Appendix A

Air Quality Technical Memorandum

TECHNICAL MEMORANDUM

To:	RPCA Solar 15, LLC
From:	Olivia Chan and Mayra Garcia, Kimley-Horn and Associates, Inc.
Date:	October 30, 2024
Subject:	Lear Avenue Solar Project– Air Quality Analysis

PURPOSE

The purpose of this memorandum is to assess potential impacts due to air pollutant emissions associated with construction and operation of the Lear Avenue Solar Project (Project), proposed to be located in unincorporated San Bernardino County (County), California.

PROJECT LOCATION

The Project would comprise 62 acres[1] of an 80-acre parcel (Assessor Parcel Number [APN] 0612-131-01) generally located at the southeast corner of the intersection of Mesa Drive and Lear Avenue (Project Site). The Project Site is bordered by Mesa Drive to the north, Shoshone Valley Road to the east, Cove View Road to the south, and Lear Avenue to the west. Regional access to the Project Site is provided via State Route 62 (SR 62) to the south (see **Figure 1: Regional Vicinity Map**). Local access to the Project Site would be accessed via Lear Avenue located west of and adjacent to the Project Site (see **Figure 2: Local Vicinity Map**).

PROJECT DESCRIPTION

RPCA Solar 15, LLC (Applicant) proposes to construct and operate the Lear Avenue Solar Project (Project), a single-axis tracker ground-mounted photovoltaic (PV) community solar and battery energy storage system (BESS) with up to 9.9 megawatts of alternating current (MWac) in capacity. The Applicant is requesting Conditional Use Permit (CUP) approval from the County. The Project would consist of the following components: solar modules, BESS, underground electrical conductors, Balance of System Equipment, access roads, and fencing. The Project would be interconnected to an existing electrical distribution system owned by Southern California Edison (SCE) located along the western Project Site boundary.

[1] The modeling completed for this analysis was done for a larger Project Site (71 acres). The Project has since been refined to be 62 acres. Therefore, the analysis provided herein is considered conservative.

Figure 1: REGIONAL VICINITY MAP
Lear Avenue Solar Project
Initial Study/Mitigated Negative Declaration

NOT TO SCALE

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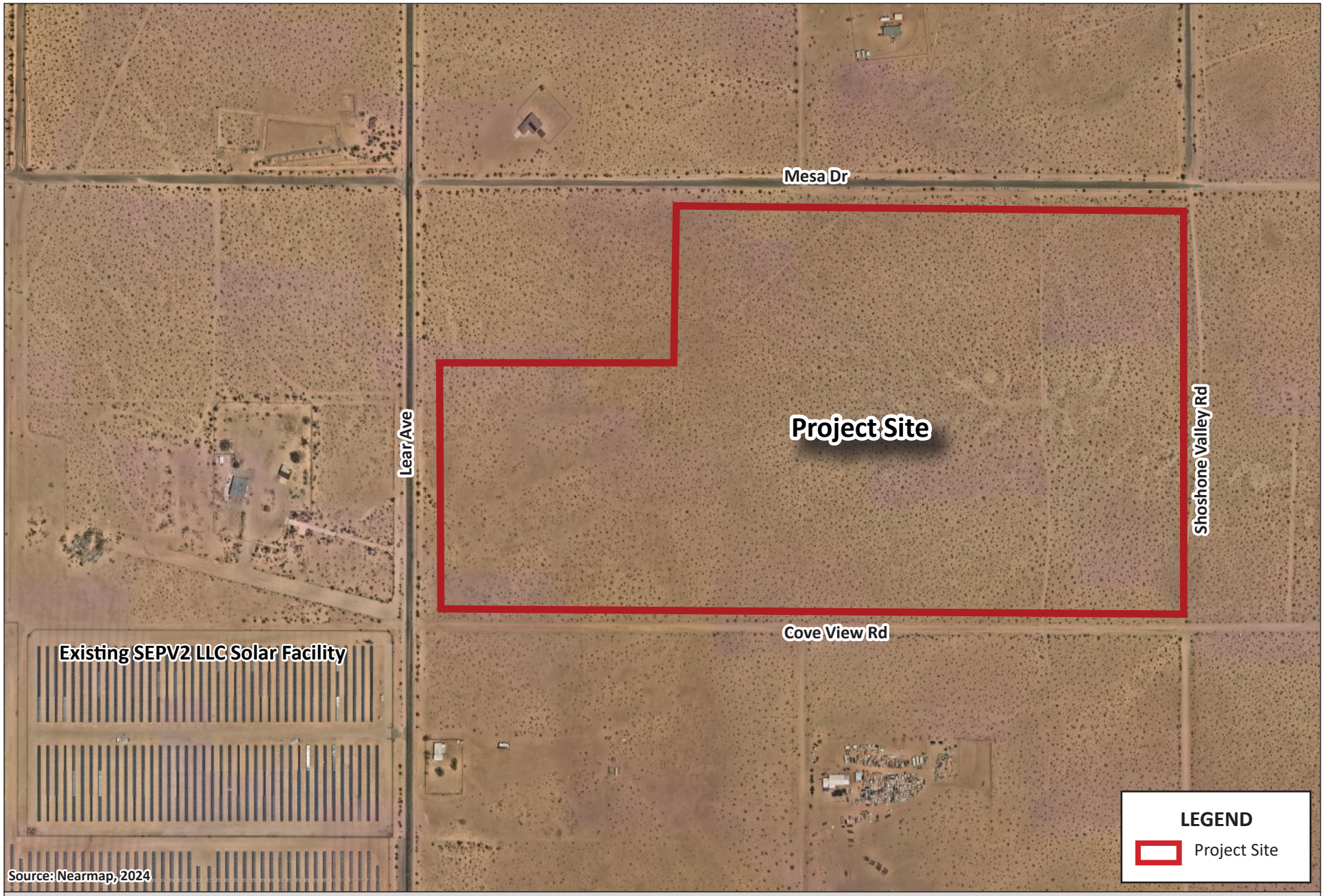

Figure 2: LOCAL VICINITY MAP
Lear Avenue Solar Project
Initial Study/Mitigated Negative Declaration

NOT TO SCALE

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The Project would include solar modules and string inverters. The modules would be manufactured off-site and delivered by truck in wooden crates or cardboard boxes. The solar modules would be fully enclosed in metal and glass frames and would rotate throughout the day to maximize sun exposure. The frames of solar modules would be mounted on steel posts, which would be driven or screwed into the ground to a depth between 10 and 15 feet. The posts would be made from galvanized or corrosion-resistant metal to minimize the potential for corrosion over the lifespan of the Project. The foundations securing the solar modules would be designed to withstand high winds and snow loads. To protect equipment from potential ponding or overland stormwater flow, all equipment skids and pads would be elevated at a minimum of 12 inches above the 100-year flood elevation. The overall height of the solar array would be no more than 15 feet tall.

The BESS would store electrical energy produced by the Project during the day and flexibly dispatch it to the grid when it is most needed, typically in the evening. The BESS would be comprised of six battery banks located in the southwest corner of the PV array. Each battery bank would be approximately the size of a standard shipping container. The BESS would include redundant safety measures, such as hydrogen detection, active ventilation, fire detection and remote shutdown, fireproof insulation, and internal fire suppression technology.

Underground electrical conductors would be installed in trenches at a depth in compliance with the National Electric Code. The conductors would be buried in either a polyvinylchloride (PVC) conduit or equivalent.

The Balance of System Equipment, including, but not limited to, inverters, AC combiner boxes, transformers, and/or medium voltage switchgear may be installed near the solar array within the Project's fence line. The Balance of System Equipment would be installed on H-Frames and concrete pads and in compliance with equipment manufacturer instructions. Low voltage conductors connecting the solar modules to the Balance of System Equipment would be run underground in conduit. The medium voltage conductors would mostly run underground in a similar fashion to low voltage wiring. A portion of the medium voltage conductor would ultimately come above ground and be strung along new distribution poles on the Project Site, ultimately terminating at the electrical distribution system along Lear Avenue, maintained by SCE.

Site access would be provided via a new driveway constructed from Lear Avenue. Where necessary, the access roads would be upgraded using gravel and geotextile fabric and extended into the Project's fence line. A perimeter access road would encircle the whole solar array. Additionally, two internal access roads would cross the entire width of the Project. The roads would be wide enough to accommodate emergency vehicles (20 feet wide and 15 feet wide for the perimeter and internal access roads, respectively) and designed in compliance with County building and fire department standards. Approximately 15 feet of space would be maintained between each row of solar modules for operations and maintenance access. The access roads would be placed such that the farthest panel is no further than 240 feet from the center of the road.

The Project would be enclosed in a six-foot-tall chain link fence with one foot of barbed wire on top in compliance with the National Electric Code. The fence would have at least one vehicle access gate at the boundary of the array. The vehicle access gate would remain locked, except during operations and maintenance activities. A Knox box would be installed at the entrance gate to provide 24-hour access for emergency responders.

Construction

Project construction is anticipated to be completed over a period of approximately nine months, beginning as early as January 2025 and ending as early as October 2025. Project construction activities generally fall into three main categories: (1) demolition, (2) site preparation (vegetation clearing), (3) grading, (4) paving, (5) system installation, and (6) testing, commissioning, and cleanup.[2] The on-site construction workforce is expected to peak at approximately 70 individuals during the construction period. Construction personnel will be divided between civil and electrical services.

Operations

The Project would operate year-round. The Project would be unmanned, and no employees would report to the Project Site daily. Typical operations and maintenance (O&M) activities during Project operations include, but are not limited to, facility monitoring; administration and reporting; remote operations of inverters, BESS system, and other equipment; repair and maintenance of solar facilities; landscape maintenance; and periodic panel and inverter washing. It is estimated that the Project would require 6 maintenance-related visits per year and up to 4 solar panel and inverter washing visits per year, resulting in a total of approximately 10 operational roundtrips per year (20 one-way trips).

During Project O&M, it is anticipated that minimal water would be required for solar panel and inverter washing. Water consumption for washing panels and inverters is expected to be approximately 0.3 acre-feet (AF) of water per year, and all water would be trucked in from an off-site source. Water washing is by deluge and no chemicals or other materials are used.

Decommissioning

At the end of the Project's operational term, the Applicant may determine that the Project should be decommissioned and deconstructed. The Applicant will work with the County to ensure decommissioning complies with all applicable local, State, and federal requirements and best management practices (BMPs). The Project would include BMPs to ensure the collection and recycling of modules and to avoid the potential for modules to be disposed of as municipal waste. Pursuant to San Bernardino County Development Code Section 84.29.070 (Decommissioning

[2] Note that the modeling does not account for testing, commissioning, and cleanup as heavy-duty construction equipment would not be utilized.

Requirements), following the operational life of the Project, the Project owner shall perform site closure activities to meet federal, State, and local requirements for the rehabilitation and revegetation of the Project Site after decommissioning.

Equipment would be de-energized prior to removal, salvaged (where possible), placed in appropriate shipping containers, and secured in a truck transport trailer for shipment off-site to be recycled or disposed of at an appropriately licensed disposal facility. Site infrastructure would be removed, including fences and concrete pads that may support the inverters and related equipment. The exterior fencing would be removed, and materials would be recycled to the extent feasible. Project internal and access roads would be restored to their pre-construction condition to the extent feasible unless the landowner elects to retain the improved roads for access throughout the property. A collection, reuse, and recycling program would be utilized to promote reuse and recycling of Project components and minimize disposal in landfills.

ENVIRONMENTAL SETTING

Regional Topography

The State of California is divided geographically into 15 air basins, generally along geographic or topographic boundaries. The Project Site is located in the Mojave Desert Air Basin (Basin). The Basin includes the desert portion of Los Angeles and San Bernardino Counties, the eastern desert portion of Kern County, and the northeastern desert portion of Riverside County. The Mojave Desert Air Quality Management District (MDAQMD) has jurisdiction over stationary sources of air pollution located within San Bernardino County's High Desert and Riverside County's Palo Verde Valley, which includes the Project Site.

The Basin is bound in the northwest by the Tehachapi Mountains, in the southwest by the San Gabriel Mountains, and in the south by the San Bernardino Mountains. To the north, the Basin is defined by the San Bernardino-Inyo County boundary, to the northeast the California-Nevada state line, and to the east by the Colorado River. The San Gabriel and San Bernardino Mountains are high and rugged, with the highest peaks being 10,066 feet above sea level (Mt. San Antonio) and 11,503 feet (Mt. San Gorgonio), respectively. The Basin generally lies at 3,000 to 6,000 feet elevation.

The Mojave Desert is situated in a transitional zone between the Great Basin Desert to the north and the Sonoran Desert to the south (mainly between 34 and 38°N latitudes). The area is primarily a rain-shadow desert, meaning it experiences little rainfall because it is sheltered from prevailing rain-bearing winds (i.e., off the Pacific Ocean) by a range of mountains.

Meteorology and Climate

Factors such as wind, sunlight, temperature, humidity, and rainfall, affect the accumulation and/or dispersion of air pollutants throughout the Basin. Local meteorological conditions are greatly affected by the topography of the region.

