5.3 AIR QUALITY

This section of the Draft Environmental Impact Report (DEIR) evaluates the potential for the Brea 265 Specific Plan (proposed project) to impact air quality in a local and regional context. This evaluation is based on the methodology recommended by the South Coast Air Quality Management District (South Coast AQMD). The analysis focuses on air pollution from regional emissions and localized pollutant concentrations. Criteria air pollutant emissions modeling for the proposed project is included in Appendix C of this DEIR. Transportation-sector impacts are based on trip generation as provided by Linscott, Law & Greenspan, Engineers (LLG) (see Appendix N). Cumulative impacts related to air quality are based on the regional boundaries of the South Coast Air Basin (SoCAB).

Terminology

The following are definitions for terms used throughout this section.

- **AAQS:** Ambient Air Quality Standards
- **CES:** CalEnviroScreen. CES is a mapping tool the helps identify the California communities most affected by many sources of pollution, and where people are often especially vulnerable to pollution's effects.
- **Concentrations:** Refers to the amount of pollutant material per volumetric unit of air. Concentrations are measured in parts per million (ppm), parts per billion (ppb), or micrograms per cubic meter ($\mu g/m^3$).
- **Criteria Air Pollutants:** Those air pollutants specifically identified for control under the Federal Clean Air Act (currently six: carbon monoxide, nitrogen oxides, lead, sulfur oxides, ozone and particulates).
- **DPM:** Diesel particulate matter
- **Emissions:** Refers to the actual quantity of pollutant, measured in pounds per day or tons per year.
- **ppm:** Parts per million
- **Sensitive receptor:** Land uses that are considered more sensitive to air pollution compared to others due to the types of population groups or activities involved. These land uses include residential, retirement facilities, hospitals, and schools.
- **TAC:** Toxic air contaminant
- **$\mu g/m^3$:** Micrograms per cubic meter
- **VMT:** Vehicle miles traveled

5.3.1 Environmental Setting

5.3.1.1 REGULATORY BACKGROUND

Ambient air quality standards have been adopted at the state and federal levels for criteria air pollutants. In addition, both the state and federal government regulate the release of TACs. The proposed project is in the SoCAB and is subject to the rules and regulations imposed by the South Coast AQMD as well as the California AAQS adopted by California Air Resources Board (CARB) and National AAQS adopted by the United States Environmental Protection Agency (EPA). Federal, state, regional, and local laws, regulations, plans, or guidelines that are potentially applicable to the proposed project are summarized in this section.

Federal and State

Ambient Air Quality Standards

The Clean Air Act was passed in 1963 by the US Congress and has been amended several times. The 1970 Clean Air Act amendments strengthened previous legislation and laid the foundation for the regulatory scheme of the 1970s and 1980s. In 1977, Congress again added several provisions, including nonattainment requirements for areas not meeting National AAQS and the Prevention of Significant Deterioration program. The 1990 amendments represent the latest in a series of federal efforts to regulate the protection of air quality in the United States. The Clean Air Act allows states to adopt more stringent standards or to include other pollution species. The California Clean Air Act, signed into law in 1988, requires all areas of the state to achieve and maintain the California AAQS by the earliest practical date. The California AAQS tend to be more restrictive than the National AAQS.

The National and California AAQS are the levels of air quality considered to provide a margin of safety in the protection of the public health and welfare. They are designed to protect "sensitive receptors" most susceptible to further respiratory distress, such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

Both California and the federal government have established health-based AAQS for seven air pollutants, which are shown in Table 5.3-1, *Ambient Air Quality Standards for Criteria Pollutants*. These pollutants are ozone (O_3), nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), coarse inhalable particulate matter (PM_{10}), fine inhalable particulate matter ($PM_{2.5}$), and lead (Pb). In addition, the state has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety.

Table 5.3-1 Ambient Air Quality Standards for Criteria Pollutants

Pollutant	Averaging Time	California Standard[1]	Federal Primary Standard[2]	Major Pollutant Sources
Ozone (O_3)[3]	1 hour	0.09 ppm	*	Motor vehicles, paints, coatings, and solvents.
	8 hours	0.070 ppm	0.070 ppm	
Carbon Monoxide (CO)	1 hour	20 ppm	35 ppm	Internal combustion engines, primarily gasoline-powered motor vehicles.
	8 hours	9.0 ppm	9 ppm	
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	0.030 ppm	0.053 ppm	Motor vehicles, petroleum-refining operations, industrial sources, aircraft, ships, and railroads.
	1 hour	0.18 ppm	0.100 ppm	
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	*	0.030 ppm	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
	1 hour	0.25 ppm	0.075 ppm	
	24 hours	0.04 ppm	0.14 ppm	
Respirable Coarse Particulate Matter (PM_{10})	Annual Arithmetic Mean	20 µg/m^3	*	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	50 µg/m^3	150 µg/m^3	
Respirable Fine Particulate Matter ($PM_{2.5}$)[4]	Annual Arithmetic Mean	12 µg/m^3	12 µg/m^3	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	*	35 µg/m^3	
Lead (Pb)	30-Day Average	1.5 µg/m^3	*	Present source: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline.
	Calendar Quarter	*	1.5 µg/m^3	
	Rolling 3-Month Average	*	0.15 µg/m^3	
Sulfates (SO_4)[5]	24 hours	25 µg/m^3	*	Industrial processes.
Visibility Reducing Particles	8 hours	ExCo =0.23/km visibility of 10≥ miles	No Federal Standard	Visibility-reducing particles consist of suspended particulate matter, which is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size and chemical composition, and can be made up of many different materials such as metals, soot, soil, dust, and salt.

Table 5.3-1 Ambient Air Quality Standards for Criteria Pollutants

Pollutant	Averaging Time	California Standard[1]	Federal Primary Standard[2]	Major Pollutant Sources
Hydrogen Sulfide	1 hour	0.03 ppm	No Federal Standard	Hydrogen sulfide (H_2S) is a colorless gas with the odor of rotten eggs. It is formed during bacterial decomposition of sulfur-containing organic substances. Also, it can be present in sewer gas and some natural gas, and can be emitted as the result of geothermal energy exploitation.
Vinyl Chloride	24 hour	0.01 ppm	No Federal Standard	Vinyl chloride (chloroethene), a chlorinated hydrocarbon, is a colorless gas with a mild, sweet odor. Most vinyl chloride is used to make polyvinyl chloride (PVC) plastic and vinyl products. Vinyl chloride has been detected near landfills, sewage plants, and hazardous waste sites, due to microbial breakdown of chlorinated solvents.

Source: CARB 2016.
Notes: ppm: parts per million; $\mu g/m^3$: micrograms per cubic meter
* Standard has not been established for this pollutant/duration by this entity.
1 California standards for O_3, CO (except 8-hour Lake Tahoe), SO_2 (1 and 24 hour), NO_2, and particulate matter (PM_{10}, $PM_{2.5}$, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
2 National standards (other than O_3, PM, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The O_3 standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 $\mu g/m^3$ is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard.
3 On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.
4 On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 $\mu g/m^3$ to 12.0 $\mu g/m^3$. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 $\mu g/m^3$, as was the annual secondary standard of 15 $\mu g/m^3$. The existing 24-hour PM_{10} standards (primary and secondary) of 150 $\mu g/m^3$ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.
5 On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. The 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

California has also adopted a host of other regulations that reduce criteria pollutant emissions, including:

- **Assembly Bill (AB) 1493: Pavley Fuel Efficiency Standards.** Pavley I is a clean-car standard that reduces GHG emissions from new passenger vehicles (light-duty auto to medium-duty vehicles) from 2009 through 2016. In January 2012, CARB approved the Advanced Clean Cars program (formerly known as Pavley II) for model years 2017 through 2025.

- **Heavy-Duty (Tractor-Trailer) GHG Regulation.** The tractors and trailers subject to this regulation must either use EPA SmartWay-certified tractors and trailers or retrofit their existing fleet with SmartWay-verified technologies. The regulation applies primarily to owners of 53-foot or longer box-type trailers, including both dry-van and refrigerated-van trailers, and owners of the heavy-duty tractors that pull them on California highways. These owners are responsible for replacing or retrofitting their affected vehicles with compliant aerodynamic technologies and low rolling resistance tires. Sleeper cab tractors model year 2011 and later must be SmartWay certified. All other tractors must use SmartWay-verified

low-rolling-resistance tires. There are also requirements for trailers to have low-rolling-resistance tires and aerodynamic devices

- **SB 1078 and SB 107: Renewables Portfolio Standards.** A major component of California's Renewable Energy Program is the renewables portfolio standard (RPS) established under Senate Bills 1078 (Sher) and 107 (Simitian). Under the RPS, certain retail sellers of electricity were required to increase the amount of renewable energy each year by at least 1 percent in order to reach at least 20 percent by December 30, 2010.

- **California Code of Regulations (CCR), Title 20: Appliance Energy Efficiency Standards.** The 2006 Appliance Efficiency Regulations (20 CCR secs. 1601–1608) were adopted by the California Energy Commission (CEC) on October 11, 2006, and approved by the California Office of Administrative Law on December 14, 2006. The regulations include standards for both federally regulated appliances and non–federally regulated appliances.

- **24 CCR, Part 6: Building and Energy Efficiency Standards.** Energy conservation standards for new residential and non-residential buildings adopted by the California Energy Resources Conservation and Development Commission (now the CEC) in June 1977.

- **24 CCR, Part 11: Green Building Standards Code.** Establishes planning and design standards for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants.[1]

Tanner Air Toxics Act and Air Toxics Hots Information and Assessment Act

Public exposure to TACs is a significant environmental health issue in California. In 1983, the California legislature enacted a program to identify the health effects of TACs and reduce exposure to them. The California Health and Safety Code defines a TAC as "an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health" (17 CCR sec. 93000). A substance that is listed as a hazardous air pollutant pursuant to Section 112(b) of the federal Clean Air Act (42 US Code sec. 7412[b]) is a toxic air contaminant. Under state law, the California Environmental Protection Agency, acting through CARB, is authorized to identify a substance as a TAC if it is an air pollutant that may cause or contribute to an increase in mortality or serious illness, or may pose a present or potential hazard to human health.

California regulates TACs primarily through AB 1807 (Tanner Air Toxics Act) and AB 2588 (Air Toxics "Hot Spot" Information and Assessment Act of 1987). The Tanner Air Toxics Act set up a formal procedure for CARB to designate substances as TACs. Once a TAC is identified, CARB adopts an "airborne toxics control measure" for sources that emit that TAC. If there is a safe threshold for a substance (i.e., a point below which there is no toxic effect), the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate "toxics best available control technology" to minimize emissions. To

[1] The green building standards became mandatory in the 2010 edition of the code.

date, CARB has established formal control measures for 11 TACs that are identified as having no safe threshold.

Under AB 2588, TAC emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High priority facilities are required to perform a health risk assessment, and if specific thresholds are exceeded, are required to communicate the results to the public through notices and public meetings.

CARB has promulgated the following specific rules to limit TAC emissions:

- **13 CCR Chapter 10 Section 2485: Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling.** Generally restricts on-road diesel-powered commercial motor vehicles with a gross vehicle weight rating of greater than 10,000 pounds from idling more than five minutes.

- **13 CCR Chapter 10 Section 2480: Airborne Toxic Control Measure to Limit School Bus Idling and Idling at Schools.** Generally restricts a school bus or transit bus from idling for more than five minutes when within 100 feet of a school.

- **13 CCR Section 2477 and Article 8: Airborne Toxic Control Measure for In-Use Diesel-Fueled Transport Refrigeration Units (TRU) and TRU Generator Sets and Facilities Where TRUs Operate.** Regulations established to control emissions associated with diesel-powered TRUs.

Air Pollutants of Concern

Criteria Air Pollutants

The pollutants emitted into the ambient air by stationary and mobile sources are categorized as primary and/or secondary pollutants. Primary air pollutants are emitted directly from sources. Carbon monoxide (CO), volatile organic compounds (VOC), nitrogen oxides (NO_x), sulfur dioxide (SO_2), coarse inhalable particulate matter (PM_{10}), fine inhalable particulate matter ($PM_{2.5}$), and lead (Pb) are primary air pollutants. Of these, CO, SO_2, NO_2, PM_{10}, and $PM_{2.5}$ are "criteria air pollutants," which means that AAQS have been established for them. VOC and NO_x are criteria pollutant precursors that form secondary criteria air pollutants through chemical and photochemical reactions in the atmosphere. Ozone (O_3) and nitrogen dioxide (NO_2) are the principal secondary pollutants.

A description of each of the primary and secondary criteria air pollutants and its known health effects is presented below.

- **Carbon Monoxide** is a colorless, odorless gas produced by incomplete combustion of carbon substances, such as gasoline or diesel fuel. CO is a primary criteria air pollutant. CO concentrations tend to be the highest during winter mornings with little to no wind, when surface-based inversions trap the pollutant at ground levels. The highest ambient CO concentrations are generally found near traffic-congested corridors and intersections. The primary adverse health effect associated with CO is interference with normal oxygen transfer to the blood, which may result in tissue oxygen deprivation

(South Coast AQMD 2005; USEPA 2022a). The SoCAB is designated as being in attainment under the California AAQS and attainment (serious maintenance) under the National AAQS (CARB 2022a).

- **Nitrogen Oxides** are a by-product of fuel combustion and contribute to the formation of ground-level O_3, PM_{10}, and $PM_{2.5}$. The two major forms of NO_X are nitric oxide (NO) and nitrogen dioxide (NO_2). NO is a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperature and/or high pressure. The principal form of NO_X produced by combustion is NO, but NO reacts quickly with oxygen to form NO_2, creating the mixture of NO and NO_2 commonly called NO_X. NO_2 is an acute irritant and more injurious than NO in equal concentrations. At atmospheric concentrations, however, NO_2 is only potentially irritating. NO_2 absorbs blue light; the result is a brownish-red cast to the atmosphere and reduced visibility. NO_2 exposure concentrations near roadways are of particular concern for susceptible individuals, including asthmatics, children, and the elderly. Current scientific evidence links short-term NO_2 exposures, ranging from 30 minutes to 24 hours, with adverse respiratory effects, including airway inflammation in healthy people and increased respiratory symptoms in people with asthma. Also, studies show a connection between elevated short-term NO_2 concentrations and increased visits to emergency departments and hospital admissions for respiratory issues, especially asthma (South Coast AQMD 2005; USEPA 2022a). On February 21, 2019, CARB's Board approved the separation of the area that runs along the State Route 60 corridor through portions of Riverside, San Bernardino, and Los Angeles counties from the remainder of the SoCAB for state nonattainment designation purposes. The Board designated this corridor as nonattainment.[2] The remainder of the SoCAB is designated an attainment (maintenance) under the National AAQS and attainment area under the California AAQS (CARB 2022a).

