

## 5. Environmental Analysis

### 5.2 AIR QUALITY

This section of the Draft Environmental Impact Report (DEIR) evaluates the potential for the Residences at Nohl Ranch (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 (SCAQMD). The analysis focuses on air pollution from regional emissions and localized pollutant concentrations. In this chapter “emissions” refers to the actual quantity of pollutant, measured in pounds per day (lbs/day) and “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 ( $\mu\text{g}/\text{m}^3$ ). 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 provided by LSA (see Appendix O). Cumulative impacts related to air quality are based on the regional boundaries of the South Coast Air Basin (SoCAB).

#### 5.2.1 Environmental Setting

##### 5.2.1.1 REGULATORY BACKGROUND

Ambient air quality standards (AAQS) 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 toxic air contaminants (TACs). The Proposed Project is in the SoCAB and is subject to the rules and regulations imposed by the SCAQMD 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.

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Both California and the federal government have established health-based AAQS for seven air pollutants, which are shown in Table 5.2-1. These pollutants are ozone (O<sub>3</sub>), nitrogen dioxide (NO<sub>2</sub>), carbon monoxide (CO), sulfur dioxide (SO<sub>2</sub>), coarse inhalable particulate matter (PM<sub>10</sub>), fine inhalable particulate matter (PM<sub>2.5</sub>), 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 5.2-1 Ambient Air Quality Standards for Criteria Pollutants**

Pollutant	Averaging Time	California Standard <sup>1</sup>	Federal Primary Standard <sup>2</sup>	Major Pollutant Sources
Ozone (O <sub>3</sub> ) <sup>3</sup>	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 <sub>2</sub> )	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 <sub>2</sub> )	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 <sub>10</sub> )	Annual Arithmetic Mean	20 µg/m <sup>3</sup>	*	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 <sup>3</sup>	150 µg/m <sup>3</sup>	
Respirable Fine Particulate Matter (PM <sub>2.5</sub> ) <sup>4</sup>	Annual Arithmetic Mean	12 µg/m <sup>3</sup>	12 µg/m <sup>3</sup>	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 <sup>3</sup>	
Lead (Pb)	30-Day Average	1.5 µg/m <sup>3</sup>	*	Present source: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline.
	Calendar Quarter	*	1.5 µg/m <sup>3</sup>	
	Rolling 3-Month Average	*	0.15 µg/m <sup>3</sup>	
Sulfates (SO <sub>4</sub> ) <sup>5</sup>	24 hours	25 µg/m <sup>3</sup>	*	Industrial processes.

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**Table 5.2-1 Ambient Air Quality Standards for Criteria Pollutants**

Pollutant	Averaging Time	California Standard <sup>1</sup>	Federal Primary Standard <sup>2</sup>	Major Pollutant Sources
Visibility Reducing Particles	8 hours	ExCo = 0.23/km visibility of 10≥ miles	*	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.
Hydrogen Sulfide	1 hour	0.03 ppm	*	Hydrogen sulfide (H <sub>2</sub> S) 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	*	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; µg/m<sup>3</sup>: micrograms per cubic meter

\* Standard has not been established for this pollutant/duration by this entity.

<sup>1</sup> California standards for O<sub>3</sub>, CO (except 8-hour Lake Tahoe), SO<sub>2</sub> (1 and 24 hour), NO<sub>2</sub>, and particulate matter (PM<sub>10</sub>, PM<sub>2.5</sub>, 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.

<sup>2</sup> National standards (other than O<sub>3</sub>, PM, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The O<sub>3</sub> 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<sub>10</sub>, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m<sup>3</sup> is equal to or less than one. For PM<sub>2.5</sub>, 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.

<sup>3</sup> On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.

<sup>4</sup> On December 14, 2012, the national annual PM<sub>2.5</sub> primary standard was lowered from 15 µg/m<sup>3</sup> to 12.0 µg/m<sup>3</sup>. The existing national 24-hour PM<sub>2.5</sub> standards (primary and secondary) were retained at 35 µg/m<sup>3</sup>, as was the annual secondary standard of 15 µg/m<sup>3</sup>. The existing 24-hour PM<sub>10</sub> standards (primary and secondary) of 150 µg/m<sup>3</sup> also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

<sup>5</sup> On June 2, 2010, a new 1-hour SO<sub>2</sub> 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:

- **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.

