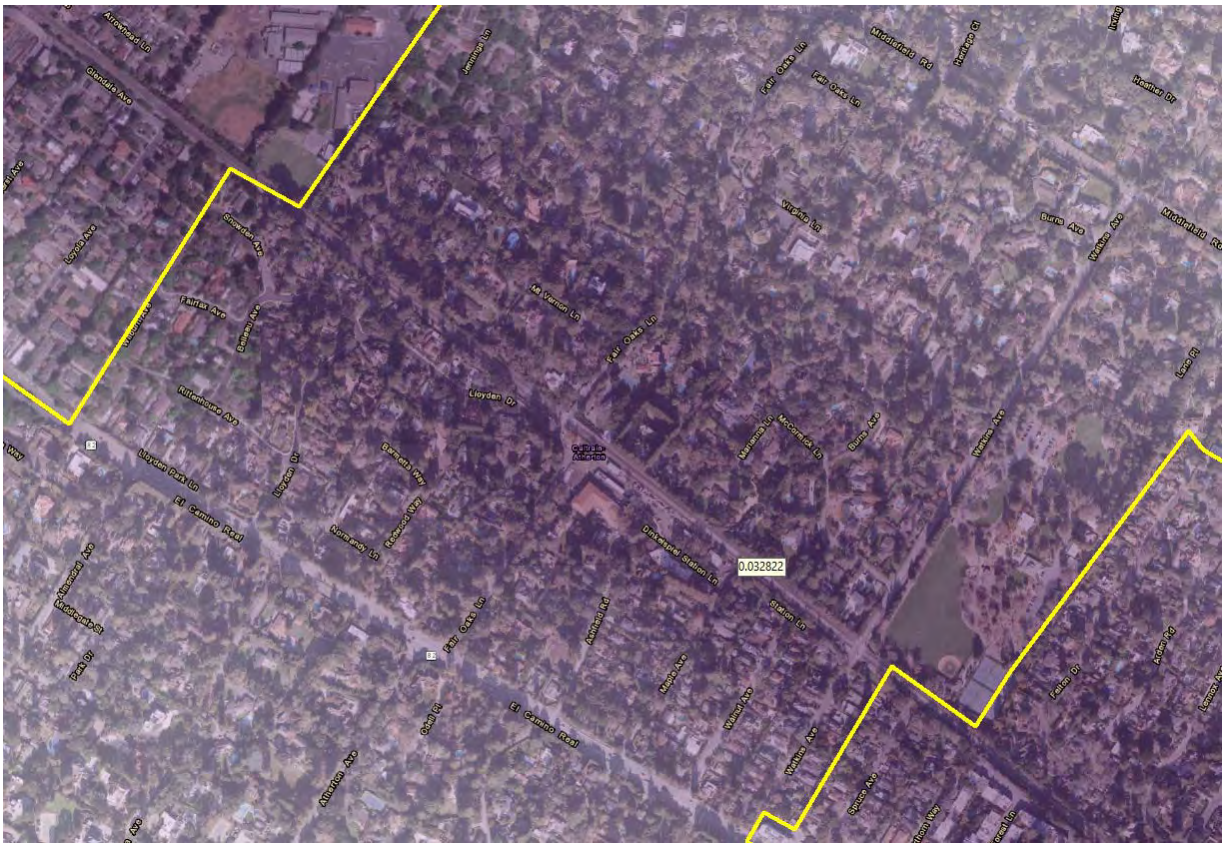
BAAQMD RASTER Screening Data – El Camino Real Hazard Index Impacts

BAAQMD RASTER Screening Data – Railroad Cancer Risk Impacts



BAAQMD RASTER Screening Data – Railroad $PM_{2.5}$ Concentration Impacts

BAAQMD RASTER Screening Data – Railroad Hazard Index Impacts



Bay Area Air Quality Management District

Risk & Hazard Stationary Source Inquiry Form

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

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

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

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

Table A: Requester Contact Information

Date of Request	**10/3/2023**
Contact Name	Jordyn Bauer
Affiliation	Illingworth & Rodkin, Inc.
Phone	707-794-0400 x106
Email	jbauer@illingworthrodkin.com
Project Name	3315 Sierra Road
Address	3315 Sierra Road
City	San Jose
County	Santa Clara
Type (residential, commercial, mixed use, industrial, etc.)	Residential
Project Size (# of units or building square feet)	25

Comments:

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

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

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

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

4. Identify stationary sources within at least a 1000ft radius of project site. Verify that the location of the source on the map matches with the source's address in the Information Table, by using the Google Earth address search box to confirm the source's address location. Please report any mapping errors to the District.