Prevailing winds in the Basin are out of west and southwest. These prevailing winds are due to the proximity of the Basin to coastal and central regions and the blocking nature of the Sierra Nevada Mountains to the north. Air masses pushed onshore in Southern California by differential heating are channeled through the mountain passes. Although a portion of the prevailing winds come from the Los Angeles Basin via the canyons, the vast majority of the winds are a result of the orographic effect and the desert heat low-pressure systems. The "orographic effect" is the phenomenon whereby the air is forced over the mountain range and loses moisture as it rises. When it descends, it also compresses and heats up. The speed of the wind is aided by the "desert heat low", which routinely form over the eastern Mojave Desert area. During the summer a Pacific Subtropical High Cell, that sits off the coast generally influences the Basin, inhibiting cloud formation and encouraging daytime solar heating. The Basin is rarely influenced by cold air masses moving south from Canada and Alaska, as these frontal systems are weak and diffuse by the time they reach the desert. Most desert moisture arrives from infrequent warm, moist and unstable air masses from the south. The Basin averages between three and seven inches of precipitation per year (from 16 to 30 days with at least 0.01 inches of precipitation). The Basin is classified as a dry-hot desert climate, with portions classified as dry-very hot desert, to indicate at least three months have maximum average temperature over 100.4° F.[3]

Criteria Air Pollutants

Carbon Monoxide (CO). Carbon monoxide is a colorless and odorless gas formed by the incomplete combustion of fossil fuels. CO is emitted almost exclusively from motor vehicles, power plants, refineries, industrial boilers, ships, aircraft, and trains. Automobile exhaust accounts for most CO emissions. CO is a nonreactive air pollutant that dissipates relatively quickly; therefore, ambient CO concentrations generally follow the spatial and temporal distributions of vehicular traffic. Concentrations are influenced by local meteorological conditions, primarily wind speed, topography, and atmospheric stability. CO from motor vehicle exhaust can become locally concentrated when surface-based temperature inversions are combined with calm atmospheric conditions. The highest levels of CO typically occur during the colder months of the year when inversion conditions are more frequent. In terms of health, CO competes with oxygen, often replacing it in the blood, thus reducing the blood's ability to transport oxygen to vital organs. The results of excess CO exposure can be dizziness, fatigue, and impairment of central nervous system functions.

Ozone (O_3). Ozone is a colorless gas that is formed in the atmosphere when volatile organic compounds (VOCs), sometimes referred to as reactive organic gases (ROGs), and nitrogen oxides (NO_X) react in the presence of ultraviolet sunlight. Ozone is not a primary pollutant; it is a secondary pollutant formed by complex interactions of the two precursor pollutants directly emitted into the atmosphere. Automobile exhaust and industrial sources are the primary sources of VOCs and NO_X. Meteorology and terrain play major roles in O_3 formation. Ideal conditions occur during summer and

[3] Mojave Desert Air Quality Management District, California Environmental Quality Act (CEQA) and Federal Conformity Guidelines, February 2020.

early autumn on days with low wind speeds or stagnant air, warm temperatures, and cloudless skies. Ozone can damage the tissues of the respiratory tract, causing inflammation and irritation, and result in symptoms such as coughing, chest tightness, and worsening of asthma symptoms.

Nitrogen Dioxide (NO_2). Most NO_2, like O_3, is not directly emitted into the atmosphere but is formed by an atmospheric chemical reaction between nitric oxide (NO) and atmospheric oxygen. NO and NO_2 are collectively referred to as NO_X and are major contributors to ozone formation. High concentrations of NO_2 can cause breathing difficulties and result in a brownish-red cast to the atmosphere with reduced visibility. There is some indication of a relationship between NO_2 and chronic pulmonary fibrosis. Some increase in bronchitis in children (2 and 3 years old) has also been observed at concentrations below 0.3 parts per million (ppm) by volume.

Particulate Matter (PM2.5 and PM10). Particulate matter pollution consists of very small liquid and solid particles floating in the air, which can include smoke, soot, dust, salts, acids, and metals. Particulate matter can form when gases emitted from industries and motor vehicles undergo chemical reactions in the atmosphere. PM2.5 and PM10 represent fractions of particulate matter. Fine particulate matter, or PM2.5, is roughly 1/28 the diameter of a human hair. PM2.5 results from fuel combustion (e.g., motor vehicles, power generation, and industrial facilities), residential fireplaces, and woodstoves. In addition, PM2.5 can be formed in the atmosphere from gases such as sulfur oxides (SO_X), NO_X, and VOC. Inhalable or coarse particulate matter, or PM10, is about 1/7 the thickness of a human hair. Major sources of PM10 include crushing or grinding operations; dust stirred up by vehicles traveling on roads; wood-burning stoves and fireplaces; dust from construction, landfills, and agriculture; wildfires and brush/waste burning; industrial sources; windblown dust from open lands; and atmospheric chemical and photochemical reactions.

PM2.5 and PM10 pose a greater health risk than larger-size particles. When inhaled, these tiny particles can penetrate the human respiratory system's natural defenses and damage the respiratory tract. PM2.5 and PM10 can increase the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infections. Very small particles of substances, such as lead, sulfates, and nitrates, can cause lung damage directly or be absorbed into the bloodstream, causing damage elsewhere in the body. Additionally, these substances can transport absorbed gases, such as chlorides or ammonium, into the lungs, also causing injury. Whereas PM10 tends to collect in the upper portion of the respiratory system, PM2.5 is so tiny that it can penetrate deeper into the lungs and damage lung tissues. Suspended particulates also damage and discolor surfaces on which they settle, as well as produce haze and reduce regional visibility.

Sulfur Dioxide (SO_2). Sulfur dioxide is a colorless, pungent gas formed primarily by the combustion of sulfur containing fossil fuels. Main sources of SO_2 are coal and oil used in power plants and industries; as such, the highest levels of SO_2 are generally found near large industrial complexes. In recent years, sulfur dioxide concentrations have been reduced by the increasingly stringent controls placed on stationary source emissions of SO_2 and limits on the sulfur content of fuels. SO_2 is an

irritant gas that attacks the throat and lungs and can cause acute respiratory symptoms and diminished ventilator function in children. SO_2 can also yellow plant leaves and corrode iron and steel.

Volatile Organic Compounds (VOC). VOCs are hydrocarbon compounds (any compound containing various combinations of hydrogen and carbon atoms) that exist in the ambient air. VOCs contribute to the formation of smog through atmospheric photochemical reactions and/or may be toxic. Compounds of carbon (also known as organic compounds) have different levels of reactivity; that is, they do not react at the same speed or do not form O_3 to the same extent when exposed to photochemical processes. VOCs often have an odor, and some examples include gasoline, alcohol, and the solvents used in paints. Exceptions to the VOC designation include carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate. VOCs are a criteria pollutant since they are a precursor to O_3, which is a criteria pollutant. The terms VOC and ROG (see below) are often used interchangeably.

Reactive Organic Gases (ROG). Similar to VOCs, ROGs are also precursors in forming O_3 and consist of compounds containing methane, ethane, propane, butane, and longer chain hydrocarbons, which are typically the result of some type of combustion/decomposition process. Smog is formed when ROG and nitrogen oxides react in the presence of sunlight. ROGs are a criteria pollutant since they are a precursor to O_3, which is a criteria pollutant. The terms ROG and VOC are often used interchangeably.

Local Ambient Air Quality

Ambient air quality for the Project Site can be determined from ambient air quality measurements conducted at nearby air quality monitoring stations. Existing levels of ambient air quality and historical trends in the region are documented by measurements made by the MDAQMD, the air pollution regulatory agency in the Basin that maintains air quality monitoring stations which process ambient air quality measurements. Air quality monitoring stations usually measure pollutant concentrations ten feet above ground level; therefore, air quality is often referred to in terms of ground-level concentration. The U.S. Environmental Protection Agency (USEPA) requires monitoring sites be capable of informing air pollution control officers about peak air pollution levels, typical levels in populated areas, air pollution transported into and out of a city or region, and air pollution levels near specific sources. Monitors must be designated with an appropriate site type so that the data collected can be used to support a specific federal monitoring objective.[4]

[4] California Air Resources Board, *Annual Network Plan, Covering Monitoring Operations in 25 California Air Districts*, https://www.mdaqmd.ca.gov/home/showpublisheddocument/5982/636710697943470000, accessed December 14, 2023.

Air Quality Impacts

Mojave Desert Air Quality Management District Thresholds

MDAQMD is the regulatory agency responsible for improving air quality for large areas for San Bernardino County's High Desert and Riverside County's Palo Verde Valley. The Project Site is located within the Mojave Desert Air Basin, which is a distinct geographic subarea within MDAQMD's jurisdiction.

The MDAQMD monitors air quality at six monitoring stations throughout the Basin.[5] Air quality monitoring stations usually measure pollutant concentrations ten feet above ground level; therefore, air quality is often referred to in terms of ground-level concentration. The closest air monitoring station to the Project Site that monitors PM10 is the Lucerne Valley Monitoring station, located approximately 63 miles northwest of the Project Site at 8560 Aliento Road. The second closest air monitoring station to the Project Site that monitors NO_2, CO, and PM2.5 is the Victorville Monitoring Station located 87 miles northwest of the Project Site at 14306 Park Avenue. The Hesperia Monitoring Station, located 88 miles northwest of the Site at 14306 Park Avenue is the third closest air monitoring station that monitors O_3. The unincorporated County land surrounding the Project Site is developed at a far lower intensity than land uses within Lucerne Valley, Hesperia, and Victorville, meaning that the data from the Lucerne Valley, Hesperia, and Victorville Monitoring Stations are likely substantially over predicting ambient levels at the Project Site. Nonetheless, it is the most applicable data available for all pollutants.

Local Air Quality

The air quality data from 2020 to 2022 monitored at the Lucerne Valley, Hesperia, and Victorville – Park Avenue Monitoring Stations is presented in **Table 1: Summary of Air Quality Data**. This table lists the monitored maximum concentrations and number of exceedances of State/Federal air quality standards for each year.

Table 1: Summary of Air Quality Data

Pollutant	California Standard	Federal Primary Standard	Year	Maximum Concentration[1]	Days (Samples) State/Federal Std. Exceeded
Ozone (O_3) (8-hour)[3]	0.070 ppm for 8 hours	0.070 ppm for 8 hours	2020 2021 2022	0.094 ppm 0.101 ppm 0.090 ppm	27/46 17 / 55 15/ 49
Ozone (O_3) (1-hour)[3]	0.09 ppm for 1 hour	NA[6]	2020 2021 2022	0.108 ppm 0.118 ppm 0.108 ppm	0 / 0 0 / 0 0 / 0

[5] Mojave Desert Air Quality Management District (MDAQMD), Ambient Air Quality, https://www.mdaqmd.ca.gov/air-quality/monitoring-info, accessed December 14,2023.

Table 1: Summary of Air Quality Data					
Carbon Monoxide (CO) (1-hour)[4]	20 ppm for 1 hour	35 ppm for 1 hour	2020 2021 2022	0.794 ppm 1.515 ppm 0.794 ppm	0 / 0 0 / 0 0 / 0
Nitrogen Dioxide (NO_2)[4]	0.180 ppm for 1 hour	0.100 ppm for 1 hour	2020 2021 2022	0.059 ppm 0.057 ppm 0.054 ppm	0 / 0 0 / 0 0 / 0
Fine Particulate Matter (PM2.5)[4]	No Separate Standard	35 µg/m^3 for 24 hours	2020 2021 2022	48.4 mg/m^3 87.1mg/m^3 24.6mg/m^3	4/4 1/1 0/0
Particulate Matter (PM10)[2]	50 µg/m^3 for 24 hours	150 µg/m^3 for 24 hours[7]	2020 2021 2022	203.1 mg/m^3 411.9mg/m^3 372.1mg/m^3	0/1 0/1 0/20
ppm = parts per million; PM10 = particulate matter 10 microns in diameter or less; mg/m^3 = micrograms per cubic meter; PM2.5 = particulate matter 2.5 microns in diameter or less; NA = not applicable					
Notes: 1. Maximum concentration is measured over the same period as the California Standards. 2. Data collected from the Lucerne Monitoring Station located at 8560 Aliento Road. 3. Data collected from the Hesperia Monitoring Station located at 17288 Olive Street. 4. Data collected from the Victorville – Park Avenue Monitoring Station is at 14306 Park Avenue. 5. PM10 and PM2.5 exceedances are derived from the number of days exceeded. 6. Data collected from the California Air Resources Board Air Quality Data (PST) Query Tool for the Victorville – Park Avenue Monitoring Station. 7.The Federal standard for 1-hour ozone was revoked in June 2005. 8.The Federal standard for average PM10 was revoked in December 2006.					
Sources: For CO, see California Air Resources Board, AQMIS2: Air Quality Data, https://www.arb.ca.gov/aqmis2/aqdselect.php, accessed December 14, 2023. For all other pollutants, see California Air Resources Board, ADAM Air Quality Data Statistics, http://www.arb.ca.gov/adam/, accessed December 14 ,2023.					

The attainment status for various pollutants in the Basin are listed in **Table 2: Federal and State Ambient Air Quality Attainment Status**. Areas that meet ambient air quality standards established by the United States Environmental Protection Agency (USEPA) and/or California Air Resources Board (CARB) are classified as attainment areas, while areas that do not meet these standards are classified as nonattainment areas. Areas for which there is insufficient data available are designated unclassified. Ambient air quality standards are set to be protective of human health. As shown in **Table 2**, the Project Site is a Federal nonattainment area for O_3 and PM10 and a state nonattainment area for O_3, PM10, and PM2.5. The Project Site is classified as attainment or unclassified for lead, visibility reducing particles, sulfates, hydrogen sulfide, and vinyl chloride.