- **Sulfur Dioxide** is a colorless, pungent, irritating gas formed by the combustion of sulfurous fossil fuels. It enters the atmosphere as a result of burning high-sulfur-content fuel oils and coal and chemical processes at plants and refineries. Gasoline and natural gas have very low sulfur content and do not release significant quantities of SO_2. When sulfur dioxide forms sulfates (SO_4) in the atmosphere, together these pollutants are referred to as sulfur oxides (SO_X). Thus, SO_2 is both a primary and secondary criteria air pollutant. At sufficiently high concentrations, SO_2 may irritate the upper respiratory tract. Current scientific evidence links short-term exposures to SO_2, ranging from 5 minutes to 24 hours, with an array of adverse respiratory effects, including bronchoconstriction and increased asthma symptoms. These effects are particularly adverse for asthmatics at elevated ventilation rates (e.g., while exercising or playing) at lower concentrations and when combined with particulates, SO_2 may do greater harm by injuring lung tissue. Studies also show a connection between short-term exposure and increased visits to emergency facilities and hospital admissions for respiratory illnesses, particularly in at-risk populations such as children, the elderly, and asthmatics (South Coast AQMD 2005; USEPA 2022a). The SoCAB is designated attainment under the California and National AAQS (CARB 2022a).

- **Suspended Particulate Matter** consists of finely divided solids or liquids such as soot, dust, aerosols, fumes, and mists. Two forms of fine particulates are now recognized and regulated. Inhalable coarse

[2] CARB is proposing to redesignate SR-60 Near-Road Portion of San Bernardino, Riverside, and Los Angeles Counties in the SoCAB as attainment for NO_2 at the February 24, 2022 Board Hearing (CARB 2022b).

particles, or PM_{10}, include particulate matter with an aerodynamic diameter of 10 microns or less (i.e., ≤10 millionths of a meter or 0.0004 inch). Inhalable fine particles, or $PM_{2.5}$, have an aerodynamic diameter of 2.5 microns or less (i.e., ≤2.5 millionths of a meter or 0.0001 inch). Particulate discharge into the atmosphere results primarily from industrial, agricultural, construction, and transportation activities. Both PM_{10} and $PM_{2.5}$ may adversely affect the human respiratory system, especially in people who are naturally sensitive or susceptible to breathing problems. The EPA's scientific review concluded that $PM_{2.5}$, which penetrates deeply into the lungs, is more likely than PM_{10} to contribute to health effects and at far lower concentrations. These health effects include premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms (e.g., irritation of the airways, coughing, or difficulty breathing) (South Coast AQMD 2005). There has been emerging evidence that ultrafine particulates, which are even smaller particulates with an aerodynamic diameter of <0.1 microns or less (i.e., ≤0.1 millionths of a meter or <0.000004 inch), have human health implications, because their toxic components may initiate or facilitate biological processes that may lead to adverse effects to the heart, lungs, and other organs (South Coast AQMD 2013). However, the EPA or CARB has yet to adopt AAQS to regulate these particulates. Diesel particulate matter is classified by CARB as a carcinogen (CARB 1998). Particulate matter can also cause environmental effects such as visibility impairment,[3] environmental damage,[4] and aesthetic damage[5] (South Coast AQMD 2005; USEPA 2022a). The SoCAB is a nonattainment area for $PM_{2.5}$ under California and National AAQS and a nonattainment area for PM_{10} under the California AAQS (CARB 2022a).[6]

- **Ozone**, or O_3, is a key ingredient of "smog" and is a gas that is formed when VOCs and NO_X, both by-products of internal combustion engine exhaust, undergo photochemical reactions in sunlight. O_3 is a secondary criteria air pollutant. O_3 concentrations are generally highest during the summer months when direct sunlight, light winds, and warm temperatures create favorable conditions for its formation. O_3 poses a health threat to those who already suffer from respiratory diseases as well as to healthy people. Breathing O_3 can trigger a variety of health problems, including chest pain, coughing, throat irritation, and congestion. It can worsen bronchitis, emphysema, and asthma. Ground-level O_3 also can reduce lung function and inflame the linings of the lungs. Repeated exposure may permanently scar lung tissue. O_3 also affects sensitive vegetation and ecosystems, including forests, parks, wildlife refuges, and wilderness areas. In particular, O_3 harms sensitive vegetation during the growing season (South Coast AQMD 2005; USEPA 2022a). The SoCAB is designated extreme nonattainment under the California AAQS (1-hour and 8-hour) and National AAQS (8-hour) (CARB 2022a).

[3] $PM_{2.5}$ is the main cause of reduced visibility (haze) in parts of the United States.

[4] Particulate matter can be carried over long distances by wind and then settle on ground or water, making lakes and streams acidic; changing the nutrient balance in coastal waters and large river basins; depleting the nutrients in soil; damaging sensitive forests and farm crops; and affecting the diversity of ecosystems.

[5] Particulate matter can stain and damage stone and other materials, including culturally important objects such as statues and monuments.

[6] CARB approved the South Coast AQMD's request to redesignate the SoCAB from serious nonattainment for PM_{10} to attainment for PM_{10} under the National AAQS on March 25, 2010, because the SoCAB did not violate federal 24-hour PM_{10} standards from 2004 to 2007. The EPA approved the State of California's request to redesignate the South Coast PM_{10} nonattainment area to attainment of the PM_{10} National AAQS, effective on July 26, 2013.

- **Volatile Organic Compounds** are composed primarily of hydrogen and carbon atoms. Internal combustion associated with motor vehicle usage is the major source of VOCs. Other sources include evaporative emissions from paints and solvents, asphalt paving, and household consumer products such as aerosols (South Coast AQMD 2005). There are no AAQS for VOCs, meaning that no health-based criteria established by the EPA or CARB. However, because they contribute to the formation of O_3, South Coast AQMD has established a significance threshold. The health effects for ozone, which VOC contributes to the formation of, are described above.

- **Lead** is a metal found naturally in the environment as well as in manufactured products. Once taken into the body, lead distributes throughout the body in the blood and accumulates in the bones. Depending on the level of exposure, lead can adversely affect the nervous system, kidney function, immune system, reproductive and developmental systems, and the cardiovascular system. Lead exposure also affects the oxygen-carrying capacity of the blood. The effects of lead most commonly encountered in current populations are neurological effects in children and cardiovascular effects in adults (e.g., high blood pressure and heart disease). Infants and young children are especially sensitive to even low levels of lead, which may contribute to behavioral problems, learning deficits, and lowered IQ (South Coast AQMD 2005; USEPA 2018). The major sources of lead emissions have historically been mobile and industrial sources. As a result of the EPA's regulatory efforts to remove lead from gasoline, emissions of lead from the transportation sector dramatically declined by 95 percent between 1980 and 1999, and levels of lead in the air decreased by 94 percent between 1980 and 1999. Today, the highest levels of lead in air are usually found near lead smelters. The major sources of lead emissions today are ore and metals processing and piston-engine aircraft operating on leaded aviation gasoline. However, in 2008 the EPA and CARB adopted more strict lead standards, and special monitoring sites immediately downwind of lead sources recorded very localized violations of the new state and federal standards.[7] As a result of these violations, the Los Angeles County portion of the SoCAB is designated as nonattainment under the National AAQS for lead (South Coast AQMD 2012; CARB 2022a). There are no lead-emitting sources associated with this project, and therefore, lead is not a pollutant of concern for the proposed project.

Table 5.3-2, *Criteria Air Pollutant Health Effects Summary*, summarizes the potential health effects associated with the criteria air pollutants.

[7] Source-oriented monitors record concentrations of lead at lead-related industrial facilities in the SoCAB, which include Exide Technologies in the City of Commerce; Quemetco, Inc., in the City of Industry; Trojan Battery Company in Santa Fe Springs; and Exide Technologies in Vernon. Monitoring conducted between 2004 through 2007 showed that the Trojan Battery Company and Exide Technologies exceed the federal standards (South Coast AQMD 2012).

Table 5.3-2 Criteria Air Pollutant Health Effects Summary

Pollutant	Health Effects	Examples of Sources
Carbon Monoxide (CO)	• Chest pain in heart patients • Headaches, nausea • Reduced mental alertness • Death at very high levels	Any source that burns fuel such as cars, trucks, construction and farming equipment, and residential heaters and stoves
Ozone (O_3)	• Cough, chest tightness • Difficulty taking a deep breath • Worsened asthma symptoms • Lung inflammation	Atmospheric reaction of organic gases with nitrogen oxides in sunlight
Nitrogen Dioxide (NO_2)	• Increased response to allergens • Aggravation of respiratory illness	Same as carbon monoxide sources
Particulate Matter (PM_{10} & $PM_{2.5}$)	• Hospitalizations for worsened heart diseases • Emergency room visits for asthma • Premature death	Cars and trucks (particularly diesels) Fireplaces and woodstoves Windblown dust from overlays, agriculture, and construction
Sulfur Dioxide (SO_2)	• Aggravation of respiratory disease (e.g., asthma and emphysema) • Reduced lung function	Combustion of sulfur-containing fossil fuels, smelting of sulfur-bearing metal ores, and industrial processes
Lead (Pb)	• Behavioral and learning disabilities in children • Nervous system impairment	Contaminated soil

Source: CARB 2022b.

Toxic Air Contaminants

People exposed to toxic air pollutants at sufficient concentrations and durations may have an increased chance of getting cancer or experiencing other serious health effects. These health effects can include damage to the immune system, as well as neurological, reproductive (e.g., reduced fertility), developmental, respiratory and other health problems (USEPA 2022b). By the last update to the TAC list in December 1999, CARB had designated 244 compounds as TACs (CARB 1999). Additionally, CARB has implemented control measures for a number of compounds that pose high risks and show potential for effective control. Since no safe levels of TACs can be determined, there are no air quality standards for TACs. Instead, TAC impacts are evaluated by calculating the health risks associated with a given exposure. The majority of the estimated health risks from TACs can be attributed to relatively few compounds, the most relevant to the project being particulate matter from diesel-fueled engines.

Diesel Particulate Matter

In 1998, CARB identified DPM as a TAC. Previously, the individual chemical compounds in diesel exhaust were considered TACs. Almost all diesel exhaust particles are 10 microns or less in diameter. Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lungs. Long-term (chronic) inhalation of DPM is likely a lung cancer risk. Short-term (i.e., acute) exposure can cause irritation and inflammatory systems and may exacerbate existing allergies and asthma systems (USEPA 2002).

Air Quality Management Planning

The South Coast AQMD is the agency responsible for improving air quality in the SoCAB and assuring that the National and California AAQS are attained and maintained. It is responsible for preparing the air quality management plan (AQMP) for the SoCAB in coordination with the Southern California Association of Governments (SCAG). Since 1979, a number of AQMPs have been prepared.

2016 AQMP

On March 3, 2017, South Coast AQMD adopted the 2016 AQMP, which serves as an update to the 2012 AQMP. The 2016 AQMP addresses strategies and measures to attain the following National AAQS:

- 2008 National 8-hour ozone standard by 2031
- 2012 National annual $PM_{2.5}$ standard by 2025[8]
- 2006 National 24-hour $PM_{2.5}$ standard by 2019
- 1997 National 8-hour ozone standard by 2023
- 1979 National 1-hour ozone standard by year 2022

It is projected that total NO_X emissions in the SoCAB would need to be reduced to 150 tons per day (tpd) by year 2023 and to 100 tpd in year 2031 to meet the 1997 and 2008 federal 8-hour ozone standards. The strategy to meet the 1997 federal 8-hour ozone standard would also lead to attaining the 1979 federal 1-hour ozone standard by year 2022 (South Coast AQMD 2017), which requires reducing NO_X emissions in the SoCAB to 250 tpd. This is approximately 45 percent additional reductions above existing regulations for the 2023 ozone standard and 55 percent additional reductions above existing regulations to meet the 2031 ozone standard.

Reducing NO_X emissions would also reduce $PM_{2.5}$ concentrations in the SoCAB. However, because the goal is to meet the 2012 federal annual $PM_{2.5}$ standard no later than year 2025, South Coast AQMD sought to reclassify the SoCAB from "moderate" to "serious" nonattainment under this federal standard. A "moderate" nonattainment required meeting the 2012 federal standard by no later than 2021.

The 2016 AQMP is composed of stationary and mobile-source emission reductions from regulatory control measures, incentive-based programs, co-benefits from climate programs, mobile-source strategies, and reductions from federal sources such as aircrafts, locomotives, and ocean-going vessels. The 2016 AQMP includes 15 measures to reduce mobile source emissions. These measures include identifying actions to mitigate and reduce emissions associated with new development and redevelopment projects, to reduce facility-based (i.e., commercial marine ports, rail yards and intermodal facilities, warehouse and distribution centers, and commercial airports in addition to new and redevelopment projects), on-road, and off-road mobile sources of emissions, and also to identify the benefits of incentive programs in reducing emissions. Overall, strategies outlined in the 2016 AQMP are implemented in collaboration between CARB and the EPA (South Coast AQMD 2017).

[8] The 2016 AQMP requests a reclassification from moderate to serious nonattainment for the 2012 National $PM_{2.5}$ standard.

2022 AQMP

On October 1, 2015, the EPA strengthened the National AAQS for ground-level ozone, lowering the primary and secondary ozone standard levels to 70 parts per billion (ppb). The SoCAB is classified as an "extreme" nonattainment area, and the Coachella Valley is classified as a "severe-15" nonattainment area for the 2015 Ozone National AAQS. South Coast AQMD is updating the AQMP to address the requirements for meeting this standard.

South Coast AQMD $PM_{2.5}$ Redesignation Request and Maintenance Plan

In 1997, the EPA adopted the 24-hour fine $PM_{2.5}$ standard of 65 micrograms per cubic meter ($\mu g/m^3$). In 2006, this standard was lowered to a more health-protective level of 35 $\mu g/m^3$. The SoCAB is designated nonattainment for both the 65 and 35 $\mu g/m^3$ 24-hour $PM_{2.5}$ standards (24-hour $PM_{2.5}$ standards). In 2020, monitored data demonstrated that the SoCAB attained both 24-hour $PM_{2.5}$ standards. The South Coast AQMD has developed the "2021 Redesignation Request and Maintenance Plan" for the 1997 and 2006 24-hour $PM_{2.5}$ Standards for the SoCAB $PM_{2.5}$ Redesignation Request, demonstrating that the SoCAB has met the requirements to be redesignated to attainment for the 24-hour $PM_{2.5}$ standards (South Coast AQMD 2021a).

AB 617, Community Air Protection Program

AB 617 (C. Garcia, Chapter 136, Statutes of 2017) requires local air districts to monitor and implement air pollution control strategies that reduce localized air pollution in communities that bear the greatest burdens. In response to AB 617, CARB has established the Community Air Protection Program.

Air districts are required to host workshops to help identify disadvantaged communities that are disproportionately affected by poor air quality. Once the criteria for identifying the highest priority locations have been identified and the communities have been selected, new community monitoring systems would be installed to track and monitor community-specific air pollution goals. In 2018 CARB prepared an air monitoring plan (Community Air Protection Blueprint) that evaluates the availability and effectiveness of air monitoring technologies and existing community air monitoring networks. Under AB 617, the Blueprint is required to be updated every five years.

Under AB 617, CARB is also required to prepare a statewide strategy to reduce TACs and criteria pollutants in impacted communities; provide a statewide clearinghouse for best available retrofit control technology; adopt new rules requiring the latest best available retrofit control technology for all criteria pollutants for which an area has not achieved attainment of California AAQS; and provide uniform, statewide reporting of emissions inventories. Air districts are required to adopt a community emissions reduction program to achieve reductions for the communities impacted by air pollution that CARB identifies.