5. List the stationary source information in Table B lue section only.

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

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

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

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

Table B: Google Earth data

Distance from Receptor (feet) or MEI[1]	Plant No.	Facility Name	Address	Cancer Risk[2]	Hazard Risk[2]	$PM_{2.5}$[2]	Source No.[3]	Type of Source[4]	Fuel Code[5]	Status/Comments	Distance Adjustment Multiplier	Adjusted Cancer Risk Estimate	Adjusted Hazard Risk	Adjusted PM2.5
	0	California Water Service Comp	120 Reservior Road	0.27	0.001	--		Gas Dispensing Facility		2021 Dataset	1.00	0.27	0.001	#VALUE!
	7852	California Water Service Company	120 Reservior Road	9.63	0.02	0.01		No Data		2021 Dataset	1.00	9.63	0.02	0.01
	15362	George Roberts	260 Atherton Avenue	4.18	0.001	0.01		Generator		2021 Dataset	1.00	4.18	0.001	0.01
	19395	Religious of Sacred Heart Oakwood	140 Valparaiso Ave	0.51	--	0.001		Generator		2021 Dataset	1.00	0.51	#VALUE!	0.001
	19442	Sequoia Union High School District	555 Middlefield Road	24.35	0.04	0.03		Generator		2021 Dataset	0.41	9.98	0.02	0.01
	23128	Linden Residence	87 Linden Avenue	0.001	--	--		Generator		2021 Dataset	1.00	0.001	#VALUE!	#VALUE!
	23631	Residence of Dr Joe Donahue	99 Linden Avenue	0.01	--	--		No Data		2021 Dataset	1.00	0.01	#VALUE!	#VALUE!
	23730	John B Rohrer - Private Residence	12 Cowell Lane	--	--	--		Generator		2021 Dataset	1.00	#VALUE!	#VALUE!	#VALUE!
	23862	130 Britton LLCI	130 Britton Avenue	0.05	--	0.06		No Data		2021 Dataset	1.00	0.05	#VALUE!	0.06
	23926	142 Britton Avenue LLC	142 Britton Avenue	0.01	--	--		Generator		2021 Dataset	1.00	0.01	#VALUE!	#VALUE!
	24244	Nevitt Magruder Residence	124 Austin Avenue	0.01	--	--		Generator		2021 Dataset	1.00	0.01	#VALUE!	#VALUE!
	24280	John Freund Atherton Residence	86 Alejandra Avenue	--	--	--		Generator		2021 Dataset	1.00	#VALUE!	#VALUE!	#VALUE!
	110721	Marsh Road Shell	743 Marsh Rd	0.09	--	--		Gas Dispensing Facility		2021 Dataset	1.00	0.09	#VALUE!	#VALUE!
	201322	Pink Sunset	141 TUSCALOOSA AVE	24.37	0.01	0.03		Generator		2021 Dataset	0.41	9.99	0.003	0.01

Footnotes:

