AIR QUALITY AND GLOBAL CLIMATE CHANGE IMPACT ANALYSIS

SAN BERNARDINO COUNTY FIRE STATION 227 PROJECT

COUNTY OF SAN BERNARDINO

PREPARED BY

WSP USA INC.
SANTA BARBARA, CA
WSP.COM

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TABLE OF CONTENTS

TABLES

FIGURES

APPENDICES

ACRONYMS AND ABBREVIATIONS

˚C	degrees Celsius
AB	Assembly Bill
ADA	Americans with Disabilities Act
AHJ	authority having jurisdiction
Amsl	above mean sea level
APCD	air pollution control district
APN	Assessor Parcel Number
AQMP	Air Quality Management Plan
BOD	biological oxygen demand
C_2H_3Cl	vinyl chloride
CAAA	Clean Air Act Amendments
CAAQS	California Ambient Air Quality Standards
CalEPA	California Environmental Protection Agency
CARB	California Air Resource Board
CAT	Climate Action Team
CCAA	California Clean Air Act
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CFC	chlorofluorocarbon
CO	carbon monoxide
COD	chemical oxygen demand
Conservancy	State Coastal Conservancy
DAC	disadvantaged community
DWR	Department of Water Resources
EISA	Energy Independence and Security Act
FEMA	Federal Emergency Management Agency
FIRM	Federal Insurance Rate Map
FRP	fiberglass reinforced plastic
Gpd	gallons per day
H_2S	hydrogen sulfide
HRT	hydraulic retention time
I-	Interstate
IRWMP	Integrated Regional Water Management Plan
Jalama Park	Jalama Beach County Park
MBBR	moving bed biofilm reactor
MBR	membrane bioreactor
mg/L	milligrams per liter
MHI	median household income

mpg	miles per gallon
mph	miles per hour
MPO	metropolitan planning organization
mSc/m	millisiemens per centimeter
NAAQS	National Ambient Air Quality Standards
ND	non-detect
NH_3	ammonium
NO_2	nitrogen dioxide
NO_3	nitrate
North County	northern Santa Barbara County
NS	not sampled
NTU	nephelometric turbidity units
O_3	ozone
O&P	overhead and profit
OPR	Office of Planning and Research
Pb	lead
PEIR	Program Environmental Impact Report
PM_{10}	particulate matter ten microns or less in diameter
$PM_{2.5}$	fine particulate matter 2.5 microns or less in diameter
Project	Jalama Beach County Park Water Recycling Project
Recreation Master Plan	Santa Barbara Countywide Recreation Master Plan
ROG	reactive organic gas
RTP	Regional Transportation Plan
RV	recreation vehicle
RWQCB	Regional Water Quality Control Board
SBCAG	Santa Barbara County Association of Governments
SCAB	South Coast Air Basin
SIP	State Implementation Plan
sqft	square foot
SO_2	sulfur dioxide
SO_4^{2-}	sulfate ion
SR	State Route
STEP	septic tank with effluent pump
TAC	Toxic Air Contaminant
TDS	total dissolved solids
TKN	total Kjeldahl nitrogen
TN	total nitrogen

TSS	total suspended solids
ug/L	micrograms per liter
UPRR	Union Pacific Railroad
USEPA	U.S. Environmental Protection Agency
VMT	vehicle miles traveled
VOC	Volatile Organic Compound
VSFB	Vandenberg Space Force Base
WWTP	wastewater treatment plant
WWTS	wastewater treatment system
ZEV	zero-emission vehicle
Zn	zinc

1 INTRODUCTION

This air quality and global climate change impact technical study was prepared by WSP USA Inc. in support of the Initial Study Mitigated Negative Declaration (IS/MND) for the San Bernardino County Fire Station No. 227 Project (Project). The Project proposes to construct a new fire station for the San Bernardino County Fire Protection District to replace the existing Fire Station No. 227. The new station would be constructed on a 1.21-acre site, occupying a portion of a 5.3-acre parcel at the south end of Arrowhead Elementary School property. New construction would include a fire station building, storage building, a steel-roofed canopy, a 1,000-gallon fuel tank, and a back-up generator.

The purpose of this report is to provide a detailed technical air quality and greenhouse gas (GHG) analysis of the Project. The analysis was prepared in accordance with the *California Environmental Quality Act (CEQA)* and *Federal Conformity Guidelines* prepared by the South Coast Air Quality Management District (SCAQMD, 2020). Regional climate and meteorology, GHG emissions inventories, air quality monitoring data, and the area's attainment status with respect to criteria air pollutants are discussed. The report includes a description of federal, state and local agencies that govern air quality and climate change, and their pertinent statutes and regulations.

It identifies potential impacts of air pollutants and GHGs of concern, including criteria pollutants (i.e., pollutants for which National Ambient Air Quality Standards [NAAQS] have been established by the U.S. Environmental Protection Agency (USEPA), and their precursors) and mobile source air toxics, and the Project's potential to generate GHG emissions from construction and operation. The report describes the analytical methodologies and assumptions used for this study as well as the results of these analyses and proposed mitigation measures.

2 PROJECT DESCRIPTION

2.1 PROJECT LOCATION

The Project site is located on a 5.3-acre parcel already partially developed with the existing Arrowhead Elementary School. The proposed Project would be located on a vacant 1.21-acre section of the parcel south of the school situated on the northwest corner of 38th Street and Genevieve Street in the City of San Bernardino, California. **Figure 1** and **Figure 2** show the site in its regional and local contexts, respectively. Regional access to the site is provided by Interstate (I-) 215, and state routes (SRs) 210 and 18. Local access is provided by West 38th Street and Genevieve Street. Surrounding land uses include developed civic/public spaces to the north and east, multifamily residential spaces to the south, and a landscaped strip along the west property line, with additional single-family homes just beyond.

2.2 DESCRIPTION OF PROPOSED PROJECT

The proposed Project would entail development of a fire station building, a storage building, a steel-roofed canopy, a 1,000-gallon fuel tank, and a back-up generator. Other improvements would include the construction of two commercial driveways. Features of the fire station building would include three bay apparatus, nine crew members sleeping quarters, five single-use toilet/sink-shower combinations, a communal living area and day room, dining area, laundry room, gym, work center, storage area, data communications room for emergency power, and administration area. **Figure 3** shows the proposed site plan. **Table 2.2-1** summarizes the proposed improvements.

Table 2.2-1. Summary of Proposed Improvements

Building/Feature	Square Footage
Fire station building	10,764
Storage building	400
Steel-roofed canopy	1,400
1,000-gallon fuel tank	--
Back-up generator	--
Total square footage	--

Figure 1. Regional Location of Project

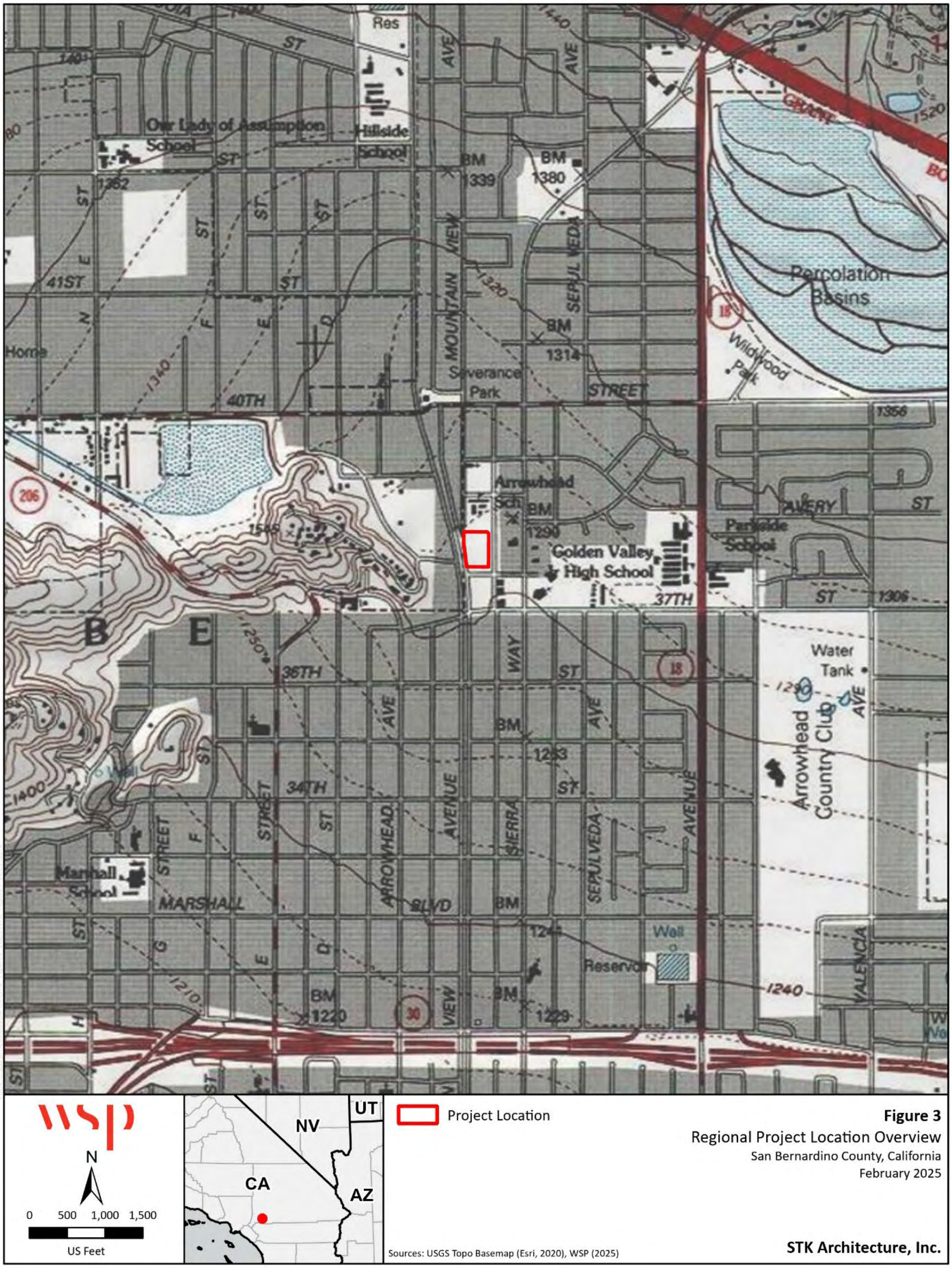


Figure 2. Project Location

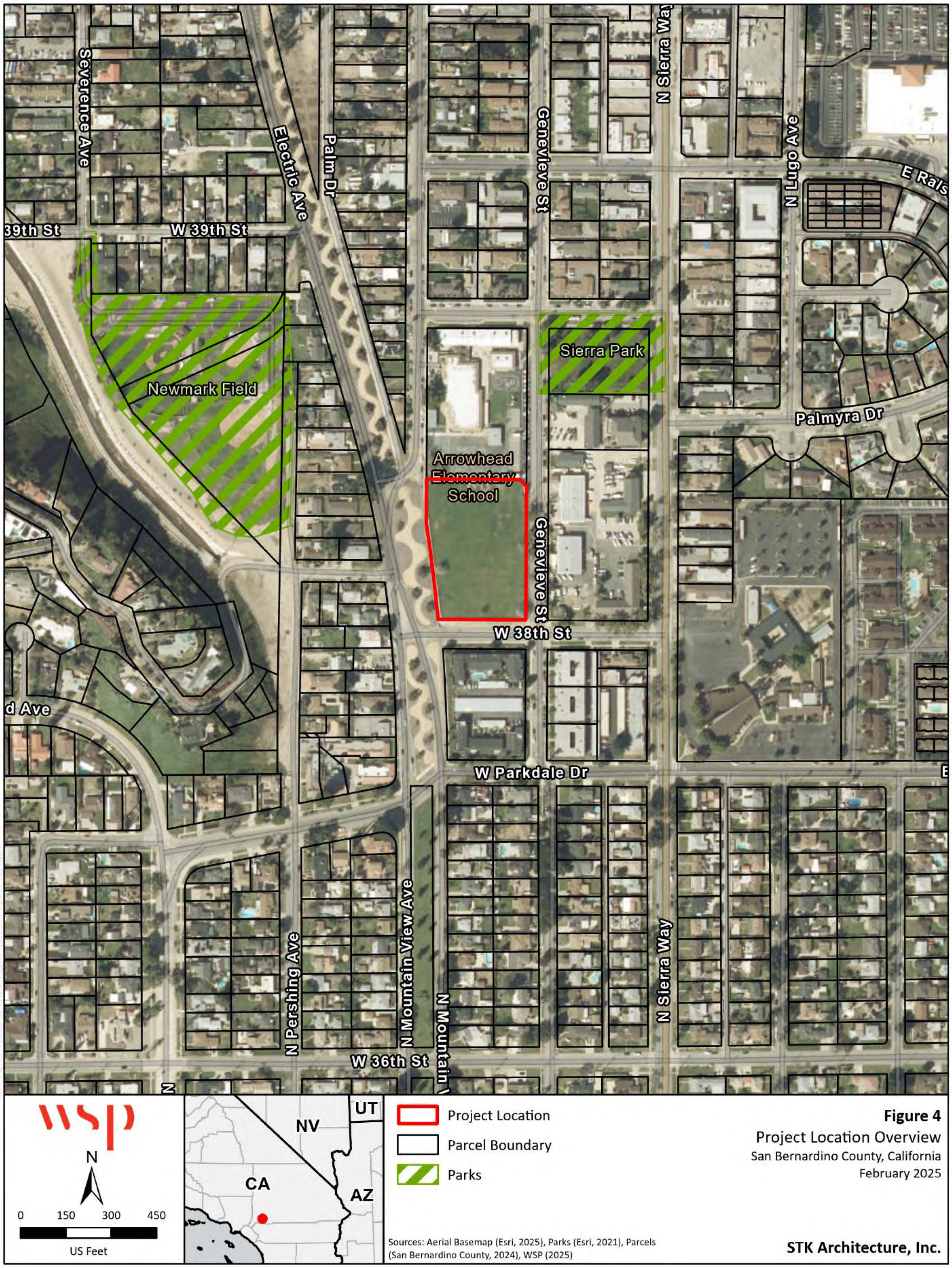
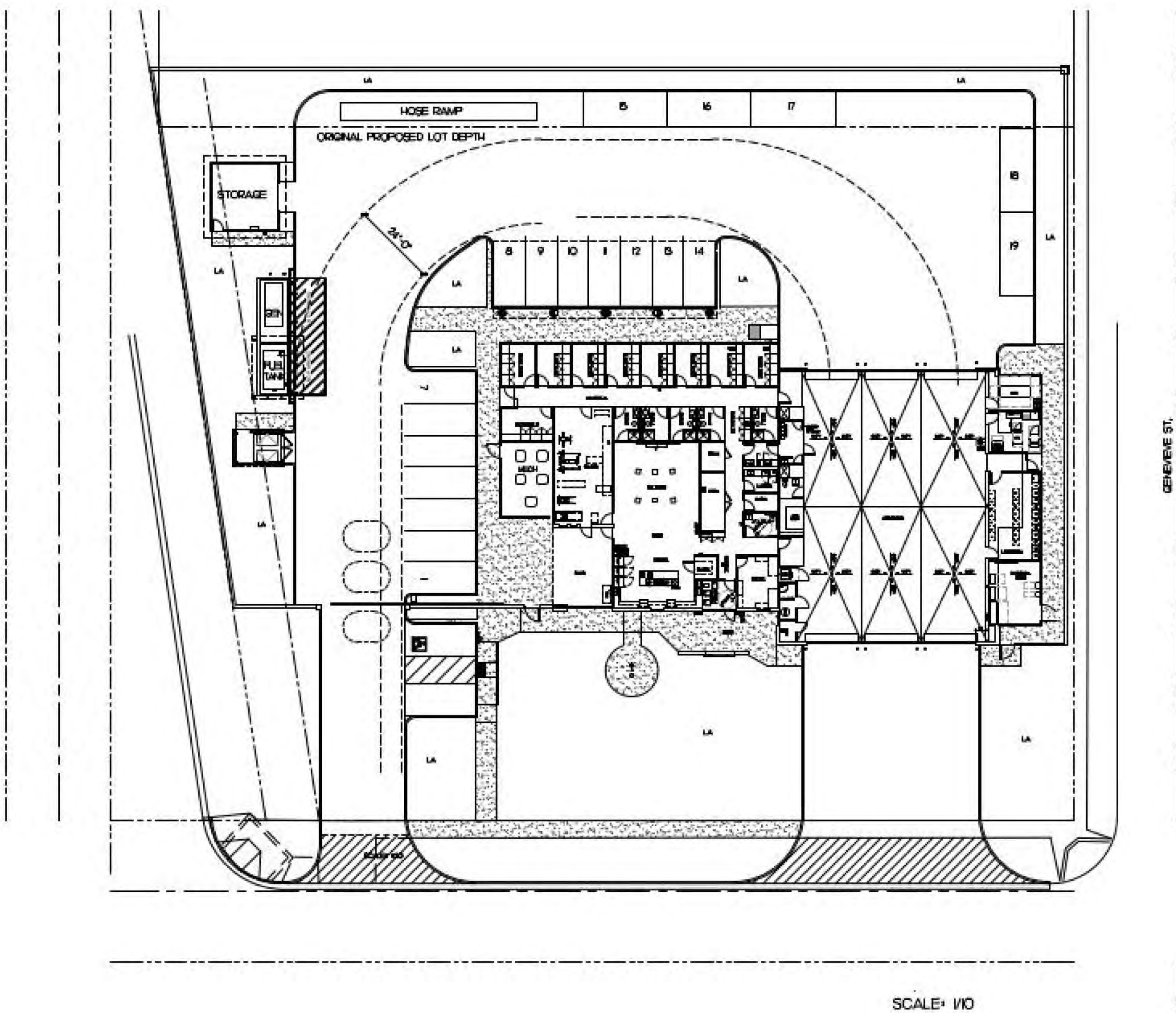


Figure 3. Proposed Site Plan



2.2.1 ACCESS, CIRCULATION, AND PARKING

Vehicle traffic from the existing Station 227 would be redirected to the new Station 227. A new driveway would wrap around the fire station building, north to south. A second driveway would provide access off Genevieve Street. Campus access, traffic circulation, and pickup/drop-off locations of the adjacent Arrowhead Elementary School would remain unchanged under the Project. Further fire station operations after completion of the Project construction would not generate additional vehicular trips in the neighborhood or greater regional area. Therefore, existing travel routes to the new Station 227 would not be altered because of the Project.