Lead Implementation Plan

In 2008, the EPA designated the Los Angeles County portion of the SoCAB as a nonattainment area under the federal lead classification due to the addition of source-specific monitoring under the new federal regulation. This designation was based on two source-specific monitors in the City of Vernon and the City of

Industry that exceeded the new standard in the 2007-to-2009 period. The remainder of the SoCAB, outside the Los Angeles County nonattainment area, remains in attainment of the new 2008 lead standard. On May 24, 2012, CARB approved the State Implementation Plan (SIP) revision for the federal lead standard, which the EPA revised in 2008. Lead concentrations in this nonattainment area have been below the level of the federal standard since December 2011. The SIP revision was submitted to the EPA for approval.

South Coast AQMD Rules and Regulations

All projects are subject to South Coast AQMD rules and regulations in effect at the time of activity, including:

- **Rule 401, Visible Emissions.** This rule is intended to prevent the discharge of pollutant emissions from an emissions source that results in visible emissions. Specifically, the rule prohibits the discharge of any air contaminant into the atmosphere by a person from any single source of emission for a period or periods aggregating more than three minutes in any one hour that is as dark as or darker than designated No. 1 on the Ringelmann Chart, as published by the United States Bureau of Mines.

- **Rule 402, Nuisance.** This rule is intended to prevent the discharge of pollutant emissions from an emissions source that results in a public nuisance. Specifically, this rule prohibits any person from discharging quantities of air contaminants or other material from any source such that it would result in an injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public. Additionally, the discharge of air contaminants would also be prohibited where it would endanger the comfort, repose, health, or safety of any number of persons or the public, or that cause, or have a natural tendency to cause, injury or damage to business or property. This rule does not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals.

- **Rule 403, Fugitive Dust.** This rule is intended to reduce the amount of particulate matter entrained in the ambient air as a result of anthropogenic (human-made) fugitive dust sources by requiring actions to prevent, reduce, or mitigate fugitive dust emissions. Rule 403 applies to any activity or human-made condition capable of generating fugitive dust, and requires best available control measures to be applied to earth moving and grading activities. In general, the rule prohibits new developments from the installation of wood-burning devices.

- **Rule 445, Wood Burning Devices.** This rule is intended to reduce the emission of particulate matter from wood-burning devices and applies to manufacturers and sellers of wood-burning devices, commercial sellers of firewood, and property owners and tenants that operate a wood-burning device.

- **Rule 1113, Architectural Coatings.** This rule serves to limit the VOC content of architectural coatings used on projects in the South Coast AQMD. Any person who supplies, sells, offers for sale, or manufactures any architectural coating for use on projects in the South Coast AQMD must comply with the current VOC standards set in this rule.

- **Rule 1403, Asbestos Emissions from Demolition/Renovation Activities.** The purpose of this rule is to specify work practice requirements to limit asbestos emissions from building demolition and

renovation activities, including the removal and associated disturbance of asbestos-containing materials (ACM). The requirements for demolition and renovation activities include asbestos surveying, notification, ACM removal procedures and time schedules, ACM handling and clean-up procedures, and storage, disposal, and landfilling requirements for asbestos-containing waste materials. All operators are required to maintain records, including waste shipment records, and are required to use appropriate warning labels, signs, and markings.

5.3.1.2 EXISTING CONDITIONS

South Coast Air Basin

The project site is in the SoCAB, which includes all of Orange County and the nondesert portions of Los Angeles, Riverside, and San Bernardino counties. The SoCAB is in a coastal plain with connecting broad valleys and low hills and is bounded by the Pacific Ocean in the southwest quadrant, with high mountains forming the remainder of the perimeter. The general region lies in the semi-permanent high-pressure zone of the eastern Pacific. As a result, the climate is mild, tempered by cool sea breezes. This usually mild weather pattern is interrupted infrequently by periods of extremely hot weather, winter storms, and Santa Ana winds (South Coast AQMD 2005).

Temperature and Precipitation

The annual average temperature varies little throughout the SoCAB, ranging from the low to middle 60s, measured in degrees Fahrenheit (°F). With a more pronounced oceanic influence, coastal areas show less variability in annual minimum and maximum temperatures than inland areas. The lowest average mean temperature for Brea is 54.6°F in December, and the highest average temperature is 75.7°Fahrenheit (°F) in August (USA.com 2022). Overall mean average temperature for the city is 65.6°F (USA.com 2022).

In contrast to a very steady pattern of temperature, rainfall is seasonally and annually highly variable. Almost all rain falls from November through April. Rainfall historically averages 19.06 inches per year in the city (USA.com 2022).

Humidity

Although the SoCAB has a semiarid climate, the air near the earth's surface is typically moist because of the presence of a shallow marine layer. Except for infrequent periods when dry, continental air is brought into the SoCAB by offshore winds, the "ocean effect" is dominant. Periods of heavy fog, especially along the coast, are frequent. Low clouds, often referred to as high fog, are a characteristic climatic feature. Annual average humidity is 70 percent at the coast and 57 percent in the eastern portions of the SoCAB (South Coast AQMD 2005).

Wind

Wind patterns across the south coastal region are characterized by westerly or southwesterly onshore winds during the day and by easterly or northeasterly breezes at night. Wind speed is somewhat greater during the dry summer months than during the rainy winter season.

Between periods of wind, periods of air stagnation may occur, both in the morning and evening hours. Air stagnation is one of the critical determinants of air quality conditions on any given day. During the winter and fall months, surface high-pressure systems over the SoCAB, combined with other meteorological conditions, can result in very strong, downslope Santa Ana winds. These winds normally continue a few days before predominant meteorological conditions are reestablished.

The mountain ranges to the east affect the transport and diffusion of pollutants by inhibiting their eastward transport. Air quality in the SoCAB generally ranges from fair to poor and is similar to air quality in most of coastal southern California. The entire region experiences heavy concentrations of air pollutants during prolonged periods of stable atmospheric conditions (South Coast AQMD 2005).

Inversions

In conjunction with the two characteristic wind patterns that affect the rate and orientation of horizontal pollutant transport, there are two similarly distinct types of temperature inversions that control the vertical depth through which pollutants are mixed. These are the marine/subsidence inversion and the radiation inversion. The combination of winds and inversions are critical determinants in leading to the highly degraded air quality in summer and the generally good air quality in the winter in the project site (South Coast AQMD 2005).

SoCAB Nonattainment Areas

The AQMP provides the framework for air quality basins to achieve attainment of the state and federal ambient air quality standards through the SIP. Areas are classified as attainment or nonattainment areas for particular pollutants depending on whether they meet the ambient air quality standards. Severity classifications for ozone nonattainment range in magnitude from marginal, moderate, and serious to severe and extreme.

- ***Unclassified.*** A pollutant is designated unclassified if the data are incomplete and do not support a designation of attainment or nonattainment.
- ***Attainment.*** A pollutant is in attainment if the AAQS for that pollutant was not violated at any site in the area during a three-year period.
- ***Nonattainment.*** A pollutant is in nonattainment if there was at least one violation of an AAQS for that pollutant in the area.
- ***Nonattainment/Transitional.*** A subcategory of the nonattainment designation. An area is designated nonattainment/transitional to signify that the area is close to attaining the AAQS for that pollutant.

The attainment status for the SoCAB is shown in Table 5.3-3, *Attainment Status of Criteria Pollutants in the South Coast Air Basin*.

Table 5.3-3 Attainment Status of Criteria Pollutants in the South Coast Air Basin

Pollutant	State	Federal
Ozone – 1-hour	Extreme Nonattainment	No Federal Standard
Ozone – 8-hour	Extreme Nonattainment	Extreme Nonattainment
PM_{10}	Serious Nonattainment	Attainment
$PM_{2.5}$	Nonattainment	Nonattainment[2]
CO	Attainment	Attainment
NO_2	Nonattainment (SR-60 Near Road only)[1]	Attainment/Maintenance
SO_2	Attainment	Attainment
Lead	Attainment	Nonattainment (Los Angeles County only)[1]
All others	Attainment/Unclassified	Attainment/Unclassified

Source: CARB 2022a.

[1] On February 21, 2019, CARB's Board approved the separation of the area that runs along State Route 60 corridor through portions of Riverside, San Bernardino, and Los Angeles counties from the remainder of the SoCAB for State nonattainment designation purposes. The Board designated this corridor as nonattainment. The remainder of the SoCAB remains in attainment for NO_2 (CARB 2019). CARB is proposing to redesignate SR-60 Near-Road Portion of San Bernardino, Riverside, and Los Angeles Counties in the SoCAB as attainment for NO_2 at the February 24, 2022 Board Hearing (CARB 2022c).

[2] The SoCAB is pending a resignation request from nonattainment to attainment for the 24-hour federal $PM_{2.5}$ standards. The *2021* $PM_{2.5}$ *Redesignation Request and Maintenance Plan* demonstrates that the South Coast meets the requirements of the CAA to allow US EPA to redesignate the SoCAB to attainment for the 65 µg/m^3 and 35 µg/m^3 24-hour $PM_{2.5}$ standards. CARB will submit the 2021 $PM_{2.5}$ Redesignation Request to the US EPA as a revision to the California SIP (CARB 2021a).

[3] In 2010, the Los Angeles portion of the SoCAB was designated nonattainment for lead under the new 2008 federal AAQS as a result of large industrial emitters. Remaining areas in the SoCAB are unclassified.

Multiple Air Toxics Exposure Study V

The Multiple Air Toxics Exposure Study (MATES) is a monitoring and evaluation study on existing ambient concentrations of TACs and the potential health risks from air toxics in the SoCAB. In April 2021, South Coast AQMD released the latest update to the MATES study, MATES V. The first MATES analysis, MATES I, began in 1986 but was limited because of the technology available at the time. Conducted in 1998, MATES II was the first MATES iteration to include a comprehensive monitoring program, an air toxics emissions inventory, and a modeling component. MATES III was conducted in 2004 to 2006, with MATES IV following in 2012 to 2013.

MATES V uses measurements taken during 2018 and 2019, with a comprehensive modeling analysis and emissions inventory based on 2018 data. The previous MATES studies quantified the cancer risks based on the inhalation pathway only. MATES V includes information on the chronic noncancer risks from inhalation and non-inhalation pathways for the first time. Cancer risks and chronic noncancer risks from MATES II through IV measurements have been re-examined using current Office of Environmental Health Hazards Assessment and CalEPA risk assessment methodologies and modern statistical methods to examine the trends over time.

The MATES V study showed that cancer risk in the SoCAB decreased to 454 in a million from 997 in a million in the MATES IV study. Overall, air toxics cancer risk in the SoCAB decreased by 54 percent since 2012 when MATES IV was conducted. MATES V showed the highest risk locations near the Los Angeles International Airport and the Ports of Long Beach and Los Angeles. DPM continues to be the major contributor to air toxics cancer risk (approximately 72 percent of the total cancer risk). Goods movement and transportation corridors have the highest cancer risk. Transportation sources account for 88 percent of

carcinogenic air toxics emissions, and the remainder is from stationary sources, which include large industrial operations such as refineries and power plants as well as smaller businesses such as gas stations and chrome-plating facilities. (South Coast AQMD 2021a).

Existing Ambient Air Quality

Existing levels of ambient air quality and historical trends and projections in the vicinity of the project site are best documented by measurements taken by the South Coast AQMD. The proposed project is in Source Receptor Area (SRA) 16: North Orange County.[9] The air quality monitoring station closest to the project site is the La Habra Monitoring Station, which is one of 31 monitoring stations South Coast AQMD operates and maintains within the SoCAB.[10] This station provides NO_2 and one- and eight-hour O_3 data. Data for PM_{10} and $PM_{2.5}$ is supplemented from the Anaheim-Pampas Lane Monitoring Station. The data from these stations are summarized in Table 5.3-4, *Ambient Air Quality Monitoring Summary*. As shown in the table, the area regularly exceeds the state and federal one-hour and eight-hour O_3 standards within the last five recorded years. Additionally, the area has regularly exceeded the state PM_{10} and federal $PM_{2.5}$ standards.

Table 5.3-4 Ambient Air Quality Monitoring Summary

Pollutant/Standard	Number of Days Thresholds Were Exceeded and Maximum Levels				
	2016	2017	2018	2019	2020
Ozone (O_3)[1]					
State 1-Hour ≥ 0.09 ppm (days exceed threshold)	3	5	3	4	15
State 8-hour ≥ 0.07 ppm (days exceed threshold)	7	12	4	6	23
Federal 8-Hour > 0.075 ppm (days exceed threshold)[2]	3	8	3	3	19
Max. 1-Hour Conc. (ppm)	0.103	0.113	0.111	0.107	0.171
Max. 8-Hour Conc. (ppm)	0.078	0.086	0.077	0.095	0.114
Nitrogen Dioxide (NO_2)[1]					
State 1-Hour ≥ 0.18 ppm (days exceed threshold)	0	0	0	0	0
Max. 1-Hour Conc. (ppm)	0.060	0.076	0.067	0.0594	0.0572
Coarse Particulates (PM_{10})[3]					
State 24-Hour > 50 µg/m^3 (days exceed threshold)	3	5	2	4	5
Federal 24-Hour > 150 µg/m^3 (days exceed threshold)	0	0	0	0	0
Max. 24-Hour Conc. (µg/m^3)	74.0	95.7	94.6	127.6	74.8
Fine Particulates ($PM_{2.5}$)[3]					
Federal 24-Hour > 35 µg/m^3 (days exceed threshold)	1	7	7	4	12
Max. 24-Hour Conc. (µg/m^3)	44.4	53.9	63.1	36.1	60.2

Source: CARB 2021b.
Notes: ppm: parts per million; parts per billion, µg/m^3: micrograms per cubic meter
* Data not available.
1 Data obtained from the La Habra Monitoring Station.
2 On October 1, 2015 the EPA adopted a new 8-hour National ambient air quality standards (AAQS) for ozone of 0.070 ppm (70 ppb).
3 Data obtained from the Anaheim-Pampas Lane Monitoring Station.

[9] Per South Coast AQMD Rule 701, an SRA is defined as follows: "A source area is that area in which contaminants are discharged and a receptor area is that area in which the contaminants accumulate and are measured. Any of the areas can be a source area, a receptor area, or both a source and receptor area". There are 37 SRAs within the South Coast AQMD's jurisdiction.

[10] Locations of the SRAs and monitoring stations are shown here: http://www.aqmd.gov/docs/default-source/default-document-library/map-of-monitoring-areas.pdf.

Air Quality Improvement Trends in the Air Basin

South Coast AQMD rule development through the 1970s and 1980s resulted in dramatic improvement in SoCAB air quality. Nearly all control programs developed through the early 1990s relied on (1) the development and application of cleaner technology; (2) add-on emission controls, and (3) uniform CEQA review throughout the SoCAB. Industrial emission sources have been significantly reduced by this approach and vehicular emissions have been reduced by technologies implemented at the state level by CARB.