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

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

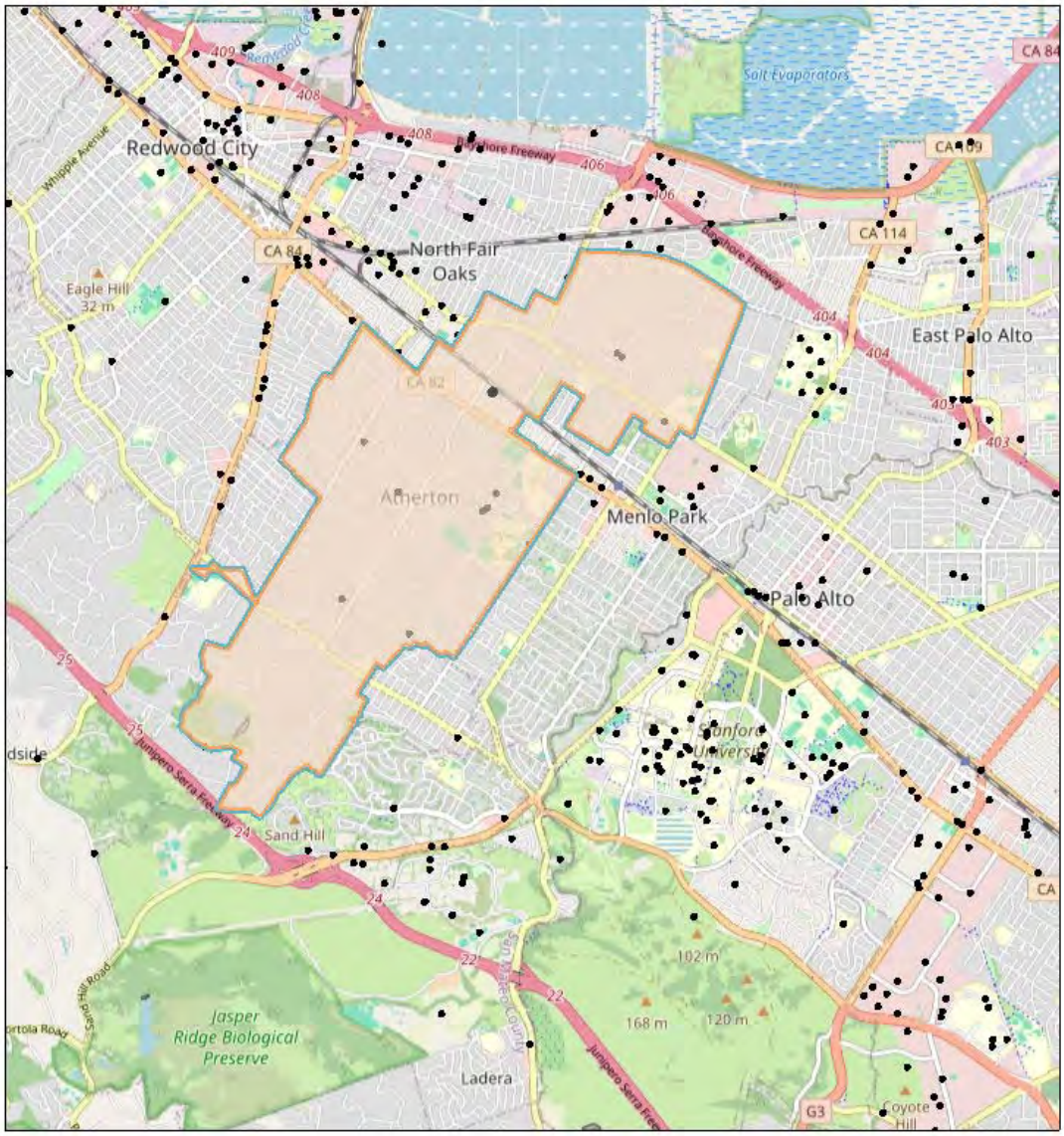
Date last updated:
03/13/2018

Screening Report

Area of Interest (AOI) Information

Area : 149,608,939.57 ft²

Jan 2 2024 13:04:20 Pacific Standard Time



Summary

Name	Count	Area(ft²)	Length(ft)
Permitted Stationary Sources	14	N/A	N/A

Permitted Stationary Sources

#	Facility_I	Facility_N	Address	City	State
1	7852	California Water Service Company	120 Reservior Road	Atherton	CA
2	15362	George Roberts	260 Atherton Avenue	Atherton	CA
3	19395	Religious of Sacred Heart Oakwood	140 Valparaiso Ave	Atherton	CA
4	19442	Sequoia Union High School District	555 Middlefield Road	Atherton	CA
5	23128	Linden Residence	87 Linden Avenue	Atherton	CA
6	23631	Residence of Dr Joe Donahue	99 Linden Avenue	Atherton	CA
7	23730	John B Rohrer - Private Residence	12 Cowell Lane	Atherton	CA
8	23862	130 Britton LLCI	130 Britton Avenue	Atherton	CA
9	23926	142 Britton Avenue LLC	142 Britton Avenue	Atherton	CA
10	24244	Nevitt Magruder Residence	124 Austin Avenue	Atherton	CA
11	24280	John Freund Atherton Residence	86 Alejandra Avenue	Atherton	CA
12	110721	Marsh Road Shell	743 Marsh Rd	Menlo Park	CA
13	201322	Pink Sunset	141 TUSCALOOSA AVE	Atherton	CA
14	0	California Water Service Company	120 Reservior Road	Atherton	CA