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- **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 §§ 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 nonresidential 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. The green building standards became mandatory in the 2010 edition of the code.

#### *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 § 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 § 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 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.

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

- **13 CCR Chapter 10 § 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 § 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 § 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<sub>x</sub>), sulfur dioxide (SO<sub>2</sub>), coarse inhalable particulate matter (PM<sub>10</sub>), fine inhalable particulate matter (PM<sub>2.5</sub>), and lead (Pb) are primary air pollutants. Of these, CO, SO<sub>2</sub>, NO<sub>2</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> are “criteria air pollutants,” which means that AAQS have been established for them. VOC and NO<sub>x</sub> are criteria pollutant precursors that form secondary criteria air pollutants through chemical and photochemical reactions in the atmosphere. Ozone (O<sub>3</sub>) and nitrogen dioxide (NO<sub>2</sub>) 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 (SCAQMD 2005; USEPA 2018). The SoCAB is designated under the California and National AAQS as being in attainment of CO criteria levels (CARB 2017).
- **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 (SCAQMD 2005). There are no AAQS for VOCs. However, because they contribute to the formation of O<sub>3</sub>, SCAQMD has established a significance threshold.

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- **Nitrogen Oxides** are a by-product of fuel combustion and contribute to the formation of ground-level O<sub>3</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub>. The two major forms of NO<sub>x</sub> are nitric oxide (NO) and nitrogen dioxide (NO<sub>2</sub>). 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<sub>x</sub> produced by combustion is NO, but NO reacts quickly with oxygen to form NO<sub>2</sub>, creating the mixture of NO and NO<sub>2</sub> commonly called NO<sub>x</sub>. NO<sub>2</sub> is an acute irritant and more injurious than NO in equal concentrations. At atmospheric concentrations, however, NO<sub>2</sub> is only potentially irritating. NO<sub>2</sub> absorbs blue light; the result is a brownish-red cast to the atmosphere and reduced visibility. NO<sub>2</sub> exposure concentrations near roadways are of particular concern for susceptible individuals, including asthmatics, children, and the elderly. Current scientific evidence links short-term NO<sub>2</sub> 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<sub>2</sub> concentrations and increased visits to emergency departments and hospital admissions for respiratory issues, especially asthma (SCAQMD 2005; USEPA 2018). The SoCAB is designated an attainment area for NO<sub>2</sub> under the National and California AAQS (CARB 2017).
- **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<sub>2</sub>. When sulfur dioxide forms sulfates (SO<sub>4</sub>) in the atmosphere, together these pollutants are referred to as sulfur oxides (SO<sub>x</sub>). Thus, SO<sub>2</sub> is both a primary and secondary criteria air pollutant. At sufficiently high concentrations, SO<sub>2</sub> may irritate the upper respiratory tract. Current scientific evidence links short-term exposures to SO<sub>2</sub>, 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<sub>2</sub> 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 (SCAQMD 2005; USEPA 2018). The SoCAB is designated attainment under the California and National AAQS (CARB 2017).
- **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 particles, or PM<sub>10</sub>, 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<sub>2.5</sub>, 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<sub>10</sub> and PM<sub>2.5</sub> 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<sub>2.5</sub>, which penetrates deeply into the lungs, is more likely than PM<sub>10</sub> 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

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symptoms (e.g., irritation of the airways, coughing, or difficulty breathing) (SCAQMD 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.,  $\leq 0.1$  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 (SCAQMD 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,<sup>1</sup> environmental damage,<sup>2</sup> and aesthetic damage<sup>3</sup> (SCAQMD 2005; USEPA 2018). The SoCAB is a nonattainment area for PM<sub>2.5</sub> under California and National AAQS and a nonattainment area for PM<sub>10</sub> under the California AAQS (CARB 2017).<sup>4</sup>