Table 2: Federal and State Ambient Air Quality Attainment Status		
Pollutant	**Federal**	**State**
Ozone (O_3)	Non-attainment[1]	Nonattainment
Nitrogen Dioxide (NO_2)	Unclassified/Attainment	Attainment

Carbon Monoxide (CO)	Attainment	Attainment
Sulfur Dioxide (SO_2)	Unclassified/Attainment	Attainment
Coarse Particulate Matter (PM10)	Non-attainment[2]	Nonattainment
Fine Particulate Matter (PM2.5)	Unclassified/Attainment	Nonattainment[1]
Notes: 1. Southwest corner of desert portion of San Bernardino County only. 2. San Bernardino County portion only.		
Source: Mojave Desert Air Quality Management District, California Environmental Quality Act (CEQA) and Federal Conformity Guidelines.		

REGULATORY FRAMEWORK

Federal

Clean Air Act

The federal Clean Air Act (CAA), which was initially established by the U.S. Congress in 1970 and substantially revised in 1977 and 1990, can be found in Title 42, Chapter 85 of the United States Code. An important aspect of the CAA is its requirement for the USEPA to establish National Ambient Air Quality Standards (NAAQS). There are NAAQS in place for seven "criteria" pollutants: CO, lead, NO_2, O_3, particle matter (PM10 and PM2.5), and SO_2. Standards are classified as primary and secondary. Primary standards are designed to protect public health, including sensitive individuals, such as children and the elderly, whereas secondary standards are designed to protect public welfare, such as visibility and crop or material damage. The USEPA sets the NAAQS based on a process that involves science policy workshops, a risk/exposure assessment (REA) that draws on the information and conclusions of the science policy workshops to development quantitative characterizations of exposures and associated risks to human health or the environment, and a policy assessment by USEPA staff that bridges the gap between agency scientific assessments and the judgments required of the USEPA administrator, who then takes the proposed standards through the federal rulemaking process.[6] The NAAQS are set to be protective of human health and are listed in **Table 3: State and National Ambient Air Quality Standards**.

The CAA requires the USEPA to routinely review and update the NAAQS in accordance with the latest available scientific evidence. For example, the USEPA revoked the annual PM10 standard in 2006 due to a lack of evidence linking health problems to long-term exposure to PM10 emissions. The 1-hour standard for O_3 was revoked in 2005 in favor of a new 8-hour standard that is intended to better protect public health.

CAA Section 182(e)(5) allows the USEPA administrator to approve provisions of an attainment strategy in an extreme area that anticipates development of new control techniques or improvement of existing control technologies if the state has submitted enforceable commitments

[6] United States Environmental Protection Agency (USEPA), Process of Reviewing the National Ambient Air Quality Standards, https://www.epa.gov/criteria-air-pollutants/process-reviewing-national-ambient-air-quality-standards, accessed December 14, 2023.

to develop and adopt contingency measures to be implemented if the anticipated technologies do not achieve planned reductions.

Nonattainment areas are required to develop their air quality management plans to include specific emission reduction strategies to meet interim milestones in implementing emission controls and improving air quality. The USEPA can withhold certain transportation funds from states that fail to comply with the planning requirements of the act. If a state fails to correct these planning deficiencies within two years of federal notification, the USEPA is required to develop a Federal Implementation Plan for the identified nonattainment area or areas.

State

California Clean Air Act

The California Clean Air Act of 1988 requires all air pollution control districts in the state to aim to achieve and maintain state ambient air quality standards for O_3, CO, and NO_2 by the earliest practical date and to develop plans and regulations specifying how the districts will meet this goal. There are no planning requirements for the State PM10 standard.

The California Air Resources Board (CARB), which became part of the California Environmental Protection Agency in 1991, is responsible for meeting state requirements of the CAA, administrating the California Clean Air Act, and establishing the California Ambient Air Quality Standards (CAAQS). The California Clean Air Act, amended in 1992, requires all air districts in the state to endeavor to achieve and maintain the CAAQS. California law does not require that CAAQS be met by specified dates as is the case with NAAQS. Rather, it requires incremental progress toward attainment.[7] California law continues to mandate CAAQS, although attainment of the NAAQS has precedence over attainment of the CAAQS due to federal penalties for failure to meet federal attainment deadlines.

The CAAQS are generally stricter than national standards for the same pollutants, but there is no penalty for nonattainment. Similar to the federal process, the standards for the CAAQS are adopted after review by CARB staff of the scientific literature produced by agencies such as the Office of Environmental Health Hazard Assessment (OEHHA), the Air Quality Advisory Committee, which is comprised of experts in health sciences, exposure assessment, monitoring methods, and atmospheric sciences appointed by the Office of the President of the University of California, and public review and comment.[8] The CAAQS are set at levels determined to be protective of human health. State and national standards are listed in **Table 3**.

[7] California Air Resources Board, California Ambient Air Quality Standards, https://ww2.arb.ca.gov/resources/california-ambient-air-quality-standards, accessed December 14, 2023.

[8] California Air Resources Board, California Ambient Air Quality Standards.

Table 3: State and National Ambient Air Quality Standards			
Pollutant	**Averaging Time**	**State Standards[1]**	**Federal Standards[2]**
Ozone (O_3) [2, 5, 7]	8 Hour	0.070 ppm (137 µg/m^3)	0.070 ppm
	1 Hour	0.09 ppm (180 µg/m^3)	0.12 ppm
Carbon Monoxide (CO)	8 Hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)
	1 Hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)
Nitrogen Dioxide (NO_2)	1 Hour	0.18 ppm (339 µg/m^3)	0.10 ppm[11]
	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)
Sulfur Dioxide (SO_2) [8]	24 Hour	0.04 ppm (105 µg/m^3)	NA
	1 Hour	0.25 ppm (655 µg/m^3)	0.075 ppm (196 µg/m^3)
Particulate Matter (PM10) [1, 3, 6]	24-Hour	50 µg/m^3	150 µg/m^3
	Annual Arithmetic Mean	20 µg/m^3	NA
Fine Particulate Matter (PM2.5) [3, 4, 6, 9]	24-Hour	NA	35 µg/m^3
	Annual Arithmetic Mean	12 µg/m^3	9 µg/m^3
Sulfates (SO_{4-2})	24 Hour	25 µg/m^3	NA
Lead (Pb) [10, 11]	30-Day Average	1.5 µg/m^3	0.15 µg/m3
Hydrogen Sulfide (H_2S)	1 Hour	0.03 ppm (0.42 µg/m^3)	NA
Vinyl Chloride (C_2H_3Cl) [10]	24 Hour	0.01 ppm (26 µg/m^3)	NA

Notes:

ppm = parts per million; µg/m^3 = micrograms per cubic meter; mg/m^3 = milligrams per cubic meter; – = no information available.

1. California standards for O_3, carbon monoxide (except Lake Tahoe), sulfur dioxide (1-hour and 24-hour), nitrogen dioxide, suspended particulate matter – PM10, and visibility reducing particles are values that are not to be exceeded. The standards for sulfates, Lake Tahoe carbon monoxide, lead, hydrogen sulfide, and vinyl chloride are not to be equaled or exceeded. If the standard is for a 1-hour, 8-hour or 24-hour average (i.e., all standards except for lead and the PM10 annual standard), then some measurements may be excluded. Measurements are excluded that CARB determines would occur less than once per year on the average. The Lake Tahoe carbon monoxide standard is 6.0 ppm, a level one-half the national standard and two-thirds the State standard.
2. National standards shown are the "primary standards" designed to protect public health. National standards other than for O_3, particulates and those based on annual averages are not to be exceeded more than once a year. The 1-hour O_3 standard is attained if, during the most recent three-year period, the average number of days per year with maximum hourly concentrations above the standard is equal to or less than one. The 8-hour O_3 standard is attained when the 3-year average of the 4th highest daily concentrations is 0.070 ppm or less. The 24-hour PM10 standard is attained when the 3-year average of the 99th percentile of monitored concentrations is less than 150 µg/m$_3$. The 24-hour PM2.5 standard is attained when the 3-year average of 98th percentiles is less than 35 µg/m^3.
3. Except for the national particulate standards, annual standards are met if the annual average falls below the standard at every site. The national annual particulate standard for PM10 is met if the 3-year average falls below the standard at every site. The annual PM2.5 standard is met if the 3-year average of annual averages spatially-averaged across officially designed clusters of sites falls below the standard.
4. On October 1, 2015, the national 8-hour O_3 primary and secondary standards were lowered from 0.075 to 0.070 ppm. An area will meet the standard if the fourth-highest maximum daily 8-hour O_3 concentration per year, averaged over three years, is equal to or less than 0.070 ppm. U.S. EPA will make recommendations on attainment designations by October 1, 2016, and issue final designations October 1, 2017. Nonattainment areas will have until 2020 to late 2037 to meet the health standard, with attainment dates varying based on the O_3 level in the area.
5. The national 1-hour O_3 standard was revoked by the U.S. EPA on June 15, 2005.
6. In June 2002, CARB established new annual standards for PM2.5 and PM10.

Table 3: State and National Ambient Air Quality Standards			
Pollutant	**Averaging Time**	**State Standards[1]**	**Federal Standards[2]**
7. The 8-hour California O_3 standard was approved by the CARB on April 28, 2005 and became effective on May 17, 2006. 8. On June 2, 2010, the U.S. EPA established a new 1-hour SO_2 standard, effective August 23, 2010, which is based on the 3-year average of the annual 99th percentile of 1-hour daily maximum concentrations. The existing 0.030 ppm annual and 0.14 ppm 24-hour SO_2 NAAQS however must continue to be used until one year following U.S. EPA initial designations of the new 1-hour SO_2 NAAQS. 9. In February 2024, U.S. EPA strengthened the annual PM2.5 NAAQS from 12.0 to 9.0 µg/m³. Areas designated "unclassifiable/attainment" must continue to take steps to prevent their air quality from deteriorating to unhealthy levels. The effective date of this standard is May 6, 2024. 10. CARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure below which there are no adverse health effects determined. 11. National lead standard, rolling 3-month average: final rule signed October 15, 2008. Final designations effective December 31, 2011.			
Source: South Coast Air Quality Management District, *Air Quality Management Plan*, 2022. https://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2022-air-quality-management-plan/final-2022-aqmp/05-ch2.pdf?sfvrsn=12			

State Implementation Plans

An important component of the MDAQMD's air quality planning strategy is contained in the State Implementation Plan (SIP) for the State of California. The CAA requires all states to submit a SIP to the USEPA. This statewide SIP is often referred to as an "infrastructure" SIP. Infrastructure SIPs are administrative in nature and describe the authorities, resources, and programs a state has in place to implement, maintain, and enforce the federal standards. It does not contain any proposals for emission control measures.

In addition to infrastructure SIPs, the Clean Air Act requires submissions of SIPs for areas that are out of compliance with the NAAQS. These area attainment SIPs are comprehensive plans that describe how an out-of-compliance area will attain and maintain the particular NAAQS standard(s) it does not conform to. Once an out-of-compliance area has attained the standard in question, a maintenance SIP is required for a period of time to ensure the area will continue to meet the standard.

SIPs are not single documents. They are a compilation of new and previously submitted plans, programs (such as monitoring, modeling, permitting, etc.), district rules, State regulations, and federal controls. Many of California's SIPs rely on the same core set of control strategies, including emission standards for cars and heavy trucks, fuel regulations, and limits on emissions from consumer products. State law makes CARB the lead agency for all purposes related to SIPs. Local air districts and other agencies prepare SIP elements and submit them to CARB for review and approval. CARB forwards those revisions to the USEPA for approval and publication in the Federal Register.

Local

Mojave Desert Air Quality Management District (MDAQMD)

MDAQMD Federal 8-hour Ozone Attainment Plan (Western Mojave Desert Non-Attainment Area)

On April 15, 2004, the USEPA designated the Western Mojave Desert nonattainment area as nonattainment of the 8-hour O_3 NAAQS pursuant to the provisions of the Federal CAA. The Western Mojave Desert Ozone Nonattainment Area includes part of San Bernardino County, a portion of the MDAQMD, as well as the Antelope Valley portion of Los Angeles County. As a result, the MDAQMD prepared its Ozone Attainment Plan in June 2008 to: (1) demonstrate that the MDAQMD will meet the primary required Federal O_3 planning milestones, attainment of the 8-hour O_3 NAAQS by 2033 (Plan revised January 2023); (2) present the progress the MDAQMD will make towards meeting all required ozone planning milestones; and (3) discuss the newest 0.075 part per million 8-hour ozone NAAQS, preparatory to an expected non-attainment designation for the new NAAQS. In February 2017, MDAQMD updated the 2008 Ozone Attainment Plan and adopted the *MDAQMD Federal 75 ppb Ozone Attainment Plan (Western Mojave Desert Nonattainment Plan)* to satisfy CAA requirements that the MDAQMD develop a plan to attain the 0.075 ppm 8-hour ozone NAAQS.