#	Zip	County	Latitude	Longitude	Details
1	94027	San Mateo	37.430515	-122.231039	*No Data*
2	94027	San Mateo	37.444294	-122.214949	Generator
3	94027	San Mateo	37.449366	-122.193030	Generator
4	94027	San Mateo	37.460766	-122.177146	Generator
5	94027	San Mateo	37.466820	-122.182225	Generator
6	94027	San Mateo	37.467146	-122.182751	*No Data*
7	94027	San Mateo	37.441100	-122.207077	Generator
8	94027	San Mateo	37.452829	-122.197944	*No Data*
9	94027	San Mateo	37.452472	-122.198524	Generator
10	94027	San Mateo	37.458900	-122.212400	Generator
11	94027	San Mateo	37.454110	-122.196894	Generator
12	94025	San Mateo	37.474141	-122.188542	Gas Dispensing Facility
13	94027	San Mateo	37.454307	-122.208347	Generator
14	94027	San Mateo	37.430515	-122.231039	Gas Dispensing Facility

#	NAICS	NAICS_Sect	NAICS_Subs	NAICS_Indu	Cancer_Ris
1	221310	Utilities	Utilities	Water Supply and Irrigation Systems	9.625000
2	531110	Real Estate and Rental and Leasing	Real Estate	Lessors of Residential Buildings and Dwellings	4.183000
3	813110	Other Services (except Public Administration)	Religious, Grantmaking, Civic, Professional, and Similar Organizations	Religious Organizations	0.513000
4	611110	Educational Services	Educational Services	Elementary and Secondary Schools	24.346000
5	423610	Wholesale Trade	Merchant Wholesalers, Durable Goods	Electrical Apparatus and Equipment, Wiring Supplies, and Related Equipment Merchant Wholesalers	0.001000
6	531311	Real Estate and Rental and Leasing	Real Estate	Residential Property Managers	0.008000
7	236115	Construction	Construction of Buildings	New Single-Family Housing Construction (except Operative Builders)	0.000000
8	721310	Accommodation and Food Services	Accommodation	Rooming and Boarding Houses	0.049000
9	423610	Wholesale Trade	Merchant Wholesalers, Durable Goods	Electrical Apparatus and Equipment, Wiring Supplies, and Related Equipment Merchant Wholesalers	0.005000
10	531120	Real Estate and Rental and Leasing	Real Estate	Lessors of Nonresidential Buildings (except Miniwarehouses)	0.014000
11	531120	Real Estate and Rental and Leasing	Real Estate	Lessors of Nonresidential Buildings (except Miniwarehouses)	0.000000
12	447110	Retail Trade	Gasoline Stations	Gasoline Stations with Convenience Stores	0.089000
13	722511	Accommodation and Food Services	Food Services and Drinking Places	Full-Service Restaurants	24.369000
14	221310	Utilities	Utilities	Water Supply and Irrigation Systems	0.268000

#	Chronic_Ha	PM25	Count
1	0.018000	0.012000	1
2	0.001000	0.006000	1
3	0.000000	0.001000	1
4	0.038000	0.032000	1
5	0.000000	0.000000	1
6	0.000000	0.000000	1
7	0.000000	0.000000	1
8	0.000000	0.057000	1
9	0.000000	0.000000	1
10	0.000000	0.000000	1
11	0.000000	0.000000	1
12	0.000000	0.000000	1
13	0.007000	0.033000	1
14	0.001000	0.000000	1

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

Attachment 3: Project Construction Emissions and Health Risk Calculations

Construction Health Risk Assessment and Calculations

Menlo School Site 2, Atherton, 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 ($g/s/m^2$)
2025	Construction	0.0128	CON_DPM	25.6	0.00779	9.81E-04	3,954	2.48E-07