- **Ozone**, or O<sub>3</sub>, is a key ingredient of “smog” and is a gas that is formed when VOCs and NO<sub>x</sub>, both by-products of internal combustion engine exhaust, undergo photochemical reactions in sunlight. O<sub>3</sub> is a secondary criteria air pollutant. O<sub>3</sub> concentrations are generally highest during the summer months when direct sunlight, light winds, and warm temperatures create favorable conditions for its formation. O<sub>3</sub> poses a health threat to those who already suffer from respiratory diseases as well as to healthy people. Breathing O<sub>3</sub> 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<sub>3</sub> also can reduce lung function and inflame the linings of the lungs. Repeated exposure may permanently scar lung tissue. O<sub>3</sub> also affects sensitive vegetation and ecosystems, including forests, parks, wildlife refuges, and wilderness areas. In particular, O<sub>3</sub> harms sensitive vegetation during the growing season (SCAQMD 2005; USEPA 2018). The SoCAB is designated extreme nonattainment under the California AAQS (1-hour and 8-hour) and National AAQS (8-hour) (CARB 2017).
- **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 (SCAQMD 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

<sup>1</sup> PM<sub>2.5</sub> is the main cause of reduced visibility (haze) in parts of the United States.

<sup>2</sup> 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.

<sup>3</sup> Particulate matter can stain and damage stone and other materials, including culturally important objects such as statues and monuments.

<sup>4</sup> CARB approved the SCAQMD’s request to redesignate the SoCAB from serious nonattainment for PM<sub>10</sub> to attainment for PM<sub>10</sub> under the National AAQS on March 25, 2010, because the SoCAB did not violate federal 24-hour PM<sub>10</sub> standards from 2004 to 2007. The EPA approved the State of California’s request to redesignate the South Coast PM<sub>10</sub> nonattainment area to attainment of the PM<sub>10</sub> National AAQS, effective on July 26, 2013.

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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.<sup>5</sup> As a result of these violations, the Los Angeles County portion of the SoCAB is designated as nonattainment under the National AAQS for lead (SCAQMD 2012; CARB 2017). There are no lead-emitting sources associated with this Project, and therefore, lead is not a pollutant of concern for the Proposed Project.

#### *Toxic Air Contaminants*

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 diesel particulate matter (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.

### **Air Quality Management Planning**

SCAQMD is the agency responsible for improving air quality in the SoCAB and ensuring that the National and California AAQS are attained and maintained. SCAQMD 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, SCAQMD 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<sub>2.5</sub> standard by 2025<sup>6</sup>

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<sup>5</sup> 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 (SCAQMD 2012).

<sup>6</sup> The 2016 AQMP requests a reclassification from moderate to serious nonattainment for the 2012 National PM<sub>2.5</sub> standard.

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- 2006 National 24-hour PM<sub>2.5</sub> 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<sub>x</sub> 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 (SCAQMD 2017), which requires reducing NO<sub>x</sub> emissions in the SoCAB to 250 tpd. This means 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<sub>x</sub> emissions would also reduce PM<sub>2.5</sub> concentrations in the SoCAB. However, because the goal is to meet the 2012 federal annual PM<sub>2.5</sub> standard no later than year 2025, SCAQMD is seeking to reclassify the SoCAB from “moderate” to “serious” nonattainment under this federal standard. A “moderate” nonattainment would require meeting the 2012 federal standard by no later than 2021.

Overall, 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. Strategies outlined in the 2016 AQMP would be implemented in collaboration between CARB and the EPA (SCAQMD 2017).

#### *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.

#### *SCAQMD Rules and Regulations*

All projects are subject to SCAQMD 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 US 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

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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 SCAQMD. Any person who supplies, sells, offers for sale, or manufactures any architectural coating for use on projects in the SCAQMD 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.

#### 5.2.1.2 EXISTING CONDITIONS

##### South Coast Air Basin

The Project Site is in the SoCAB, which includes all of Orange County and the non-desert 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 (SCAQMD 2005).