2.2.2 LANDSCAPING

The Project landscaping would be designed to be compatible with the neighborhood and incorporate, to the extent possible, native plants and vegetation that are appropriate for the campus and the Southern California setting. All tree removal would comply with the City of San Bernardino Tree Removal Permit, as needed.

2.2.3 CONSTRUCTION

Construction of the proposed Project would occur over a period of up to 18 months, anticipated to begin in early 2026. Development of the Project site would require demolition and removal of existing site improvements (e.g., sidewalks, curb cuts, fencing, and a retaining wall), site preparation, grading, paving, construction of buildings, and architectural coating. Specifically, construction activities for the Project would include but not be limited to the following:

- Clearing and grubbing, including removal of four (4) existing trees.
- Preparation of subgrade.
- Mass site grading and roadbeds.
- Installation of the on-site storm drain systems, including water quality infrastructure.
- Installation of sewer service lateral.
- Installation of water service lateral.
- Fine grading to prepare for surface improvements.
- Installation of building foundations.
- Installation of aboveground fuel tank and associated fuel dispensing systems.
- Installation of a back-up generator.
- Installation of interior utility infrastructure.

— Installation of curb, gutters, handrails, sidewalks and asphalt base course.

Minor street improvements on West 38th Street and Genevieve Street will include, but will not be limited to the following:

- Patching and repairing curbs, gutters, driveways, sidewalk, and asphalt.
- Installation of landscaping and placing final lift of asphalt.
- Installation of signage and striping.

A detailed construction schedule was not yet available at the time of this report and is subject to change as the Project design is refined. However, based on the overall construction duration and range of construction activities, a conservative phasing plan was developed for the purposes of modeling Project air emissions (see **Table 2.2-1**). Construction activities are assumed to take place six days a week, pursuant to the County's construction noise regulations (San Bernardino County Code § 83.01.080).

Table 2.2-2. Estimated Construction Phases and Subphases

Construction Phase	Start	End	Work Days
Demolition	January 5, 2026	January 17, 2026	12
Site preparation	January 19, 2026	January 31, 2026	12
Grading	February 2, 2026	February 28, 2026	24
Building construction	March 2, 2026	April 24, 2027	360
Paving	April 26, 2027	May 22, 2027	24
Architectural coating	May 24, 2027	June 12, 2027	18

3 EXISTING CONDITIONS

3.1 TOPICAL BACKGROUND

In the United States, air quality is primarily characterized by ambient ground-level concentrations of seven specific pollutants identified by the USEPA to be of concern with respect to health and welfare of the public. These specific pollutants—known as “criteria air pollutants”—are pollutants for which the federal and state governments have established ambient air quality standards, or criteria, for outdoor concentrations to protect public health. The federal ambient concentration criteria are known as the National Ambient Air Quality Standards (NAAQS), and the California ambient concentration criteria are referred to as the California Ambient Air Quality Standards (CAAQS). Federal criteria air pollutants include ground-level ozone (O_3), nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), respirable particulate matter ten microns or less in diameter (PM_{10}), fine particulate matter 2.5 microns or less in diameter ($PM_{2.5}$), and lead (Pb). **Table 3.1-1** shows the CAAQS and NAAQS concentrations for the criteria air pollutants with the corresponding averaging times.

Table 3.1-1. Criteria Air Pollutant Standards

Pollutant	Averaging Period	California (CAAQS)	Federal (NAAQS) Primary	Federal (NAAQS) Secondary
Ozone (O_3)	1 Hour	0.09 ppm (180 µg/m^3)	--	Same as Primary Standard
	8 Hour	0.070 ppm (137 µg/m^3)	0.070 ppm (137 µg/m^3)	
Respirable particulate matter (PM_{10})	24 Hour	50 µg/m^3	150 µg/m^3	Same as Primary Standard
	Annual Arithmetic Mean	20 µg/m^3	--	
Fine particulate matter ($PM_{2.5}$)	24 Hour	--	35 µg/m^3	Same as Primary Standard
	Annual Arithmetic Mean	12 µg/m^3	9.0 µg/m^3	15 µg/m^3
Carbon monoxide (CO)	1 Hour	20 ppm (23 µg/m^3)	35 ppm (40 µg/m^3)	--
	8 Hour	9.0 ppm (10 µg/m^3)	9 ppm (10 µg/m^3)	--
Nitrogen dioxide (NO_2)	1 Hour	0.18 ppm (339 µg/m^3)	0.10 ppm (188 µg/m^3)	--
	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)	0.053 ppb (100 µg/m^3)	Same as Primary Standard
Sulfur dioxide (SO_2)	1 Hour	0.25 ppm (655 µg/m^3)	75 ppb (196 µg/m^3)	--
	3 Hour	--	--	0.5 ppm (1,300 µg/m^3)
	24 Hour	0.04 ppm (105 µg/m^3)	0.14 ppm (for certain areas)	--
	Annual Arithmetic Mean	--	0.030 ppm (for certain areas)	--
Lead	30 Day Average	1.5 µg/m^3	--	--
	Calendar Quarter	--	1.5 µg/m^3 (for certain areas)	Same as Primary Standard
	Rolling 3-Month Average	--	0.15 µg/m^3	
Visibility-reducing particles	8 Hour	--	No National Standards	

Sulfates	24 Hour	25 µg/m^3
Hydrogen sulfide	1 Hour	0.03 ppm (42 µg/m^3)
Vinyl chloride	24 Hour	0.01 ppm (26 µg/m^3)

Source: California Air Resources Board (CARB) 2024.
Notes: ppm = parts per million; µg/m^3 = micrograms per cubic meter.

3.1.1 FEDERAL CRITERIA AIR POLLUTANTS

Ozone (O_3), a highly reactive form of oxygen, is a colorless gas with a sharp odor. High O_3 concentrations exist naturally in the stratosphere. However, it is also formed in the atmosphere when volatile organic compounds (VOCs) and nitrogen oxides (NO_X) react in the presence of ultraviolet sunlight (also known as smog). The primary sources of VOCs and NO_X, the components of O_3, are automobile exhaust and industrial sources. Some mixing of stratospheric O_3 downward through the troposphere to the earth's surface does occur. However, the extent of O_3 transport is limited.

O_3 has a propensity for reacting with organic materials, which causes it to be damaging to living cells, resulting in health effects. O_3 enters the human body primarily through the respiratory tract and causes respiratory irritation and discomfort, makes breathing more difficult during exercise, and reduces the respiratory system's ability to remove inhaled particles and fight infection. Individuals exercising outdoors, children and people with pre-existing lung disease, such as asthma and chronic pulmonary lung disease, are considered to be the most susceptible subgroups for O_3 effects.

Particulate matter (PM_{10} and $PM_{2.5}$) refers to particles small enough to be inhaled into the deepest parts of the lung, which are of great concern to public health. Major sources of PM_{10} 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. Emissions of $PM_{2.5}$ result from fuel combustion (e.g., motor vehicles, power generation and industrial facilities), residential fireplaces, and wood stoves. In addition, $PM_{2.5}$ can be formed in the atmosphere from gases such as SO_2, NO_X, and VOCs.

Respirable particles (particles less than 10 microns in diameter, denoted as PM_{10}) can accumulate in the respiratory system and aggravate health problems, such as asthma, bronchitis, and other lung diseases. Children, the elderly, exercising adults, and those suffering from asthma are especially vulnerable to adverse health effects of PM. A consistent correlation between elevated ambient fine particulate matter (particles less than 2.5 microns in diameter, denoted as $PM_{2.5}$) levels and an increase in mortality rates, respiratory infections, number and severity of asthma attacks, and the number of hospital admissions has been observed in different parts of the United States and various areas around the world. Studies have reported an association between long-term exposure to air pollution dominated by $PM_{2.5}$ and increased mortality, reduction in lifespan, and an increased mortality from lung cancer.

Daily fluctuations in $PM_{2.5}$ concentration levels have also been related to hospital admissions for acute respiratory conditions, to school and kindergarten absences, to a decrease in respiratory function in normal children and to increased medication use in children and adults with asthma. Studies have also shown lung function growth in children is reduced with long-term exposure to PM. In addition to children, the elderly, and people with pre-existing respiratory and/or cardiovascular disease appear to be more susceptible to the effects of PM_{10} and $PM_{2.5}$.

Carbon monoxide (CO) is a colorless, odorless, relatively inert gas. It is a trace constituent in the unpolluted troposphere and is produced by both natural processes and human activities. In remote areas far from human habitation, CO occurs in the atmosphere at an average background concentration of 0.04 ppm, primarily because of natural processes, such as forest fires and the oxidation of methane. Global atmospheric mixing of CO from urban and industrial sources creates higher background concentrations (up to 0.20 ppm) near urban areas. The major source of CO in urban areas is incomplete combustion of carbon-containing fuels, mainly gasoline.

Individuals with a deficient blood supply to the heart are the most susceptible to the adverse effects of CO exposure. The effects observed include earlier onset of chest pain with exercise and electrocardiograph changes indicative of worsening oxygen supply to the heart. Inhaled CO has no direct toxic effect on the lungs but exerts its effect on tissues by interfering with oxygen transport by competing with oxygen to combine with hemoglobin present in the blood to form carboxyhemoglobin. Hence, conditions with an increased demand for oxygen supply can be adversely affected by exposure to CO. Individuals most at risk include patients with diseases involving heart and blood vessels, fetuses (unborn babies), and patients with chronic hypoxemia (oxygen deficiency), as seen in high altitudes.

Nitrogen dioxide (NO_2) is a reddish-brown gas with a bleach-like odor and is responsible for the brownish tinge of polluted air. Nitric oxide (NO) is a colorless gas, formed from nitrogen (N_2) and oxygen (O_3) under conditions of high temperature and pressure, which are generally present during combustion of fuels (e.g., motor vehicles). NO reacts rapidly with the oxygen in air to form NO_2. The two gases, NO and NO_2, are referred to collectively as NO_X. In the presence of sunlight, atmospheric NO_2 reacts and splits to form a NO molecule and an oxygen atom. The oxygen atom can react further to form O_3 via a complex series of chemical reactions involving hydrocarbons.

Population-based studies suggest that an increase in acute respiratory illness, including infections and respiratory symptoms in children (not infants), is associated with long-term exposures to NO_2 at levels found in homes with gas stoves, which are higher than ambient levels found in Southern California (fewer or no stoves). In healthy subjects, increase in resistance to air flow and airway contraction is observed after short-term exposure to NO2. Larger decreases in lung functions are observed in individuals with asthma and/or chronic obstructive pulmonary disease (e.g., chronic bronchitis, emphysema) than in healthy individuals, indicating a greater susceptibility of these subgroups. More recent studies have found associations between NO2 exposures and cardiopulmonary mortality, decreased lung function, respiratory symptoms and emergency room asthma visits.

Sulfur dioxide (SO_2) is a colorless gas with a sharp odor. It reacts in air to form sulfuric acid, which contributes to acid precipitation, and sulfates, which are components of particulate matter. Main sources of SO_2 include coal and oil used in power plants and industries. Exposure of a few minutes to low levels of SO2 can result in airway constriction in some asthmatics. All asthmatics are sensitive to the effects of SO_2. In asthmatics, increase in resistance to air flow, as well as reduction in breathing capacity leading to severe breathing difficulties, is observed after acute higher exposure to SO_2. In contrast, healthy individuals do not exhibit similar acute responses, even after exposure to higher concentrations of SO_2.

Lead (Pb) in the atmosphere is present as a mixture of several lead compounds. Leaded gasoline and lead smelters have been the main sources of lead emitted into the air. Due to the phasing out of leaded gasoline, there was a dramatic reduction in atmospheric Pb over the past three decades. Exposure to low levels of Pb can adversely affect the development and function of the central nervous system, leading to learning disorders, distractibility, inability to follow simple commands, and lower intelligence quotient. Fetuses, infants, and children are more sensitive than others to the adverse effects of Pb exposure. In adults, increased Pb levels are associated with increased blood pressure. Pb poisoning can cause anemia, lethargy, seizures, and death. There is no evidence to suggest that there are direct effects of Pb on the respiratory system.

3.1.2 CALIFORNIA CRITERIA AIR POLLUTANTS

The California Environmental Protection Agency (CalEPA) establishes statewide standards, and the California Air Resources Board (CARB) establishes local standards for the six common air pollutants identified above. In addition, CARB has established standards for the following four additional pollutants.

Visibility-reducing particles are a by-product of various processes and activities involved in land use development. Deterioration of visibility is one of the most obvious manifestations of air pollution and plays a major role in the public's perception of air quality. Visibility reduction from air pollution is often due to the presence of sulfur and NO_X, as well as PM.

Sulfates ($X\text{-}SO_4^{2-}$) are chemical compounds that contain the sulfate ion (SO_4^{2-}) and are part of the mixture of solid materials that comprise PM_{10}. Most SO_X in the atmosphere are produced by oxidation of SO_2. Oxidation of SO_2 yields sulfur trioxide, which reacts with water to form sulfuric acid, which contributes to acid deposition. The reaction of sulfuric acid with basic substances such as ammonia yields SO_4^{2-}, a component of PM_{10} and $PM_{2.5}$. Both mortality and morbidity effects have been observed with an increase in ambient SO_4^{2-} concentrations. However, studies to separate the effects of SO_4^{2-} from the effects of other pollutants have generally not been successful. Clinical studies of asthmatics exposed to sulfuric acid suggest that adolescent asthmatics are possibly a subgroup susceptible to acid aerosol exposure.

Hydrogen sulfide (H_2S) is a colorless, flammable, poisonous compound having a characteristic rotten egg odor. It is used as a reagent and as an intermediate in the preparation of other reduced sulfur compounds. It is also a by-product of the desulfurization processes in the oil and gas industries and rayon production, sewage treatment, and leather tanning. Geothermal power plants, petroleum production and refining, and sewer gas are specific sources of H2S in California. High H_2S exposure has been documented as a cause of sudden death in the workplace.