Construction Hours

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

DPM Construction Emissions and Modeling Emission Rates - With Mitigation

Construction Year	Activity	DPM (ton/year)	Area Source	DPM Emissions (lb/yr)	DPM Emissions (lb/hr)	DPM Emissions (g/s)	Modeled Area (m^2)	DPM Emission Rate ($g/s/m^2$)
2025	Construction	0.0015	CON_DPM	3.0	0.00092	1.16E-04	3,954	2.94E-08

Construction Hours

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

Menlo School Site 2, Atherton, 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 $g/s/m^2$
2025	Construction	CON_FUG	0.0027	5.4	0.00163	2.05E-04	3,954	5.19E-08

Construction Hours

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

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

Construction Year	Activity	Area Source	PM2.5 Emissions (ton/year)	PM2.5 Emissions (lb/yr)	PM2.5 Emissions (lb/hr)	PM2.5 Emissions (g/s)	Modeled Area (m^2)	PM2.5 Emission Rate $g/s/m^2$
2025	Construction	CON_FUG	0.0011	2.2	0.00067	8.39E-05	3,954	2.12E-08

Construction Hours

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

Menlo School Site 2, Atherton, CA
- Construction Health Impact Summary

Maximum Impacts at MEI Location - 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	Cancer Risk (per million): Adult	Hazard Index (-)	Maximum Annual PM2.5 Concentration ($\mu g/m^3$)
2025	0.0678	0.0311	**12.05**	0.19	0.01	0.10

Maximum Impacts at MEI Location - 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	Cancer Risk (per million): Adult	Hazard Index (-)	Maximum Annual PM2.5 Concentration ($\mu g/m^3$)
2025	0.0080	0.0127	1.43	0.02	0.002	0.02

- Tier 4 final engines and BMPs as Mitigation Measures.

Menlo School Site 2, Atherton, 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)		Age	Infant/Child	Modeled DPM Conc (ug/m3)		Age	Adult			
Exposure Year	**Exposure Duration (years)**	**Age**	**Year**	**Annual**	**Sensitivity Factor**	**Cancer Risk (per million)**	**Year**	**Annual**	**Sensitivity Factor**	**Cancer Risk (per million)**	**Hazard Index**	**Fugitive PM2.5**	**Total PM2.5**
0	0.25	-0.25 - 0*	2025	0.0080	10	0.11	2025	0.0080	-	-			
1	1	0 - 1	2025	0.0080	10	1.32	2025	0.0080	1	0.02	0.002	0.01	0.02
2	1	1 - 2		0.0000	10	0.00		0.0000	1	0.00			
3	1	2 - 3		0.0000	3	0.00		0.0000	1	0.00			
4	1	3 - 4		0.0000	3	0.00		0.0000	1	0.00			
5	1	4 - 5		0.0000	3	0.00		0.0000	1	0.00			
6	1	5 - 6		0.0000	3	0.00		0.0000	1	0.00			
7	1	6 - 7		0.0000	3	0.00		0.0000	1	0.00			
8	1	7 - 8		0.0000	3	0.00		0.0000	1	0.00			
9	1	8 - 9		0.0000	3	0.00		0.0000	1	0.00			
10	1	9 - 10		0.0000	3	0.00		0.0000	1	0.00			
11	1	10 - 11		0.0000	3	0.00		0.0000	1	0.00			
12	1	11 - 12		0.0000	3	0.00		0.0000	1	0.00			
13	1	12 - 13		0.0000	3	0.00		0.0000	1	0.00			
14	1	13 - 14		0.0000	3	0.00		0.0000	1	0.00			
15	1	14 - 15		0.0000	3	0.00		0.0000	1	0.00			
16	1	15 - 16		0.0000	3	0.00		0.0000	1	0.00			
17	1	16-17		0.0000	1	0.00		0.0000	1	0.00			
18	1	17-18		0.0000	1	0.00		0.0000	1	0.00			
19	1	18-19		0.0000	1	0.00		0.0000	1	0.00			
20	1	19-20		0.0000	1	0.00		0.0000	1	0.00			
21	1	20-21		0.0000	1	0.00		0.0000	1	0.00			
22	1	21-22		0.0000	1	0.00		0.0000	1	0.00			
23	1	22-23		0.0000	1	0.00		0.0000	1	0.00			
24	1	23-24		0.0000	1	0.00		0.0000	1	0.00			
25	1	24-25		0.0000	1	0.00		0.0000	1	0.00			
26	1	25-26		0.0000	1	0.00		0.0000	1	0.00			
27	1	26-27		0.0000	1	0.00		0.0000	1	0.00			
28	1	27-28		0.0000	1	0.00		0.0000	1	0.00			
29	1	28-29		0.0000	1	0.00		0.0000	1	0.00			
30	1	29-30		0.0000	1	0.00		0.0000	1	0.00			
Total Increased Cancer Risk						**1.43**				**0.02**			