Criteria Air Pollutant Trends

As discussed above, the South Coast AQMD is the lead agency charged with regulating air quality emission reductions for the entire SoCAB. South Coast AQMD created AQMPs, which represent a regional blueprint for achieving healthful air on behalf of the 16 million residents of the SoCAB. The 2012 AQMP states, "the remarkable historical improvement in air quality since the 1970s is the direct result of Southern California's comprehensive, multiyear strategy of reducing air pollution from all sources as outlined in its AQMPs," (South Coast AQMD 2012). Ozone, NO_X, VOC, and CO have been decreasing in the SoCAB since 1975 and were projected to continue to decrease through 2020 (CARB 2009; CARB 2013).[11] These decreases result primarily from motor vehicle controls and reductions in evaporative emissions. Although vehicle miles traveled in the SoCAB continue to increase, NO_X and VOC levels are decreasing because of the mandated controls on motor vehicles and the replacement of older polluting vehicles with lower-emitting vehicles. NO_X emissions from electric utilities have also decreased due to use of cleaner fuels and renewable energy. Ozone contour maps show that the number of days exceeding the national 8-hour standard has decreased between 1997 and 2007. The overall trends of PM_{10} and $PM_{2.5}$ in the air (not emissions) show an overall improvement since 1975. Direct emissions of PM_{10} have remained somewhat constant in the SoCAB, and direct emissions of $PM_{2.5}$ have decreased slightly since 1975. Area-wide sources (fugitive dust from roads, dust from construction and demolition, and other sources) contribute most of direct particulate matter emissions.

Toxic Air Contaminants Trends

In 1984, as a result of public concern for exposure to airborne carcinogens, the CARB adopted regulations to reduce the amount of air toxic contaminant emissions resulting from mobile and area sources, such as cars, trucks, stationary products, and consumer products. According to the "Ambient and Emission Trends of Toxic Air Contaminants in California" article was prepared for CARB, results show that between 1990 and 2012, ambient concentration and emission trends for the seven TACs responsible for most of the known cancer risk associated with airborne exposure in California have declined significantly (Propper et al. 2015). The decline in ambient concentration and emission trends of these TACs are a result of various regulations CARB has implemented to address cancer risk.[12]

Existing Emissions

The project site has been used for oil production continuously since the early 1900s. Of the approximately 190 wells drilled on the site, 110 remain in operation and produce approximately 500 barrels per day. Current

[11] See Appendix C5 of this DEIR for further details.
[12] See Appendix C5 of this DEIR for further details.

emissions generated from the existing operations are associated with any operations-related vehicle trips made to and from the project site and from related equipment.

Sensitive Receptors

Some land uses are considered more sensitive to air pollution (i.e., toxic air contaminants) than others due to the types of population groups or activities involved. Sensitive population groups include children, the elderly, the acutely ill, and the chronically ill, especially those with cardiorespiratory diseases.

Residential areas are also considered sensitive to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Other sensitive receptors include retirement facilities, hospitals, and schools. Recreational land uses are considered moderately sensitive to air pollution. Although exposure periods are generally short, exercise places a high demand on respiratory functions, which can be impaired by air pollution. In addition, noticeable air pollution can detract from the enjoyment of recreation. Industrial, commercial, retail, and office areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent, because the majority of the workers tend to stay indoors most of the time. In addition, the workforce is generally the healthiest segment of the population.

The project site is generally bordered by residential uses to the west, north, and south with single family residences further to the east. Other nearby sensitive uses include Olinda Elementary School along East Birch Street adjacent to the southwest corner of the site's Phase 2 development area, and North Hills Preschool also along East Birch Street further to the southwest.

5.3.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

AQ-1 Conflict with or obstruct implementation of the applicable air quality plan.

AQ-2 Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.

AQ-3 Expose sensitive receptors to substantial pollutant concentrations.

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

5.3.2.1 SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT THRESHOLDS

The analysis of the proposed project's air quality impacts follows the guidance and methodologies recommended in South Coast AQMD's *CEQA Air Quality Handbook* (Handbook) and the significance

thresholds on South Coast AQMD's website (South Coast AQMD 1993).[13] CEQA allows the significance criteria established by the applicable air quality management or air pollution control district to be used to assess impacts of a project on air quality. South Coast AQMD has established thresholds of significance for regional air quality emissions for construction activities and project operation based on substantial evidence.

Regional Significance Thresholds

South Coast AQMD has adopted regional construction and operational emissions thresholds to determine a project's cumulative impact on air quality in the SoCAB, shown in Table 5.3-5, *South Coast AQMD Regional Significance Thresholds*. The table lists thresholds that are applicable for all projects uniformly, regardless of size or scope. There is growing evidence that although ultrafine particulate matter contributes a very small portion of the overall atmospheric mass concentration, it represents a greater proportion of the health risk from PM. However, the EPA and CARB have not adopted AAQS to regulate ultrafine particulate matter; therefore, South Coast AQMD has not developed thresholds for them.

Table 5.3-5 South Coast AQMD Regional Significance Thresholds

Air Pollutant	Construction Phase	Operational Phase
Reactive Organic Gases (ROGs)/Volatile Organic Compounds (VOCs)	75 lbs/day	55 lbs/day
Nitrogen Oxides (NO_X)	100 lbs/day	55 lbs/day
Carbon Monoxide (CO)	550 lbs/day	550 lbs/day
Sulfur Oxides (SO_X)	150 lbs/day	150 lbs/day
Particulates (PM_{10})	150 lbs/day	150 lbs/day
Particulates ($PM_{2.5}$)	55 lbs/day	55 lbs/day

Source: South Coast AQMD 2019.

Health Outcomes Associated with the Regional Significance Thresholds

Projects that exceed the regional significance threshold contribute to the nonattainment designation of the SoCAB. The attainment designations are based on the AAQS, which are set at levels of exposure that are determined to not result in adverse health effects. Exposure to fine particulate pollution and ozone causes myriad health impacts, particularly to the respiratory and cardiovascular systems:

- Increases cancer risk ($PM_{2.5}$, TACs)
- Aggravates respiratory disease (O_3, $PM_{2.5}$)
- Increases bronchitis (O_3, $PM_{2.5}$)
- Causes chest discomfort, throat irritation, and increased effort to take a deep breath (O_3)
- Reduces resistance to infections and increases fatigue (O_3)

[13] The South Coast AQMD is currently in the process developing an "Air Quality Analysis Guidance Handbook" to replace its CEQA Air Quality Handbook. While the new handbook is being prepared, South Coast AQMD has made available supplemental information and guidance including updated significance thresholds, of which this analysis utilizes. The South Coast AQMD's Air Quality Significance Thresholds are current as of March 2015 and can be found at: http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook.

- Reduces lung growth in children ($PM_{2.5}$)
- Contributes to heart disease and heart attacks ($PM_{2.5}$)
- Contributes to premature death (O_3, $PM_{2.5}$)
- Contributes to lower birth weight in newborns ($PM_{2.5}$) (South Coast AQMD 2000)

Exposure to fine particulates and ozone aggravates asthma attacks and can amplify other lung ailments such as emphysema and chronic obstructive pulmonary disease. Exposure to current levels of $PM_{2.5}$ is responsible for an estimated 4,300 cardiopulmonary-related deaths per year in the SoCAB. In addition, University of Southern California scientists, in a landmark children's health study, found that lung growth improved as air pollution declined for children aged 11 to 15 in five communities in the SoCAB (South Coast AQMD 2015).

South Coast AQMD is the primary agency responsible for ensuring the health and welfare of sensitive individuals exposed to elevated concentrations of air pollutants in the SoCAB and has established thresholds that would be protective of these individuals. To achieve the health-based standards established by the EPA, South Coast AQMD prepares an AQMP that details regional programs to attain the AAQS. Mass emissions in Table 5.3-5 are not correlated with concentrations of air pollutants but contribute to the cumulative air quality impacts in the SoCAB. Therefore, regional emissions from a single project do not single-handedly trigger a regional health impact. The South Coast AQMD CEQA significance thresholds in Table 5.3-5 are based on the trigger levels for the federal New Source Review (NSR) Program. The NSR Program was created to ensure projects are consistent with attainment of health-based federal ambient air quality standards. The federal ambient air quality standards establish the levels of air quality necessary, with an adequate margin of safety, to protect the public health of sensitive populations such as asthmatics, children, and the elderly. Therefore, projects that do not exceed the South Coast AQMD regional significance thresholds would not violate any air quality standards or contribute substantially to an existing or projected air quality violation.

If projects exceed the emissions in Table 5.3-5, emissions would cumulatively contribute to the nonattainment status and would contribute in elevating health effects associated to these criteria air pollutants. Known health effects related to ozone include worsening of bronchitis, asthma, and emphysema and a decrease in lung function. Health effects associated with particulate matter include premature death of people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, decreased lung function, and increased respiratory symptoms. Reducing emissions would further contribute to reducing possible health effects related to criteria air pollutants. However, for projects that exceed the emissions in Table 5.3-5, it is speculative to determine how exceeding the regional thresholds would affect the number of days the region is in nonattainment since mass emissions are not correlated with concentrations of emissions or how many additional individuals in the air basin would be affected by the health effects cited above.

The South Coast AQMD has not provided methodology to assess the specific correlation between mass emissions generated and the effect on health in order to address the issue raised in *Sierra Club v. County of Fresno (Friant Ranch, L.P.)* (2018) 6 Cal.5th 502, Case No. S21978 (Friant Ranch). Ozone concentrations are dependent upon a variety of complex factors, including the presence of sunlight and precursor pollutants, natural topography, nearby structures that cause building downwash, atmospheric stability, and wind patterns. Because of the complexities of predicting ground-level ozone concentrations in relation to the National AAQS and California AAQS, it is not possible to link health risks to the magnitude of emissions exceeding

the significance thresholds. However, if a project within the SoCAB exceeds the regional significance thresholds, the project could contribute to an increase in health effects in the basin until such time the attainment standard are met in the SoCAB.

CO Hotspots

Areas of vehicle congestion have the potential to create pockets of CO called hotspots. These pockets have the potential to exceed the state one-hour standard of 20 ppm or the eight-hour standard of 9 ppm. Because CO is produced in greatest quantities from vehicle combustion and does not readily disperse into the atmosphere, adherence to ambient air quality standards is typically demonstrated through an analysis of localized CO concentrations. Hotspots are typically produced at intersections, where traffic congestion is highest because vehicles queue for longer periods and are subject to reduced speeds. With the turnover of older vehicles and introduction of cleaner fuels, as well as implementation of control technology on industrial facilities, CO concentrations in the SoCAB and the state have steadily declined.

In 2007, the SoCAB was designated in attainment for CO under both the California AAQS and National AAQS. The CO hotspot analysis conducted for the attainment by South Coast AQMD did not predict a violation of CO standards at the busiest intersections in Los Angeles during the peak morning and afternoon periods.[14] As identified in South Coast AQMD's 2003 AQMP and the 1992 Federal Attainment Plan for Carbon Monoxide (1992 CO Plan), peak carbon monoxide concentrations in the SoCAB in years before redesignation were a result of unusual meteorological and topographical conditions and not of congestion at a particular intersection. Under existing and future vehicle emission rates, a project would have to increase traffic volumes at a single intersection by more than 44,000 vehicles per hour—or 24,000 vehicles per hour where vertical and/or horizontal air does not mix—in order to generate a significant CO impact (BAAQMD 2017).[15]

Localized Significance Thresholds

The South Coast AQMD identifies localized significance thresholds, shown in Table 5.3-6, *South Coast AQMD Localized Significance Thresholds*. Emissions of NO_2, CO, PM_{10}, and $PM_{2.5}$ generated at a project site (off-site mobile-source emissions are not included in the LST analysis) could expose sensitive receptors to substantial concentrations of criteria air pollutants. A project that generates emissions that trigger a violation of the AAQS when added to the local background concentrations would generate a significant impact.

[14] The four intersections were: Long Beach Boulevard and Imperial Highway; Wilshire Boulevard and Veteran Avenue; Sunset Boulevard and Highland Avenue; and La Cienega Boulevard and Century Boulevard. The busiest intersection evaluated (Wilshire and Veteran) had a daily traffic volume of approximately 100,000 vehicles per day with LOS E in the morning peak hour and LOS F in the evening peak hour.

[15] The CO hotspot analysis refers to the modeling conducted by the Bay Area Air Quality Management District for its CEQA Guidelines because it is based on newer data and considers the improvement in mobile-source CO emissions. Although meteorological conditions in the Bay Area differ from those in the Southern California region, the modeling conducted by BAAQMD demonstrates that the net increase in peak hour traffic volumes at an intersection in a single hour would need to be substantial. This finding is consistent with the CO hotspot analysis South Coast AQMD prepared as part of its 2003 AQMP to provide support in seeking CO attainment for the SoCAB. Based on the analysis prepared by South Coast AQMD, no CO hotspots were predicted for the SoCAB. As noted in the preceding footnote, the analysis included some of Los Angeles' busiest intersections, with daily traffic volumes of 100,000 or more peak hour vehicle trips operating at LOS E and F.

Table 5.3-6 South Coast AQMD Localized Significance Thresholds

Air Pollutant (Relevant AAQS)	Concentration
1-Hour CO Standard (CAAQS)	20 ppm
8-Hour CO Standard (CAAQS)	9.0 ppm
1-Hour NO_2 Standard (CAAQS)	0.18 ppm
Annual NO_2 Standard (CAAQS)	0.03 ppm
24-Hour PM_{10} Standard – Construction (South Coast AQMD)[1]	10.4 µg/m^3
24-Hour $PM_{2.5}$ Standard – Construction (South Coast AQMD)[1]	10.4 µg/m^3
24-Hour PM_{10} Standard – Operation (South Coast AQMD)[1]	2.5 µg/m^3
24-Hour $PM_{2.5}$ Standard – Operation (South Coast AQMD)[1]	2.5 µg/m^3
Annual Average PM_{10} Standard (South Coast AQMD)[1]	1.0 µg/m^3

Source: South Coast AQMD 2019.
ppm – parts per million; µg/m^3 – micrograms per cubic meter
[1] Threshold is based on South Coast AQMD Rule 403. Since the SoCAB is in nonattainment for PM_{10} and $PM_{2.5}$, the threshold is established as an allowable change in concentration. Therefore, background concentration is irrelevant.

To assist lead agencies, South Coast AQMD developed screening-level LSTs to back-calculate the mass amount (lbs. per day) of emissions generated on-site that would trigger the levels shown in Table 5.3-6 for projects under five acres. These "screening-level" LSTs tables are the localized significance thresholds for all projects of five acres and less; however, they can be used as screening criteria for larger projects to determine whether or not dispersion modeling may be required.

The construction and operational screening-level LSTs in SRA 16 are shown in Table 5.3-7, *South Coast AQMD Screening-Level Localized Construction Significance Thresholds*. For construction activities, screening-level LSTs are based on the acreage disturbed per day based on equipment use (South Coast AQMD 2011). The different types of construction activities would require different equipment mixes, resulting in multiple LSTs.

Table 5.3-7 South Coast AQMD Screening-Level Localized Construction Significance Thresholds

	Threshold (lbs/day)[1]			
Acreage Disturbed	Nitrogen Oxides (NO_X)	Carbon Monoxide (CO)	Coarse Particulates (PM_{10})	Fine Particulates ($PM_{2.5}$)
1.31 Acres Disturbed Per Day	117	597	4.62	3.31
1.81 Acres Disturbed Per Day	139	717	5.62	3.81
3.13 Acres Disturbed Per Day	175	968	7.87	4.75
3.50 Acres Disturbed Per Day	184	1,036	8.50	5.00
4.00 Acres Disturbed Per Day	196	1,128	9.33	5.33
4.50 Acres Disturbed Per Day	209	1,219	10.16	5.67
4.81 Acres Disturbed Per Day	216	1,277	10.68	5.87
5.00 Acres Disturbed Per Day	221	1,311	10.99	6.00

Source: South Coast AQMD 2008 and South Coast AQMD 2011, Based on receptors in SRA 16.
[1] Screening-level LSTs are based on receptors within 82 feet (25 meters).