Vinyl chloride (C_2H_3Cl) is a colorless, flammable gas at ambient temperature and pressure. It is also highly toxic and is classified as a known carcinogen by the American Conference of Governmental Industrial Hygienists and the International Agency for Research on Cancer. At room temperature, vinyl chloride is a gas with a sickly-sweet odor that is easily condensed. However, it is stored at cooler temperatures as a liquid. Due to the hazardous nature of vinyl chloride to human health, there are no end products that use vinyl chloride in its monomer form. Vinyl chloride is a chemical intermediate, not a final product.

Vinyl chloride is an important industrial chemical chiefly used to produce polyvinyl chloride (PVC). The process involves vinyl chloride liquid fed to polymerization reactors where it is converted from a monomer to a polymer PVC. The final product of the polymerization process is PVC in either a flake or pellet form. From its flake or pellet form, PVC is sold to companies that heat and mold the PVC into end products such as PVC pipe and bottles. Vinyl chloride is not only used to make PVC products, but it is also a natural degradation product of chlorinated industrial solvents (e.g., perchloroethylene, trichloroethene, etc.). Vinyl chloride emissions are historically associated primarily with landfills and sites contaminated with chlorinated solvents.

3.1.3 TOXIC AIR CONTAMINANTS

Toxic Air Contaminants (TACs) are generally defined as those contaminants that are known or suspected to cause serious health problems, but do not have a corresponding ambient air quality standard. Air toxics are also defined as an air pollutant that may increase a person's risk of developing cancer and/or other serious health effects. However, the emission of a toxic chemical does not automatically create a health hazard. Air toxics include metals, other particles, gases absorbed by particles, and certain vapors from fuels and other sources. Most of the estimated health risks from air toxics can be attributed to relatively few compounds, the most important being PM from the exhaust of diesel-fueled engines (diesel PM or DPM). DPM differs from other air toxics in that it is a complex mixture of hundreds of substances rather than a single substance.

Common stationary sources of TAC emissions include gasoline stations, dry cleaners, and diesel back-up generators, which are subject to local air district permit requirements. The other, often more significant, sources of TAC emissions are motor vehicles on freeways, high-volume roadways, or other areas with high numbers of diesel vehicles, such as distribution centers. Off-road mobile sources are also major contributors of TAC emissions and include construction equipment, ships, and trains.

TACs can be separated into carcinogens and noncarcinogens based on the nature of the effects associated with exposure to the pollutant. For regulatory purposes, carcinogens are assumed to have no safe threshold below which health impacts would not occur. Any exposure to a carcinogen poses some risk of contracting cancer. Noncarcinogens differ in that there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur. These levels are determined on a pollutant-by-pollutant basis.

Acute exposure to diesel exhaust may cause irritation to the eyes, nose, throat and lungs, and some neurological effects, such as lightheadedness. Acute exposure may also elicit a cough or nausea, as well as exacerbate asthma. Chronic exposure to diesel PM in experimental animal inhalation studies has shown a range of dose-dependent lung inflammation and cellular changes in the lung and immunological effects. Based on human and laboratory studies, there is considerable evidence that diesel PM is a likely carcinogen. Human epidemiological studies have demonstrated an association between diesel PM exposure and increased lung cancer rates in occupational settings.

3.1.4 GREENHOUSE GAS AND CLIMATE CHANGE

The USEPA describes climate change as *"changes in global or regional climate patterns attributed largely to human-caused increased levels of atmospheric greenhouse gases."* Climate change can include major changes in air temperature, precipitation, or wind patterns, among others, that occur over several decades or longer. These changes are caused by several natural factors, including oceanic processes, variations in solar radiation received by Earth, plate tectonics and volcanic eruptions, and anthropogenic (i.e., human-related) activities. However, the primary anthropogenic driver of climate change is the release of GHGs into the atmosphere.

The "*greenhouse effect*" refers to Earth's natural warming process, which is necessary to support life. The Earth's atmosphere consists of a variety of gases that absorb solar energy and regulate the Earth's temperature by preventing the loss of heat to space. These gases are referred to as GHGs because they trap heat like glass of a greenhouse. Relying on decades of research, the overwhelming majority of the scientific community agrees that human activities, which include the burning of fossil fuels to produce energy and deforestation, have contributed to elevated concentration of GHGs in the atmosphere since the Industrial Revolution (National Research Council 2010). When GHGs build up in the atmosphere, they lead to a warmer climate, which leads to many other potential adverse physical and environmental effects, including sea level rise, flooding, increased weather variability and intensified storm events, reduced reliability of water supplies, reduced quality of water supplies, and increased stress on ecosystems that would reduce biodiversity. Additionally, climate change may have impacts to human health due to heat waves and extreme weather events, reduced air quality, and increased climate-sensitive diseases, including foodborne, waterborne, and animal-borne diseases.

GHGs consist of a variety of gases that have the potential to trap heat, though regulations generally focus on carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). (Chloroflourocarbons [CFCs] have been banned and have no natural source; and therefore, these GHGs are not included in this analysis.) The following provides a brief description of each of the remaining GHGs and their sources:

Carbon dioxide (CO_2) is the primary greenhouse gas emitted through human activities. In 2022, CO_2 accounted for 80 percent of all U.S. GHG emissions. The natural production and absorption of CO_2 occurs through the burning of fossil fuels (e.g., oil, natural gas, and coal), solid waste, trees and wood products, and as a result of other chemical reactions, such as those required to manufacture cement. CO_2 is constantly being exchanged among the atmosphere, ocean, and land surface as it is both produced and absorbed by many microorganisms, plants, and animals. However, emissions and removal of CO_2 by these natural processes tend to balance. Globally, the largest source of CO_2 emissions is the combustion of fossil fuels such as coal, oil, and gas in power plants, automobiles, and industrial facilities. CO_2 is removed from the atmosphere (or sequestered) when it is absorbed by plants as part of the biological carbon cycle. When in balance, total CO_2 emissions and removals from the entire carbon cycle are roughly equal.

Methane (CH_4) is emitted from a variety of both human-related and natural sources. Anthropogenic sources include the production and transport of coal, natural gas, and oil, from livestock and other agricultural practices, and from the decay of organic waste in municipal solid waste landfills. In 2022, CH_4 accounted for 12 percent of all U.S. greenhouse gas emissions from human activities. Natural sources of CH_4 include wetlands, gas hydrates, permafrost, termites, oceans, freshwater bodies, nonwetland soils, and wildfires. Methane's lifetime in the atmosphere is much shorter than CO_2, but CH_4 is more efficient at trapping radiation than CO_2. Pound for pound, the comparative impact of CH_4 is 28 times greater than CO_2 over a 100-year period (USEPA 2025).

Nitrous oxide (N_2O) In 2022, nitrous oxide (N_2O) accounted for 6 percent of all U.S. greenhouse gas emissions from human activities. Globally, 40 percent of total N_2O emissions come from human activities. N_2O is emitted from agriculture, land use, transportation, industry, and other activities. In addition to agricultural sources, some industrial processes (e.g., fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions) also contribute to the atmospheric load of N_2O (USEPA 2025).

N_2O emissions occur naturally through many sources associated with the nitrogen cycle, which is the natural circulation of nitrogen among the atmosphere, plants, animals, and microorganisms that live in soil and water. Nitrogen takes on a variety of chemical forms throughout the nitrogen cycle, including N_2O. Natural emissions of N_2O are mainly from bacteria breaking down nitrogen in soils and the oceans. N_2O is removed from the atmosphere when it is absorbed by certain types of bacteria or destroyed by ultraviolet radiation or chemical reactions. N_2O molecules stay in the atmosphere for an average of 121 years before being removed by a sink or destroyed through chemical reactions. The impact of 1 pound of N_2O on warming the atmosphere is 265 times that of 1 pound of carbon dioxide.

3.2 EXISTING AIR QUALITY CONDITIONS

3.2.1 TOPOGRAPHICAL INFLUENCE AND LOCAL CLIMATOLOGY

Air quality is affected by both the rate and location of pollutant emissions, and by meteorological conditions that influence movement and dispersal of pollutants. Atmospheric conditions such as wind speed, wind direction, and air temperature gradients, along with local topography, provide the link between air pollutant emissions and air quality.

The Project site is in the South Coast Air Basin (SCAB or Basin), which includes the western portion of San Bernardino County, including some portions of what was previously known as the Southeast Desert Air Basin, all of Orange County, the non-desert portions of Los Angeles County, and most of Riverside County. The distinctive climate of the SCAB is determined by its terrain and geographic location. The SCAB is a coastal plain with connecting broad valleys and low hills, bounded by the Pacific Ocean to the southwest and high mountains around its remaining perimeter. The general region lies in the semi-permanent high-pressure zone of the eastern Pacific, resulting in a mild climate tempered by cool sea breezes with light average wind speeds. The usually mild climatological pattern is interrupted occasionally by periods of extremely hot weather, winter storms, or Santa Ana winds.

The vertical dispersion of air pollutants in the SCAB is hampered by the presence of persistent temperature inversions. An upper layer of dry air that warms as it descends characterizes high-pressure systems, such as the semi-permanent high-pressure zone in which the SCAB is located. This upper layer restricts the mobility of cooler marine-influenced air near the ground surface and results in the formation of subsidence inversions. Such inversions restrict the vertical dispersion of air pollutants released into the marine layer and, together with strong sunlight, can produce worst-case conditions for the formation of photochemical smog.

The atmospheric pollution potential of an area is largely dependent on winds, atmospheric stability, solar radiation, and terrain. The combination of low wind speeds and low inversions produces the greatest concentration of air pollutants. On days without inversions, or on days of winds averaging over 15 miles per hour (mph), smog potential is greatly reduced (SCAQMD 1993).

The annual average high and low temperatures in the City of San Bernardino are 79.1 degrees Fahrenheit (°F) and 49.5°F, respectively. Average winter (December, January, and February) high and low temperatures are approximately 64°F and 40.2°F and average summer (June, July, and August) high and low temperatures are approximately 92.3°F and 86°F.

On average, dry months (April-November) experience zero to one inch of rainfall and wet months (December–March) may experience 2 to 3 inches of rainfall. The month with the highest relative humidity is March (56 percent). The month with the lowest relative humidity is September (41 %) (Climate Data 2025). In this location, the month that receives most sunshine is July, with a mean number of daily hours being 12.4. Across the entire duration of said calendar period there are an aggregate total of 3530.75 hours' worth of sunlight (Climate Data 2025).

3.2.2 REGIONAL ATTAINMENT STATUS

Table 3.2-1 shows the area designation status of the SCAB for each criteria pollutant for both the NAAQS and CAAQS as of 2018.

Table 3.2-1. Federal and State Attainment Status

Pollutants	Federal Classification	State Classification
Ozone (O_3)	1&8-Hour: Non-Attainment	1&8-Hour: Non-Attainment
Particulate matter (PM_{10})	Attainment (Maintenance)	Non-Attainment
Fine particulate matter ($PM_{2.5}$)	Non-Attainment	Non-Attainment
Carbon monoxide (CO)	Attainment (Maintenance)	Attainment
Nitrogen dioxide (NO_2)	Attainment (Maintenance)	Attainment
Sulfur dioxide (SO_2)	Unclassified / Attainment	Attainment
Lead (Pb)	Non-Attainment (Partial)	No State Standards
Sulfates	No Federal Standards	Attainment
Hydrogen sulfide		Attainment
Vinyl chloride		Attainment

Sources: NAAQS and CAAQS Attainment Status for SCAB. SCAQMD 2018.

3.2.3 LOCAL AIR MONITORING DATA

The SCAQMD has divided the Basin into source receptor areas (SRAs), based on similar meteorological and topographical features. The proposed Project site is in the SCAQMD's Central San Bernardino Valley SRA (SRA No. 34). The most representative station of the Project site is the San Bernardino Station, which is located at 24302 4th Street, San Bernardino, CA 92410, approximately 5 miles south of the Project site. The San Bernardino Station measures PM_{10}, NO_2, CO, and O_3. The nearest station that monitors SO_2 is the Fontana Station, which is located at 14360 Arrow Highway, Fontana, CA 92335, approximately 16 miles west of the Project site. The nearest station that monitors $PM_{2.5}$, is the Rubidoux Station, which is located at 5888 Mission Boulevard, Riverside, CA 92509, approximately 17 miles southwest of the Project site.

Table 3.2-2 summarizes the air pollution monitoring results for 2022 for the Central San Bernardino Valley SRA.

Table 3.2-2. Air Quality Summary – Central San Bernardino Valley SRA

	Year		
	2022	2023	2024
Ozone (O_3)			
Maximum 1-Hour Concentration (ppm)	0.128	0.143	0.140
Days > CAAQS (0.09 ppm)	*79*	*69*	*98*
Maximum 8-Hour Concentration (ppm)	0.105	0.118	0.121
Days > NAAQS (0.070 ppm)	*103*	*90*	*110*
Days > CAAQS (0.070 ppm)	*103*	*90*	*110*
Nitrogen dioxide (NO_2)			
Maximum 1-Hour Concentration (ppm)	0.053	0.056	0.059
Days > NAAQS (0.10 ppm)	*0*	*0*	*0*
Days > CAAQS (0.18 ppm)	*0*	*0*	*0*
Respirable particulate matter (PM_{10})			
Maximum 24-Hour Concentration (μg/m^3)	177.9	178.2	149.4
Days > NAAQS (150 μg/m^3)	*1*	*1*	*0*
Days > CAAQS (50 μg/m^3)	*78*	*20*	*84*

Annual Arithmetic Mean (20 µg/m[3])	--	--	--
Fine particulate matter ($PM_{2.5}$)			
Maximum 24-Hour Concentration (µg/m[3])	40.2	52.9	N/A
Days > NAAQS (35 µg/m[3])	*2*	*1*	
Annual Arithmetic Mean (µg/m[3])	--	--	--
Days > CAAQS (12 µg/m[3])	--	--	--

Source: CARB 2025.
Notes: ppm = parts per million; ppb = parts per billion; µg/m[3] = micrograms per cubic meter.

3.2.4 PROJECT SITE EMISSIONS

The Project site consists of an existing grass field area connected to the asphalt playground/recess area of the Arrowhead Elementary School. There is no existing developed uses at the Project site. Existing emissions from the site are attributed to operation of the Arrowhead Elementary School. With respect to the specific Project site, these may consist of nominal emissions associated with operation of landscape equipment and electricity consumption for irrigation of the field area.

Given the minimal activities and associated emissions for the site, for the purpose of this analysis, the Project site is not considered to generate any air emissions.

3.3 EXISTING GHG EMISSIONS

3.3.1 U.S. EMISSIONS

The USEPA's annual *Inventory of U.S. Greenhouse Gas Emissions and Sinks* tracks U.S. greenhouse gas emissions and sinks by source, economic sector, and greenhouse. In 2022, the U.S. emitted 6,343 million metric tons of carbon dioxide equivalents (MMT CO_2 e.). U.S. emissions decreased by 3 percent from 1990 to 2022 and increased by 0.2 percent from 2021 to 2022 (14.4 MMT CO_2 e.). In 2022, CO_2 emissions from fossil fuel combustion increased by 1 percent relative to the previous year. This increase in fossil fuel consumption emissions was from increased energy use, due in part to the continued rebound in economic activity after the height of the COVID-19 pandemic. CO_2 accounted for 79.7 percent of 2022 GHG emissions while CH_4 accounted for 11.1 percent, N_2O for 6.1 percent, and fluorinated gases for 3.1 percent (UESPA 2024).

In 2022, total GHG emissions by the five major sectors generating emissions through direct fossil fuel combustion—electricity generation, transportation, industrial, agricultural, and residential and commercial—25 percent for the electric power industry, 28 percent for transportation, 23 percent for industry, 10 percent for agriculture, 13 percent for residential and commercial (USEPA 2024).

3.3.2 CALIFORNIA EMISSIONS

In 2022, California generated approximately 371.1 MMT CO_2e, 2.4 percent lower than in 2021 (380.4 MMT CO_2e,). The 2022 emissions data is representative of California's continuing long-term trend of GHG emissions declines, despite the anomalous emissions trends from 2019 through 2021, due in large part to the impacts of the COVID-19 pandemic. The largest decrease in emissions occurred in the transportation sector, with a decrease of 3.6 percent (5.2 MMT CO_2e) compared to 2021 (CARB 2024). Transportation emission decreases are largely attributed to reduced use of fossil distillate and fossil gasoline. GHG emissions in the electricity sector decreased by 4.1 percent (2.6 MMT CO_2e) compared to 2021 due to increases in solar, wind, and hydropower power generation. GHG emissions in the industrial sector decreased by 2 percent (1.5 1 MMT CO_2e) compared to 2021 (CARB 2024). This decline is attributed to historic lows in oil and gas production and processing subsector emissions since 2000.