Final Mojave Desert Planning Area Federal Particulate Matter 10 (PM10) Attainment Plan

On January 20, 1994, the USEPA re-designated a significant portion of the Mojave Desert as a nonattainment area with respect to the PM10 NAAQS. This nonattainment area covers a vast geographical region, including the urban areas of Victor Valley and Barstow, the Morongo Basin, along with the rural desert environs reaching to the Nevada and Arizona state lines. The PM10 Attainment Plan was prepared in July 1995 to provide a complete description and submittal to USEPA of the PM10 attainment planning elements which the MDAQMD will implement to bring the nonattainment area into compliance with federal law. Most importantly, the PM10 Attainment Plan serves as a planning tool for reducing PM10 pollution. The PM10 Attainment Plan sets forth an air quality improvement program for the region which will be implemented by both the public and private sector of the community.

MDAQMD Rules

The MDAQMD has adopted rules to limit air emissions. Many of these rules were put in place as required by measures specified in various SIPs and air quality management plans. The MDAQMD rules that are applicable to the Project include, but are not limited to, those listed below:

- Rule 201 – Written Authorization. This rule prohibits the building, erection, installation, alteration, or replacement of any equipment that may affect the issuance of air contaminates without first obtaining written authorization for such construction from the Air Pollution Control Officer.

- Rule 203 – Permit to Operate. This rule prohibits the operation of equipment that may affect the issuance of air contaminates without first obtaining a written permit from the Air Pollution Control Officer.
- Rule 206 – Posting of Permit to Operate. Permits and written authorizations granted under Rule 201 and/or 203 must be posted to be completely visible on the equipment Rule 401 – Visible Emissions. This rule prohibits discharges of air contaminants or other material, which are as dark or darker in shade as that designated No. 1 on the Ringelmann Chart.
- Rule 402 – Nuisance. This rule prohibits the discharge of air contaminants or other material that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public.
- Rule 403 – Fugitive Dust. The purpose of this rule is to control the amount of PM entrained in the atmosphere from manmade sources of fugitive dust. The rule prohibits emissions of fugitive dust from any active operation, open storage pile, or disturbed surface area to be visible beyond the emission source's property line.
- Rule 404 – Particulate Matter Concentration. Prohibits discharge from any source of particulate matter in excess of the concentration at standard conditions, shown in Table 404(a) of Appendix B.
- Rule 409 – Combustion Contaminants. Prohibits the burning of fuel that results in the discharge of contaminants exceeding 0.23 grams per cubic meter (0.1 grain per cubic foot) of gas calculated to 12 percent of carbon dioxide (CO2) at standard conditions averaged over a minimum of 15 consecutive minutes.
- Rule 431 – Sulfur Content in Fuels. Limits the sulfur content in fuels during combustion in stationary equipment.
- Rule 474 – Fuel Burning Equipment. Limits the emissions of oxides of nitrogen (NOx) from non-Mobile, Fuel Burning Equipment.

<u>San Bernardino County General Plan</u>

The County's Countywide Plan, adopted on October 27, 2020, serves as a set of plans and tools for the County's unincorporated communities and complements the Countywide vision. The Countywide Plan consists of the Policy Plan, Business Plan, and Community Action Guides, together with the supporting environmental clearance. The Policy Plan is a component of the Countywide Plan that is an update and expansion of the County's General Plan for the unincorporated areas. The following goals and policies are applicable to the Project:

Natural Resources Element

Goal NR-1: Air Quality

Air quality that promotes health and wellness of residents in San Bernardino County through improvements in locally generated emission.

Policy NR-1.1 Land use. We promote compact and transit-oriented development countywide and regulate the types and locations of development in unincorporated areas to minimize vehicle miles traveled and greenhouse gas emissions.

Policy NR-1.2 Indoor air quality. We promote the improvement of indoor air quality through the California Building and Energy Codes and through the provision of public health programs and services.

Policy NR-1.3 Coordination on air pollution. We collaborate with air quality management districts and other local agencies to monitor and reduce major pollutants affecting the county at the emission source.

Policy NR-1.6 Fugitive dust emissions. We coordinate with air quality management districts on requirements for dust control plans, revegetation, and soil compaction to prevent fugitive dust emissions.

Policy NR-1.8 Construction and operations. We invest in County facilities and fleet vehicles to improve energy efficiency and reduce emissions. We encourage County contractors and other builders and developers to use low-emission construction vehicles and equipment to improve air quality and reduce emissions.

Policy NR-1.9 Building design and upgrades. We use the CALGreen Code to meet energy efficiency standards for new buildings and encourage the upgrading of existing buildings to incorporate design elements, building materials, and fixtures that improve environmental sustainability and reduce emissions.

Renewable Energy Element

RE Policy 4.1 Apply standards to the design, siting, and operation of all renewable energy facilities that protect the environment, including sensitive biological resources, air quality, water supply and quality, cultural, archaeological, paleontological and scenic resources.

RE Policy 4.3.1 Define measures required to minimize ground disturbance, soil erosion, flooding, and blowing of sand and dust, with appropriate enforcements mechanisms in the Development Code.

Hazards Element

Policy HZ-3.3 Air quality management districts establish community emissions reduction plans for unincorporated environmental justice focus areas that should be considered in these areas. With particular emphasis in addressing the types of pollution identified in the Hazard Element table.

San Bernardino County Code of Ordinances

The San Bernardino County Code of Ordinances Section 83.01.040 *Air Quality* will apply to the construction phase of the Project.[9] Relevant provisions of the section are listed below.

(c) Diesel Exhaust Emissions Control Measures. The following emissions control measures shall apply to all discretionary land use projects approved by the County on or after January 15, 2009:

(1) On-Road Diesel Vehicles. On-road diesel vehicles are regulated by the State of California Air Resources Board.

(2) Off-Road Diesel Vehicle/Equipment Operations. All business establishments and contractors that use off-road diesel vehicle/equipment as part of their normal business operations shall adhere to the following measures during their operations in order to reduce diesel particulate matter emissions from diesel-fueled engines:

(A) Off-road vehicles/equipment shall not be left idling on site for periods in excess of five minutes. The idling limit does not apply to:

(I) Idling when queuing;

(II) Idling to verify that the vehicle is in safe operating condition;

(III) Idling for testing, servicing, repairing or diagnostic purposes;

(IV) Idling necessary to accomplish work for which the vehicle was designed (such as operating a crane);

(V) Idling required to bring the machine system to operating temperature; and

(VI) Idling necessary to ensure safe operation of the vehicle.

(B) Use reformulated ultra-low-sulfur diesel fuel in equipment and use equipment certified by the U.S. Environmental Protection Agency (EPA) or that pre-dates EPA regulations.

(C) Maintain engines in good working order to reduce emissions.

(D) Signs shall be posted requiring vehicle drivers to turn off engines when parked.

(E) Any requirements or standards subsequently adopted by the South Coast Air Quality Management District, the Mojave Desert Air Quality Management District or the California Air Resources Board.

(F) Provide temporary traffic control during all phases of construction.

[9] San Bernardino County Code of Ordinances, Section 84.29.035 Required Findings for Approval of commercial Solar Energy Facility, https://codelibrary.amlegal.com/codes/sanbernardino/latest/sanberncty_ca/0-0-0-172625#JD_84.29.035, accessed December 29, 2023.

(G) On-site electrical power connections shall be provided for electric construction tools to eliminate the need for diesel-powered electric generators, where feasible.

(H) Maintain construction equipment engines in good working order to reduce emissions. The developer shall have each contractor certify that all construction equipment is properly serviced and maintained in good operating condition.

(I) Contractors shall use ultra-low sulfur diesel fuel for stationary construction equipment as required by Air Quality Management District (AQMD) Rules 431.1 and 431.2 to reduce the release of undesirable emissions.

(J) Substitute electric and gasoline-powered equipment for diesel-powered equipment, where feasible.

San Bernardino County Code of Ordinances Section 84.29.035 *Required Findings for Approval of a Commercial Solar Energy Facility* includes the following requirements relevant to fugitive dust emissions:

(c) The finding of fact shall include the following:

(20) The proposed commercial solar energy generation facility will be designed, constructed, and operated so as to minimize dust generation, including provision of sufficient watering of excavated or graded soil during construction to prevent excessive dust. Watering will occur at a minimum of three (3) times daily on disturbed soil areas with active operations, unless dust is otherwise controlled by rainfall or use of a dust palliative, or other approved dust control measure.

(21) All clearing, grading, earth moving, and excavation activities will cease during period of winds greater than 20 miles per hour (mph), averaged over one hour, or when dust plumes of 20 percent or greater opacity impact public roads, occupied structures, or neighboring property, and in conformance with AQMD regulations.

(22) For sites where the boundary of a new commercial solar energy generation facility will be located within one-quarter mile of a primary residential structure, an adequate wind barrier will be provided to reduce potentially blowing dust in the direction of the residence during construction and ongoing operation of the commercial solar energy generation facility.

(23) Any unpaved roads and access ways will be treated and maintained with a dust palliative or graveled or treated by another approved dust control Chapter 83.09 of the Development Code.

(24) On-site vehicle speed will be limited to 15 mph.

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) THRESHOLDS OF SIGNIFICANCE

In accordance with Appendix G of the California Environmental Quality Act (CEQA) Guidelines, the Project would have a significant impact in regard to air quality if one or more of the following would occur:

Threshold a): Conflict with or obstruct implementation of the applicable air quality plan (refer to Impact AQ-1);

Threshold b): Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable Federal or State ambient air quality standard (refer to Impact AQ-2);

Threshold c): Expose sensitive receptors to substantial pollutant concentrations (refer to Impact AQ-3); or

Threshold d): Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people (refer to Impact AQ-4).

MDAQMD Air Quality Thresholds

Under CEQA, the MDAQMD is an expert commenting agency on air quality and related matters within its jurisdiction or impacting on its jurisdiction. Under the CAA, the MDAQMD has adopted federal attainment plans for O_3 and PM10. The MDAQMD has dedicated assets to reviewing projects to ensure that they will not: (1) cause or contribute to any new violation of any air quality standard; (2) increase the frequency or severity of any existing violation of any air quality standard; or (3) delay timely attainment of any air quality standard or any required interim emission reductions or other milestones of any federal attainment plan.

According to the MDAQMD's *CEQA and Federal Conformity Guideline*, a project is significant if it triggers or exceeds the most appropriate evaluation criteria:

1. Generates total emissions (direct and indirect) in the excess of the thresholds given in; **Table 4: MDAQMD Significant Emissions Thresholds;**

2. Generates a violation of any ambient air quality standard when added to the local background;

3. Does not conform with the applicable attainment or maintenance plan(s)[10];

[10] A project is deemed to not exceed this threshold, and hence not be significant, if it is consistent with the existing land use plan. Zoning changes, specific plans, general plan amendments and similar land use plan changes which do not increase dwelling unit density, do not increase vehicle trips, and do not increase vehicle miles traveled are also deemed to not exceed this threshold.

4. Exposes sensitive receptors to substantial pollution concentrations, including those resulting in a cancer risk greater than or equal to 10 in a million and/or a Hazard Index (HI) (non-cancerous) greater than or equal to 1.

Table 4: MDAQMD Significant Emissions Thresholds

Criteria Pollutant	Annual Threshold (tons)	Daily Threshold (pounds)
Carbon Monoxide (CO)	100	548
Oxides of Nitrogen (NO_X)	25	137
Volatile Organic Compounds (VOC)	25	137
Oxides of Sulfur (SO_X)	25	137
Particulate Matter (PM10)	15	82
Fine Particulate Matter (PM2.5)	12	65
Hydrogen Sulfide (H_2S)	10	54
Lead (Pb)	0.6	3

Source: Mojave Desert Air Quality Management District, *CEQA and Federal Conformity Guidelines*, page 9, February 2020.

IMPACT ANALYSIS

Impact AQ-1: Would the Project conflict with or obstruct implementation of the appliable air quality plan?

The Project Site is located within the Mojave Desert Air Basin and is regulated by the MDAQMD. The MDAQMD PM10 Attainment Plan and Ozone Attainment Plan established under the Western Mojave Desert Air Quality Management Plans (AQMPs) set forth a comprehensive set of programs that will lead the Mojave Desert Air Basin into compliance with federal and State air quality standards. The control measures and related emission reduction estimates within the MDAQMD PM10 Attainment Plan and Ozone Attainment Plan are based upon emissions projections for a future development scenario derived from land use, population, and employment characteristics defined in consultation with local governments. Accordingly, conformance with these attainment plans is determined by:

- Demonstrating Project consistency with local land use plans and/or population projections (**Criterion 1**);
- Demonstrating Project compliance with applicable MDAQMD Rules and Regulations (**Criterion 2**); and
- Demonstrating Project implementation will not increase the frequency or severity of a violation in the Federal or State ambient air quality standards (**Criterion 3**).

Criterion 1: Consistency with local land use plans and/or population projections.

Growth projections included in the AQMPs form the basis for the projections of air pollutant emissions and are based on general plan land use designations and the Southern California Association of Governments (SCAG) *2016–2040 Regional Transportation Plan/Sustainable Communities Strategy* (RTP/SCS) demographics forecasts. While SCAG has recently adopted the 2020-2045 RTP/SCS, the MDAQMD has not released an updated AQMP that utilizes information from the 2020-2045 RTP/SCS. As such, this consistency analysis is based off the 2016-2040 RTP/SCS. The population, housing, and employment forecasts within the 2016-2040 RTP/SCS are based on local general plans as well as input from local governments, such as the County. The MDAQMD has incorporated these same demographic growth forecasts for various socioeconomic categories (e.g., population, housing, employment) into the AQMPs.