Health Risk

Whenever a project would use chemical compounds identified in South Coast AQMD Rule 1401, on CARB's air toxics list pursuant to AB 1807, or on the EPA's National Emissions Standards for Hazardous Air Pollutants, a health risk assessment is required by the South Coast AQMD. Table 5.3-8, *South Coast AQMD Toxic Air Contaminants Incremental Risk Thresholds*, lists the South Coast AQMD's TAC incremental risk thresholds for operation of a project. Projects that do not generate emissions that exceed the values in Table 5.3-8 would not substantially contribute to cumulative air quality hazards or exacerbate an existing environmental hazard.

Table 5.3-8 South Coast AQMD Toxic Air Contaminants Incremental Risk Thresholds

Maximum Incremental Cancer Risk	≥ 10 in 1 million
Cancer Burden (in areas ≥ 1 in 1 million)	> 0.5 excess cancer cases
Hazard Index (project increment)	≥ 1.0

Source: South Coast AQMD 2019

Under the California Supreme Court's decision in *California Building Industry Association v. Bay Area Air Quality Management District* (2015) 62 Cal.4th 369 (Case No. S213478), where a project will exacerbate an existing environmental hazard, CEQA requires an analysis of the worsened condition on future project residents and the public at large. Projects that do not generate emissions that exceed the values in Table 5.3-8 would not substantially contribute to cumulative air quality hazards or exacerbate an existing environmental hazard. Residential, commercial, office, and institutional uses (such as the hospital land uses) do not use substantial quantities of TACs and typically do not exacerbate existing hazards. Thus, these thresholds are typically applied to new industrial and warehouse projects.

5.3.2.2 MOJAVE DESERT AIR QUALITY MANAGEMENT DISTRICT

The anticipated site remediation may include the transport of impacted soils to an off-site location outside of the South Coast AQMD jurisdictional area. For purposes of this analysis, it is assumed that any impacted soil removed off-site would be transported to a receiving location in the City of Adelanto. The primary route would take a haul truck through the SoCAB and the Mojave Desert Air Basin (MDAB), which is managed by the Mojave Desert Air Quality Management District (MDAQMD). The MDAQMD has adopted thresholds for emissions generated in the MDAB. Emissions from transport of impacted soil from remediation activities is also compared the MDAQMD CEQA thresholds (MDAQMD 2016).

Regional Significance Threshold

The MDAQMD's significance criteria are shown in Table 5.3-9, *MDAQMD Regional Significance Thresholds*. The thresholds in this table are applied to both construction and operational phases of the project regardless of whether they are stationary or mobile sources, resulting in a conservative estimate of air quality impacts of the project. Projects with phases shorter than one year (e.g., construction activities) should be compared to the daily value.

Table 5.3-9 MDAQMD Regional Significance Thresholds

Air Pollutant	Annual	Daily
Reactive Organic Gases (ROGs)/ Volatile Organic Compounds (VOCs)	25 tons/year	137 lbs/day
Carbon Monoxide (CO)	100 tons/year	548 lbs/day
Nitrogen Oxides (NO_X)	25 tons/year	137 lbs/day
Sulfur Oxides (SO_X)	25 tons/year	137 lbs/day
Particulates (PM_{10})	15 tons/year	82 lbs/day
Particulates ($PM_{2.5}$)	15 tons/year	82 lbs/day

Source: MDAQMD 2016.
Notes:
Lead and hydrogen sulfide are not air quality pollutants of concern for most projects and are typically generated by industrial (MDAQMD permitted) projects only.
Project with phases shorter than one year, including construction activities, can be compared to the daily value.

Localized Significance Thresholds

The MDAQMD also considers projects that cause or contribute to an exceedance of the California or National AAQS to result in significant impacts. Emissions that do not exceed the daily or annual regional significance thresholds in Table 5.3-9 are considered to result in less than significant localized impacts.

5.3.3 Plans, Programs, and Policies

Regulatory Requirements

PPP AIR-1 New buildings are required to achieve the current California Building Energy Efficiency Standards (Title 24, Part 6) and California Green Building Standards Code (CALGreen) (Title 24, Part 11). The 2019 Building Energy Efficiency Standards were effective starting on January 1, 2020, and the 2022 Building Energy Efficiency Standards will become effective January 1, 2023.

PPP AIR-2 New buildings are required to adhere to the California Green Building Standards Code (CALGreen) requirement to provide bicycle parking for new non-residential buildings, or meet local bicycle parking ordinances, whichever is stricter (CALGreen Sections 5.106.4.1, 14.106.4.1, and 5.106.4.1.2).

PPP AIR-3 Construction activities will be conducted in compliance with California Code of Regulations Title 13 Section 2499, which requires that nonessential idling of construction equipment is restricted to five minutes or less.

PPP AIR-4 Construction activities will be conducted in compliance with any applicable South Coast Air Quality Management District rules and regulations, including but not limited to:

- Rule 403, Fugitive Dust, for controlling fugitive dust and avoiding nuisance.

- Rule 402, Nuisance, which states that a project shall not "discharge from any source whatsoever such quantities of 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 1113, which limits the volatile organic compound content of architectural coatings.

5.3.4 Environmental Impacts

5.3.4.1 METHODOLOGY

This air quality evaluation was prepared in accordance with the requirements of CEQA to determine if significant air quality impacts are likely to occur in conjunction with future development that would be accommodated by the proposed project. South Coast AQMD has published the Handbook and updates on its website that are intended to provide local governments with guidance for analyzing and mitigating project-specific air quality impacts. The Handbook provides standards, methodologies, and procedures for conducting air quality analyses in EIRs, and they were used in this analysis. The following provides a summary of the assumptions utilized for the proposed project analysis.

Operational Phase

- **Transportation.** Based on daily trip generation and vehicle miles traveled data provided by LLG (see Appendix N of this DEIR). The proposed project would generate 9,351 weekday average daily trips (ADT), 12,389 Saturday ADTs, and 10,333 Sunday ADTs at full buildout. Additionally, an average trip distance of 8.95 miles per vehicle is used based on the calculated 83,659 vehicle miles traveled per weekday for year 2035.

- **Area Sources.** Area sources generated from use of consumer products and cleaning supplies are based on CalEEMod default emission rates and on the assumed building and land use square footages. For fireplaces, it is assumed that single family detached and attached homes ((i.e. townhomes) are equipped with gas fireplaces per South Coast AQMD 445.

- **Energy.** The CalEEMod default energy rates, which are based on the 2019 Building Energy Efficiency Standards, are used to quantify criteria air pollutant emissions from energy use (natural gas used for cooking, heating, etc.). Use of the CalEEMod default energy rates result in conservative estimates compared to the recently adopted 2022 Building Energy Efficiency Standards as it is anticipated new buildings building under the 2022 Standards would result in higher electricity use and lower natural gas use compared to 2019 Standards.

Construction Phase

- **Activities, Schedule, and Equipment.** Development of the proposed project is anticipated to commence in year 2023, and development would generally occur in three phases, in addition to

remediation. For purposes of this analysis, the anticipated remediation is modeled over two phases. The western remediation area is west of Valencia Avenue, and the eastern remediation area is east of Valencia Avenue. Table 5.3-10, *Construction Activities, Phasing, and Equipment*, shows the assumed construction activities and the start and end dates and equipment mix for each activity. The construction schedule used in the analysis represents a conservative scenario should construction occur any time after the respective dates, since emission factors for construction decrease as time passes and the analysis year increases due to emission regulations becoming more stringent.

Table 5.3-10 Construction Activities, Phasing and Equipment

Activities[1]	Start/End Dates[1]	Equipment[1, 2]
Western Remediation Area		
Site Preparation	08/01/2023 to 08/08/2023	3 rubber tired dozers, 4 tractors/loaders/backhoes, & 4 water trucks
Rough Grading	08/09/2023 to 08/31/2023	2 excavators, 1 grader, 1 rubber tired dozer, 2 scrapers, 2 tractors/loaders/backhoes, & 8 water trucks
Eastern Remediation Area		
Site Preparation	10/01/2024 to 10/08/2024	3 rubber tired dozers, 4 tractors/loaders/backhoes, & 4 water trucks
Rough Grading	10/09/2024 to 10/31/2024	2 excavators, 1 grader, 1 rubber tired dozer, 2 scrapers, 2 tractors/loaders/backhoes, & 8 water trucks
Phase 1		
Site Preparation	08/01/2023 to 10/03/2023	3 rubber tired dozers, 4 tractors/loaders/backhoes, & 4 water trucks
Rough Grading	10/04/2023 to 02/07/2024	2 excavators, 1 grader, 1 rubber tired dozer, 2 scrapers, 2 tractors/loaders/backhoes, & 8 water trucks
Utility Trenching	11/20/2023 to 03/09/2024	2 excavators & 1 trencher
Fine Grading	01/06/2024 to 05/12/2024	2 excavators, 1 grader, 1 rubber tired dozer, 2 scrapers, 2 tractors/loaders/backhoes, & 8 water trucks
Asphalt Paving	03/10/2024 to 07/16/2024	2 pavers, 2 paving equipment, & 2 rollers
Finishing/Landscaping	04/12/2024 to 08/17/2024	1 tractor/loader/backhoe
Building Construction	05/13/2024 to 05/31/2025	1 crane, 3 forklifts, 1 generator set, 3 tractors/loaders/backhoes, & 1 welder
Architectural Coating	01/25/2025 to 05/31/2025	1 air compressor
Phase 2		
Site Preparation	10/01/2024 to 01/06/2025	3 rubber tired dozers, 4 tractors/loaders/backhoes, & 4 water trucks
Rough Grading	01/07/2025 to 07/20/2025	2 excavators, 1 grader, 1 rubber tired dozer, 2 scrapers, 2 tractors/loaders/backhoes, & 8 water trucks
Utility Trenching	03/21/2025 to 09/07/2025	2 excavators & 1 trencher
Fine Grading	06/02/2025 to 12/15/2025	2 excavators, 1 grader, 1 rubber tired dozer, 2 scrapers, 2 tractors/loaders/backhoes, & 8 water trucks
Asphalt Paving	09/09/2025 to 03/26/2026	2 pavers, 2 paving equipment, & 2 rollers
Finishing/Landscaping	10/29/2025 to 05/13/2026	1 tractor/loader/backhoe
Building Construction	12/17/2025 to 07/31/2027	1 crane, 3 forklifts, 1 generator set, 3 tractors/loaders/backhoes, & 1 welder
Architectural Coating	01/14/2027 to 07/31/2027	1 air compressor

Table 5.3-10 Construction Activities, Phasing and Equipment

Activities[1]	Start/End Dates[1]	Equipment[1, 2]
Phase 3		
Site Preparation	08/01/2026 to 10/06/2026	3 rubber tired dozers, 4 tractors/loaders/backhoes, & 4 water trucks
Rough Grading	10/07/2026 to 08/31/2027	2 excavators, 1 grader, 1 rubber tired dozer, 2 scrapers, 2 tractors/loaders/backhoes, & 8 water trucks
Utility Trenching	03/20/2027 to 11/05/2027	2 excavators & 1 trencher
Fine Grading	06/27/2027 to 03/18/2028	2 excavators, 1 grader, 1 rubber tired dozer, 2 scrapers, 2 tractors/loaders/backhoes, & 8 water trucks
Asphalt Paving	09/03/2027 to 03/18/2028	2 pavers, 2 paving equipment, & 2 rollers
Finishing/Landscaping	11/08/2027 to 05/25/2028	1 tractor/loader/backhoe
Building Construction	03/21/2028 to 05/31/2030	1 crane, 3 forklifts, 1 generator set, 3 tractors/loaders/backhoes, & 1 welder
Architectural Coating	11/15/2029 to 05/31/2030	1 air compressor

Notes: n/a = not applicable
1 Based on the development phasing presented in Section 3.3.3, *Project Phasing*, of the DEIR, information provided, and CalEEMod defaults.
2 Water trucks are based on 10,000 gallons per acre disturbed and a 4,000 gallon water truck (Maricopa 2005)

- **Soil Haul.** For purposes of modeling, it is assumed that approximately 20 percent (35,655 cubic yards) of the 178,275 cubic yards of the impacted soils associated with the remediation activities would be transported off-site to the Soil Safe of California facility in Adelanto. This facility is approximately 75 miles from the project site, with approximately 21.9 miles in the MDAB and 53.10 miles in the SoCAB. Soil haul truck emissions are proportioned between these two air basins based on distance traveled in each (i.e., 29.2 percent in the MDAB and 70.8 percent in the SoCAB).

Health Risk and Air Dispersion Modeling

A construction health risk assessment (HRA) from TACs and $PM_{2.5}$ associated with construction equipment exhaust was prepared for the proposed project. Sources evaluated in the HRA include off-road construction equipment and heavy-duty diesel trucks along the truck haul route. Modeling is based on the EPA's AERMOD, v. 10.2.1, air dispersion modeling program and the latest HRA guidance from the Office of Environmental Health Hazard Assessment (OEHHA) to estimate excess lifetime cancer risks, chronic noncancer hazard indices, and the $PM_{2.5}$ maximum annual concentrations at the nearest maximum exposed off-site and on-site sensitive receptors, and assumes 24-hour outdoor exposure with risks averaged over a 70-year lifetime (OEHHA 2015).

DPM emissions were based on the CalEEMod construction runs, using annual exhaust PM_{10} construction emissions presented in pounds (lbs) per day. The $PM_{2.5}$ emissions were taken from the CalEEMod output for exhaust $PM_{2.5}$ also presented in lbs per day. Construction of the proposed project would occur continuously over a total cumulative duration of approximately 6.84 years (1,784 workdays) between years 2023 and 2030. The average daily emission rates from construction equipment used during the proposed project were determined by dividing the annual average emissions for each construction year by the number of construction days per year for each calendar year of construction. The off-site hauling emission rates were adjusted to evaluate localized emissions from the haul route distance within 1,000 feet of the project site.

Air dispersion modeling using AERMOD was conducted to assess the impact of emitted compounds on sensitive receptors. The model is a steady-state Gaussian plume model and is approved by South Coast AQMD for estimating ground level impacts from point and fugitive sources in simple and complex terrain. Meteorological data from the South Coast AQMD for the nearest representative meteorological station (Fullerton Airport) with the five latest available years (2012 to 2016) of records were used to represent local weather conditions and prevailing winds.

For all modeling runs, a unit emission rate of 1 gram per second was used. The unit emission rates were proportioned over the polygonal area sources for on-site construction emissions and divided between the volume sources for off-site hauling emissions. The maximum modeled concentrations at each sensitive receptor were multiplied by the construction emission rates to obtain the maximum concentrations at the off-site maximum exposed receptors. The calculated total cancer risk for a resident conservatively assumes that the maximum exposed individual resident (MEIR) is a pregnant woman in the third trimester that gives birth during the approximately seven-year construction window; therefore, calculated risk values for years 2023 through part of 2025 (up to 2 years of age) were multiplied by a factor of 10. In addition, it was conservatively assumed that the residents were outdoors 8 hours a day, 260 construction days per year, and exposed to all of the daily construction emissions.

For the Olinda Elementary School student receptors, it is assumed the ages range between 4 to 11 years based on the grade levels of preschool through 6th grade. Therefore, all calculated risk values were multiplied by a factor of 3. Additionally, it is assumed the students were outdoors and are subject to DPM for 8 hours per day, and approximately 180 school days per year.