3.3.3 SAN BERNADINO COUNTY EMISSIONS

The 2011 San Bernardino County Greenhouse Gas Reduction Plan (GHGRP) completed a baseline year 2007 GHG emissions inventory for communitywide emission sectors. The GHGRP was later succeeded in 2021 by the GHGRP Update, which used 2016 GHG emission inventories as a baseline and forecasted GHG inventories for 2020 and 2030. As with the 2007 inventories, these inventories estimate emissions for building energy, on-road transportation, off-road equipment, agriculture, solid waste management, wastewater treatment, and water transport, distribution, and treatment (County of San Bernardino 2021). GHG emissions are forecast using two scenarios: a Business-as-Usual (BAU) and an Adjusted BAU (ABAU) scenario. The BAU scenario describes emissions based on projected growth in population and employment and does not consider policies in place in 2016 that would reduce emissions in the future. The Adjusted BAU scenario describes emissions based on projected growth and considers policies that will achieve GHG reductions in the future. Both scenarios account for future projected growth in population, housing, and jobs.

Table 3.2-1 below illustrates the County's 2016 GHG emissions inventory, as well as the GHG emissions projections for 2020 and 2030 under a BAU scenario. In 2016, the County generated approximately 2,873,469MT CO_2e. On-road vehicles, at 1,519,146 MT CO_2e, represented the largest share of emissions at 52.9 percent. Building energy represented the second largest source of emissions with 948,183 MT CO_2e accounting for 33 percent of emission. Off-road equipment accounted for 1.2 percent (35,618 MT CO_2e) of emissions. Agriculture accounted for 5 percent (143,146 MT CO_2e) of emissions. Solid waste management accounted for 6.9 percent (197,260 MT CO_2e) of emissions. Wastewater treatment accounted for 0.3 percent (9,651 MT CO_2e) of emissions. Water transport, distribution, and treatment accounted for 0.7 percent (20,465 MT CO_2e) of emissions.

Under the BAU scenario, 2020 emissions would rise to an estimated 2,923,496 MT CO_2e, representing a 2 percent increase from 2016 emissions. Solid waste management and water treatment, transport, and distribution sectors would increase emissions by 2 percent. Building energy, on-road vehicles, and wastewater treatment sectors would increase emissions by 3 percent. The off-road equipment sector would increase emission by 6 percent, representing the largest increase by sector. Agriculture emissions would decrease by 15 percent due to a decline in agricultural activities in the County (County of San Bernardino 2021).

Both BAU and ABAU scenarios assume 2020 emissions to be 2,923,496 MT CO2e. The 2030 BAU emissions are estimated to be 3,051,959 MT CO2e, which would represent a 6 percent increase from 2016 to 2030. The County of San Bernardino's ABAU emissions are estimated to be 2,007,063 MT CO2e in 2030, which would represent an approximately 30.2 percent reduction from 2016 by 2030.

Table 3.2-1. San Bernardino County Business-as-Usual (BAU) Forecast Emissions

Emission Source	2016 MMT CO_2e	2020 MMT CO_2e	Percent Change 2016-2020	2030 MMT CO_2e	Percent Change 2016-2030
Building energy	948,183	975,155	3%	1,043,581	10%
On-road vehicles	1,519,146	1,557,858	3%	1,641,251	8%
Off-road equipment	35,618	37,598	6%	44,682	25%
Agriculture	143,146	121,477	-15%	80,591	-44%
Solid waste management	197,260	200,758	2%	210,590	7%
Wastewater treatment	9,651	9,823	3%	10,304	7%
Water transport, distribution, and treatment	20,465	20,827	2%	20,960	2%
Total	**2,873,469**	**2,923,496**	**2%**	**3,051,959**	**6%**

Source: San Bernardino County 2021.

On a per capita basis, the County of San Bernardino generated 1.44 MT CO_2e per year per resident in 2016, based on U.S. Census Bureau estimates of 2,035,210 residents in 2010 (U.S Census Bureau 2025). The per capita estimates are lower than the California average of 12.1 MT CO_2e per resident in 2012 (CARB 2016).

3.3.4 PROJECT SITE EMISSIONS

As previously described, given the minimal activities and associated emissions for the site, for the purpose of this analysis, the Project site is not currently considered to generate any GHG emissions.

3.4 SENSITIVE RECEPTORS

Some people, such as individuals with respiratory illnesses or impaired lung function because of other illnesses, persons over 65 years of age, and children under 14, are particularly sensitive to certain pollutants. Facilities and structures where these sensitive people live or spend considerable amounts of time are known as sensitive receptors. Land uses identified to be sensitive receptors by SCAQMD (1993) in its *CEQA Air Quality Handbook* include residences, schools, playgrounds, childcare centers, athletic facilities, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes. Sensitive receptors may be at risk of being affected by air emissions released from the construction and operation of the proposed Project.

The nearest sensitive receptors to the proposed Project site, with the highest potential to be impacted by the proposed Project, are listed in **Table 3.3-1**. Additionally, numerous residences, including single-family and multifamily residences are located within a 0.25-mile radius of the Project site. The nearest residential use to the Project site is the Avalon Apartments com

Table 3.3-1. Nearest Sensitive Receptors

Sensitive Receptor Name	Location	Distance from Proposed Project (Feet)
Avalon Apartments	3776 Genevieve St. N.	75
Arrowhead Elementary School	3825 N. Mountain View Avenue	150
St. Sierra Park	3878 N. Sierra Way	425
Harper Field (Newark Little League fields)	3900 Severance Avenue	450
TJ's Daycare	3905 N. Lugo Avenue	985

4 APPLICABLE REGULATIONS

4.1 FEDERAL REGULATIONS

4.1.1 FEDERAL CLEAN AIR ACT

The Federal Clean Air Act (CAA) was passed in 1963 and amended in 1990 and was the first comprehensive federal law to regulate air emissions from stationary and mobile sources. Among other things, the law authorizes the U.S. Environmental Protection Agency (USEPA) to establish NAAQS, which help to ensure basic health and environmental protection from air pollution. The Federal CAA also gives the USEPA the authority to limit emissions of air pollutants coming from sources like chemical plants, utilities, and steel mills.

4.1.2 FEDERAL CLEAN AIR ACT AMENDMENTS

In 1990, the U.S. Congress adopted the Federal Clean Air Act Amendments (CAAA), which updated the nation's air pollution control program. The CAAA established several requirements, including new deadlines for achieving federal clean air standards.

The USEPA is the federal agency charged with administering the CAAA and other air quality-related legislation. As a regulatory agency, USEPA's principal functions include setting NAAQS, establishing minimum national emission limits for major sources of pollution, and promulgating regulations.

The CAAA require USEPA to approve state implementation plans (SIPs) to meet and/or maintain the NAAQS. California's SIP consists of plans developed at the regional or local level.

4.1.3 ENERGY INDEPENDENCE AND SECURITY ACT

The Energy Independence and Security Act (EISA) of 2007 includes several key provisions that will increase energy efficiency and the availability of renewable energy, which will reduce GHG emissions as a result. The EISA facilitates the reduction of GHG emissions by requiring the following:

- Increasing the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard that requires fuel producers to use at least 36 billion gallons of biofuel in 2022.
- Prescribing or revising standards affecting regional efficiency for heating and cooling products, procedures for new or amended standards, energy conservation, energy efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances.
- Achieving approximately 25 percent greater efficiency for light bulbs by phasing out old incandescent light bulbs between 2012 and 2014; requiring approximately 200 percent greater efficiency for light bulbs, or similar energy savings, by 2020.
- Establishing a minimum average fuel economy of 35 mpg for the combined fleet of cars and light trucks by 2020.
- Directing the National Highway Traffic Safety Administration to establish a fuel economy program for medium- and heavy-duty trucks and create a separate fuel economy standard for trucks.

Additional provisions of EISA address energy savings in government and public institutions, promote research for alternative energy, additional research in carbon capture, international energy programs, and the creation of green jobs.

4.1.4 VEHICLE EMISSIONS STANDARDS

In 2009, a national policy was adopted for fuel efficiency and emissions standards in the U.S. auto industry, which applies to passenger cars and light-duty trucks for model years 2012 to 2016 (referred to as the Pavley standards; Phase 1 standards). The standards surpass the prior Corporate Average Fuel Economy standards and require an average fuel economy standard of 35.5 miles per gallon (mpg) and 250 grams of CO_2 per mile by model year 2016, based on USEPA calculation methods. These standards were formally adopted on April 1, 2010.

In 2012, new standards were adopted for model year 2017 to 2025 for passenger cars and light-duty trucks. By 2020, new vehicles are projected to achieve 41.7 mpg—if GHG reductions are achieved exclusively through fuel economy improvements—and 213 grams of CO_2 per mile (Phase 2 standards). By 2025, vehicles are required to achieve 54.5 mpg (if GHG reductions are achieved exclusively through fuel economy improvements) and 163 grams of CO_2 per mile. According to the USEPA, a model year 2025 vehicle would emit approximately half of the GHG emissions from a model year 2010 vehicle.

On October 25, 2016, the USEPA established rules for a comprehensive Phase 2 Heavy-Duty National Program that established fuel consumption and CO_2 standards for each of the four regulatory categories of heavy-duty vehicles. The rule also included separate standards for the engines that power combustion tractors and vocational vehicles. These standards build upon the Phase 1 and Phase 2 standards for light-duty vehicles spanning model years 2012-2025.

On April 12, 2023, the USEPA announced new, more ambitious proposed standards to further reduce harmful air pollutant emissions from light-duty and medium-duty vehicles starting with model year 2027 and through 2032 (USEPA 2023c).

4.2 STATE REGULATIONS

4.2.1 CALIFORNIA CLEAN AIR ACT

The California Clean Air Act (CCAA) was enacted in 1988 (California Health & Safety Code Section 39000 et seq.). California also has ambient air quality standards (i.e., CAAQS), which predate USEPA's formation in 1970 and the original NAAQS for pollutants considered harmful to public health and the environment, including the six criteria pollutants, as well as sulfates, hydrogen sulfide, vinyl chloride (chloroethene), and visibility-reducing particles. The CAAQS currently in effect for each pollutant, as well as the attainment status of the SCAB, are shown in Table 3.3-2. In 1959, California enacted legislation requiring the California Department of Public Health to establish air quality standards and necessary controls for motor vehicle emissions. The CCAA requires all areas of the State to achieve and maintain the CAAQS by the earliest practicable date. California law continues to mandate CAAQS, although attainment of the NAAQS has precedence over attainment of the CAAQS. The CAAQS includes more stringent standards than the NAAQS. CARB ensures the implementation of the CCAA and responds to the Federal CAA. CARB is responsible for the control of vehicle emission sources, while the local air district is responsible for enforcing standards and regulating stationary sources.

4.2.2 CALIFORNIA AIR RESOURCES BOARD

CARB, a part of the CalEPA, is responsible for the coordination and administration of both federal and state air pollution control programs within California. In this capacity, CARB conducts research, sets CAAQS, compiles emission inventories, develops suggested control measures, provides oversight of local programs, and prepares the SIP. CARB is responsible for the control of vehicle emission sources, while the local air district is responsible for enforcing standards and regulating stationary sources.

4.2.3 CALIFORNIA AIR TOXICS "HOT SPOTS" INFORMATION AND ASSESSMENT ACT

The Air Toxic "Hot Spots" Information and Assessment Act identifies TAC hot spots where emissions from specific stationary source facilities may expose individuals to an elevated risk of adverse health effects. It requires that a business or other establishment identified as a significant source of toxic emissions provide the affected population with information about the health risks posed by the emissions. Health Risk Assessments (HRAs) would identify the hazard or hazardous material, assess the amount, duration, and pattern of exposure to the hazard or hazardous material, assess the amount it would take to cause negative health effects, and characterize the risk to the general population and sensitive receptors from the hazard or hazardous material. The California Office of Environmental Health Hazard Assessment provides *A Guide to Health Risk Assessment* and *The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments* (2015) to aid California projects' compliance with the Air Toxic "Hot Spots" Information and Assessment Act. In San Bernardino County, SCAQMD implements and enforces the Air Toxic "Hot Spots" Information and Assessment Act.

4.2.4 CALIFORNIA BUILDING CODE

California Code of Regulations, Title 24, is known as the CBC, which establishes the regulations for building construction and system design and installation to achieve energy efficiency and preserve outdoor and indoor environmental quality. The CBC includes the following subparts which are most applicable to development under the proposed Project.

California Code of Regulations, Title 24, Part 6 comprises the California Energy Code, which was first established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to increase the baseline energy efficiency requirements. The Title 24 standards were updated in 2021 and became effective on January 1, 2023. The updated standards apply to all buildings for which an applicable building permit is submitted on or after January 1, 2023, and established new standards for electric-ready requirements, expanded solar PV and battery storage, and strengthened ventilation standards for improved air quality. The Title 24 standards also include efficiency improvements to the residential standards for attics, walls, water heating, and lighting; and efficiency improvements to the non-residential standards are in alignment with the American Society of Heating and Air-Conditioning Engineers (ASHRAE) 90.1-2013 National Standards. Although it was not originally intended to reduce criteria pollutant or TAC emissions, electricity production by fossil fuels results in ozone precursor emissions and energy-efficient buildings require less electricity. Therefore, increased energy efficiency results in decreased criteria pollutant and TAC emissions from residential and non-residential buildings.

California Code of Regulations, Title 24, Part 11 comprises CALGreen, which establishes mandatory green building code requirements as well as voluntary measures (Tier 1 and Tier 2) for new buildings in California. The mandatory provisions in CALGreen will reduce the use of VOC-emitting materials, strengthen water efficiency conservation, increase construction waste recycling, and increase energy efficiency. Tier 1 and Tier 2 are intended to further encourage building practices that minimize the building's impact on the environment and promote a more sustainable design.

4.2.5 CALIFORNIA LEGISLATION ON CLIMATE CHANGE

Recent California legislation related to GHG emissions and climate change includes the following:

- Assembly Bill (AB) 1493 – Requires CARB to define standards for cars and light trucks manufactured after 2009.
- EO S-3-05 – Announced GHG emission reduction targets.
- AB 32 (Global Warming Solutions Act of 2006) – Requires CARB to adopt regulations to evaluate statewide GHG emissions and then create a program and emission caps to limit statewide emissions to 1990 levels.

- EO S-01-07 – Requires a statewide goal to be established to reduce the carbon intensity of California's transportation fuels.
- EO B-16-12 – Requires state agencies to increase the number of zero-emission vehicles (ZEV) within the state fleet through the normal course of fleet replacement so that at least 10 percent of fleet purchases of light-duty vehicles are ZEV by 2015 and 20 percent by 2025.
- Senate Bill (SB) 97 – Acknowledges that climate change analysis is to occur in conjunction with the California Environmental Quality Act (CEQA) process and that the Governor's Office of Planning and Research (OPR) is responsible for developing CEQA Guidelines.
- SB 375 – Creates a process whereby local governments and other stakeholders work together within their region to achieve the reduction of GHG emissions.
- EO B-30-15 – Established a new interim statewide GHG emission reduction target.
- Climate Change Scoping Plan – Designed to reduce overall carbon emissions in California.
- CARB GHG Emission Inventory – Creates GHG emissions limits and requires an emissions inventory for the industries determined to be significant sources of GHG emissions.
- SB 32 – Extension of AB 32 requiring the state to further reduce GHGs to 40 percent below 1990 levels by 2030 (the other provisions of AB 32 remain unchanged).
- SB 100 and 350 – Supports the reduction of GHG emissions from the electricity sector by accelerating California's Renewables Portfolio Standard Program, which was last updated by SB 350 in 2015.
- SB 1383 – Requires CARB to approve and begin implementing a comprehensive strategy to reduce emissions of short-lived climate pollutants.
- EO B-55-18 – Established a new statewide goal of achieving carbon neutrality by 2045 and maintaining net negative emissions thereafter.
- EO N-79-20 – Established a new statewide goal of achieving 100 percent of in-state sales of new passenger cars and trucks will be ZEV by 2035, 100 percent of in-state sales of new medium and heavy-duty vehicles will be ZEV by 2045, and transition to 100 percent zero-emission off-road vehicles and equipment by 2035 where feasible.
- AB 1279 (California Climate Crisis Act) - Declares the policy of the state both to achieve net zero GHG emissions as soon as possible, but no later than 2045, and achieve and maintain net negative GHG emissions thereafter, and to ensure that by 2045, statewide anthropogenic GHG emissions are reduced to at least 85 percent below the 1990 levels. AB 1279 also requires the state to ensure that updates to the Scoping Plan identify and recommend measures to achieve these policy goals and to identify and implement a variety of policies and strategies that enable CO_2 removal solutions and carbon capture, utilization, and storage technologies in California.