Zoning is local law that regulates various aspects of how land can be used. Zoning in the Project area is regulated by the San Bernardino County Code of Ordinances and Zoning designations that are found in the Countywide Plan/Policy Plan.[11] The Project Site is designated as RL (Rural Living) in the Countywide Plan/Policy Plan. The existing zoning for the Project is also RL (Rural Living). Pursuant to San Bernardino County Code of Ordinances Section 82.04.040, renewable energy generation facilities are a permitted use with an approved CUP.

The County's total area population estimate as of January 1, 2023 was 2,182,056.[12] SCAG growth forecasts in the 2016-2040 RTP/SCS estimate the County's unincorporated population to reach 344,100 persons by 2040, representing a total increase of 48,500 persons between 2012 and 2040. Additionally, SCAG growth forecasts in the 2016-2040 RTP/SCS estimate the unincorporated County's employment to reach 91,100 jobs by 2040, representing a total increase of 33,700 jobs between 2012 and 2040.[13]

The Project would include neither a residential component that would increase local population growth, nor a commercial component that would substantially increase employment. Construction of the Project would not result in residential, commercial, or growth-inducing development that would result in a substantial increase in growth-related emissions. In addition, because of the presence of locally available construction workers, and because of the relatively short duration of construction (approximately nine months), workers are not expected to relocate to the area with their families.

The Project would operate year-round. Typical O&M activities during Project operations include, but are not limited to, facility monitoring; administration and reporting; remote operations of inverters,

[11] San Bernardino County Land Use Service Zoning Maps, Interactive Zoning Layer https://lus.sbcounty.gov/planning-home/zoning-and-overlay-maps/zoning-maps/, accessed on December 14, 2023.

[12] State of *California Department* of Finance, E-5 Population and Housing Estimates for Cities, Counties, and the State, January 2021-2022, with 2020 Benchmark, May 2022.

[13] Southern California Association of Governments, 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy Demographics & Growth Forecast Appendix, April 2016.

BESS system, and other equipment; repair and maintenance of solar facilities, electrical transmission lines, and other Project facilities; and periodic panel washing.

Therefore, limited operations staff would be required. As such, there would be no employee or population growth as a result of the Project, and the Project would not cause the SCAG growth forecast to be exceeded. As the MDAQMD has incorporated these forecasts on population, housing, and employment into the AQMPs, the Project would be consistent with the AQMPs and would meet Criterion 1.

Criterion 2: Compliance with applicable MDAQMD Rules and Regulations.

The Project would be required to comply with all applicable MDAQMD Rules and Regulations. This would include MDAQMD Rules 401, 402, and 403. MDAQMD Rule 403 requires periodic watering for short-term stabilization of disturbed surface area to minimize visible fugitive dust (PM10) emissions, covering loaded haul vehicles, and reduction of non-essential earth moving activities during higher wind conditions. The Project would comply with applicable MDAQMD rules, enforced through Project Conditions of Approval, and not conflict with applicable MDAQMD Rules and Regulations. The Project would meet Criterion 2.

Criterion 3: Demonstrating Project implementation will not increase the frequency or severity of a violation in the Federal or State ambient air quality standards.

Analysis of the Project's potential to result in more frequent or severe violations of the CAAQS and NAAQS can be satisfied by comparing Project emissions to MDAQMD thresholds. As discussed under Impact AQ-2 below, unmitigated short-term construction emissions would not exceed MDAQMD significance thresholds. Additionally, unmitigated long-term operational emissions of all criteria pollutants studied (NO_X, ROG, CO, sulfur dioxide [SO_2] PM10, and PM2.5) would be less than the applicable MDAQMD significance thresholds. Therefore, the Project would not delay the Mojave Desert Air Basin's attainment goals for O_3[14], PM10, and PM2.5, and would not result in an increase in the frequency or severity of existing air quality violations. As such, the Project would not cause or contribute to localized air quality violations or delay the attainment of air quality standard or interim emissions reductions specified in the AQMPs and would meet Criterion 3.

Conclusion

As discussed above, the Project would comply with MDAQMD Rules and Regulations and would not induce residential or worker population growth. Further, the Project would not cause or contribute to localized air quality violations or delay the attainment of air quality standard or interim emissions reductions specified in the AQMPs. Thus, the Project would not result in or cause NAAQS or CAAQS violations. The Project would meet Criterion 1, Criterion 2, and Criterion 3. As such, the Project would be consistent with the MDAQMD's AQMPs and impacts would be less than significant.

[14] Ground level O_3 is created during a photochemical reaction from NO_X and ROG emissions.

Impact Determination: Less Than Significant Impact.

Mitigation Measures: No mitigation is required.

Impact AQ-2: Would the Project result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable Federal or State ambient air quality standard?

Construction

Project construction involving the use of heavy-duty construction equipment is anticipated to be completed over a period of approximately nine months.[15] The Project involves construction activities associated with demolition, site preparation, grading, paving, construction/installation, and PV vendor trips.

Exhaust Emissions

Exhaust emissions (e.g., ROG, NO_x, and CO) from Project construction activities would include emissions associated with the transport of machinery and supplies/materials to and from the Project Site, emissions produced on-site as the equipment is used, and emissions from construction workers' personal vehicles traveling to/from the site. Mobile source criteria pollutant emissions are based on the actual number of worker trips and delivery truck trips associated with construction of the proposed Project.

Exhaust emission factors for typical diesel-powered heavy equipment are based on the California Emissions Estimator Model version 2022.1 (CalEEMod) program defaults. Variables factored into estimating the total construction emissions include the level of activity, length of construction period, number of pieces and types of equipment in use, site characteristics, weather conditions, number of construction personnel, and the amount of materials to be transported on- or off-site. The analysis includes emissions from delivering the construction materials and PV modules (panels) from the nearest port (a roundtrip distance of approximately 152 miles). Additionally, construction worker trip emissions are based on the maximum construction workforce (70 individuals) and the distance to the nearest populated areas (Twentynine Palms, and Yucca Valley; a roundtrip distance of 26 miles). Further, as water would be trucked in from an off-site source a construction water truck trip length of 13 miles was accounted for in CalEEMod.

Fugitive Dust Emissions

Fugitive dust from site preparation and facilities construction activities is expected to be short-term and would cease upon completion of Project construction. The Project would implement all applicable MDAQMD dust control techniques, limitations on construction hours, and adhere to

[15] Note that the modeling does not account for testing, commissioning, and cleanup as heavy-duty construction equipment would not be utilized.

MDAQMD Rule 403 (which require watering of inactive and perimeter areas, track out requirements, etc.), to reduce PM10 and PM2.5 concentrations. Additionally, the Project would comply with San Bernardino County Code of Ordinances Section 84.29.035, which would further reduce emissions from certain pollutants related to construction exhaust.

Total Construction Emissions

The analysis of daily construction emissions has been prepared using CalEEMod. Refer to **Appendix A: Air Quality Emissions Data**, for the CalEEMod outputs and results. **Table 5: Daily Construction-Related Emissions** and **Table 6: Annual Construction-Related Emissions** present the anticipated short-term construction emissions. As indicated in **Table 5** and **Table 6**, criteria pollutant emissions during Project construction would not exceed the MDAQMD significance thresholds. Therefore, total Project construction-related emissions would be less than significant.

Table 5: Daily Construction-Related Emissions

Construction Year	Maximum Pounds Per Day[1]					
	ROG	NO_X	CO	SO_2	PM10	PM2.5
Year (2025)[2]	3.49	27.23	33.28	0.06	9.39	3.91
MDAQMD Thresholds	***137***	***137***	***548***	***137***	***82***	***65***
Exceed MDAQMD Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

ROG = Reactive Organic Gases; NO_X = Nitrogen Oxides; CO = Carbon Monoxide; SO_2 = Sulfur Dioxide; PM10 = Particulate Matter 10 microns in diameter or less; PM2.5 = Particulate Matter 2.5 microns in diameter or less

Notes:
1. The highest values between summer and winter results were used as a worst-case scenario.
2. The reductions/credits for construction emissions are based on adjustments to CalEEMod and are required by the MDAQMD Rules. The adjustments applied in CalEEMod includes the following: properly maintain mobile and other construction equipment; replace ground cover in disturbed areas quickly; water exposed surfaces three times daily; cover stockpiles with tarps; and limit speeds on unpaved roads to 15 miles per hour.

Source: CalEEMod version 2022.1. See **Appendix A** for model outputs.

Table 6: Annual Construction-Related Emissions

Construction Year	Maximum Tons per Year[1]					
	ROG	NO_X	CO	SO_2	PM10	PM2.5
Year (2025)	0.18	1.49	1.76	<0.005	0.30	0.14
MDAQMD Thresholds	***25***	***25***	***100***	***25***	***15***	***12***
Exceed MDAQMD Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

ROG = Reactive Organic Gases; NO_X = Nitrogen Oxides; CO = Carbon Monoxide; SO_2 = Sulfur Dioxide; PM10 = Particulate Matter 10 microns in diameter or less; PM2.5 = Particulate Matter 2.5 microns in diameter or less

Notes:
1. The reductions/credits for construction emissions are based on adjustments to CalEEMod and are required by the MDAQMD Rules. The adjustments applied in CalEEMod includes the following: properly maintain mobile and other construction equipment; replace ground cover in disturbed areas quickly; water exposed surfaces three times daily; cover stockpiles with tarps; and limit speeds on unpaved roads to 15 miles per hour.

Source: CalEEMod version 2022.1. See **Appendix A** for model outputs.

Operations

Operational emissions associated with the Project would include those generated from panel washing, maintenance, and the BESS. **Table 7: Daily Operational Emissions** and **Table 8: Annual Operational Emissions**, present the Project's anticipated mobile source (i.e., motor vehicle use), energy source, and area source emissions. Each of these sources are described below.

Table 7: Daily Operational Emissions

Source	Maximum Pounds Per Day[1]					
	ROG	**NO_X**	**CO**	**SO_2**	**PM10**	**PM2.5**
Area	92.2	1.13	135	0.01	0.24	0.18
Energy	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	<0.05	0.14	0.05	<0.05	0.03	0.01
Total Emissions	*92.2*	*1.27*	*135*	*0.01*	*0.27*	0.19
MDAQMD Thresholds	***137***	***137***	***548***	***137***	***82***	***65***
Exceed MDAQMD Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

ROG = Reactive Organic Gases; NO_X = Nitrogen Oxides; CO = Carbon Monoxide; SO_2 = Sulfur Dioxide; PM10 = Particulate Matter 10 microns in diameter or less; PM2.5 = Particulate Matter 2.5 microns in diameter or less

Note: Total values are from CalEEMod and may not add up 100 percent due to rounding.
1. The highest values between summer and winter results were used as a worst-case scenario.

Source: CalEEMod version 2022.1. See **Appendix A** for model outputs.

Table 8: Annual Operational Emissions

Source	Maximum Tons per Year					
	ROG	**NO_X**	**CO**	**SO_2**	**PM10**	**PM2.5**
Area	14.8	0.10	12.1	< 0.005	0.02	0.02
Energy	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	<0.05	0.02	0.01	<0.005	<0.05	<0.05
Total Emissions[1]	*14.8*	*0.12*	*12.1*	*<0.005*	*0.03*	0.02
MDAQMD Thresholds	***25***	***25***	***100***	***25***	***15***	***12***
Exceed MDAQMD Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

ROG = Reactive Organic Gases; NO_X = Nitrogen Oxides; CO = Carbon Monoxide; SO_2 = Sulfur Dioxide; PM10 = Particulate Matter 10 microns in diameter or less; PM2.5 = Particulate Matter 2.5 microns in diameter or less

Note: Total values are from CalEEMod and may not add up 100 percent due to rounding.
1. The highest values between summer and winter results were used as a worst-case scenario.

Source: CalEEMod version 2022.1. See **Appendix A** for model outputs.

Area Source Emissions. Area source emissions would be generated due to potential BESS architectural coatings, use of consumer products (e.g. cleaning supplies), and landscaping equipment. Default CalEEMod assumptions were utilized.

Energy Source Emissions. The Project's operational activities would not consume natural gas. The Project would consume negligible amounts of electricity for auxiliary equipment, such as BESS heating, ventilation, and air conditioning (HVAC) units, communications equipment, and lighting. It is assumed that electricity demand would be met by solar energy collected at the Project Site; therefore, zero emissions have been accounted for.

Mobile Source Emissions. Mobile sources are emissions from motor vehicles, including tailpipe and evaporative emissions. Depending upon the pollutant being discussed, the potential air quality impact may be of either regional or local concern. For example, ROG, NO_X, SO_X, PM10, and PM2.5 are all pollutants of regional concern (NO_X and ROG react with sunlight to form O_3 [photochemical smog], and wind currents readily transport SO_X, PM10, and PM2.5); however, CO tends to be a localized pollutant, dispersing rapidly at the source. During operations, the Project would generate minimal periodic operational vehicle trips internal to the Project Site for required maintenance activities. It is estimated that the Project would require 6 maintenance-related roundtrips per year and up to 4 solar panel and inverter washing roundtrips per year, resulting in approximately 10 operational roundtrips per year (20 one-way trips). For purposes of a worst-case analysis assuming a maximum operational day, the model assumes that all 20 one-way trips would occur in one day; refer to **Appendix A** for assumptions and calculations.