Lastly, for the North Hills Preschool student receptors, it is assumed the ages range between six weeks to five years, which is the age range accommodated by this facility. All calculated risk values for years 2023 through part of 2025 were multiplied by a factor of 10. The risk values for the remaining part of year 2025 to year 2030 were multiplied by a factor of 3. It is assumed the students were outdoors and are subject to DPM for 8 hours per day, and approximately 250 school days per year.

5.3.4.2 IMPACT ANALYSIS

The following impact analysis addresses the thresholds of significance; the applicable thresholds are identified in brackets after the impact statement.

Impact 5.3-1: Construction activities associated with the proposed project would generate short-term emissions of NO_X in exceedance of South Coast AQMD's threshold criteria. [Threshold AQ-2]

Construction activities would temporarily increase PM_{10}, $PM_{2.5}$, VOC, NO_X, SO_X, and CO regional emissions in the SoCAB. The primary source of NO_x, CO, and SO_X emissions is the operation of construction equipment. The primary sources of particulate matter (PM_{10} and $PM_{2.5}$) emissions are activities that disturb the soil, such as grading and excavation, road construction, and building demolition and construction. The primary source of VOC emissions is the application of architectural coating and off-gas emissions associated

with asphalt paving. A discussion of health impacts associated with air pollutant emissions generated by construction activities is included in section 5.3.1, *Environmental Setting,* "Air Pollutants of Concern."

Emissions in the SoCAB

As discussed in Section 3.3.3, *Project Phasing*, of this DEIR, it is anticipated that buildout of the proposed Specific Plan would be implemented in three phases based on oil field abandonment, remediation, and construction of necessary infrastructure. An estimate of maximum daily construction emissions is provided in Table 5.3-11, *Maximum Daily Regional Construction Emissions Estimate*. The table shows the highest daily emissions that would be generated over the anticipated development period.

Table 5.3-11 Maximum Daily Regional Construction Emissions Estimate

Construction Phase(s)	Criteria Air Pollutants (pounds per day)[1, 2]					
	VOC	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Year 2023[3]	7	**103**	56	<1	22	11
Year 2024[4]	9	**114**	82	<1	25	12
Year 2025	43	63	64	<1	13	7
Year 2026	6	48	63	<1	18	8
Year 2027	41	84	104	<1	21	9
Year 2028	4	38	44	<1	6	3
Year 2029	12	14	19	<1	1	1
Year 2030	12	9	19	<1	1	<1
Worst-Case Day	43	**114**	104	<1	25	12
South Coast AQMD Regional Thresholds	75	100	550	150	150	55
Significant?	No	**Yes**	No	No	No	No

Source: CalEEMod Version 2020.4.0. Highest winter or summer emissions are reported.
1 Construction equipment mix is based on CalEEMod default construction mix.
2 Includes implementation of fugitive dust control measures required by South Coast AQMD under Rule 403, including watering disturbed areas a minimum of two times per day, reducing speed limit to 15 miles per hour on unpaved surfaces, replacing ground cover quickly, and street sweeping with Rule 1186–compliant sweepers.
3 The worst-case day for NO_X in year 2023 would be generated during overlap of the Western Remediation site preparation and Phase 1 site preparation activities.
4 The worst-case day for NO_X in year 2024 would be generated during overlap of the Phase 1 building construction, Eastern Remediation grading, and Phase 2 site preparation activities.

As shown in the table, construction activities associated with development of the proposed project could potentially exceed the South Coast AQMD regional threshold for NO_X. The primary source of NO_X emissions is vehicle and construction equipment exhaust. Because NO_X is a precursor to the formation of both O_3 and particulate matter (PM_{10} and $PM_{2.5}$), project-related emissions of NO_X would contribute to the O_3, NO_2, PM_{10}, and $PM_{2.5}$ nonattainment designations of the SoCAB. Therefore, project-related construction activities would result in potentially significant regional air quality impacts.

Emissions in the MDAB

As stated, the anticipated remediation activities are assumed to result in the transport of approximately 20 percent of the total impacted soil to a facility in Adelanto. For purposes of modeling, approximately 21.9 miles of the 75-mile haul route would be in the MDAB. Table 5.13-12, *Maximum Regional Construction Emissions*

in the MDAB, shows the emissions associated with the haul trucks in the MDAB. As shown in the table, the air pollutant emissions from construction-related activities would be less than their respective MDAQMD regional significance threshold values. Therefore, air quality impacts from project-related construction activities would be less than significant in the MDAB.

Table 5.3-12 Maximum Regional Construction Emissions in the MDAB

	Criteria Air Pollutants (lbs/day)[1]					
Source	**VOC**	**NO_X**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Western Remediation Rough Grading – Year 2024	<1	16	5	<1	2	1
Eastern Remediation Rough Grading – Year 2024	<1	15	5	<1	2	1
Maximum Daily Emissions	1	16	5	<1	8	3
MDAQMD Threshold	137	137	548	137	82	82
Exceeds Threshold?	No	No	No	No	No	No
	Criteria Air Pollutants (tons/year)[1,2]					
Source	**VOC**	**NO_X**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Western Remediation Rough Grading – Year 2024	<1	<1	<1	<1	<1	<1
Eastern Remediation Rough Grading – Year 2024	<1	<1	<1	<1	<1	<1
Maximum Annual Emissions	<1	<1	<1	<1	<1	<1
MDAQMD Threshold	25	25	100	25	15	15
Exceeds Threshold?	No	No	No	No	No	No

Source: CalEEMod, version 2020.4.0.
[1] Emissions shown represent the proportion of the total emissions generated from impacted soil haul truck trips associated with the anticipated remediation efforts that would occur within the MDAB.

Level of Significance Before Mitigation: Potentially significant.

Impact 5.3-2: Long-term operation of the proposed project would generate emissions of VOC in exceedance of South Coast AQMD's threshold criteria. [Threshold AQ-2]

Buildout of the proposed project would result in direct and indirect criteria air pollutant emissions from transportation, energy (e.g., natural gas use), and area sources (e.g., aerosols and landscaping equipment). Mobile-source criteria air pollutant emissions are based on vehicle trip generation data provided by LLG (see Appendix N of this DEIR). The proposed Specific Plan emphasizes the development of a variety of residential types to accommodate housing demand in the city and region. As discussed in Impact 5.14-1 of this DEIR, the city is currently jobs-rich, with 2.98 jobs per housing unit. Implementation of the proposed project, which would provide additional housing, would decrease the jobs-to-housing ratio to 2.80 jobs per housing unit. Because the recommended jobs-housing ratio ranges between 1.3 to 1.7, implementation of the proposed project would improve the jobs-housing balance for the city overall and could contribute to reducing the average distance traveled between where people live and work (i.e., reduce passenger VMT).

As shown in Table 5.3-13, *Maximum Daily Regional Operational Phase Emissions*, operation of the proposed residential land uses at buildout would generate VOC emissions that exceed the South Coast AQMD's regional significance threshold. The primary sources of VOC during operation would be from use of

consumer cleaning products and exhaust emitted from project-related vehicle trips. Because VOC is a precursor to the formation of O_3, it would contribute to the O_3 nonattainment designation of the SoCAB. Therefore, the proposed project could significantly contribute to the nonattainment designations of the SoCAB, and operation-related regional air quality impacts would be potentially significant.

Table 5.3-13 Maximum Daily Regional Operational Phase Emissions

Source	Operation-Related Regional Emissions (pounds/day)					
	VOC	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Area	36	19	98	<1	2	2
Energy	1	5	2	<1	<1	<1
Transportation	27	17	263	1	85	23
Total	**64**	42	364	1	87	25
South Coast AQMD Regional Thresholds	55	55	550	150	150	55
Significant?	**Yes**	No	No	No	No	No

Source: CalEEMod Version 2020.4.0. Based on highest winter or summer emissions using calendar year 2035 vehicle emission rates. Manual summation may not equal the shown totals may due to rounding. Excludes permitted sources of emissions that are covered under South Coast AQMD regulations.

Overlap of Construction and Operational Phase

Based on the assumed construction and buildout schedule of the proposed project, there is potential for overlap between construction and operational activity. It should be noted that, based on the estimated construction schedule, the site remediation would precede occupancy of any of the proposed buildings within the project site. Thus, there would be no overlap between the site remediation and the occupancy of the buildings. The vertical construction phase of the residential units on the project site would occur on an individual basis and could result in an overlap with occupancy. Combining the maximum daily construction emissions with the maximum daily operational emissions would give a maximum daily emission representing peak construction activity and full buildout of the project, an impossible scenario. At the request of South Coast AQMD, hypothetical overlap of construction and operational activities is shown in Table 5.3-14, *Potential Overlap of Construction and Operational Activities*. South Coast AQMD does not have a significance threshold for construction/operation overlap; therefore, this analysis is included for informational purposes only.

Table 5.3-14 Potential Overlap of Construction and Operational Activities

Source	Unmitigated Regional Emissions (pounds/day)					
	VOC	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Construction Peak Emissions	43	114	104	<1	25	12
Maximum Operational Emissions	64	42	364	1	87	25
Max Daily Combined Emissions	106	156	467	1	112	38

Source: CalEEMod Version 2020.4.0.

Level of Significance Before Mitigation: Potentially significant.

Impact 5.3-3: Long-term operation of the land uses associated with buildout of the proposed project would not expose sensitive receptors to substantial concentrations of criteria air pollutants or toxic air contaminants. [Threshold AQ-3]

Operation of new land uses that would be accommodated under the proposed project could generate new sources of criteria air pollutants and TACs in the Specific Plan area from area/stationary sources and mobile sources. Unlike the mass of operation emissions shown in Table 5.3-13, described in pounds per day, localized concentrations refer to an amount of pollutant in a volume of air (ppm or $\mu g/m^3$) and can be correlated to potential health effects.

Operation Phase Localized Significance Thresholds

The screening-level LSTs are the amount of project-related stationary and area sources of emissions at which localized concentrations (ppm or $\mu g/m^3$) would exceed the ambient air quality standards for criteria air pollutants for which the SoCAB is designated a nonattainment area. The proposed project would primarily permit the development of residential uses only. Typical sources of criteria air pollutant emissions within the Specific Plan from stationary and area sources include energy use (natural gas used for cooking and water heating) and landscaping fuel and aerosols. Types of land uses that typically generate substantial quantities of criteria air pollutants and TACs include industrial (stationary sources) and warehousing (truck idling) land uses. These types of major air pollutant emissions sources are not permitted in the project site. Thus, the proposed project would not create land uses that would generate substantial concentrations of criteria air pollutant emissions. Therefore, localized operation-related air quality impacts are considered less than significant.

Operational Phase Toxic Air Contaminants

As stated, types of land uses that typically generate substantial quantities of criteria air pollutants and TACs are industrial (stationary sources) and warehousing (truck idling) land uses. These types of major air pollutant emissions sources are not permitted in the project site. The proposed project would only accommodate residential land uses and public recreation areas. Therefore, the Specific Plan would not result in creation of land uses that would generate substantial concentrations of TACs. Therefore, overall, impacts related to TACs are considered less than significant.

Operational Phase CO Hotspots

Areas of vehicle congestion have the potential to create pockets of CO called hotspots. In 2007, the SoCAB was designated in attainment for CO under both the California AAQS and National AAQS. The CO hotspot analysis conducted for the attainment by South Coast AQMD did not predict a violation of CO standards at the busiest intersections in Los Angeles during the peak morning and afternoon periods.[16] As identified in South Coast AQMD's 2003 AQMP and the 1992 Federal Attainment Plan for Carbon Monoxide, peak

[16] The four intersections were: Long Beach Boulevard and Imperial Highway; Wilshire Boulevard and Veteran Avenue; Sunset Boulevard and Highland Avenue; and La Cienega Boulevard and Century Boulevard. The busiest intersection evaluated (Wilshire and Veteran) had a daily traffic volume of approximately 100,000 vehicles per day with LOS E in the morning peak hour and LOS F in the evening peak hour.

carbon monoxide concentrations in the SoCAB in previous years, prior to redesignation, were a result of unusual meteorological and topographical conditions and not of congestion at a particular intersection (South Coast AQMD 1992; South Coast AQMD 2003).

Under existing and future vehicle emission rates, a project would have to increase traffic volumes at a single intersection by more than 44,000 vehicles per hour—or 24,000 vehicles per hour where vertical and/or horizontal air does not mix—in order to generate a significant CO impact (BAAQMD 2017). Under full buildout conditions, the proposed project would generate up to 1,059 peak hour trips (mid-day). Thus, implementation of the proposed project would not produce the volume of traffic required (i.e., 24,000 to 44,000 peak hour vehicle trips) to generate a CO hotspot. Therefore, implementation of the Specific Plan would not have the potential to substantially increase CO hotspots at intersections in the vicinity of the project site, and impacts would be less than significant.

Level of Significance Before Mitigation: Less than significant.

Impact 5.3-4: Construction-related emissions associated with land uses accommodated under the proposed project would not expose sensitive receptors to substantial concentrations of criteria air pollutants. [Threshold AQ-3]

Development of new land uses that would be accommodated under the proposed project could generate new sources of criteria air pollutants from construction equipment exhaust and fugitive dust (criteria air pollutants only). Implementation of the proposed project could expose sensitive receptors to elevated pollutant concentrations during construction activities if it would cause or contribute significantly to elevating those levels.

Localized Construction Impacts in the SoCAB

Localized Significance Thresholds

The screening-level LSTs are the amount of project-related emissions at which localized concentrations could exceed the ambient air quality standards for criteria air pollutants for which the SoCAB is designated nonattainment. Screening-level LSTs are based on the proposed project site size and distance to the nearest sensitive receptor. Thresholds are based on the California AAQS, which are the most stringent AAQS, established to provide a margin of safety in the protection of the public health and welfare. They are designed to protect sensitive receptors most susceptible to further respiratory distress, such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise.

Table 5.3-15, *Maximum Daily On-Site Localized Construction Emissions*, shows the maximum daily construction emissions (pounds per day) generated during on-site construction activities. As shown in the table, maximum daily construction emissions would not exceed the South Coast AQMD screening-level LSTs for NO_X and CO. However, construction activities would exceed the screening-level LSTs for PM_{10} and $PM_{2.5}$. The on-site PM_{10} and $PM_{2.5}$ emissions shown in the table represent the total on-site particulate matter emissions from vehicle exhaust and fugitive dust.