* Third trimester of pregnancy

Menlo School Site 2, Atherton, CA - Construction Impacts - Without Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at Off-Site MEI Location - 1.5 meter receptor height

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

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

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

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

Values

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

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

			Infant/Child - Exposure Information				Adult - Exposure Information					Maximum	
			DPM Conc (ug/m3)		Age	Infant/Child	Modeled DPM Conc (ug/m3)		Age	Adult			
Exposure Year	**Exposure Duration (years)**	**Age**	**Year**	**Annual**	**Sensitivity Factor**	**Cancer Risk (per million)**	**Year**	**Annual**	**Sensitivity Factor**	**Cancer Risk (per million)**	**Hazard Index**	**Fugitive PM2.5**	**Total PM2.5**
0	0.25	-0.25 - 0*	2025	0.0678	10	0.92	2025	0.0678	-	-			
1	1	0 - 1	2025	0.0678	10	11.13	2025	0.0678	1	0.19	0.01	0.03	0.10
2	1	1 - 2		0.0000	10	0.00		0.0000	1	0.00			
3	1	2 - 3		0.0000	3	0.00		0.0000	1	0.00			
4	1	3 - 4		0.0000	3	0.00		0.0000	1	0.00			
5	1	4 - 5		0.0000	3	0.00		0.0000	1	0.00			
6	1	5 - 6		0.0000	3	0.00		0.0000	1	0.00			
7	1	6 - 7		0.0000	3	0.00		0.0000	1	0.00			
8	1	7 - 8		0.0000	3	0.00		0.0000	1	0.00			
9	1	8 - 9		0.0000	3	0.00		0.0000	1	0.00			
10	1	9 - 10		0.0000	3	0.00		0.0000	1	0.00			
11	1	10 - 11		0.0000	3	0.00		0.0000	1	0.00			
12	1	11 - 12		0.0000	3	0.00		0.0000	1	0.00			
13	1	12 - 13		0.0000	3	0.00		0.0000	1	0.00			
14	1	13 - 14		0.0000	3	0.00		0.0000	1	0.00			
15	1	14 - 15		0.0000	3	0.00		0.0000	1	0.00			
16	1	15 - 16		0.0000	3	0.00		0.0000	1	0.00			
17	1	16-17		0.0000	1	0.00		0.0000	1	0.00			
18	1	17-18		0.0000	1	0.00		0.0000	1	0.00			
19	1	18-19		0.0000	1	0.00		0.0000	1	0.00			
20	1	19-20		0.0000	1	0.00		0.0000	1	0.00			
21	1	20-21		0.0000	1	0.00		0.0000	1	0.00			
22	1	21-22		0.0000	1	0.00		0.0000	1	0.00			
23	1	22-23		0.0000	1	0.00		0.0000	1	0.00			
24	1	23-24		0.0000	1	0.00		0.0000	1	0.00			
25	1	24-25		0.0000	1	0.00		0.0000	1	0.00			
26	1	25-26		0.0000	1	0.00		0.0000	1	0.00			
27	1	26-27		0.0000	1	0.00		0.0000	1	0.00			
28	1	27-28		0.0000	1	0.00		0.0000	1	0.00			
29	1	28-29		0.0000	1	0.00		0.0000	1	0.00			
30	1	29-30		0.0000	1	0.00		0.0000	1	0.00			
Total Increased Cancer Risk						**12.05**				**0.19**			

* Third trimester of pregnancy

Menlo College Site 1, Atherton, CA

DPM Emissions and Modeling Emission Rates - Unmitigated

Construction Year	Activity	DPM (ton/year)	Area Source	DPM Emissions (lb/yr)	(lb/hr)	(g/s)	Modeled Area (m^2)	DPM Emission Rate ($g/s/m^2$)
2025	Construction	0.0415	CON_DPM	83.0	0.02528	3.19E-03	5,267	6.05E-07