Total Operational Emissions

As shown in **Table 6** and **Table 7**, estimated total Project operational emissions would not exceed established MDAQMD thresholds. Therefore, impacts associated with Project operational emissions would be less than significant.

Air Quality Health Impacts

Adverse health effects induced by criteria pollutant emissions are highly dependent on a multitude of interconnected variables (e.g., cumulative concentrations, local meteorology and atmospheric conditions, and the number and character of exposed individual [e.g., age, gender]). In particular, ozone precursors VOCs and NO_x affect air quality on a regional scale. Health effects related to ozone are therefore the product of emissions generated by numerous sources throughout a region. Existing models have limited sensitivity to small changes in criteria pollutant concentrations, and, as such, translating criteria pollutants generated by an individual project to specific health effects or additional days of nonattainment would produce meaningless results. The NAAQS and CAAQS are set to be protective of human health, however, which means that the Project's less than significant increases in regional air pollution from criteria air pollutants would have less than significant impacts on human health.

The MDAQMD does not have clear thresholds or methodology to quantify health impacts of criteria pollutants from individual projects. Other air districts, including the South Coast Air Quality Management District (SCAQMD), have stated that it would be extremely difficult, if not impossible

to quantify health impacts of criteria pollutants from individual projects for various reasons including modeling limitations as well as the fact that certain emissions are the result of chemical interactions and it is impossible to determine exactly where in the atmosphere precursor air pollutants will interact.[16]

The SCAQMD acknowledges that health effects quantification from O_3, as an example, is correlated with the increases in ambient level of O_3 in the air (concentration) that an individual person breathes. SCAQMD has written that it would take a large amount of additional emissions to cause a modeled increase in ambient O_3 levels over the entire region. The SCAQMD states that based on their own modeling in the SCAQMD's *2012 Air Quality Management Plan*, a reduction of 432 tons (864,000 pounds) per day of NO_X and a reduction of 187 tons (374,000 pounds) per day of VOCs would reduce ozone levels at the site with the highest ozone levels by only nine parts per billion. As such, the SCAQMD concludes that it is not currently possible to accurately quantify ozone-related health impacts caused by NO_X or VOC emissions from relatively small projects (defined as projects with less than a regional scope) due to photochemistry and regional model limitations.

Because the Project would not exceed MDAQMD's thresholds for construction and operational air emissions, the Project would have a less than significant impact for air quality health impacts as well and no modeling of health impacts was performed.

Decommissioning

At the end of the Project's operational term, the Applicant may determine that the Project should be decommissioned and deconstructed. Pursuant to San Bernardino County Development Code Section 84.29.070, the Applicant will work with the County to ensure decommissioning of the Project after its productive lifetime complies with all applicable local, State, and federal requirements and BMPs. The Project would include BMPs to ensure the collection and recycling of modules and to avoid the potential for modules to be disposed of as municipal waste.

Equipment would be de-energized prior to removal, salvaged (where possible), placed in appropriate shipping containers, and secured in a truck transport trailer for shipment off-site to be recycled or disposed of at an appropriately licensed disposal facility. Site infrastructure would be removed, including fences and concrete pads that may support the inverters and related equipment. The exterior fencing would be removed, and materials would be recycled to the extent feasible. Project internal and access roads would be restored to their pre-construction condition to the extent feasible unless the landowner elects to retain the improved roads for access throughout the property. A collection, reuse, and recycling program would be utilized to promote reuse and recycling of Project components and minimize disposal in landfills.

[16] South Coast Air Quality Management District, *Application of the South Coast Air Quality Management District for Leave to File Brief of Amicus Curiae in Support of Neither Party and Brief of Amicus Curiae. In the Supreme Court of California. Sierra Club, Revive the San Joaquin, and League of Women Voters of Fresno v. County of Fresno*, 2014.

While decommissioning would likely take the same or fewer months than construction and involve less construction equipment and workers on a daily basis, for the purposes of presenting a conservative analysis, it was assumed that Project decommissioning would generate the same emissions as Project construction. As shown in **Table 5** and **Table 6** emissions would not exceed MDAQMD thresholds and impacts would be less than significant.

Cumulative Impacts

Cumulative Short-Term Construction Impacts

With respect to the Project's construction-period air quality emissions and cumulative Mojave Desert Air Basin-wide conditions, the MDAQMD has developed strategies to reduce criteria pollutant emissions outlined in the AQMPs pursuant to CAA mandates. As such, the Project would comply with MDAQMD Rule 403 greatest requirements and implement all applicable MDAQMD rules to reduce construction air emissions to the extent feasible. Rule 403 requires that fugitive dust be controlled with the best available control measures in order to reduce dust so that it does not remain visible in the atmosphere beyond the property line of the Project Site. Examples of best available control measures for dust include the application of water and soil stabilizers, covering of loads, avoiding track out onto public roads, and the minimization of non-essential grading during high wind conditions. In addition, the Project would comply with adopted AQMP emissions control measures. Implementation of MDAQMD Rule 403 and the AQMP emissions control measures would help the Project further reduce emissions from construction activities. Pursuant to MDAQMD rules and mandates, these same requirements (i.e., Rule 403 compliance and compliance with adopted AQMP emissions control measures) would also be imposed on construction projects throughout the Mojave Desert Air Basin, which would include potential cumulative projects.

As discussed in **Table 5** and **Table 6** above, the Project's estimated short-term construction emissions would be below the MDAQMD thresholds and would result in less than significant air quality impacts. Thus, the Project's construction emissions would not contribute to a cumulatively considerable air quality impact for nonattainment criteria pollutants in the Mojave Desert Air Basin, and impacts would be less than significant impact.

Cumulative Long-Term Operational Impacts

As discussed in **Table 7** and **Table 8**, the Project would not result in long-term operational air quality impacts. Additionally, adherence to MDAQMD rules and regulations alleviate cumulatively considerable contributions to potential significant impacts related to cumulative conditions on a project-by-project basis. Emission reduction technology, strategies, and plans are constantly being developed to address existing significant cumulative impacts. As a result, the Project would not contribute a cumulatively considerable net increase of any nonattainment criteria pollutant, and impacts would be less than significant.

Impact Determination: Less Than Significant Impact.

Mitigation Measures: No mitigation is required.

Impact AQ-3: Would the Project expose sensitive receptors to substantial pollutant concentrations?

Sensitive receptors are defined as facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, parks, daycare centers. CARB has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over 65, children under 14, athletes, and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis. The nearest sensitive receptor to the Project Site is a residential use located approximately 168 feet north. No schools, hospitals, or parks are located within two miles of the Project Site.

Construction

Project construction is anticipated to be completed over a period of approximately nine months. Project construction activities are anticipated to involve the operation of diesel-powered equipment, which would emit Diesel Particulate Matter (DPM). In 1998, the CARB identified diesel exhaust as a (TAC). Cancer health risks associated with exposures to diesel exhaust typically are associated with chronic exposure, in which a 30-year exposure period often is assumed. Project construction would comply with the California Code of Regulations (CCR), Title 13, Section 2449(d)(3) and 2485, which minimizes the idling time of construction equipment either by shutting it off when not in use or by reducing the time of idling to nor more than five minutes. Implementation of these regulations would reduce the amount of DPM emissions from Project construction.

Furthermore, construction activities are expected to occur well below the 30-year exposure period used in health risk assessments. Emissions would be short-term and intermittent in nature, and therefore would not generate TAC emissions at high enough exposure concentrations to represent a health hazard. Therefore, construction of the Project would not result in a significant increase in elevated cancer risk to nearby sensitive receptors and impacts would be less than significant.

Operations

Typical O&M activities during Project operations include, but are not limited to, facility monitoring; administration and reporting; remote operations of inverters, BESS system, and other equipment; repair and maintenance of solar facilities, electrical transmission lines, and other Project facilities; and periodic panel washing. None of these activities would result in the generation of excessive TAC emissions, or associated health risks. Therefore, operation of the Project is not anticipated to result in an elevated cancer risk to nearby sensitive receptors and potential impacts would be less than significant.

Carbon Monoxide Hotspots

CO emissions are a function of vehicle idling time, meteorological conditions, and traffic flow. Under certain extreme meteorological conditions, CO concentrations near a congested roadway or intersection may reach unhealthful levels (i.e., adversely affecting residents, school children, hospital patients, the elderly, etc.). CO is primarily a product of incomplete combustion of gaseous or liquid fuels, meaning tailpipe emissions are worse in stop-and-go congested traffic as compared to free flowing conditions. The Project does not include any stationary sources of combustion, and results in a net increase of approximately 10 maintenance and solar panel washing roundtrips per year (20 one-way trips) year. The Project is not located near existing CO hotspots and the trips associated with the Project are insufficient to create a CO hotspot.

With such low existing ambient levels of CO, low levels of CO emissions from the Project, and lack of congested roadways around the Project, the Project would not cause CO hotspots in excess of applicable NAAQS or CAAQS standards at any intersections within the County. Impacts would be less than significant in this regard.

Naturally Occurring Asbestos.

Asbestos is a term used for several types of naturally occurring fibrous minerals that are a human health hazard when airborne. The most common type of asbestos is chrysotile, but other types such as tremolite and actinolite are also found in California. Asbestos is classified as a known human carcinogen by federal, State, and international agencies and was identified as a toxic air contaminant by CARB in 1986. Asbestos can be released from serpentinite and ultramafic rocks when the rock is broken or crushed. At the point of release, the asbestos fibers may become airborne, causing air quality and human health hazards. These rocks have been commonly used for unpaved gravel roads, landscaping, fill projects, and other improvement projects in some localities.

According to the Department of Conservation Division of Mines and Geology, *A General Location Guide for Ultramafic Rocks in California – Areas More Likely to Contain Naturally Occurring Asbestos Report* (August 2000), serpentinite and ultramafic rocks do not occur within the vicinity of the Project Site. Thus, there would be no impact in this regard.

Valley Fever

Coccidioidomycosis (CM), often referred to as San Joaquin Valley Fever or Valley Fever, commonly affects people who live in hot dry areas with alkaline soil and varies with the season. This disease, which affects both humans and animals, is caused by inhalation of arthroconidia (spores) of the fungus *Coccidioides immitis* (CI). CI spores are found in the top 2-to-12 inches of soil and the existence of the fungus in most soil areas is temporary. The cocci fungus lives as a saprophyte in dry, alkaline soil. When weather and moisture conditions are favorable, the fungus “blooms” and forms many tiny spores that lie dormant in the soil until they are stirred up by wind, vehicles, excavation, or other ground-moving activities and become airborne. Agricultural workers, construction workers,

and other people who work outdoors and who are exposed to wind and dust are more likely to contract Valley Fever. Children and adults whose hobbies or sports activities expose them to wind and dust are also more likely to contract Valley Fever.

The fugus is known to live in the soil in the southwestern United States and parts of Mexico and Central and South America. People and animals can get sick when they breathe in dust that contains the Valley fever fungus. This fungus infects the lungs and can cause respiratory symptoms including cough, fever, chest pain, and tiredness. In California, the number of reported Valley fever cases has greatly increased in recent years. The number of Valley Fever cases in the United States has been steadily increasing over the past few years. There were over 20,000 reported cases in 2019, and the Center for Disease Control and Prevention (CDC) estimates that an additional 150,000 cases go undiagnosed each year. About 32 percent of all cases occur in California.[17] In 2016, there were 45 cases of Valley Fever in San Bernardino County, an incidence rate of 2.1 cases per 100,000 people.[18]

When a susceptible human who is not immune inhales these airborne spores, they enter the lungs and may cause respiratory infections, such as pneumonia. Roughly 60 percent of individuals infected with CI have no symptoms. For the remaining 40 percent, a wide spectrum of clinical symptoms can occur. The most common presentation of CM is a mild, influenza-like illness while the more severe includes pneumonia-like symptoms requiring rest and medication (fungus-killing medicines). The symptoms of the disease typically begin about two weeks after inhaling the spores. These symptoms typically include flu-like symptoms such as fever, aching, chills, sweats, fatigue, cough, and headache. In uncomplicated CM, symptoms usually subside in a few weeks or months.

In approximately one percent of infected persons, disseminated disease develops, in which CM is spread from the lungs to other areas of the body such as the skin, bones, brain, or other organs. This spreading of CM infection beyond the lungs can be fatal. Meningitis, the most lethal complication of disseminated CM, may cause a stiff neck, severe and persistent headache, nausea, vomiting, and various other central nervous system symptoms such as disorientation, loss of balance or equilibrium, inability to think clearly and loss of consciousness. People with diabetes and women who contract CM while they are pregnant are particularly prone to dissemination of the disease.