4.3 REGIONAL AND LOCAL REGULATIONS

4.3.1 SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

The SCAQMD has jurisdiction over a total area of 10,743 square miles, consisting of the SCAB, which comprises 6,745 square miles, including Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties, and the Riverside County portion of the Salton Sea and Mojave Desert Air Basins. The Project site is in the City of San Bernardino, which is situated in the SCAB portion of San Bernardino County and is within the jurisdiction of the SCAQMD.

The SCAQMD is required to produce plans to show how air quality will be improved in the region. The CCAA requires that these plans be updated triennially to incorporate the most recent available technical information.[1] A multi-level partnership of governmental agencies at the federal, state, regional, and local levels implement the programs contained in these plans. Agencies involved include the USEPA, CARB, local governments, Southern California Association of Governments (SCAG), and SCAQMD. The SCAQMD and the SCAG are responsible for formulating and implementing the Air Quality Management Plan (AQMP) for the Basin.

The SCAQMD updates its AQMP every three years. The most recent of these is the 2022 AQMP, which was adopted by the Governing Board of SCAQMD on December 2, 2022. The 2022 AQMP was prepared to comply with the CAA and CCAA, to accommodate growth, to reduce air pollutant levels in the Basin, to meet federal and State air quality standards, and to minimize the fiscal impact that pollution control measures have on the local economy.

The 2022 AQMP focuses on attaining the 2015 8-hour ozone standard, which is the most stringent standard to date. The 2022 AQMP builds upon measures already in place from previous AQMPs. It also includes a variety of additional strategies such as regulation, accelerated deployment of available cleaner technologies (e.g., zero emissions technologies, when cost-effective and feasible, and low NO_X technologies in other applications), best management practices, co-benefits from existing programs (e.g., climate and energy efficiency), incentives, and other CAA measures to achieve the 2015 8-hour ozone standard. Specifically, the AQMP projects that to meet this standard, NO_X emissions must be reduced by 67 percent by 2037.

The SCAQMD has also established various rules to manage and improve air quality in the SCAB. The Project proponent shall comply with all applicable SCAQMD Rules and Regulations pertaining to construction activities, including, but not limited to:

- Rule 401 (Visible Emissions) prohibits discharges of any pollutant into the atmosphere from any single source of emissions that is as dark or darker in shade as that designated No. 1 on the Ringelmann chart (opacity equal to or greater than 20 percent) for up to or more than three minutes in any one hour.
- Rule 402 (Nuisance) states that a person should not emit air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.
- Rule 403 (Fugitive Dust) controls fugitive dust through various requirements including, but not limited to, applying water in sufficient quantities to prevent the generation of visible dust plumes, applying soil binders to uncovered areas, reestablishing ground cover as quickly as possible, utilizing a wheel washing system to remove bulk material from tires and vehicle undercarriages before vehicles exit the Project site, limiting vehicle speeds on unpaved roads to 15 miles per hour, and maintaining effective cover over exposed areas. Rule 403 also prohibits the release of fugitive dust emissions from any active operation, open storage piles, or disturbed surface area beyond the property line of the emission source and prohibits particulate matter deposits on public roadways.
- Rule 1113 (Architectural Coatings) establishes limits on the VOC content of specific architectural coating applications. Non-residential building envelope coatings are required to have VOC content less than 50 grams per liter.
- Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines) specifies requirements for stationary diesel engines, including emergency standby generators. This rule requires owners or operators of emergency standby generators to keep monthly logs of usage, limits maintenance and testing to 20 hours per day, and requires emission rates to not exceed certain levels. For new emergency standby diesel-fueled engines (>50hp) located 100 meters or less from a school, DPM emission rates shall be less than or equal to 0.01 grams per brake horsepower hour (g/bhp-hr).

[1] CCAA of 1988.

- Regulation XIII (New Source Review) authorizes the SCAQMD to deny any Permit to Construct for any new or modified source that results in an emission increase of any non-attainment air contaminant, any ozone depleting compound, or ammonia, unless Best Available Control Technology is employed (Rule 1303) and it can be demonstrated through emissions modeling that the source would not cause or contribute to air quality violations.

4.3.2 REGIONAL TRANSPORTATION PLAN/SUSTAINABLE COMMUNITIES STRATEGY (RTP/SCS)

The Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) is a long-range vision plan of transportation planning and programming activities in the SCAG region. The San Bernardino County Transportation Authority contributes to the RTP/SCS through various policy and technical advisory committees maintained by SCAG, and through the coordination and preparation of local and sub-regional input to the RTP/SCS. The RTP/SCS maps out how the region will integrate land use, transportation strategies, transportation investments including transit, bicycle, and pedestrian infrastructure, and future population growth while progressing California state goals to reduce greenhouse gas emissions and vehicle miles driven.

4.3.3 COUNTY OF SAN BERNARDINO GREENHOUSE GAS REDUCTION PLAN UPDATE

In compliance with SB 97, the County of San Bernardino adopted a Greenhouse Gas Reduction Plan (GHGRP) in September 2011 and has since updated it in 2015 and 2021. The GHGRP provides a means of implementing state regulations, including AB 32, AB 1493, Executive Order S-3-05, SB 375, Executive Order B-30-15, SB 32, AB 398, and SB 97, at the local level within the County. The GHGRP from 2015 provided a comprehensive set of actions to reduce the County's internal and external GHG emissions to 15 percent below current levels by 2020, consistent with the AB 32 Scoping Plan. This equates to a reduction of 159,423 metric tons of carbon dioxide equivalents (MT CO_2e) per year from new development by 2020 as compared to the 2020 unmitigated conditions. San Bernardino County achieved this 2020 GHG reduction target.

The GHGRP Update, adopted September 21, 2021, updates the 2011 GHGRP. The GHGRP Update updates San Bernardino County's 2007 GHG emissions inventory with a 2016 GHG emissions baseline and estimates future emissions for the years 2020 and 2030. The GHGRP Update also presents a reduction target of reducing emissions 40 percent below 2007 levels and provides emission reduction strategies for reaching this reduction target.

4.3.4 SAN BERNARDINO COUNTY GHG DEVELOPMENT REVIEW PROCESS

The GHG Development Review Process (DRP) outlines procedures for evaluating GHG impacts and streamlining significance impact decisions by (1) applying a uniform set of performance standards to all development projects, and (2) utilizing Screening Tables to mitigate Project GHG emissions. Performance standards used for assessing and mitigating GHG emissions are taken from the County GHG Plan.

Based on MDAQMD standards, projects exceeding 3,000 MTCO2e per year of GHG emissions must use of Screening Tables or a project-specific technical analysis to quantify and mitigate Project emissions. The DRP procedures also allow projects the option of preparing Screening Tables or a project-specific technical analysis to quantify and mitigate GHG emissions.

Projects exceeding 3,000 MTY of GHG emissions may use Screening Tables as a tool to assist with calculating GHG reduction measures and the determination of a significance finding. Projects that garner a 100 or greater points do not require quantification of project-specific GHG emissions. The point system was devised to ensure to Project compliance with the reduction measures in the GHG Plan such that the GHG emissions from new development, when considered together with those existing development, allow the County to meet its 2020 target and support reductions in GHG emissions beyond 2020.

Projects exceeding 3,000 MTY of GHG emissions that do not use the Screening Tables, are required to quantify project-specific GHG emissions and achieve the equivalent level of GHG emissions efficiency as a 100-point project. Consistent with the CEQA Guidelines, such projects are consistent with the GHG Plan and therefore would have a less than significant individual and cumulative impact for GHG emissions.

5 PROJECT IMPACT ANALYSIS

5.1 CEQA IMPACT REVIEW CRITERIA

In accordance with *State CEQA Guidelines* Appendix G, implementation of the Project would result in a potentially significant impact to air quality if it were to:

- Conflict with or obstruct implementation of the applicable air quality plan.
- 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.
- Expose sensitive receptors to substantial pollutant concentrations.
- Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Implementation of the Project would result in a potentially significant impact with regards to GHG emissions if it were to:

- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.
- Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs.

Where available, the significance criteria established by the applicable air quality management district (AQMD) or air pollution control district (APCD) may be relied upon to make the significance determinations. As discussed in the next sections, the SCAQMD has developed their *CEQA and Federal Conformity Guidelines* to provide a protocol for air quality analyses that are prepared under the requirements of CEQA. The County has developed guidance for evaluating GHG impacts under CEQA under their *Greenhouse Gas Emissions Development Review Process Screening Tables*. The SCAQMD is also the process of developing an "*Air Quality Analysis Guidance Handbook*" (Handbook) to replace the *CEQA Air Quality Handbook* approved by the South Coast AQMD Governing Board in 1993.

5.1.1 EMISSION THRESHOLDS FOR REGIONAL AIR QUALITY IMPACTS

The SCAQMD has developed criteria for determining whether emissions from a project are regionally significant. They are useful for estimating whether a project is likely to result in a violation of the NAAQS and/or whether the project is in conformity with plans to achieve attainment. The SCAQMD no longer has “indirect source” rules, e.g., rules that place restrictions on housing or commercial development, or require reductions in trip generation and/or VMT to developed commercial or industrial sites.[2] Instead, the district has published guidance on conducting air quality analyses under CEQA (SCAQMD 1993).[3] SCAQMD’s significance thresholds are summarized in **Table 5.1-1** for criteria pollutant emissions during construction activities and Project operation. A project is considered to have a regional air quality impact if emissions from its construction and/or operational activities exceed the corresponding SCAQMD significance thresholds.

Table 5.1-1. SCAQMD Emissions Thresholds for Significant Regional Impacts

Pollutant	Mass Daily Thresholds (lbs/day)	
	Construction	Operation
Nitrogen oxides (NO_X)	100	55
Volatile organic compounds (VOCs)	75	55

[2] Two indirect source rules (1501 - Work Trip Reduction Plans and 1501.1 - Alternatives to Work Trip Reduction Plans) were repealed in 1995.
[3] Partially updated in 2006.

Respirable particulate matter (PM_{10})	150	150
Fine particulate matter ($PM_{2.5}$)	55	55
Sulfur oxides (SO_X)	150	150
Carbon monoxide (CO)	550	550
Lead	3	3

Source: "SCAQMD Air Quality Significance Thresholds." 2023. Diamond Bar, CA: SCAQMD, https://www.aqmd.gov/docs/default-source/ceqa/handbook/south-coast-aqmd-air-quality-significance-thresholds.pdf?sfvrsn=25. March 2023. Accessed February 24, 2025.

5.1.2 EMISSION THRESHOLDS FOR LOCALIZED AIR QUALITY IMPACTS

As part of its environmental justice program to address localized air quality impacts of development projects, SCAQMD developed localized significance thresholds (LSTs) in 2003 (Chico and Koizumi 2003). LSTs represent the maximum NO_X, CO, PM_{10}, and $PM_{2.5}$ emissions from a project that are not expected to cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard. NO_X and CO LSTs are based on the ambient concentrations of that pollutant for each SRA and distance to the nearest off-site receptor. For PM_{10}, LSTs were derived based on requirements in SCAQMD Rule 403. Note that the LST analysis does not apply to reactive organic gas (ROG) emissions, since there is no ambient air quality standard for ROG.

For the purposes of a CEQA analysis, the SCAQMD considers a sensitive receptor to be a receptor such as a residence, hospital, or convalescent facility where it is possible that an individual could remain for 24 hours or longer. Commercial and industrial facilities are not included in the definition of sensitive receptor, because employees typically are present for shorter periods of time, such as eight hours. Therefore, applying a 24-hour standard for PM_{10} is appropriate not only because the averaging period for the state standard is 24 hours, but because the sensitive receptor would be present at the location for the full 24 hours.

The SCAQMD has developed mass rate look-up tables that can be used to determine whether a project may generate significant localized air quality impacts to off-site receptors (including sensitive receptors). Note that the use of LSTs is voluntary, to be implemented at the discretion of the lead agency pursuant to CEQA.

5.1.3 IMPACTS OF CARBON MONOXIDE HOTSPOTS

With respect to the formation of CO hotspots, a project's localized air quality impact is considered significant if CO emissions create a hotspot where either the California 1-hour standard of 20 ppm or the Federal and State 8-hour standard of 9.0 ppm is exceeded. In general, this only occurs at severely congested intersections (i.e., LOS E or worse).

SCAQMD conducted CO modeling for the attainment demonstration in the Federal Attainment Plan for Carbon Monoxide (*CO Plan* for the SCAQMD's 2003 *Air Quality Management Plan*). SCAQMD modeled the four most congested intersections in the Basin, including: (1) Wilshire Boulevard and Veteran Avenue; (2) Sunset Boulevard and Highland Avenue; (3) La Cienega Boulevard and Century Boulevard; and (4) Long Beach Boulevard and Imperial Highway. In the 2003 AQMP, SCAQMD notes that the intersection of Wilshire Boulevard and Veteran Avenue is the most congested intersection in Los Angeles County, with an average daily traffic volume of approximately 100,000 vehicles per day (SCAQMD 2003). This intersection is located near the on- and off-ramps to I-405 in West Los Angeles. The evidence provided in Table 4-10 of Appendix V of the 2003 AQMP shows that the peak modeled CO concentration due to vehicle emissions at these four intersections was 4.6 ppm (maximum 1-hour concentration) and 3.2 (maximum 8-hour concentration) at Wilshire Boulevard and Veteran Avenue, exclusive of ambient background CO concentrations, which is well below the Federal and State CO standards. This indicates that even these highly congested intersections would not cause a CO hotspot to result.

5.1.4 HEALTH IMPACTS OF TOXIC AIR CONTAMINANTS

The potential for Toxic Air Contaminants (TACs) to have an effect on sensitive receptors would occur if the Project were located near an existing significant source of TACs or if it would generate TACs in quantities that may have an adverse effect on sensitive receptors. CARB identifies high-volume freeways and roads, dry cleaners, and large gas stations as potential sources of TACs, while typical sources of acutely and chronically hazardous TACs include industrial manufacturing processes and automotive repair facilities. In 1998, CARB also identified DPM as a TAC associated with lung cancer (Office of Environmental Health Hazards Assessment [OEHHA] 1998). The CARB indicates that one of the highest public health priorities is the reduction of DPM generated by vehicles on California's freeways and highways, as it is one of the primary TACs with the most direct and common implications for respiratory health problems.

Per CARB criteria, heavily traveled roadways where annual average daily trips (AADT) exceed 100,000 can be sources of particulate emissions from diesel-fueled engines. The nearest roadway to the Project site, which has an AADT in excess of 100,000 is SR 210, located nearly 1.0 mile to the south, which had an AADT of 152,000 as measured at the U.S. Route 18 on-/off-ramp (Caltrans 2022). Other potential sources of TACs surrounding the Project site are associated with specific types of facilities, such as gas stations, dry cleaners, and automotive repair shops located along W. 40th Street approximately 1,500 feet north of the Project site.

The CARB has made specific recommendations with respect to considering existing sensitive uses when siting new TAC-emitting facilities or with respect to TAC-emitting sources when siting sensitive receptors. The CARB recommends the following buffer distances be observed when locating these types of TAC emitters or sensitive land uses:

- Freeways or major roadways – 500 feet.
- Dry cleaners – 500 feet.
- Auto body repair services – 500 feet.
- Gasoline dispensing stations with an annual throughput of less than 3.6 million gallons – 50 feet; gasoline dispensing stations with an annual throughput at or above 3.6 million gallons – 300 feet.