Table 5.3-15 Maximum Daily On-Site Localized Construction Emissions

Construction Scenario	Pollutants (pounds per day)[1, 2]			
	NO_X	CO	PM_{10}	$PM_{2.5}$
Phase 2 Asphalt Paving & Finishing/Landscaping – Year 2025	10	17	0.47	0.43
Phase 3 Finishing/Landscaping – Year 2028	1	2	0.05	0.05
Less Than 1-Acre LSTs[3]	103	522	4.00	3.00
Exceeds LSTs?	No	No	No	No
Phase 1 Building Construction – Year 2024	13	16	0.61	0.58
Phase 1 Building Construction – Year 2025	12	16	0.53	0.50
Phase 1 Building Construction & Architectural Coating, & Phase 2 Rough Grading – Year 2025	14	18	0.58	0.55
Phase 2 Building Construction – Year 2026	12	16	0.53	0.50
1.31-Acre LSTs[3]	117	597	4.62	3.31
Exceeds LSTs?	No	No	No	No
Phase 1 Asphalt Paving, Finishing/Landscaping, & Building Construction – Year 2024	24	33	1.15	1.07
Phase 1 Finishing/Landscaping & Building Construction – Year 2024	15	18	0.68	0.64
Phase 2 Asphalt Paving, Finishing/Landscaping, & Building Construction – Year 2025	22	33	1.00	0.93
Phase 2 Asphalt Paving, Finishing/Landscaping, & Building Construction – Year 2026	22	33	1.00	0.93
Phase 2 Finishing/Landscaping & Building Construction – Year 2026	14	18	0.58	0.55
1.81-Acre LSTs[3]	139	717	5.62	3.81
Exceeds LSTs?	No	No	No	No
Western Remediation Site Preparation – Year 2023	28	18	**9.67**	**5.48**
Phase 1 Site Preparation – Year 2023	28	18	**9.67**	**5.48**
Phase 2 Site Preparation – Year 2024	27	18	**9.63**	**5.45**
Phase 2 Site Preparation – Year 2025	25	18	**9.49**	**5.32**
3.50-Acre LSTs[3]	184	1,036	8.50	5.00
Exceeds LSTs?	No	No	**Yes**	**Yes**
Western Remediation Grading – Year 2023	35	28	5.41	2.88
Phase 1 Rough Grading – Year 2023	35	28	5.36	2.87
Phase 1 Rough Grading & Utility Trenching – Year 2023	40	35	5.68	5.17
Phase 1 Rough Grading & Utility Trenching – Year 2024	37	34	5.58	3.07
Phase 1 Utility Trenching & Fine Grading – Year 2024	37	34	5.58	3.07
Phase 1 Fine Grading & Asphalt Paving – Year 2024	42	42	5.74	3.22
Phase 2 Rough Grading – Year 2025	28	26	5.07	2.60
Phase 2 Rough Grading & Utility Trenching – Year 2025	33	35	5.38	2.89
Phase 2 Fine Grading – Year 2025	28	26	5.07	2.60
Phase 2 Utility Trenching & Fine Grading – Year 2025	33	35	5.38	2.89
Phase 2 Fine Grading & Asphalt Paving – Year 2025	37	41	5.48	2.99
Phase 3 Utility Trenching & Fine Grading – Year 2027	33	35	5.38	2.89

Table 5.3-15 Maximum Daily On-Site Localized Construction Emissions

Construction Scenario	Pollutants (pounds per day)[1, 2]			
	NO_X	CO	PM_{10}	$PM_{2.5}$
Phase 3 Utility Trenching, Fine Grading, & Asphalt Paving – Year 2027	42	50	5.80	3.28
Phase 3 Fine Grading & Asphalt Paving – Year 2027	37	41	5.48	2.99
4.00-Acre LSTs[3]	196	1,128	9.33	5.33
Exceeds LSTs?	No	No	No	No
Phase 1 Fine Grading, Asphalt Paving, & Finishing/Landscaping – Year 2024	43	45	5.80	3.28
Phase 2 Fine Grading, Asphalt Paving, & Finishing/Landscaping – Year 2025	38	43	5.54	3.04
Phase 3 Fine Grading, Asphalt Paving, & Finishing/Landscaping – Year 2027	38	43	5.54	3.04
Phase 3 Fine Grading, Asphalt Paving, & Finishing/Landscaping – Year 2028	38	43	5.54	3.04
4.50-Acre LSTs[3]	209	1,219	10.16	5.67
Exceeds LST?	No	No	No	No
Phase 2 Building Construction & Site Preparation – Year 2026	38	34	10.02	5.82
4.81-Acre LSTs[3]	216	1,277	10.68	5.87
Exceeds LSTs?	No	No	No	No
Phase 1 Rough Grading, Utility Trenching, & Fine Grading – Year 2024	70	62	10.85	5.86
Phase 1 Building Construction, Phase 2 Site Preparation, & Eastern Remediation Site Preparation – Year 2024	68	53	**19.88**	**11.48**
Phase 1 Building Construction, Phase 2 Site Preparation, & Eastern Remediation Grading – Year 2024	73	62	**15.57**	**8.82**
Phase 1 Building Construction & Phase 2 Rough Grading – Year 2025	41	42	5.68	3.18
Phase 2 Rough Grading, Utility Trenching, & Fine Grading – Year 2025	61	62	10.45	5.50
Phase 2 Building Construction & Phase 3 Rough Grading – Year 2026	40	42	5.59	3.10
Phase 2 Building Construction & Phase 3 Rough Grading – Year 2027	40	42	5.59	3.10
Phase 2 Building Construction, Phase 2 Architectural Coating, & Phase 3 Rough Grading – Year 2027	42	44	5.64	3.15
Phase 2 Building Construction, Phase 2 Architectural Coating, Phase 3 Rough Grading, & Phase 3 Utility Trenching – Year 2027	47	53	5.96	3.44
Phase 2 Building Construction, Phase 2 Architectural Coating, Phase 3 Rough Grading, Phase 3 Utility Trenching, & Phase 3 Fine Grading – Year 2027	75	80	**11.03**	**6.04**
Phase 3 Rough Grading, Utility Trenching, & Fine Grading – Year 2027	61	62	10.45	5.50
5.00-Acre LSTs[3]	221	1,311	10.99	6.00
Exceeds LSTs?	No	No	**Yes**	**Yes**

Source: CalEEMod 2020.4.0; South Coast AQMD 2008; South Coast AQMD 2011. Highest winter or summer emissions are reported.
1 Where specific information regarding project-related construction activities was not available, construction assumptions were based on CalEEMod defaults.
2 Includes implementation of fugitive dust control measures required by South Coast AQMD under Rule 403, including watering disturbed areas a minimum of two times per day, reducing speed limit to 15 miles per hour on unpaved surfaces, replacing ground cover quickly, and street sweeping with Rule 1186–compliant sweepers.
3 Screening-level LSTs are based on receptors within 82 feet (25 meters).

In accordance with South Coast AQMD methodology, because the proposed project would result in construction activities that generate on-site emissions exceeding the PM_{10} and $PM_{2.5}$ screening-level LSTs, dispersion modeling was conducted using AERMOD, version 10.2.1, air dispersion modeling program. The

calculated concentration levels associated with the construction activities that would generate on-site emissions exceeding the screening-level LSTs are shown in Table 5.3-16, *Construction LSTs*. As shown in the table, project-related construction activities would not generate emissions that would exceed the South Coast AQMD LSTs. Thus, construction activities associated with the proposed project would not generate emissions that expose receptors to substantial concentrations of criteria air pollutants, and impacts are considered less than significant.

Table 5.3-16 Construction LSTs

Construction Scenario	24-Hour Concentrations		Annual Average Concentration
	PM_{10} (µg/m³)	$PM_{2.5}$ (µg/m³)	PM_{10} (µg/m³)
Maximum Exposed Individual Resident			
Western Remediation Site Preparation – Year 2023	1.5	0.83	0.04
Phase 1 Site Preparation – Year 2023	1.5	0.83	0.04
Phase 2 Site Preparation – Year 2024	1.6	0.88	0.4
Phase 2 Site Preparation – Year 2025	1.4	0.80	0.04
Phase 1 Building Construction, Phase 2 Site Preparation, & Eastern Remediation Site Preparation – Year 2024	3.2	1.85	0.8
Phase 1 Building Construction, Phase 2 Site Preparation, & Eastern Remediation Grading – Year 2024	2.5	1.42	0.7
Phase 2 Building Construction, Phase 2 Architectural Coating, Phase 3 Rough Grading, Phase 3 Utility Trenching, & Phase 3 Fine Grading – Year 2027	0.2	0.11	0.4
Maximum Exposed School Receptor – Olinda Elementary School			
Western Remediation Site Preparation – Year 2023	0.9	0.5	0.1
Phase 1 Site Preparation – Year 2023	0.9	0.5	0.1
Phase 2 Site Preparation – Year 2024	0.9	0.5	0.1
Phase 2 Site Preparation – Year 2025	0.9	0.5	0.1
Phase 1 Building Construction, Phase 2 Site Preparation, & Eastern Remediation Site Preparation – Year 2024	1.9	1.1	0.3
Phase 1 Building Construction, Phase 2 Site Preparation, & Eastern Remediation Grading – Year 2024	1.5	0.9	0.2
Phase 2 Building Construction, Phase 2 Architectural Coating, Phase 3 Rough Grading, Phase 3 Utility Trenching, & Phase 3 Fine Grading – Year 2027	1.1	0.6	0.1
Maximum Exposed School Receptor – North Hills Preschool			
Western Remediation Site Preparation – Year 2023	0.3	0.19	0.02
Phase 1 Site Preparation – Year 2023	0.3	0.19	0.02
Phase 2 Site Preparation – Year 2024	0.4	0.20	0.03
Phase 2 Site Preparation – Year 2025	0.3	0.19	0.02
Phase 1 Building Construction, Phase 2 Site Preparation, & Eastern Remediation Site Preparation – Year 2024	0.7	0.43	0.1
Phase 1 Building Construction, Phase 2 Site Preparation, & Eastern Remediation Grading – Year 2024	0.6	0.33	0.05

Table 5.3-16 Construction LSTs

Construction Scenario	24-Hour Concentrations		Annual Average Concentration
	PM_{10} (µg/m³)	$PM_{2.5}$ (µg/m³)	PM_{10} (µg/m³)
Phase 2 Building Construction, Phase 2 Architectural Coating, Phase 3 Rough Grading, Phase 3 Utility Trenching, & Phase 3 Fine Grading – Year 2027	0.4	0.21	0.1
South Coast AQMD LST Significance Thresholds	10.4	10.4	1.0
Exceeds Threshold?	No	No	No

Source: AERMOD Version 10.2.1.

Localized Construction Impacts in the MDAB

As shown above in Table 5.3-12, project-related regional construction emissions generated in the MDAB would be below the MDAQMD regional significance thresholds. Therefore, per MDAQMD methodology, project-related construction activities would result in less than significant localized impacts.

Level of Significance Before Mitigation: Less than significant.

Impact 5.3-5: Project-related construction activities would result in potentially significant cancer risk impacts to nearby off-site residences. [Threshold AQ-3]

The proposed project would temporarily elevate concentrations of TACs and DPM in the vicinity of sensitive land uses during construction activities. As stated, South Coast AQMD currently does not require health risk assessments for short-term emissions from construction equipment, which primarily consist of DPM. However, this analysis has been included to conservatively gauge the potential health-risk-related impacts of short-term construction activities on off-site sensitive receptors.

The proposed project would be developed over three development phases in addition to the required remediation. It is anticipated that the construction durations for Phase 1, Phase 2, and Phase 3 would be 22 months, 34 months, and 46 months, respectively. For purposes of this analysis, remediation for each of the designated areas would last one month. Overall, construction would occur continuously from 2023 to 2030. The estimated excess lifetime cancer risk and chronic noncancer hazard index at the nearest sensitive receptors are shown in Table 5.3-17, *Construction Risk Summary*.

Table 5.3-17 Construction Risk Summary

Receptor	Cancer Risk (per million)	Chronic Hazards
Maximum Exposed Individual Resident	**15.1**	0.5
Maximum Exposed School Receptor – Olinda Elementary School Students	1.0	0.02
Maximum Exposed Daycare Receptor – North Hills Preschool	1.1	0.004
Significance Thresholds	10	1.0
Exceeds Threshold?	**Yes**	No

Note: Cancer risk calculated using 2015 OEHHA HRA guidance.

The results of the HRA are based on the maximum modeled receptor concentration over the construction exposure period, conservatively assuming a 24-hour per day outdoor exposure and averaged over a 70-year lifetime. According to the modeling results, the MEIR is the single-family residence south of State Route 142 in the pocket of land near the northeast portion of the Phase 3 development area. The maximum exposed receptor for the Olinda Elementary School, which is situated along East Birch Street next to the southwest corner of the Phase 2 development area of the Specific Plan, lies within the northeastern portion of the school campus.

As shown in the table above, the maximum incremental cancer risk during the construction phase of the project at the MEIR is 15.1 per million, which exceeds the significance threshold of 10 per million. Cancer risk for students at Olinda Elementary School and North Hills Preschool is 1.0 per million and 1.1 per million, respectively, and would not exceed 10 per million. For noncarcinogenic effects, the hazard index identified for each toxicological endpoint totaled less than one for the MEIR, the maximum exposed school receptor, and the maximum exposed daycare receptor. Therefore, chronic noncarcinogenic hazards are within acceptable limits. However, because the cancer risk for the MEIR would exceed the 10 per million threshold, project-related construction activities would result in potentially significant health risk impacts.

Level of Significance Before Mitigation: Potentially significant.

Impact 5.3-6: The proposed project would generate long-term emissions that cumulatively contribute to the nonattainment designations in the SoCAB and therefore conflict with the South Coast AQMD Air Quality Management Plan. [Threshold AQ-1]

The following describes potential air quality impacts and consistency with the AQMP from the implementation of the proposed project.

South Coast AQMD is directly responsible for reducing emissions from area, stationary, and mobile sources in the SoCAB to achieve the National and California AAQS. South Coast AQMD has responded to this requirement by preparing an AQMP. On March 3, 2017, the South Coast AQMD Governing Board adopted the 2016 AQMP, which is a regional and multiagency effort (South Coast AQMD, CARB, SCAG, and EPA). A consistency determination with the AQMP plays an important role in local agency project review by linking local planning and individual projects to the AQMP. It fulfills the CEQA goal of informing decision makers of the environmental efforts of the project under consideration early enough to ensure that air quality concerns are fully addressed. It also provides the local agency with ongoing information as to whether they are contributing to the clean air goals in the AQMP.

The two principal criteria for conformance with an AQMP are:

1. Whether the project would exceed the assumptions in the AQMP.

2. Whether the project would result in an increase in the frequency or severity of existing air quality violations, cause or contribute to new violations, or delay timeline attainment of air quality standards.

SCAG is South Coast AQMD's partner in the preparation of the AQMP, providing the latest economic and demographic forecasts and developing transportation measures. Regional population, housing, and

employment projects developed by SCAG are based, in part, on a city's general plan land use designations. These projections form the foundation for the emissions inventory of the AQMP and are incorporated into the regional transportation plan/sustainable communities strategy (RTP/SCS) prepared by SCAG to determine priority transportation projects and VMT in the SCAG region. Because the AQMP strategy is based on projections from local general plans, projects that are consistent with the local general plan are considered consistent with the air quality-related regional plan. Additionally, only large projects have the potential to substantially affect the demographic forecasts in the AQMP.

Criterion 1

CEQA Guidelines Section 15206(b) states that a proposed project is of statewide, regional, or area-wide significance if the project is a residential development or more than 500 dwelling units. The proposed project would introduce a net increase of approximately 1,100 new dwelling units; therefore, it is a project of statewide, regional, or area-wide significance. As described under Impact 5.14-1, the anticipated population growth of 3,102 residents associated with the proposed project would be within the assumed population growth under the Brea General Plan and SCAG projections for the city. Thus, implementation of the proposed project would not substantially affect demographic projections beyond what is accounted for in the current 2016 AQMP. Furthermore, as discussed under Impact 5.3-2, the proposed project would improve the jobs-housing balance for the area, which could contribute to reducing VMT by providing more housing options closer to where people work. Therefore, the proposed project would not be considered inconsistent with the AQMP under the first criterion.