Currently, no vaccine is available to prevent this infection. Further, there is no effective way to detect and monitor CI growth patterns in the soil. Thus, controlling the growth of the fungus in the environment to reduce the risk to individuals is currently not a viable option. A skin test can be conducted to identify individuals who have been infected in the past and would have developed immunity to the fungus, although recurrence as a result of immuno-suppression is possible. Even if the fungus is present in soil, earthmoving activities may not result in increased incidence of valley

[17] Center for Disease Control and Prevention, Valley Fever (Coccidioidomycosis) Statistics, https://www.cdc.gov/fungal/diseases/coccidioidomycosis/statistics.html, accessed December 14, 2023.

[18] San Bernardino County Coccidioidomycosis Fact Sheet, https://wp.sbcounty.gov/dph/wp-content/uploads/sites/7/2017/06/News-Coccidioidomycosis-6.1.17.pdf, accessed December 14, 2023.

fever. Propagation of Coccidioides is dependent on climatic conditions, with the potential for growth and surface exposure highest following early seasonal rains and long dry spells.

To reduce exposure to CI, development projects implement measures to prevent wind dispersion of arthrospores, such as applying dust control palliatives, water, or vegetation to fungus-bearing soils. To facilitate early identification of infection and subsequent treatment, the San Bernardino County Department of Public Health Division of Environmental Health Service recommends using dust suppression methods include wetting the soil during work or covering bare soil.

The California Department of Public Health recommends stopping outside activity during conditions where the dust cannot be controlled well. Appropriate use of respiratory protect may be also needed in some circumstances.

During ground disturbing activities associated Project construction, the potential exists that such activities could disturb dust particles and, if present, CI spores, which could then be released into the air and potentially be inhaled by on-site workers and nearby sensitive receptors; exposure to these spores can cause Valley Fever. MDAQMD Rule 403 requires that fugitive dust be controlled with the best available control measures in order to reduce dust so that it does not remain visible in the atmosphere beyond the property line of the Project Site. Examples of best available control measures for dust include the application of water and soil stabilizers, covering of loads, avoiding track out onto public roads, and the minimization of non-essential grading during high-wind conditions. Due to the distance of the nearest sensitive receptor, the Project is not anticipated to exacerbate the risk of existing sensitive receptors to contract Valley Fever. Although CEQA does not require the analysis of a Project's impacts on its construction workers, such analysis is included for informational purposes. The best approaches to reducing construction workers' risk of contracting Valley Fever are awareness and dust reduction because dust can be an indicator that increased efforts are needed to control other airborne particulates (including CI spores, if any). Compliance with MDAQMD rules reduce dust. For example, MDAQMD Rule 401 prohibits a person from discharging into the atmosphere any air emission contaminant for a period or periods aggregating more than three minutes in any single hour emissions that is: (a) as dark or darker in shade as that designated as No. 1 on the Ringelmann Chart, as published by the U.S. Bureau of Mines; or (b) of such opacity as to obscure an observer's view to a degree equal to or greater than 20 percent opacity. MDAQMD Rule 402 prohibits the discharge of air contaminants in quantities that would cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or that endanger the comfort, repose, health, or safety of any such persons or the public. Additionally, the Project would be required to provide training and awareness of Valley Fever via **Mitigation Measure (MM) AQ-1**. **MM AQ-1** would further ensure worker safety through education and ensuring implementation of required Occupational safety and Health Administration (OSHA) safety measures.

With the implementation of **MM AQ-1**, the potential for the release of CI spores, if present, and the associated potential for workers or nearby residents to contract Valley Fever from Project

construction activities would be minimized. Accordingly, the Project would not add significantly to the existing exposure level of construction workers or nearby residents to the CI fugus. Therefore, potential impacts would be less than significant with mitigation incorporated.

Impact Determination: Potentially Significant Impact.

Mitigation Measure:

MM AQ-1: Prior to ground disturbance activities, the Applicant must prepare a Valley Fever Management Plan (VFMP), including a Valley Fever training program, to be implemented during construction to address potential risks from *Coccidioides immitis* by minimizing the potential for unsafe dust exposure during construction. The VFMP will identify best management practices including:

- Development of an educational Valley Fever Training Handout for distribution to onsite workers, which should include general information about the causes, symptoms, and treatment instructions regarding Valley Fever, including contact information of local health departments and clinics knowledgeable about Valley Fever.
- Conducting Valley Fever training sessions to educate all Project construction workers regarding appropriate dust management and safety procedures, symptoms of Valley Fever, testing and treatment options. This training must be completed by all workers and visitors (expected to be on-site for more than 2 days) prior to participating in or working in proximity to any ground disturbing activities. Signed documentation of successful completion of the training is to be kept on-site for the duration of construction.
- Developing a job-specific Job Hazard Analyses (JHA), in accordance with Cal/OSHA regulations, to analyze the risk of worker exposure to dust, and maintain and manage safety supplies identified by the JHA.
- Provide and/or require, if determined to be needed based on the applicable JHA, National Institute for Occupational Safety and Health-approved half-face respirators equipped with a minimum N-95 protection factor for use during worker collocation with surface disturbance activities, following completion of medical evaluations, fit-testing, and proper training on use of respirators.

With implementation of **MM AQ-1**, potentially significant impacts related to sensitive receptor pollutant exposure would be reduced to less than significant levels.

Impact AQ-4: Would the Project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

According to the CARB's *CEQA Air Quality Handbook*, land uses associated with odor complaints typically include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. The Project includes

construction of a PV electricity generation and energy storage facility and does not include any uses identified by the CARB as being associated with odors.

Project construction activities may generate detectable odors from heavy-duty equipment exhaust. However, construction-related odors would be short-term in nature and cease upon completion of Project construction. Further, the nearest potential residence is too far from the Project Site to detect construction odors. In addition, the Project would be required to comply with the CCR, Title 13, Sections 2449(d)(3) and 2485, which minimizes the idling time of construction equipment either by shutting it off when not in use or by reducing the time of idling to no more than five minutes. This would further reduce the detectable odors, if any, from heavy-duty equipment exhaust. Therefore, potential impacts would be short-term and are considered less than significant.

As previously noted, land uses associated with odor complaints do not typically include PV electricity generation and energy storage facilities. During operations, the Project would generate minimal periodic operational vehicle trips internal to the Project Site for required maintenance activities.

It is estimated that the Project would require 6 maintenance-related visits per year and up to 4 solar panel and inverter washing visits per year, resulting in 10 total annual roundtrips (20 one-way trips). Project operational vehicle trips would be minimal and not of sufficient number to create concentrations of odorous fumes to form and cause a nuisance. As such, potential impacts would be easily dispersed in the atmosphere, and impacts would be less than significant.

Impact Determination: Less Than Significant Impact.

Mitigation Measures*:* No mitigation is required.

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Appendix A

Air Quality Emissions Data

Lear Construction Schedule

Phase	Start Date	End Date	Work Days
Demolition	1/1/2025	1/22/2025	15
Site Preparation	1/23/2025	2/27/2025	25
Grading	2/28/2025	4/11/2025	30
Paving	4/12/2025	4/26/2025	10
Construction/Installation	4/27/2025	7/13/2025	55
PV Panel vendor Trips	7/14/2025	8/30/2025	34

Demolition	
Dozer	2
Excavator	3
Concrete/industrial straws	1
Site Preparation	
Tractor/loader/backhoe	1
Dozers	1
Grading	
Excavators	2
Rubber Tired Dozers	2
Off-Highway Trucks	1
Skid Steer Loaders	1
Rollers	2
Construction/Installation	
Cranes	1
Pile driver rig	2
Drill rig	1
Tractors/Loaders/Backhoes	1
Excavators	1
Off-Highway Trucks	1
concrete truck	1
Rubber Tired Dozers	1
Trenchers	1
Skid steer	2
PV Vendor Trips	
Tractor/Loader/Backhoe	1
Paving	
Rollers	1

Worker Trips

	Distance from Project Site	Population[1]	%	Peak Workers
Twentynine Palms, City, California	8	25,929	55%	38
Yucca Valley	20	21,635	45%	32
Totals	*28*	*47,564*		*70*
		Trip Length (miles):	**13**	
		Estimated Worker Trips[2]:	**40**	

Notes:
1. California Department of Finance Demographic Research Unit, Report E-5 Population and Housing Estimates for Cities, Counties, and the State, January 1, 2021-2023, 1/1/2023
2. Based on the San Bernardino County Average Vehicle Occupancy rate for home-work trips within the *Year 2000 Post-Census Regional Travel Survey* , Table 12, prepared by Southern California Association of Governments, dated 2003.

Water Truck Trips (On-Site Wells)

	Distance Traveled	Trips/Day[1]	System Installation (# Days)	Total Trips[2]
Site Prep	13	11	0	0
Grading	13	11	0	0
Construction/Installation	13	11	0	0
			Total	-

Notes:
1. For another Project, during 6-month construction, Project will use 13 acre-feet or 4,236,000 gallons.
2.Using similar methodology, each water truck would hold an average of 4,697 gallons (4,236,000 gallons/4,697 gallons per truck = 902 trucks total. 902 total trucks / 87 total days site prep grading and construction = 11 trucks per day). Water trucks hold anywhere from 2,000 to as much as 20,000 gallons.
3.Trips assumed as Vendor trips. Distance is 13 miles based on on-site well extraction.

PV Panel Vendor Trips

	Distance from Project Site	Trips/Day[1]	System Installation (# Days)	Total Trips
Port of Long Beach	152	2	13	27

Notes:
1. A similar Project assumed 5 trips per day (113 days) from the Port of Long Beach for system installation (130 MW). Since the project is 6.2 MW, scaled down the trips/day to 5% of the other Project.

25 miles to Landers Landfill

Notes:
CalEEMod Worker Trips: One-Way
CalEEMod Vendor Trips: One-Way

Operational Trips: The project would generate 20 operational trips per year

AQ Trip Rate: 0.0422535

GHG Trip Rate: 0.0006

*2 panel washing, 1 water truck

	Non Res W-O (panel washing)	Non Res O-O (water truck)
Length (miles)	13	4
Purpose and Percentages	66.67	33.33
Fleet Mix	HHD%	100

Note:
CalEEMod Operational Trips: Round Trip

RPCA Lear Solar Project Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	RPCA Lear Solar Project
Construction Start Date	1/1/2025
Operational Year	2026
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.60
Precipitation (days)	12.2
Location	34.17653017987279, -116.14642858997195
County	San Bernardino-Mojave Desert
City	Unincorporated
Air District	Mojave Desert AQMD
Air Basin	Mojave Desert
TAZ	5143
EDFZ	10
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.26

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
User Defined Industrial	71.0	User Defined Unit	71.0	3,092,760	0.00	0.00	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

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.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.10	3.49	27.2	33.3	0.06	1.14	6.09	7.22	1.05	2.87	3.91
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.03	3.41	27.2	31.8	0.06	1.14	8.43	9.39	1.05	2.87	3.91
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.16	0.99	8.15	9.64	0.02	0.33	1.33	1.67	0.31	0.46	0.77
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.21	0.18	1.49	1.76	< 0.005	0.06	0.24	0.30	0.06	0.08	0.14

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
2025	4.10	3.49	27.2	33.3	0.06	1.14	6.09	7.22	1.05	2.87	3.91
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
2025	4.03	3.41	27.2	31.8	0.06	1.14	8.43	9.39	1.05	2.87	3.91

Average Daily	—	—	—	—	—	—	—	—	—	—	—
2025	1.16	0.99	8.15	9.64	0.02	0.33	1.33	1.67	0.31	0.46	0.77
Annual	—	—	—	—	—	—	—	—	—	—	—
2025	0.21	0.18	1.49	1.76	< 0.005	0.06	0.24	0.30	0.06	0.08	0.14

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.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	94.0	92.2	1.27	135	0.01	0.24	0.03	0.27	0.18	0.01	0.19
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	70.1	70.1	0.15	0.05	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	81.9	81.0	0.66	66.4	< 0.005	0.12	0.02	0.14	0.09	0.01	0.10
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	14.9	14.8	0.12	12.1	< 0.005	0.02	< 0.005	0.03	0.02	< 0.005	0.02

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Mobile	< 0.005	< 0.005	0.14	0.05	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01
Area	94.0	92.2	1.13	135	0.01	0.24	—	0.24	0.18	—	0.18
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00
Water	—	—	—	—	—	—	—	—	—	—	—

Waste	—	—	—	—	—	—	—	—	—	—	—
Total	94.0	92.2	1.27	135	0.01	0.24	0.03	0.27	0.18	0.01	0.19
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Mobile	< 0.005	< 0.005	0.15	0.05	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01
Area	70.1	70.1	—	—	—	—	—	—	—	—	—
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00
Water	—	—	—	—	—	—	—	—	—	—	—
Waste	—	—	—	—	—	—	—	—	—	—	—
Total	70.1	70.1	0.15	0.05	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Mobile	< 0.005	< 0.005	0.10	0.03	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01
Area	81.9	81.0	0.56	66.3	< 0.005	0.12	—	0.12	0.09	—	0.09
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00
Water	—	—	—	—	—	—	—	—	—	—	—
Waste	—	—	—	—	—	—	—	—	—	—	—
Total	81.9	81.0	0.66	66.4	< 0.005	0.12	0.02	0.14	0.09	0.01	0.10
Annual	—	—	—	—	—	—	—	—	—	—	—
Mobile	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Area	14.9	14.8	0.10	12.1	< 0.005	0.02	—	0.02	0.02	—	0.02
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00
Water	—	—	—	—	—	—	—	—	—	—	—
Waste	—	—	—	—	—	—	—	—	—	—	—
Total	14.9	14.8	0.12	12.1	< 0.005	0.02	< 0.005	0.03	0.02	< 0.005	0.02