The SCAQMD recommends that site-specific HRAs be performed to document potential cancer risk when siting sensitive land uses within the above buffer zones. Based on the methodology established by OEHHA and the SCAQMD, the following significance thresholds have been established to determine the maximum individual cancer risk (MICR), and hazard index (HI) from Project emissions:

- MICR – cancer risk greater than or equal to 10 in one million ($<10x10^{-6}$).
- HI – highest chronic health index greater than or equal to than 1.0.

The proposed Project does not place sensitive land uses within the above buffer zones and is not a major operational point-source of TACs. As described above, the nearest roadway with over 100,000 AADT is nearly a mile from the Project site, while the nearest potential sources of stationary TACs are located along E. 40th Street approximately 1,500 feet to the north.

5.1.5 EMISSION THRESHOLDS FOR GHGS

According to the California Air Pollution Control Officers Association (CAPCOA), "GHG impacts are exclusively cumulative impacts; there are no noncumulative GHG emission impacts from a climate change perspective" (CAPCOA 2008). Section 15064.4(b) of the CEQA Guidelines states that *"in determining the significance of a project's greenhouse gas emissions, the lead agency should focus its analysis on the reasonable foreseeable incremental contribution of the project's emissions to the effects of climate change. A project's incremental contribution may be cumulatively considerable even if it appears relatively small compared to statewide, national or global emissions."* Due to the global context of climate change, GHG analysis is based on the cumulative impact of emissions.

Generally, the evaluation of an impact under CEQA involves comparing the project's effects against a threshold of significance. The CEQA Guidelines clarify that "*when adopting thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence.*" For GHG emissions and global warming, there is not, at this time, one established, universally agreed-upon quantified threshold of significance for GHG impacts. The CEQA Guidelines do not establish a quantified threshold of significance for GHG impacts. Instead, lead agencies have the discretion to establish significance thresholds for their respective jurisdictions. A lead agency may look to thresholds developed by other public agencies or other expert entities, so long as the threshold chosen is supported by substantial evidence.

The County of San Bernardino adopted its Updated GHG Plan in 2021, which provides direction for evaluation of GHG emissions during the CEQA review of proposed development projects within the County. The County employs a GHG Development Review Process that specifies a two-step approach in quantifying GHG emissions. First, a screening threshold of 3,000 MT CO_2e/yr is used to determine whether additional analysis is required. Projects that exceed the 3,000 MT CO_2e/yr are required to either achieve a minimum 100 points per the Screening Tables or a 31 percent reduction below 2007 emissions levels. Consistent with CEQA Guidelines, projects meeting these criteria would be determined to have a less than significant individual and cumulative impact for GHG emissions.

5.2 METHODOLOGY

Estimated regional air emissions from the Project's on-site and off-site construction activities were calculated using the California Emissions Estimator Model (CalEEMod), Version 2022.1. CalEEMod is a planning tool for estimating emissions related to land use projects. The model incorporates EMFAC2021 emission factors to estimate on-road vehicle emissions; and emission factors and assumptions from the ARB's OFFROAD 2007 and OFFROAD2011 model to estimate off-road construction equipment emissions. Model-predicted Project emissions are compared against SCAQMD's significance thresholds to assess regional air quality impacts. All modeling output files and additional assumptions are provided in **Attachment 1**.

CalEEMod uses many default assumptions based upon surveys of various types of construction projects. However, the user may override the default values where project-specific data are available. For the proposed Project, detailed information regarding construction phasing, durations, equipment, and workers was not provided or readily available for use in this report. As such, default assumptions from CalEEMod were relied upon where project-specific information was not available.

While the Project would involve the construction of a new fire station to replace the existing San Bernardino County Fire Station No. 227, the Project's total construction and operational emissions are compared against adopted thresholds to present a worst-case analysis of Project impacts. In other words, the following analysis does not consider the net change in emissions associated with the replacement and upgrade of the existing fire station. All emissions associated with Project construction and operation are treated as new regional emissions.

5.3 AIR QUALITY IMPACTS

5.3.1 REGIONAL IMPACTS

CONSTRUCTION

For the purpose of this analysis, it was estimated that the construction of the proposed Project would begin in early January 2026 and finish in June 2027. Preliminary Project design information was used in conjunction with CalEEMod default construction duration assumption to estimate the number of days to execute the following construction phases:

- Site Preparation.
- Grading.
- Building Construction.
- Paving.
- Architectural Coating.

CalEEMod default construction assumptions for the types and numbers of construction equipment and worker trips were utilized. It was also assumed that the construction contractor would comply with all pertinent provisions of SCAQMD Rule 403 and Rule 1113 for controlling fugitive dust emissions from site preparation and grading, and VOC emissions from application of architectural coating. Equipment exhaust emissions were determined using CalEEMod default values for horsepower and load factors. **Table 5.3-1** shows the model's estimates of maximum daily construction emissions for the proposed Project.

Table 5.3-1. Maximum Daily Unmitigated Regional Construction Emissions

Construction Activity	Maximum Emissions (lbs/day)[1]					
	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Demolition	1.4	13.4	15.4	<0.1	1.1	0.6
Site preparation	1.3	11.7	12.0	<0.1	3.0	1.7
Grading	1.5	13.4	14.7	<0.1	3.6	1.9
Building construction	1.0	8.6	10.2	<0.1	0.3	0.3
Paving	0.6	4.3	7.2	<0.1	0.3	0.2
Architectural coating	4.0	0.8	1.2	<0.1	<0.1	<0.1
Maximum daily emissions	**4.0**	**13.4**	**15.4**	**<0.1**	**3.6**	**1.9**
SCAQMD significance thresholds	***75***	***100***	***550***	***150***	***150***	***55***
Exceeds threshold?	**No**	**No**	**No**	**No**	**No**	**No**

[1] Maximum daily emissions during summer or winter.

For each criteria pollutant, construction emissions would be below the pollutant's SCAQMD significance threshold. Therefore, the Project would not violate any air quality standard or contribute substantially to an existing or projected air quality violation. Construction emissions would be less than significant without mitigation.

OPERATION

Long-term operation of the Project would generate air pollutant emissions. Operational emissions from the Project include those generated by vehicle trips (mobile emissions), the operation of equipment (energy emissions), use of consumer products and appliances, and the use of landscaping maintenance equipment (area source emissions). A summary of the estimated operational emissions modeled for the Project are presented in **Table 5.3-2**.

Table 5.3-2. Maximum Daily Unmitigated Regional Operational Emissions

Activity	Maximum Emissions (lbs/day)					
	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Mobile	1.0	0.9	8.3	<0.1	1.9	0.5
Energy	<0.1	0.3	0.3	<0.1	<0.1	<0.1
Area	0.4	<0.1	0.6	<0.1	<0.1	<0.1
Stationary	2.9	8.0	7.3	<0.1	0.4	0.4
Total	**4.3**	**9.3**	**16.5**	**<0.1**	**2.3**	**0.9**
SCAQMD Significance Thresholds	***55***	***55***	***550***	***150***	***150***	***55***
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Operational emissions generated by the Project would not exceed adopted SCAMQD criteria pollutant thresholds. Given these low levels of emissions, operation of the Project would not cause or contribute to a violation of any adopted AAQS. Therefore, the Project would not violate any air quality standard or contribute substantially to an existing or projected air quality violation. Operational emissions would be less than significant without mitigation.

5.3.2 LOCALIZED AIR QUALITY IMPACTS

CONSTRUCTION

Following SCAQMD guidance (Chico and Koizumi 2003), only on-site construction emissions of NO_X, CO, PM_{10}, and $PM_{2.5}$ should be considered in the localized construction emissions significance analysis. According to the CalEEMod analysis, the highest on-site emissions of all pollutants would occur during the site preparation and grading phases from off-road equipment. It was estimated that, as a worst case, the maximum daily disturbance for demolition and for new building construction would be 1.33 acre, which has been rounded up to 2 acres for the purposes of providing a conservative worst-case analysis. As seen in **Table 3.3-1**, the nearest off-site sensitive receptors include the Avalon Apartments multifamily residences, the Arrowhead Elementary School, a park, little league baseball fields, and a daycare facility.

LSTs were obtained by interpolation from tables in Appendix C of the SCAQMD's *Final Localized Significance Threshold Methodology*.[4] **Tables 5.3-3** through **5.3-7** show the results of the localized significance analysis for the proposed Project. For the unmitigated scenario, no criteria pollutant emissions would exceed their threshold for significance. Therefore, localized construction air pollution impacts are less than significant without mitigation.

Table 5.3-3. Localized Significance Analysis for Avalon Apartments (Construction)

	NO_x	CO	PM_{10}	$PM_{2.5}$
Maximum On-site Emissions (lbs/day)	13.4	15.4	3.6	1.9
LSA Threshold (lbs/day)	*170*	*972*	*7*	*4*
Significant?	No	No	No	No

Table 5.3-4. Localized Significance Analysis for Arrowhead Elementary School (Construction)

	NO_x	CO	PM_{10}	$PM_{2.5}$
Maximum On-site Emissions (lbs/day)	13.4	15.4	3.6	1.9
LSA Threshold (lbs/day)	*195*	*1,384*	*20*	*6*
Significant?	No	No	No	No

Table 5.3-5. Localized Significance Analysis for St. Sierra Park (Construction)

	NO_x	CO	PM_{10}	$PM_{2.5}$

[4] Chico, T. and Koizumi, J. *Op. Cit.*

Maximum On-site Emissions (lbs/day)	13.4	15.4	3.6	1.9
LSA Threshold (lbs/day)	*198*	*3,820*	*54*	*16*
Significant?	No	No	No	No

Table 5.3-6. Localized Significance Analysis for Harper Field (Construction)

	NO_x	CO	PM_{10}	$PM_{2.5}$
Maximum On-site Emissions (lbs/day)	13.4	15.4	3.6	1.9
LSA Threshold (lbs/day)	*306*	*4,072*	*57*	*17*
Significant?	No	No	No	No

Table 5.3-7. Localized Significance Analysis for TJ's Daycare (Construction)

	NO_x	CO	PM_{10}	$PM_{2.5}$
Maximum On-site Emissions (lbs/day)	13.4	15.4	3.6	1.9
LSA Threshold (lbs/day)	*480*	*11,998*	*124*	*52*
Significant?	No	No	No	No

OPERATION

Similar to construction, on-site operational emissions of NO_X, CO, PM_{10}, and $PM_{2.5}$ are considered in the localized operational emissions significance analysis. These primarily include emissions from area, energy, and stationary source emissions. Mobile emissions are primarily generated off-site, but a small percentage of mobile emissions are generated on-site. Because CalEEMod does not distinguish between on-site and off-site mobile emissions, total operational emissions, including from mobile sources, are considered in this analysis.

LSTs were obtained by interpolation from tables in Appendix C of the SCAQMD's *Final Localized Significance Threshold Methodology*.[5] **Tables 5.3-8** through **5.3-12** show the results of the localized significance analysis for the proposed Project. For the unmitigated scenario, no criteria pollutant emissions would exceed their threshold for significance. Therefore, localized operational air pollution impacts are less than significant without mitigation.

Table 5.3-8. Localized Significance Analysis for Avalon Apartments (Operational)

	NO_x	CO	PM_{10}	$PM_{2.5}$
Maximum On-site Emissions (lb/day)	9.2	16.5	2.3	0.9
LSA Threshold (lb/day)	*170*	*972*	*7*	*4*
Significant?	No	No	No	No

Table 5.3-9. Localized Significance Analysis for Arrowhead Elementary School (Operational)

	NO_x	CO	PM_{10}	$PM_{2.5}$
Maximum On-site Emissions (lb/day)	9.2	16.5	2.3	0.9
LSA Threshold (lb/day)	*195*	*1,384*	*20*	*6*
Significant?	No	No	No	No

Table 5.3-10. Localized Significance Analysis for St. Sierra Park (Operational)

	NO_x	CO	PM_{10}	$PM_{2.5}$
Maximum On-site Emissions (lb/day)	9.2	16.5	2.3	0.9
LSA Threshold (lb/day)	*198*	*3,820*	*54*	*16*
Significant?	No	No	No	No

5 Chico, T. and Koizumi, J. *Op. Cit.*

Table 5.3-11. Localized Significance Analysis for Harper Field (Operational)

	NO_x	CO	PM_{10}	$PM_{2.5}$
Maximum On-site Emissions (lb/day)	9.2	16.5	2.3	0.9
LSA Threshold (lb/day)	*306*	*4,072*	*57*	*17*
Significant?	No	No	No	No

Table 5.3-12. Localized Significance Analysis for TJ's Daycare (Operational)

	NO_x	CO	PM_{10}	$PM_{2.5}$
Maximum On-site Emissions (lb/day)	9.2	16.5	2.3	0.9
LSA Threshold (lb/day)	*480*	*11,998*	*124*	*52*
Significant?	No	No	No	No

5.3.3 CARBON MONOXIDE HOTSPOTS

As described above, SCAQMD conducted CO modeling for the attainment demonstration in the Federal Attainment Plan for Carbon Monoxide. Based on modeling of the most congested intersection in the Basin which exceed 100,000 ADT, SCAQMD concluded that CO hotspots are not anticipate to occur. Given the limited number of daily construction worker trips, the limited number of operational trips anticipated for operation of a new fire station, and SCAQMD's conclusions regarding probably of CO hotspots occurring, the Project is not considered to result in potential creation of a CO hotspot. Impacts are considered less than significant with mitigation.

5.3.4 ODORS

According to the SCAQMD *CEQA Air Quality Handbook*, objectionable odors are typically associated with industrial uses such as agricultural facilities (e.g., farms and dairies), refineries, wastewater treatment facilities, and landfills. The proposed Project would include construction and operation of a new fire station, which does not typically generate nuisance odors perceptible to sensitive receptors. During construction, short-term, temporary odors would be expected over the approximately 1.5-year construction period from construction equipment and paving activities. Any odors that may be generated would be localized and temporary in nature and would not affect a substantial number of people or result in a nuisance as defined by SCAQMD Rule 402.

Operationally, odors that would be expected from the proposed Project would be typically associated with solid waste (refuse) storage typical of urban uses. However, refuse associated with the proposed Project would be consistent with that generated by surrounding uses (e.g., Arrowhead Elementary School, California Department of Forestry and Fire Protection San Bernardino Ranger Unit, multifamily and single-family residential uses). Based on the Project site plans, trash and recycling collection facilities would be provided within a separated trash enclosure. All refuse would be stored in covered containers and removed regularly consistent with the County's solid waste and recycling pickup requirements. Therefore, odors would not be a substantially perceptible by sensitive receptors and impacts associated with generation of objectionable odors would be less than significant without mitigation.

5.3.5 CONSISTENCY WITH APPLICABLE AIR QUALITY PLANS

Consistency with applicable air quality plans, or other regional air quality planning documents, is required under CEQA. The SCAQMD's 2022 AQMP is the applicable air quality plan for the proposed Project area. In the County, consistency with the 2022 AQMP means that projects are consistent with the regional population, housing, and employment forecast identified by SCAG. Additionally, because SCAG's regional growth forecasts are based upon, among other things, land uses designated in general plans, a project that is consistent with the land use designated in a general plan would also be consistent with the SCAG's regional forecast projections, and thus also with the AQMP growth projections. The land use designation for the Project site is Public/Quasi-Public (QPQ), which is intended for institutional, academic, governmental and community service uses. The proposed Project would involve the development of a new fire station to replace the existing Fire Station No. 227. The Project is consistent with the QPQ land use designation of the site, and given the Project would involve replacement of an existing fire station, the Project would not result in additional growth in regional population. The Project is consistent with growth projections and is therefore considered to be consistent with the 2022 AQMP. In addition, as described above, the Project would not exceed thresholds adopted by SCAQMD, which are based on the AQMP and designed to bring the Basin into attainment for criteria air pollutant concentrations for which the Basin is designated non-attainment. Impacts are therefore considered less than significant without mitigation.

5.4 GHG IMPACTS

5.4.1 PROJECT GHG EMISSIONS

Total annual GHG emissions for construction and operation of the proposed Project were estimated using CalEEMod and are presented in **Table 5.4-1**. It should be noted that the GHG emissions shown in **Table 5.4-1** are based on construction equipment operating continuously throughout the workday. Construction equipment operates periodically or cyclically throughout the workday. Therefore, the GHG emissions shown reflect a conservative, worst-case estimate.