Construction Hours

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

DPM Construction Emissions and Modeling Emission Rates - With Mitigation

Construction Year	Activity	DPM (ton/year)	Area Source	DPM Emissions (lb/yr)	(lb/hr)	(g/s)	Modeled Area (m^2)	DPM Emission Rate ($g/s/m^2$)
2025	Construction	0.0071	CON_DPM	14.3	0.00434	5.47E-04	5,267	1.04E-07

Construction Hours

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

Menlo College Site 1, Atherton, CA

PM2.5 Fugitive Dust Emissions for Modeling - Unmitigated

Construction Year	Activity	Area Source	PM2.5 Emissions (ton/year)	(lb/yr)	(lb/hr)	(g/s)	Modeled Area (m^2)	PM2.5 Emission Rate $g/s/m^2$
2025	Construction	CON_FUG	0.0103	20.6	0.00627	7.90E-04	5,267	1.50E-07

Construction Hours

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

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

Construction Year	Activity	Area Source	PM2.5 Emissions (ton/year)	(lb/yr)	(lb/hr)	(g/s)	Modeled Area (m^2)	PM2.5 Emission Rate $g/s/m^2$
2025	Construction	CON_FUG	0.0043	8.6	0.00261	3.29E-04	5,267	6.25E-08

Construction Hours

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

Menlo College Site 1, Atherton, CA
- Construction Health Impact Summary

Maximum Impacts at MEI Location - Without Mitigation

Emissions Year	Maximum Concentrations		Cancer Risk (per million)		Hazard Index	Maximum Annual PM2.5 Concentration
	Exhaust PM10/DPM ($\mu g/m^3$)	Fugitive PM2.5 ($\mu g/m^3$)	Infant/Child	Adult	(-)	($\mu g/m^3$)
2025	0.1897	0.1001	**33.73**	0.54	0.04	0.29

Maximum Impacts at MEI Location - With Mitigation

Emissions Year	Maximum Concentrations		Cancer Risk (per million)		Hazard Index	Maximum Annual PM2.5 Concentration
	Exhaust PM10/DPM ($\mu g/m^3$)	Fugitive PM2.5 ($\mu g/m^3$)	Infant/Child	Adult	(-)	($\mu g/m^3$)
2025	0.0326	0.0417	5.80	0.09	0.01	0.07

- Tier 4 final engines and BMPs as Mitigation Measures.

Menlo College Site 1, Atherton, 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						
			DPM Conc (ug/m3)				Modeled DPM Conc (ug/m3)				Maximum		
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*	2025	0.1897	10	2.58	2025	0.1897	-	-			
1	1	0 - 1	2025	0.1897	10	31.15	2025	0.1897	1	0.54	0.04	0.10	0.29
2	1	1 - 2		0.0000	10	0.00		0.0000	1	0.00			
3	1	2 - 3		0.0000	3	0.00		0.0000	1	0.00			
4	1	3 - 4		0.0000	3	0.00		0.0000	1	0.00			
5	1	4 - 5		0.0000	3	0.00		0.0000	1	0.00			
6	1	5 - 6		0.0000	3	0.00		0.0000	1	0.00			
7	1	6 - 7		0.0000	3	0.00		0.0000	1	0.00			
8	1	7 - 8		0.0000	3	0.00		0.0000	1	0.00			
9	1	8 - 9		0.0000	3	0.00		0.0000	1	0.00			
10	1	9 - 10		0.0000	3	0.00		0.0000	1	0.00			
11	1	10 - 11		0.0000	3	0.00		0.0000	1	0.00			
12	1	11 - 12		0.0000	3	0.00		0.0000	1	0.00			
13	1	12 - 13		0.0000	3	0.00		0.0000	1	0.00			
14	1	13 - 14		0.0000	3	0.00		0.0000	1	0.00			
15	1	14 - 15		0.0000	3	0.00		0.0000	1	0.00			
16	1	15 - 16		0.0000	3	0.00		0.0000	1	0.00			
17	1	16-17		0.0000	1	0.00		0.0000	1	0.00			
18	1	17-18		0.0000	1	0.00		0.0000	1	0.00			
19	1	18-19		0.0000	1	0.00		0.0000	1	0.00			
20	1	19-20		0.0000	1	0.00		0.0000	1	0.00			
21	1	20-21		0.0000	1	0.00		0.0000	1	0.00			
22	1	21-22		0.0000	1	0.00		0.0000	1	0.00			
23	1	22-23		0.0000	1	0.00		0.0000	1	0.00			
24	1	23-24		0.0000	1	0.00		0.0000	1	0.00			
25	1	24-25		0.0000	1	0.00		0.0000	1	0.00			
26	1	25-26		0.0000	1	0.00		0.0000	1	0.00			
27	1	26-27		0.0000	1	0.00		0.0000	1	0.00			
28	1	27-28		0.0000	1	0.00		0.0000	1	0.00			
29	1	28-29		0.0000	1	0.00		0.0000	1	0.00			
30	1	29-30		0.0000	1	0.00		0.0000	1	0.00			
Total Increased Cancer Risk						**33.73**				**0.54**			