Criterion 2

With respect to the second criterion, as shown under Impact 5.3-2, the proposed project would generate long-term emissions of criteria air pollutants that would exceed South Coast AQMD's regional operation-phase significance thresholds, which were established to determine whether a project has the potential to cumulatively contribute to the SoCAB's nonattainment designations. Thus, long-term implementation of the proposed project would result in an increase in the frequency or severity of existing air quality violations; cause or contribute to new violations; or delay timely attainment of the AAQS. Therefore, overall, the proposed project would be considered inconsistent with the AQMP under the second criterion.

Summary

Implementation of the proposed project would not substantially affect the population estimates for the City and the population estimate assumed in the 2016 AQMP. However, the proposed project would result in long-term VOC emissions in exceedance of the South Coast AQMD's regional operational significance threshold (see Table 5.3-13) and would cumulatively contribute to the nonattainment designations in the SoCAB. Therefore, the proposed project would be considered inconsistent with the AQMP and impacts would be potentially significant.

Level of Significance Before Mitigation: Potentially significant.

Impact 5.3-7: The proposed project would not result in other emissions that would adversely affect a substantial number of people. [Threshold AQ-4]

Growth in the project site could generate new sources of odors. Nuisance odors from land uses in the SoCAB are regulated under South Coast AQMD Rule 402, Nuisance, which states:

> A person shall not discharge from any source whatsoever such quantifies of 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. The provisions of this rule shall not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals.

Industrial and South Coast AQMD Permitted Land Uses

Industrial land uses have the potential to generate objectionable odors. Examples of industrial projects are wastewater treatment plants, compost facilities, landfills, solid-waste transfer stations, fiberglass manufacturing facilities, paint/coating operations (e.g., auto body shops), dairy farms, petroleum refineries, asphalt batch manufacturing plants, chemical manufacturing, and food manufacturing facilities. The proposed project would primarily involve the development of residential uses only. Thus, industrial-type land uses would generally be prohibited within the Specific Plan area. Therefore, impacts related to objectionable odors as it relates to industrial-type land uses for the proposed project would be less than significant.

Residential and Other Nonresidential Land Uses

Residential land uses could result in generation of odors such as exhaust from landscaping equipment and cooking. However, unlike industrial land uses, these are not considered potential generators of odor that could affect a substantial number of people. Additionally, South Coast AQMD Rule 402 would minimize and provide a control for odors. Therefore, impacts from potential odors generated from residential land uses associated with the proposed project are considered less than significant.

Construction

During construction activities, construction equipment exhaust and application of asphalt and architectural coatings would temporarily generate odors. Any construction-related odor emissions would be temporary and intermittent. Additionally, noxious odors would be confined to the immediate vicinity of the construction equipment. By the time such emissions reached any sensitive receptor sites, they would be diluted to well below any level of air quality concern. Furthermore, short-term construction-related odors are expected to cease upon the drying or hardening of odor-producing materials. Therefore, impacts associated with construction-generated odors are considered less than significant.

Level of Significance Before Mitigation: Less than significant.

5.3.5 Cumulative Impacts

In accordance with South Coast AQMD and MDAQMD methodology, any project that produces a significant project-level regional air quality impact in an area that is in nonattainment contributes to the cumulative impact. Cumulative projects in the local area include new development and general growth in the SoCAB. Due to the extent of the area potentially impacted from cumulative project emissions, South Coast AQMD and MDAQMD consider a project cumulatively significant when project-related emissions exceed the regional emissions thresholds shown in Table 5.3-5 and Table 5.3-9. No significant cumulative impacts were identified with regard to CO hotspots.

Construction

The SoCAB and MDAB are designated nonattainment for O_3, $PM_{2.5}$, PM_{10}, lead (SoCAB: Los Angeles County only), and hydrogen sulfide (MDAB: Searles Valley Planning Area only) under the California and/or National AAQS. Construction of cumulative projects will further degrade the regional and local air quality. Air quality will be temporarily impacted during construction activities. As discussed under Impact 5.3-1, project-related construction emissions would not exceed the MDAQMD regional significance thresholds, but would exceed the South Coast AQMD regional threshold for VOC. However, as discussed below in Section 5.3.8, implementation of mitigation measures for related projects would reduce project-related construction emissions to below the South Coast AQMD regional significance thresholds. Therefore, with incorporation of mitigation, the proposed project's contribution to cumulative air quality impacts would not be cumulatively considerable, and cumulative impacts would be less than significant.

Operation

For operational air quality emissions, any project that does not exceed or can be mitigated to less than the daily regional threshold values is not considered by South Coast AQMD to be a substantial source of air pollution and does not add significantly to a cumulative impact. Operation of the project would result in emissions in excess of the South Coast AQMD regional emissions threshold for VOC. Therefore, the air pollutant emissions associated with the proposed project would be cumulatively considerable and impacts are significant and unavoidable.

5.3.6 Level of Significance Before Mitigation

Upon implementation of the plans, programs, and policies, the following impacts would be less than significant: 5.3-3, 5.3-4, and 5.3-7.

Without mitigation, these impacts would be **potentially significant**:

- **Impact 5.3-1** Construction activities associated with the proposed project would generate short-term emissions of NO_X in exceedance of the South Coast AQMD threshold criteria.

- **Impact 5.3-2** Operation of the proposed project would generate long-term emissions of VOC in exceedance of South Coast AQMD threshold criteria.
- **Impact 5.3-5** Construction-related emissions associated with the proposed project could expose sensitive receptors to substantial concentrations of toxic air contaminants.
- **Impact 5.3-6** The long-term emissions generated by the proposed project would contribute to an increase in frequency or severity of air quality violations in the South Coast Air Basin and would conflict with the assumptions of the applicable Air Quality Management Plan.

5.3.7 Mitigation Measures

Impact 5.3-1

AQ-1 Construction and remediation contractors shall, at minimum, use equipment that meets the United States Environmental Protection Agency's (EPA) Tier 4 Interim emissions standards for off-road diesel-powered construction equipment with more than 50 horsepower for the following activities, unless it can be demonstrated to the City of Brea Building and Safety Division that such equipment is not available:

- Remediation phase ground disturbing activities (e.g., site preparation, grading, and trenching)
- Phase 1 ground disturbing activities (e.g., site preparation, grading, and trenching)
- Phase 1 building/structure construction
- Phase 2 ground disturbing activities (e.g., site preparation, grading, and trenching)

Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by Tier 4 Interim emissions standards for a similarly sized engine, as defined by the California Air Resources Board's regulations.

Prior to construction, the project engineer shall ensure that all construction (e.g., grading) plans clearly show the requirement for EPA Tier 4 Interim emissions standards for construction equipment over 50 horsepower for the specific activities stated above. During construction, the construction contractor shall maintain a list of all operating equipment in use on the construction site for verification by the City of Brea. The construction equipment list shall state the makes, models, Equipment Identification Numbers, Engine Family Numbers, and number of construction equipment on-site. Equipment shall be properly serviced and maintained in accordance with the manufacturer's recommendations. Construction contractors shall also ensure that all nonessential idling of construction equipment is restricted to 5 minutes or less in compliance with Section 2449 of the California Code of Regulations, Title 13, Article 4.8, Chapter 9.

Impact 5.3-2

Apply Mitigation Measures GHG-1 and GHG-2.

Impact 5.3-5

Apply Mitigation Measure AQ-1.

Impact 5.3-6

Apply Mitigation Measures GHG-1 and GHG-2.

5.3.8 Level of Significance After Mitigation

Impact 5.3-1

Implementation of Mitigation Measure AQ-1 would require off-road construction equipment of 50 horsepower or greater used for remediation, Phase 1, and Phase 2 ground disturbing activities (e.g., site preparation, trenching, and grading) and Phase 1 buildings and structures construction activities to be fitted with engines that meet the EPA's Tier 4 Interim emissions standards. As shown in Table 5.3-18, *Maximum Daily Regional Construction Emissions Estimate, Mitigated*, incorporation of Mitigation Measure AQ-1 would reduce project-related construction emissions of NO_X to below the respective significance threshold. Therefore, Impact 5.3-1 would be reduced to less than significant.

Table 5.3-18 Maximum Daily Regional Construction Emissions Estimate, Mitigated

Construction Phase(s)	Criteria Air Pollutants (pounds per day)[1, 2]					
	VOC	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Year 2023[3]	2	72	72	<1	19	8
Year 2024[4]	5	83	98	<1	22	10
South Coast AQMD Regional Thresholds	75	100	550	150	150	55
Significant?	No	No	No	No	No	No

Source: CalEEMod Version 2020.4.0. Highest winter or summer emissions are reported.

[1] Construction equipment mix is based on CalEEMod default construction mix.

[2] Includes implementation of fugitive dust control measures required by South Coast AQMD under Rule 403, including watering disturbed areas a minimum of two times per day, reducing speed limit to 15 miles per hour on unpaved surfaces, replacing ground cover quickly, and street sweeping with Rule 1186–compliant sweepers. Also include incorporation of Mitigation Measure AQ-1, which requires off-road equipment of 50 horsepower or more used for remediation, Phase 1, and Phase 2 ground disturbing activities and Phase 1 building/structures construction activities to be fitted with engines that meet the Tier 4 Interim emissions standards.

Impact 5.3-2

Implementation of Mitigation Measures GHG-1 and GHG-2 would contribute to minimizing project-related long-term emissions of VOC. The prohibition of wood-burning and gas-powered fireplaces in addition to the requirement that all residential units be all electric under Mitigation Measure GHG-1 would contribute to reducing area source VOC emissions from on-site combustion of natural gas. These two measures would reduce daily VOC emissions by three pounds per day, which would reduce the overall maximum daily emissions to 61 pounds per day. Mitigation Measure GHG-2, which would require providing electric vehicle

charging stations and preferential parking spaces for low-emitting and carpool/van vehicles would also contribute to reducing mobile-source VOC emissions to the extent feasible. Because use of these parking spaces and charging stations are voluntary, an estimate of potential VOC reductions associated with these two measures is not provided. Although VOC emissions from consumer cleaning products would be a primary generator of VOC emissions, it would not be feasible to control the types of home cleaning products each individual homeowner would use.

Though implementation of Mitigation Measures GHG-1 and GHG-2 would contribute to reducing project-related long-term emissions of VOC, they may not provide enough of a reduction to reduce project-related VOC emissions to below the South Coast AQMD regional significance threshold. Emissions of VOC that exceed the South Coast AQMD regional significance threshold would contribute to the ozone nonattainment designations of the SoCAB and cumulatively contribute to health impacts. As identified previously, the incremental effect of the project on health outcomes in the SoCAB is speculative. (see "Health Outcomes Associated with the Regional Significance Thresholds" in Section 5.3.2.1, *South Coast Air Quality Management District Thresholds*). Additionally, per South Coast AQMD, exceedance of the regional significance thresholds cannot be used to correlate a project to quantifiable health impacts unless emissions are sufficiently high to use a regional model (see Appendix C6). Because the AAQS are applied at the regional level, a regional scale air quality model is necessary to determine the concentrations of the criteria air pollutants in the SoCAB and whether they exceed the AAQS. In general, regional scale air quality modeling efforts are conducted by air districts because they are the agencies that oversee compliance of the air basins to the AAQS.

Regional air quality models currently available to air districts typically attempt to account for all emissions sources within an air basin. Due to the nature of the available regional model, the purpose of the AAQS, the AAQS being based on concentrations instead of mass emissions, and the complexity in correlating concentration levels with the amount of mass emissions generated, a large change in emissions would be needed to provide observable and meaningful results. For example, as part of its preparation of the 2012 AQMP, South Coast AQMD showed that reducing NO_X by 431 tons per day (157,680 tons per year) and VOC by 187 tons per day (68,255 tons per year) would reduce ozone concentration levels by only 9 parts per billion (see Appendix C6). Additionally, as part of the environmental assessment for Rule 1315, South Coast AQMD conducted pollutant modeling that accounted for essentially all of the increases in emissions due to new or modified sources in the South Coast AQMD between years 2010 and 2030. The estimated increases approximated to 6,620 pounds per day of NO_X and 89,947 pounds per day of VOC. Overall, the analysis for Rule 1315 showed that the increase in regional pollutant emissions would contribute to only a small increase in the SoCAB-wide ozone concentrations in 2030 of 2.6 ppb and less than 1 ppb of NO_2 (see Appendix C6). In comparing the proposed project, the maximum daily VOC emissions of 64 pounds per day would equate to 0.02 percent and 0.07 percent of the emissions estimated for the 2012 AQMP and Rule 1315, respectively. Thus, it can be reasonably assumed that project VOC emissions would likely be too negligible to affect ozone concentrations or for regional models to provide meaningful results.

Overall, while modeling of VOC exceedance using regional-scale modeling would not provide a reasonable degree of scientific certainty, and therefore would not provide reliable, credible information of value to decision-makers or the public regarding effects on health, air districts develop region-specific thresholds of significance based on existing attainment status for the California and National AAQS in the air basin (see

Table 5.3-3, *Attainment Status of Criteria Pollutants in the South Coast Area Air Basin*). The ambient air quality standards were developed based on scientific evidence related to the acceptable pollutant concentrations above which human health may be adversely impacted. These concentrations are the cumulative effect of all pollutant sources in the air basin. South Coast AQMD considers projects with emissions below the thresholds of significance to have a minor or negligible impact on the regional cumulative emission concentrations that exceed the ambient air quality standards. Projects that exceed an applicable threshold could contribute to the continued nonattainment designation of a region or potentially degrade a region from attainment to nonattainment, resulting in acute or chronic respiratory and cardiovascular illness from exposure to concentrations of criteria air pollutants above what the EPA and CARB consider safe. As identified above, the proposed project would generate long-term VOC emissions that exceed the South Coast AQMD regional significance threshold, which contribute to the formation of ozone. Therefore, Impact 5.3-2 is considered a significant and unavoidable impact.

Impact 5.3-5

As shown in Table 5.3-19, *Construction Risk Summary, Mitigated*, implementation of Mitigation Measure AQ-1 would reduce the cancer risk level at the MEIR to 6.6 per million, which would be below the 10 per million significance threshold. Therefore, with incorporation of mitigation, Impact 5.3-5 would be reduced to less than significant.

Table 5.3-19 Construction Risk Summary

Receptor	Cancer Risk (per million)[1]	Chronic Hazards[1]
Maximum Exposed Individual Resident	**6.6**	0.4
Significance Thresholds	10	1.0
Exceeds Threshold?	No	No

Note: Cancer risk calculated using 2015 OEHHA HRA guidance.
[1] include incorporation of Mitigation Measure AQ-1, which requires off-road equipment of 50 horsepower or more used for remediation, Phase 1, and Phase 2 ground disturbing activities and Phase 1 building/structures construction activities to be fitted with engines that meet the Tier 4 Interim emissions standards.

Impact 5.3-6

As discussed, incorporation of Mitigation Measures GHG-1 and GHG-2 would contribute to minimizing VOC emissions from operation of the proposed project, to the extent feasible. However, it is anticipated that project-related operation-phase activities would still result in VOC emissions exceeding the South Coast AQMD regional significance threshold. Thus, the proposed project would continue to be inconsistent with the AQMP. Therefore, Impact 5.3-6 would be significant and unavoidable.

5.3.9 References

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