Table 5.4-1. GHG Emissions from Construction

Year	GHGs (MT CO_2e/yr)
2026	285.7
2027	97.34
Total	383.0
Amortized over 30 years	**12.8**

As indicated in **Table 5.4-1** above, construction activities for the proposed Project would result in temporary generation of GHG emissions totaling 383.0 MT CO_2e. As described above, SCAQMD recommends that construction-related GHG emissions be amortized over a project's lifetime (typically 30 years) to include these emissions as part of a project's annualized lifetime total emissions. In accordance with SCAQMD methodology, the estimated construction GHG emissions have been amortized over a 30-year lifetime period and are included in the annualized operational GHG emissions in **Table 5.4-2** below.

Total operational GHG emissions generated by the proposed Project would be approximately 409.6 MT CO_2e/year. Per current County methodology, the combination of amortized construction GHG emissions with operational GHG emissions would result in a combined total of approximately 421 MT CO_2e/year, which would be less than the screening level threshold of 3,000 MTCO_2e/year. Therefore, the Project would not generate GHG emissions would are considered to have a significant impact on the environment, and impacts would be less than significant without mitigation.

Table 5.4-2. Combined Annual Operational GHG Emissions

Annual Emissions by Category	GHGs (MT CO_2e/yr)
Area	0.2
Energy	152.6
Mobile	244.3
Water and Wastewater	7.5
Solid Waste	3.6
Stationary (Emergency Generator)	1.3
Construction (Amortized)	12.8
Total	**421.0**

County Screening Threshold	***3,000***
Exceed Threshold?	**No**

5.4.2 CONSISTENCY WITH GHG REDUCTION PLANS AND POLICIES

The County's GHGRP was designed to implement GHG reduction efforts at the local level. Because the proposed Project would not exceed the County's screening threshold of 3,000 MT CO_2e/yr, it would be consistent with the County's GHG Plan and would not conflict with the County's GHG reduction plan or policies. Impacts would be less than significant without mitigation.

6 EMISSION REDUCTION MEASURES

As discussed in **Section 5**, both the short-term and long-term air pollution and GHG impacts of the Project would be less than significant. Therefore, air quality and GHG mitigation measures are not necessary for the proposed Project.

7 IMPACTS AFTER MITIGATION

No air quality mitigation measures are necessary for this Project.

8 REFERENCES

Caltrans (California Department of Transportation)

- 2022 2022 AADT Traffic Census Program. 2022. https://dot.ca.gov/programs/traffic-operations/census.

CARB (California Air Resources Board)

- 2016 California Greenhouse Gas Emissions for 2000 to 2014 – Trends of Emissions and Other Indicators. June 2016. https://www.arb.ca.gov/cc/inventory/pubs/reports/2000_2014/ghg_inventory_trends_00-14_20160617.pdf.
- 2024 "Table of Ambient Air Quality Standards." July 2024. https://ww2.arb.ca.gov/sites/default/files/2024-08/AAQS%20Table_ADA_FINAL_07222024.pdf.
- 2025 Air Quality and Meteorological Information System – Air Quality Data (PST) Query Tool. https://www.arb.ca.gov/aqmis2/aqdselect.php.

Climate Data

- 2025 San Bernardino Climate. February. https://en.climate-data.org/north-america/united-states-of-america/california/san-bernardino-1455/.

Chico, T. and Koizumi, J.

- 2003 Final Localized Significance Threshold Methodology: South Coast Air Quality Management District, Diamond Bar, CA. June.

OEHHA (Office of Environmental Health Hazard Assessment)

- 1998 Part B: Health Risk Assessment for Diesel Exhaust. Proposed Identification of Diesel Exhaust as a Toxic Air Contaminant. California Environmental Protection Agency. 1998.

County of San Bernardino

- 2021 Greenhouse Gas Reduction Plan Update. June 2021. https://www.sbcounty.gov/uploads/LUS/GreenhouseGas/GHG_2021/GHG%20Reduction%20Plan%20Update-Greenhouse%20Gas%20Reduction%20Plan%20Update%20-%20Adopted%209-21-2021.pdf.

SCAQMD (South Coast Air Quality Management District)

- 1993 CEQA Air Quality Handbook: South Coast Air Quality Management District, Diamond Bar, CA.
- 2018 NAAQS/CAAQS and Attainment Status for South Coast Air Basin. September 2018. https://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/naaqs-caaqs-feb2016.pdf?sfvrsn=23.

USEPA (U.S. Environmental Protection Agency)

- 2024 Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2022. EPA 420-R-24-004. https://www.epa.gov/system/files/documents/2024-04/us-ghg-inventory-2024-main-text_04-18-2024.pdf.
- 2025 Overview of Greenhouse Gas Emissions. https://www.epa.gov/ghgemissions/overview-greenhouse-gases.

U.S. Census Bureau

- 2025 QuickFacts San Bernardino County, California. https://www.census.gov/quickfacts/fact/table/sanbernardinocountycalifornia/AFN120222.

APPENDIX

A CALEEMOD OUTPUTS

San Bernardino Fire Station #227 Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	San Bernardino Fire Station #227
Construction Start Date	1/5/2026
Operational Year	2027
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.20
Precipitation (days)	8.40
Location	34.160269680094814, -117.28679977986523
County	San Bernardino-South Coast
City	San Bernardino
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	5360
EDFZ	10
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.29

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description

Government Office Building	12.6	1000sqft	0.29	12,564	1,750	—	—	Fire station building, storage, and roofed parking area
Parking Lot	3.55	1000sqft	0.08	0.00	0.00	—	—	Total area of parking stalls
Other Asphalt Surfaces	40.1	1000sqft	0.92	0.00	0.00	—	—	Other asphalt surfaces/driveways

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	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.05	4.03	8.64	10.2	0.02	0.29	0.12	0.35	0.27	0.03	0.28	—	1,893	1,893	0.08	0.02	0.38	1,902
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.79	1.47	13.4	15.4	0.03	0.58	2.97	3.56	0.54	1.39	1.93	—	2,972	2,972	0.14	0.09	0.03	3,003
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.11	0.92	7.88	9.15	0.02	0.28	0.33	0.62	0.26	0.14	0.40	—	1,716	1,716	0.07	0.03	0.14	1,726
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.20	0.17	1.44	1.67	< 0.005	0.05	0.06	0.11	0.05	0.03	0.07	—	284	284	0.01	< 0.005	0.02	286

Exceeds (Daily Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	75.0	100	550	150	—	—	150	—	—	55.0	—	—	—	—	100	—	—
Unmit.	Yes	No	No	No	No	—	—	No	—	—	No	—	—	—	—	No	—	—
Exceeds (Average Daily)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	75.0	100	550	150	—	—	150	—	—	55.0	—	—	—	—	100	—	—
Unmit.	Yes	No	No	No	No	—	—	No	—	—	No	—	—	—	—	No	—	—
Exceeds (Annual)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	—	Yes	Yes	Yes	Yes	—	—	Yes	—	—	Yes	—	—	—	—	Yes	—	—

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	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.24	1.03	8.64	10.2	0.02	0.29	0.05	0.35	0.27	0.01	0.28	—	1,893	1,893	0.08	0.02	0.27	1,902
2027	4.05	4.03	8.32	10.1	0.02	0.26	0.12	0.31	0.24	0.03	0.25	—	1,891	1,891	0.08	0.02	0.38	1,900
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.79	1.47	13.4	15.4	0.03	0.58	2.97	3.56	0.54	1.39	1.93	—	2,972	2,972	0.14	0.09	0.03	3,003
2027	1.19	0.99	8.32	10.1	0.02	0.26	0.05	0.31	0.24	0.01	0.25	—	1,888	1,888	0.08	0.02	0.01	1,897
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

2026	1.11	0.92	7.88	9.15	0.02	0.28	0.33	0.62	0.26	0.14	0.40	—	1,716	1,716	0.07	0.03	0.14	1,726
2027	0.56	0.50	2.56	3.22	0.01	0.08	0.02	0.10	0.08	0.01	0.08	—	585	585	0.02	0.01	0.04	588
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.20	0.17	1.44	1.67	< 0.005	0.05	0.06	0.11	0.05	0.03	0.07	—	284	284	0.01	< 0.005	0.02	286
2027	0.10	0.09	0.47	0.59	< 0.005	0.01	< 0.005	0.02	0.01	< 0.005	0.01	—	96.9	96.9	< 0.005	< 0.005	0.01	97.3

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	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.71	4.30	9.22	16.5	0.04	0.46	1.85	2.31	0.46	0.47	0.93	11.1	4,556	4,568	1.35	0.13	6.65	4,645
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.54	4.14	9.28	14.6	0.04	0.46	1.85	2.31	0.46	0.47	0.93	11.1	4,421	4,432	1.35	0.13	0.20	4,505
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.17	1.07	1.04	5.89	0.02	0.04	1.31	1.35	0.04	0.33	0.37	11.1	2,403	2,414	1.26	0.09	2.07	2,474
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.21	0.20	0.19	1.07	< 0.005	0.01	0.24	0.25	0.01	0.06	0.07	1.83	398	400	0.21	0.01	0.34	410
Exceeds (Daily Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	55.0	55.0	550	150	—	—	150	—	—	55.0	—	—	—	—	55.0	—	—
Unmit.	—	No	No	No	No	—	—	No	—	—	No	—	—	—	—	No	—	Yes

Exceeds (Average Daily)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	55.0	55.0	550	150	—	—	150	—	—	55.0	—	—	—	—	55.0	—	—
Unmit.	—	No	No	No	No	—	—	No	—	—	No	—	—	—	—	No	—	Yes
Exceeds (Annual)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	10,000
Unmit.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	No

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	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.12	1.02	0.87	8.33	0.02	0.01	1.85	1.86	0.01	0.47	0.48	—	2,142	2,142	0.10	0.10	6.62	2,180
Area	0.40	0.39	< 0.005	0.55	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.25	2.25	< 0.005	< 0.005	—	2.26
Energy	0.04	0.02	0.32	0.27	< 0.005	0.02	—	0.02	0.02	—	0.02	—	918	918	0.07	< 0.005	—	921
Water	—	—	—	—	—	—	—	—	—	—	—	4.78	24.9	29.7	0.49	0.01	—	45.5
Waste	—	—	—	—	—	—	—	—	—	—	—	6.30	0.00	6.30	0.63	0.00	—	22.0
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.03	0.03
Stationary	3.16	2.87	8.03	7.32	0.01	0.42	0.00	0.42	0.42	0.00	0.42	0.00	1,469	1,469	0.06	0.01	0.00	1,474
Total	4.71	4.30	9.22	16.5	0.04	0.46	1.85	2.31	0.46	0.47	0.93	11.1	4,556	4,568	1.35	0.13	6.65	4,645
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.05	0.95	0.93	7.03	0.02	0.01	1.85	1.86	0.01	0.47	0.48	—	2,009	2,009	0.10	0.10	0.17	2,042
Area	0.30	0.30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Energy	0.04	0.02	0.32	0.27	< 0.005	0.02	—	0.02	0.02	—	0.02	—	918	918	0.07	< 0.005	—	921
Water	—	—	—	—	—	—	—	—	—	—	—	4.78	24.9	29.7	0.49	0.01	—	45.5
Waste	—	—	—	—	—	—	—	—	—	—	—	6.30	0.00	6.30	0.63	0.00	—	22.0
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.03	0.03
Stationary	3.16	2.87	8.03	7.32	0.01	0.42	0.00	0.42	0.42	0.00	0.42	0.00	1,469	1,469	0.06	0.01	0.00	1,474
Total	4.54	4.14	9.28	14.6	0.04	0.46	1.85	2.31	0.46	0.47	0.93	11.1	4,421	4,432	1.35	0.13	0.20	4,505
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.74	0.67	0.68	5.20	0.01	0.01	1.31	1.32	0.01	0.33	0.34	—	1,450	1,450	0.07	0.07	2.04	1,475
Area	0.37	0.37	< 0.005	0.37	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.54	1.54	< 0.005	< 0.005	—	1.54
Energy	0.04	0.02	0.32	0.27	< 0.005	0.02	—	0.02	0.02	—	0.02	—	918	918	0.07	< 0.005	—	921
Water	—	—	—	—	—	—	—	—	—	—	—	4.78	24.9	29.7	0.49	0.01	—	45.5
Waste	—	—	—	—	—	—	—	—	—	—	—	6.30	0.00	6.30	0.63	0.00	—	22.0
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.03	0.03
Stationary	0.02	0.02	0.04	0.04	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	8.05	8.05	< 0.005	< 0.005	0.00	8.08
Total	1.17	1.07	1.04	5.89	0.02	0.04	1.31	1.35	0.04	0.33	0.37	11.1	2,403	2,414	1.26	0.09	2.07	2,474
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.14	0.12	0.12	0.95	< 0.005	< 0.005	0.24	0.24	< 0.005	0.06	0.06	—	240	240	0.01	0.01	0.34	244
Area	0.07	0.07	< 0.005	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.25	0.25	< 0.005	< 0.005	—	0.26
Energy	0.01	< 0.005	0.06	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	152	152	0.01	< 0.005	—	153
Water	—	—	—	—	—	—	—	—	—	—	—	0.79	4.12	4.91	0.08	< 0.005	—	7.53
Waste	—	—	—	—	—	—	—	—	—	—	—	1.04	0.00	1.04	0.10	0.00	—	3.65
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.01	0.01
Stationary	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	1.33	1.33	< 0.005	< 0.005	0.00	1.34
Total	0.21	0.20	0.19	1.07	< 0.005	0.01	0.24	0.25	0.01	0.06	0.07	1.83	398	400	0.21	0.01	0.34	410

3. Construction Emissions Details

3.1. Demolition (2026) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.66	1.39	12.9	14.6	0.02	0.51	—	0.51	0.47	—	0.47	—	2,494	2,494	0.10	0.02	—	2,503
Demolition	—	—	—	—	—	—	0.34	0.34	—	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	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.05	0.43	0.48	< 0.005	0.02	—	0.02	0.02	—	0.02	—	82.0	82.0	< 0.005	< 0.005	—	82.3
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.01	0.01	0.08	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.6	13.6	< 0.005	< 0.005	—	13.6
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.04	0.52	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	115	115	< 0.005	< 0.005	0.01	117
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	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	< 0.005	0.40	0.22	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	326	326	0.03	0.05	0.02	342
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.84	3.84	< 0.005	< 0.005	0.01	3.89
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	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	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	10.7	10.7	< 0.005	< 0.005	0.01	11.3
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.63	0.63	< 0.005	< 0.005	< 0.005	0.64
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.77	1.77	< 0.005	< 0.005	< 0.005	1.86

3.3. Site Preparation (2026) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.47	1.24	11.0	11.7	0.02	0.51	—	0.51	0.47	—	0.47	—	2,065	2,065	0.08	0.02	—	2,072
Dust From Material Movement	—	—	—	—	—	—	2.44	2.44	—	1.17	1.17	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	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	0.05	0.04	0.36	0.39	< 0.005	0.02	—	0.02	0.02	—	0.02	—	67.9	67.9	< 0.005	< 0.005	—	68.1
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	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.2	11.2	< 0.005	< 0.005	—	11.3
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	0.01	0.01	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.31	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	69.0	69.0	< 0.005	< 0.005	0.01	69.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	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	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.30	2.30	< 0.005	< 0.005	< 0.005	2.33
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	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	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.38	0.38	< 0.005	< 0.005	< 0.005	0.39
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	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	—	0.00	0.00	0.00	0.00	0.00	0.00

3.5. Grading (2026) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	1.70	1.42	12.9	14.0	0.02	0.58	—	0.58	0.53	—	0.53	—	2,455	2,455	0.10	0.02	—	2,463
Dust From Material Movement	—	—	—	—	—	—	2.76	2.76	—	1.34	1.34	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	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	0.11	0.09	0.85	0.92	< 0.005	0.04	—	0.04	0.04	—	0.04	—	161	161	0.01	< 0.005	—	162
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	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.15	0.17	< 0.005	0.01	—	0.01	0.01	—	0.01	—	26.7	26.7	< 0.005	< 0.005	—	26.8
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	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.03	0.42	0.00	0.00	0.09	0.09	0.00	0.02	0.02	—	92.0	92.0	< 0.005	< 0.005	0.01	93.2
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.05	0.01	0.52	0.29	< 0.005	0.01	0.12	0.12	0.01	0.03	0.04	—	424	424	0.04	0.07	0.02	446
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.14	6.14	< 0.005	< 0.005	0.01	6.22
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	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	0.03	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	27.9	27.9	< 0.005	< 0.005	0.02	29.3
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.02	1.02	< 0.005	< 0.005	< 0.005	1.03
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	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	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.62	4.62	< 0.005	< 0.005	< 0.005	4.86