* Third trimester of pregnancy

Menlo College Site 1, Atherton, 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

Exposure Year	Exposure Duration (years)	Age	Infant/Child - Exposure Information			Infant/Child Cancer Risk (per million)	Adult - Exposure Information			Adult Cancer Risk (per million)	Maximum		
			DPM Conc (ug/m3)		Age Sensitivity Factor		Modeled DPM Conc (ug/m3)		Age Sensitivity Factor		Hazard Index	Fugitive PM2.5	Total PM2.5
			Year	Annual			Year	Annual					
0	0.25	-0.25 - 0*	2025	0.0326	10	0.44	2025	0.0326	-	-			
1	1	0 - 1	2025	0.0326	10	5.36	2025	0.0326	1	0.09	0.007	0.04	0.07
2	1	1 - 2		0.0000	10	0.00		0.0000	1	0.00			
3	1	2 - 3		0.0000	3	0.00		0.0000	1	0.00			
4	1	3 - 4		0.0000	3	0.00		0.0000	1	0.00			
5	1	4 - 5		0.0000	3	0.00		0.0000	1	0.00			
6	1	5 - 6		0.0000	3	0.00		0.0000	1	0.00			
7	1	6 - 7		0.0000	3	0.00		0.0000	1	0.00			
8	1	7 - 8		0.0000	3	0.00		0.0000	1	0.00			
9	1	8 - 9		0.0000	3	0.00		0.0000	1	0.00			
10	1	9 - 10		0.0000	3	0.00		0.0000	1	0.00			
11	1	10 - 11		0.0000	3	0.00		0.0000	1	0.00			
12	1	11 - 12		0.0000	3	0.00		0.0000	1	0.00			
13	1	12 - 13		0.0000	3	0.00		0.0000	1	0.00			
14	1	13 - 14		0.0000	3	0.00		0.0000	1	0.00			
15	1	14 - 15		0.0000	3	0.00		0.0000	1	0.00			
16	1	15 - 16		0.0000	3	0.00		0.0000	1	0.00			
17	1	16-17		0.0000	1	0.00		0.0000	1	0.00			
18	1	17-18		0.0000	1	0.00		0.0000	1	0.00			
19	1	18-19		0.0000	1	0.00		0.0000	1	0.00			
20	1	19-20		0.0000	1	0.00		0.0000	1	0.00			
21	1	20-21		0.0000	1	0.00		0.0000	1	0.00			
22	1	21-22		0.0000	1	0.00		0.0000	1	0.00			
23	1	22-23		0.0000	1	0.00		0.0000	1	0.00			
24	1	23-24		0.0000	1	0.00		0.0000	1	0.00			
25	1	24-25		0.0000	1	0.00		0.0000	1	0.00			
26	1	25-26		0.0000	1	0.00		0.0000	1	0.00			
27	1	26-27		0.0000	1	0.00		0.0000	1	0.00			
28	1	27-28		0.0000	1	0.00		0.0000	1	0.00			
29	1	28-29		0.0000	1	0.00		0.0000	1	0.00			
30	1	29-30		0.0000	1	0.00		0.0000	1	0.00			
Total Increased Cancer Risk						**5.80**				**0.09**			

* Third trimester of pregnancy