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.86	2.40	22.2	19.9	0.03	0.92	—	0.92	0.84	—	0.84
Demolition	—	—	—	—	—	—	7.11	7.11	—	1.08	1.08
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	0.97	0.87	< 0.005	0.04	—	0.04	0.04	—	0.04
Demolition	—	—	—	—	—	—	0.31	0.31	—	0.05	0.05
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.18	0.16	< 0.005	0.01	—	0.01	0.01	—	0.01
Demolition	—	—	—	—	—	—	0.06	0.06	—	0.01	0.01
Onsite truck	0.00	0.00	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	0.37	0.34	0.32	3.38	0.00	0.00	0.73	0.73	0.00	0.17	0.17
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.04	0.04	2.50	0.46	0.01	0.04	0.59	0.63	0.04	0.15	0.19
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.01	0.16	0.00	0.00	0.03	0.03	0.00	0.01	0.01

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.11	0.02	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.27	1.07	10.2	9.42	0.02	0.44	—	0.44	0.41	—	0.41
Dust From Material Movement	—	—	—	—	—	—	2.56	2.56	—	1.31	1.31
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.08	0.73	0.67	< 0.005	0.03	—	0.03	0.03	—	0.03
Dust From Material Movement	—	—	—	—	—	—	0.18	0.18	—	0.09	0.09
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.01	0.13	0.12	< 0.005	0.01	—	0.01	0.01	—	0.01

Dust From Material Movement	—	—	—	—	—	—	0.03	0.03	—	0.02	0.02
Onsite truck	0.00	0.00	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	0.37	0.34	0.32	3.38	0.00	0.00	0.73	0.73	0.00	0.17	0.17
Vendor	0.03	0.03	0.89	0.34	0.01	0.01	0.24	0.25	0.01	0.07	0.08
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.02	0.27	0.00	0.00	0.05	0.05	0.00	0.01	0.01
Vendor	< 0.005	< 0.005	0.06	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Hauling	0.00	0.00	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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.63	3.05	26.0	28.1	0.05	1.12	—	1.12	1.03	—	1.03

Dust From Material Movement	—	—	—	—	—	—	5.11	5.11	—	2.63	2.63
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.63	3.05	26.0	28.1	0.05	1.12	—	1.12	1.03	—	1.03
Dust From Material Movement	—	—	—	—	—	—	5.11	5.11	—	2.63	2.63
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.31	0.26	2.21	2.38	< 0.005	0.10	—	0.10	0.09	—	0.09
Dust From Material Movement	—	—	—	—	—	—	0.43	0.43	—	0.22	0.22
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.40	0.44	< 0.005	0.02	—	0.02	0.02	—	0.02
Dust From Material Movement	—	—	—	—	—	—	0.08	0.08	—	0.04	0.04
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.44	0.41	0.29	4.88	0.00	0.00	0.73	0.73	0.00	0.17	0.17
Vendor	0.03	0.03	0.84	0.34	0.01	0.01	0.24	0.25	0.01	0.07	0.08
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—

Worker	0.37	0.34	0.32	3.38	0.00	0.00	0.73	0.73	0.00	0.17	0.17
Vendor	0.03	0.03	0.89	0.34	0.01	0.01	0.24	0.25	0.01	0.07	0.08
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.32	0.00	0.00	0.06	0.06	0.00	0.01	0.01
Vendor	< 0.005	< 0.005	0.08	0.03	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Construction/Installation (2025) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.14	2.64	23.7	26.8	0.05	1.04	—	1.04	0.96	—	0.96
Onsite truck	0.00	0.00	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	0.47	0.40	3.57	4.03	0.01	0.16	—	0.16	0.14	—	0.14
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.07	0.65	0.74	< 0.005	0.03	—	0.03	0.03	—	0.03

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.44	0.41	0.29	4.88	0.00	0.00	0.73	0.73	0.00	0.17	0.17
Vendor	0.02	0.02	0.42	0.17	< 0.005	0.01	0.12	0.13	0.01	0.03	0.04
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.05	0.05	0.57	0.00	0.00	0.11	0.11	0.00	0.03	0.03
Vendor	< 0.005	< 0.005	0.07	0.03	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.10	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.9. PV Vendor Trips (2025) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.06	0.58	1.01	< 0.005	0.02	—	0.02	0.02	—	0.02
Onsite truck	0.00	0.00	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	0.01	0.06	0.10	< 0.005	< 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	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.02	< 0.005	< 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	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.03	0.03	1.34	0.31	0.01	0.03	0.51	0.54	0.03	0.14	0.17
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	< 0.005	< 0.005	0.14	0.03	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Paving (Access Road Installation) (2025) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.16	0.14	0.89	0.99	< 0.005	0.04	—	0.04	0.04	—	0.04
Architectural Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	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	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005
Architectural Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	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	—	< 0.005	< 0.005	—	< 0.005
Architectural Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.44	0.41	0.29	4.88	0.00	0.00	0.73	0.73	0.00	0.17	0.17
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.10	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005

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

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	< 0.005	< 0.005	0.14	0.05	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01
Total	< 0.005	< 0.005	0.14	0.05	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	< 0.005	< 0.005	0.15	0.05	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01
Total	< 0.005	< 0.005	0.15	0.05	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01
Annual	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Total	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	66.2	66.2	—	—	—	—	—	—	—	—	—
Architectural Coatings	3.93	3.93	—	—	—	—	—	—	—	—	—
Landscape Equipment	23.9	22.1	1.13	135	0.01	0.24	—	0.24	0.18	—	0.18
Total	94.0	92.2	1.13	135	0.01	0.24	—	0.24	0.18	—	0.18
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	66.2	66.2	—	—	—	—	—	—	—	—	—
Architectural Coatings	3.93	3.93	—	—	—	—	—	—	—	—	—
Total	70.1	70.1	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	12.1	12.1	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.72	0.72	—	—	—	—	—	—	—	—	—

Landscape Equipment	2.15	1.99	0.10	12.1	< 0.005	0.02	—	0.02	0.02	—	0.02
Total	14.9	14.8	0.10	12.1	< 0.005	0.02	—	0.02	0.02	—	0.02

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—

User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
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	1/22/2025	5.00	16.0	—
Site Preparation	Site Preparation	1/23/2025	2/27/2025	5.00	26.0	—
Grading	Grading	2/28/2025	4/11/2025	5.00	31.0	—
Construction/Installation	Building Construction	4/27/2025	7/13/2025	5.00	55.0	—
PV Vendor Trips	Building Construction	7/14/2025	8/30/2025	5.00	35.0	—
Paving (Access Road Installation)	Paving	4/12/2025	4/26/2025	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	Rubber Tired Dozers	Diesel	Average	2.00	8.00	367	0.40
Demolition	Excavators	Diesel	Average	3.00	8.00	36.0	0.38
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73

Site Preparation	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Grading	Excavators	Diesel	Average	2.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	2.00	8.00	367	0.40
Grading	Off-Highway Trucks	Diesel	Average	1.00	8.00	376	0.38
Grading	Skid Steer Loaders	Diesel	Average	1.00	8.00	71.0	0.37
Grading	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Construction/Installation	Cranes	Diesel	Average	1.00	8.00	82.0	0.20
Construction/Installation	Other Construction Equipment	Diesel	Average	2.00	8.00	83.0	0.50
Construction/Installation	Bore/Drill Rigs	Diesel	Average	1.00	8.00	83.0	0.50
Construction/Installation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Construction/Installation	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Construction/Installation	Off-Highway Trucks	Diesel	Average	1.00	8.00	376	0.38
Construction/Installation	Cement and Mortar Mixers	Diesel	Average	1.00	8.00	10.0	0.56
Construction/Installation	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Construction/Installation	Trenchers	Diesel	Average	1.00	8.00	40.0	0.50
Construction/Installation	Skid Steer Loaders	Diesel	Average	2.00	8.00	71.0	0.37
PV Vendor Trips	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	82.0	0.20
Paving (Access Road Installation)	Rollers	Diesel	Average	1.00	8.00	36.0	0.38

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	80.0	13.0	LDA,LDT1,LDT2
Demolition	Vendor	0.00	0.00	HHDT,MHDT
Demolition	Hauling	26.0	25.0	HHDT
Demolition	Onsite truck	0.00	0.00	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	80.0	13.0	LDA,LDT1,LDT2
Site Preparation	Vendor	22.0	13.0	HHDT,MHDT
Site Preparation	Hauling	0.00	0.00	HHDT
Site Preparation	Onsite truck	0.00	0.00	HHDT
Grading	—	—	—	—
Grading	Worker	80.0	13.0	LDA,LDT1,LDT2
Grading	Vendor	22.0	13.0	HHDT,MHDT
Grading	Hauling	0.00	0.00	HHDT
Grading	Onsite truck	0.00	0.00	HHDT
Construction/Installation	—	—	—	—
Construction/Installation	Worker	80.0	13.0	LDA,LDT1,LDT2
Construction/Installation	Vendor	11.0	13.0	HHDT,MHDT
Construction/Installation	Hauling	0.00	0.00	HHDT
Construction/Installation	Onsite truck	0.00	0.00	HHDT
PV Vendor Trips	—	—	—	—
PV Vendor Trips	Worker	0.00	0.00	LDA,LDT1,LDT2
PV Vendor Trips	Vendor	4.00	152	HHDT,MHDT
PV Vendor Trips	Hauling	0.00	0.00	HHDT

PV Vendor Trips	Onsite truck	0.00	0.00	HHDT
Paving (Access Road Installation)	—	—	—	—
Paving (Access Road Installation)	Worker	80.0	13.0	LDA,LDT1,LDT2
Paving (Access Road Installation)	Vendor	0.00	0.00	HHDT,MHDT
Paving (Access Road Installation)	Hauling	0.00	0.00	HHDT
Paving (Access Road Installation)	Onsite truck	0.00	0.00	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)
Paving (Access Road Installation)	0.00	0.00	0.00	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 (Ton of Debris)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	7,937	—
Site Preparation	—	—	13.0	0.00	—
Grading	—	—	31.0	0.00	—
Paving (Access Road Installation)	0.00	0.00	0.00	0.00	0.00

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%
Water Demolished Area	2	36%	36%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
User Defined Industrial	0.00	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	532	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
User Defined Industrial	3.00	0.00	0.00	782	30.0	0.00	0.00	7,822

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)

0	0.00	4,639,140	1,546,380	—

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)
User Defined Industrial	0.00	532	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)
User Defined Industrial	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
User Defined Industrial	0.00	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced

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	30.6	annual days of extreme heat
Extreme Precipitation	0.15	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.41	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	3	0	0	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	0	0	0	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	3	1	1	3
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	1	1	1	2
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	88.8
AQ-PM	2.35
AQ-DPM	0.57
Drinking Water	69.5
Lead Risk Housing	65.0
Pesticides	0.00
Toxic Releases	5.54
Traffic	1.71
Effect Indicators	—
CleanUp Sites	79.7
Groundwater	0.00
Haz Waste Facilities/Generators	0.00
Impaired Water Bodies	0.00
Solid Waste	0.00
Sensitive Population	—
Asthma	38.8
Cardio-vascular	99.5
Low Birth Weights	64.2

Socioeconomic Factor Indicators	—
Education	49.2
Housing	25.3
Linguistic	36.0
Poverty	81.9
Unemployment	79.7

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	22.75118696
Employed	0.936738098
Median HI	7.121775953
Education	—
Bachelor's or higher	31.19466188
High school enrollment	100
Preschool enrollment	1.873476197
Transportation	—
Auto Access	89.83703323
Active commuting	1.039394328
Social	—
2-parent households	89.07994354
Voting	77.26164507
Neighborhood	—
Alcohol availability	85.3586552
Park access	32.83716156
Retail density	4.619530348

Supermarket access	16.15552419
Tree canopy	0.076992172
Housing	—
Homeownership	60.9393045
Housing habitability	18.46528936
Low-inc homeowner severe housing cost burden	53.68920826
Low-inc renter severe housing cost burden	84.35775696
Uncrowded housing	69.47260362
Health Outcomes	—
Insured adults	68.95932247
Arthritis	0.0
Asthma ER Admissions	52.2
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	36.6
Cognitively Disabled	20.1
Physically Disabled	0.8
Heart Attack ER Admissions	5.8
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	82.3
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	75.0
Elderly	17.6
English Speaking	83.0
Foreign-born	2.4
Outdoor Workers	77.9
Climate Change Adaptive Capacity	—
Impervious Surface Cover	97.8
Traffic Density	3.3
Traffic Access	23.0
Other Indices	—
Hardship	74.4
Other Decision Support	—
2016 Voting	79.9

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	35.0
Healthy Places Index Score for Project Location (b)	17.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

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

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Land use according to project description.
Construction: Construction Phases	Changes according to Project Construction schedule.
Construction: Off-Road Equipment	Construction equipment assumptions
Construction: Trips and VMT	Project assumptions
Construction: Architectural Coatings	No architectural coating.
Operations: Vehicle Data	Changes according to project assumptions
Operations: Fleet Mix	Changes according to Project assumptions