3.7. Building Construction (2026) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.22	1.01	8.57	9.96	0.02	0.29	—	0.29	0.27	—	0.27	—	1,801	1,801	0.07	0.01	—	1,807
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	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	1.22	1.01	8.57	9.96	0.02	0.29	—	0.29	0.27	—	0.27	—	1,801	1,801	0.07	0.01	—	1,807
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	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	0.87	0.73	6.14	7.13	0.01	0.21	—	0.21	0.19	—	0.19	—	1,290	1,290	0.05	0.01	—	1,294
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	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	0.16	0.13	1.12	1.30	< 0.005	0.04	—	0.04	0.04	—	0.04	—	214	214	0.01	< 0.005	—	214
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	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	0.02	0.02	0.01	0.22	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	40.3	40.3	< 0.005	< 0.005	0.14	40.9
Vendor	0.01	< 0.005	0.06	0.03	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	< 0.005	—	51.4	51.4	< 0.005	0.01	0.13	54.0
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	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	0.02	0.02	0.01	0.17	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	37.0	37.0	< 0.005	< 0.005	< 0.005	37.5
Vendor	0.01	< 0.005	0.06	0.03	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	< 0.005	—	51.5	51.5	< 0.005	0.01	< 0.005	53.9
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	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	0.01	0.01	0.01	0.13	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	26.9	26.9	< 0.005	< 0.005	0.04	27.3
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	36.8	36.8	< 0.005	0.01	0.04	38.6
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	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	—	4.45	4.45	< 0.005	< 0.005	0.01	4.51
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.10	6.10	< 0.005	< 0.005	0.01	6.40
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Building Construction (2027) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.17	0.97	8.25	9.91	0.02	0.26	—	0.26	0.24	—	0.24	—	1,801	1,801	0.07	0.01	—	1,807
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	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	1.17	0.97	8.25	9.91	0.02	0.26	—	0.26	0.24	—	0.24	—	1,801	1,801	0.07	0.01	—	1,807
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	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	0.31	0.26	2.21	2.65	0.01	0.07	—	0.07	0.06	—	0.06	—	482	482	0.02	< 0.005	—	484
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	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	0.48	< 0.005	0.01	—	0.01	0.01	—	0.01	—	79.8	79.8	< 0.005	< 0.005	—	80.1
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	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	0.02	0.02	0.01	0.20	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	39.5	39.5	< 0.005	< 0.005	0.12	40.1
Vendor	0.01	< 0.005	0.06	0.03	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	< 0.005	—	50.5	50.5	< 0.005	0.01	0.12	52.9
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	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	0.02	0.01	0.01	0.16	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	36.3	36.3	< 0.005	< 0.005	< 0.005	36.7
Vendor	< 0.005	< 0.005	0.06	0.03	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	< 0.005	—	50.5	50.5	< 0.005	0.01	< 0.005	52.8
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	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	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.84	9.84	< 0.005	< 0.005	0.01	9.98
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	13.5	13.5	< 0.005	< 0.005	0.01	14.2
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	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	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.63	1.63	< 0.005	< 0.005	< 0.005	1.65
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.24	2.24	< 0.005	< 0.005	< 0.005	2.34

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	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 (2027) - 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	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.54	0.46	4.30	6.49	0.01	0.17	—	0.17	0.16	—	0.16	—	992	992	0.04	0.01	—	995
Paving	0.11	0.11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	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	0.04	0.03	0.28	0.43	< 0.005	0.01	—	0.01	0.01	—	0.01	—	65.2	65.2	< 0.005	< 0.005	—	65.4
Paving	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	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.05	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.8	10.8	< 0.005	< 0.005	—	10.8
Paving	< 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	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.03	0.63	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	123	123	< 0.005	< 0.005	0.38	125
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	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	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.52	7.52	< 0.005	< 0.005	0.01	7.62
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	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	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.24	1.24	< 0.005	< 0.005	< 0.005	1.26
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	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	—	0.00	0.00	0.00	0.00	0.00	0.00

3.13. Architectural Coating (2027) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.14	0.11	0.83	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	3.91	3.91	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	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	0.04	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.58	6.58	< 0.005	< 0.005	—	6.61
Architectural Coatings	0.19	0.19	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	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	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.09	1.09	< 0.005	< 0.005	—	1.09
Architectural Coatings	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	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.90	7.90	< 0.005	< 0.005	0.02	8.02
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	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	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.36	0.36	< 0.005	< 0.005	< 0.005	0.37
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.06	0.06	< 0.005	< 0.005	< 0.005	0.06
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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	—	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	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Government Office Building	1.12	1.02	0.87	8.33	0.02	0.01	1.85	1.86	0.01	0.47	0.48	—	2,142	2,142	0.10	0.10	6.62	2,180
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	1.12	1.02	0.87	8.33	0.02	0.01	1.85	1.86	0.01	0.47	0.48	—	2,142	2,142	0.10	0.10	6.62	2,180
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government Office Building	1.05	0.95	0.93	7.03	0.02	0.01	1.85	1.86	0.01	0.47	0.48	—	2,009	2,009	0.10	0.10	0.17	2,042
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	1.05	0.95	0.93	7.03	0.02	0.01	1.85	1.86	0.01	0.47	0.48	—	2,009	2,009	0.10	0.10	0.17	2,042
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government Office Building	0.14	0.12	0.12	0.95	< 0.005	< 0.005	0.24	0.24	< 0.005	0.06	0.06	—	240	240	0.01	0.01	0.34	244
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.14	0.12	0.12	0.95	< 0.005	< 0.005	0.24	0.24	< 0.005	0.06	0.06	—	240	240	0.01	0.01	0.34	244

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	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government Office Building	—	—	—	—	—	—	—	—	—	—	—	—	537	537	0.03	< 0.005	—	539
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	537	537	0.03	< 0.005	—	539
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government Office Building	—	—	—	—	—	—	—	—	—	—	—	—	537	537	0.03	< 0.005	—	539
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	537	537	0.03	< 0.005	—	539
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Government Office Building	—	—	—	—	—	—	—	—	—	—	—	—	88.9	88.9	0.01	< 0.005	—	89.2
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	88.9	88.9	0.01	< 0.005	—	89.2

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	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government Office Building	0.04	0.02	0.32	0.27	< 0.005	0.02	—	0.02	0.02	—	0.02	—	381	381	0.03	< 0.005	—	382
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.04	0.02	0.32	0.27	< 0.005	0.02	—	0.02	0.02	—	0.02	—	381	381	0.03	< 0.005	—	382
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government Office Building	0.04	0.02	0.32	0.27	< 0.005	0.02	—	0.02	0.02	—	0.02	—	381	381	0.03	< 0.005	—	382

Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.04	0.02	0.32	0.27	< 0.005	0.02	—	0.02	0.02	—	0.02	—	381	381	0.03	< 0.005	—	382
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government Office Building	0.01	< 0.005	0.06	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	63.1	63.1	0.01	< 0.005	—	63.3
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.01	< 0.005	0.06	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	63.1	63.1	0.01	< 0.005	—	63.3

4.3. Area Emissions by Source

4.3.1. Unmitigated

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

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.27	0.27	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.03	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Landscape	0.10	0.09	< 0.005	0.55	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.25	2.25	< 0.005	< 0.005	—	2.26
Total	0.40	0.39	< 0.005	0.55	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.25	2.25	< 0.005	< 0.005	—	2.26
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.27	0.27	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.03	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.30	0.30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.05	0.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.01	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.01	0.01	< 0.005	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.25	0.25	< 0.005	< 0.005	—	0.26
Total	0.07	0.07	< 0.005	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.25	0.25	< 0.005	< 0.005	—	0.26

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	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government Office Building	—	—	—	—	—	—	—	—	—	—	—	4.78	24.9	29.7	0.49	0.01	—	45.5
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	4.78	24.9	29.7	0.49	0.01	—	45.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government Office Building	—	—	—	—	—	—	—	—	—	—	—	4.78	24.9	29.7	0.49	0.01	—	45.5
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	4.78	24.9	29.7	0.49	0.01	—	45.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government Office Building	—	—	—	—	—	—	—	—	—	—	—	0.79	4.12	4.91	0.08	< 0.005	—	7.53
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.79	4.12	4.91	0.08	< 0.005	—	7.53

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	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government Office Building	—	—	—	—	—	—	—	—	—	—	—	6.30	0.00	6.30	0.63	0.00	—	22.0
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	6.30	0.00	6.30	0.63	0.00	—	22.0
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government Office Building	—	—	—	—	—	—	—	—	—	—	—	6.30	0.00	6.30	0.63	0.00	—	22.0
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	6.30	0.00	6.30	0.63	0.00	—	22.0
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government Office Building	—	—	—	—	—	—	—	—	—	—	—	1.04	0.00	1.04	0.10	0.00	—	3.65
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	1.04	0.00	1.04	0.10	0.00	—	3.65

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	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.03	0.03
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.03	0.03
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Government Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.03	0.03
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.03	0.03
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.01	0.01
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.01	0.01

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

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

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

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

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	3.16	2.87	8.03	7.32	0.01	0.42	0.00	0.42	0.42	0.00	0.42	0.00	1,469	1,469	0.06	0.01	0.00	1,474
Total	3.16	2.87	8.03	7.32	0.01	0.42	0.00	0.42	0.42	0.00	0.42	0.00	1,469	1,469	0.06	0.01	0.00	1,474
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	3.16	2.87	8.03	7.32	0.01	0.42	0.00	0.42	0.42	0.00	0.42	0.00	1,469	1,469	0.06	0.01	0.00	1,474
Total	3.16	2.87	8.03	7.32	0.01	0.42	0.00	0.42	0.42	0.00	0.42	0.00	1,469	1,469	0.06	0.01	0.00	1,474
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	1.33	1.33	< 0.005	< 0.005	0.00	1.34
Total	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	1.33	1.33	< 0.005	< 0.005	0.00	1.34

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	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

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

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

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

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	1/5/2026	1/17/2026	6.00	12.0	—
Site Preparation	Site Preparation	1/19/2026	1/31/2026	6.00	12.0	—
Grading	Grading	2/2/2026	2/28/2026	6.00	24.0	—
Building Construction	Building Construction	3/2/2026	4/24/2027	6.00	360	—
Paving	Paving	4/26/2027	5/22/2027	6.00	24.0	—
Architectural Coating	Architectural Coating	5/24/2027	6/12/2027	6.00	18.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

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

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	7.50	13.4	LDA,LDT1,LDT2
Site Preparation	Vendor	—	8.33	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	10.0	13.4	LDA,LDT1,LDT2
Grading	Vendor	—	8.33	HHDT,MHDT
Grading	Hauling	6.25	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	4.02	13.4	LDA,LDT1,LDT2
Building Construction	Vendor	2.06	8.33	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	12.5	13.4	LDA,LDT1,LDT2
Paving	Vendor	—	8.33	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	0.80	13.4	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	8.33	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT

Architectural Coating	Onsite truck	—	—	HHDT
Demolition	—	—	—	—
Demolition	Worker	12.5	13.4	LDA,LDT1,LDT2
Demolition	Vendor	—	8.33	HHDT,MHDT
Demolition	Hauling	4.80	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	0.00	0.00	18,846	6,282	2,617

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (Ton of Debris)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	190	—
Site Preparation	0.00	0.00	9.38	0.00	—
Grading	0.00	998	20.0	0.00	—
Paving	0.00	0.00	0.00	0.00	1.00

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction

Water Exposed Area	2	61%	61%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Government Office Building	0.00	0%
Parking Lot	0.08	100%
Other Asphalt Surfaces	0.92	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2026	0.00	532	0.03	< 0.005
2027	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
Government Office Building	284	0.00	0.00	73,996	2,606	0.00	0.00	679,503
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

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	18,846	6,282	2,617

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	250

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)
Government Office Building	368,455	532	0.0330	0.0040	1,189,673
Parking Lot	0.00	532	0.0330	0.0040	0.00
Other Asphalt Surfaces	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)
Government Office Building	2,495,960	16,263
Parking Lot	0.00	0.00
Other Asphalt Surfaces	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Government Office Building	11.7	—
Parking Lot	0.00	—
Other Asphalt Surfaces	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
Government Office Building	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
Government Office Building	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

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

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor
Emergency Generator	Diesel	1.00	10.0	20.0	175	0.73

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	27.4	annual days of extreme heat
Extreme Precipitation	5.80	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	11.8	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	1	0	0	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	0	0	0	N/A

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

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	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	1	1	1	2
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	1	1	1	2

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

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

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

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	100
AQ-PM	55.0
AQ-DPM	30.8
Drinking Water	44.1
Lead Risk Housing	82.9

Pesticides	41.5
Toxic Releases	57.4
Traffic	27.5
Effect Indicators	—
CleanUp Sites	83.0
Groundwater	0.00
Haz Waste Facilities/Generators	43.3
Impaired Water Bodies	0.00
Solid Waste	9.67
Sensitive Population	—
Asthma	91.8
Cardio-vascular	81.7
Low Birth Weights	69.5
Socioeconomic Factor Indicators	—
Education	58.9
Housing	51.4
Linguistic	47.1
Poverty	77.4
Unemployment	94.7

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	38.08546131
Employed	36.78942641
Median HI	35.54471962
Education	—

Bachelor's or higher	26.78044399
High school enrollment	15.50109072
Preschool enrollment	39.79212113
Transportation	—
Auto Access	48.06877967
Active commuting	38.2137816
Social	—
2-parent households	25.86936995
Voting	39.79212113
Neighborhood	—
Alcohol availability	66.6495573
Park access	50.32721673
Retail density	37.44385987
Supermarket access	53.9715129
Tree canopy	50.50686514
Housing	—
Homeownership	51.52059541
Housing habitability	51.21262672
Low-inc homeowner severe housing cost burden	40.83151546
Low-inc renter severe housing cost burden	52.48299756
Uncrowded housing	36.04516874
Health Outcomes	—
Insured adults	26.99858848
Arthritis	20.2
Asthma ER Admissions	6.7
High Blood Pressure	28.2
Cancer (excluding skin)	29.3
Asthma	27.9

Coronary Heart Disease	25.9
Chronic Obstructive Pulmonary Disease	25.1
Diagnosed Diabetes	44.3
Life Expectancy at Birth	26.4
Cognitively Disabled	25.4
Physically Disabled	49.3
Heart Attack ER Admissions	10.4
Mental Health Not Good	39.0
Chronic Kidney Disease	27.1
Obesity	36.0
Pedestrian Injuries	19.6
Physical Health Not Good	39.2
Stroke	29.9
Health Risk Behaviors	—
Binge Drinking	35.4
Current Smoker	39.2
No Leisure Time for Physical Activity	49.0
Climate Change Exposures	—
Wildfire Risk	6.3
SLR Inundation Area	0.0
Children	10.6
Elderly	57.9
English Speaking	58.2
Foreign-born	15.6
Outdoor Workers	35.8
Climate Change Adaptive Capacity	—
Impervious Surface Cover	70.5
Traffic Density	25.2

Traffic Access	23.0
Other Indices	—
Hardship	63.5
Other Decision Support	—
2016 Voting	32.3

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	79.0
Healthy Places Index Score for Project Location (b)	31.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

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

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Project site acreage, minus parking area
Construction: Construction Phases	Project estimated construction schedule
Construction: Architectural Coatings	SCAQMD Rule 1113

Operations: Architectural Coatings	SCAQMD Rule 1113
Operations: Energy Use	Electricity usage of 368,455 kWh per year based on an average of 11.8 kWh per square foot per the US Energy Information Administration table PBA4. Gas usage of 1,189,673 cu. ft. per year based on an average of 38.1 cu. ft. per square foot per the US Energy Information Administration table C32.
Operations: Water and Waste Water	Project specific estimated annual water use (EAWU) of 2,174 cu ft/year (16,263 gals/yr) from Project landscape plans.
Operations: Off-Road Equipment	—