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#### *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 climatological station nearest to the Project Site is the Anaheim Monitoring Station (ID 040192). The average low is reported at 46.9°F in December, and the average high is 87.1°F in August (WRCC 2018).

In contrast to a very steady pattern of temperature, rainfall is seasonally and annually highly variable. Almost all rain falls from October through April. Summer rainfall is normally restricted to widely scattered thundershowers near the coast, with slightly heavier shower activity in the east and over the mountains. The historical rainfall average for the Project area is 14.09 inches per year (WRCC 2018).

#### *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 (SCAQMD 1993).

#### *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 (SCAQMD 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 area (SCAQMD 2005).

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#### 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 5.2-2.

**Table 5.2-2 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 <sub>10</sub>	Serious Nonattainment	Attainment
PM <sub>2.5</sub>	Nonattainment	Nonattainment
CO	Attainment	Attainment
NO <sub>2</sub>	Nonattainment (SR-60 Near Road only) <sup>1</sup>	Attainment/Maintenance
SO <sub>2</sub>	Attainment	Attainment
Lead	Attainment	Nonattainment (Los Angeles County only) <sup>2</sup>
All others	Attainment/Unclassified	Attainment/Unclassified

Source: CARB 2017.

<sup>1</sup> On February 21, 2019, CARB/s Board is considering approving the separation of the area that runs along the CA-60 corridor through portions of Riverside, San Bernardino, and Los Angeles Counties from the remainder of the South Coast Air Basin for designation purposes. The Board is proposing to designate this corridor as nonattainment. The remainder of the South Coast Air Basin would remain in attainment for NO<sub>2</sub>.

<sup>2</sup> 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 IV

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 2008, SCAQMD conducted its third update, MATES III, based on the Office of Environmental Health Hazards Assessment’s (OEHHA) 2003 Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments (2003 HRA Guidance Manual). The results showed that the overall risk for excess cancer from a lifetime

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exposure to ambient levels of air toxics was about 1,200 in a million. The largest contributor to this risk was diesel exhaust, which accounted for 84 percent of the cancer risk (SCAQMD 2008a).

SCAQMD recently released the fourth update, MATES IV, which was also based on OEHHA's 2003 HRA Guidance Manual. The results showed that the overall monitored risk for excess cancer from a lifetime exposure to ambient levels of air toxics decreased to approximately 418 in one million. Compared to the 2008 MATES III, monitored excess cancer risks decreased by approximately 65 percent. Approximately 90 percent of the risk is attributed to mobile sources, and 10 percent is attributed to TACs from stationary sources, such as refineries, metal processing facilities, gas stations, and chrome plating facilities. The largest contributor to this risk was diesel exhaust, which accounted for approximately 68 percent of the air toxics risk. Compared to MATES III, MATES IV found substantial improvement in air quality and associated decrease in air toxics exposure. As a result, the estimated basinwide population-weighted risk decreased by approximately 57 percent since MATES III (SCAQMD 2015a).

OEHHA updated the guidelines for estimating cancer risks on March 6, 2015 (OEHHA 2015). The new method uses higher estimates of cancer potency during early life exposures, which result in a higher calculation of risk. There are also differences in the assumptions on breathing rates and length of residential exposures. When combined, SCAQMD estimates that risks for a given inhalation exposure level will be about 2.7 times higher than the risk identified in MATES IV using the 2015 OEHHA guidance methodology (e.g., 2.7 times higher than 418 in one million overall excess cancer risk) (SCAQMD 2015a).

### 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 SCAQMD. The Proposed Project is located within Source Receptor Area (SRA) 17 – Central Orange County.<sup>7</sup> The air quality monitoring station closest to the Proposed Project is the Orange – Anaheim Pampas Lane Monitoring Station, which is one of 31 monitoring stations SCAQMD operates and maintains within the SoCAB.<sup>8</sup> Data from this station is summarized in Table 5.2-3. The data show that the area regularly exceeds the state and federal one-hour and eight-hour O<sub>3</sub> standards within the last five recorded years. Additionally, the area has regularly exceeded the state PM<sub>10</sub> standards and has exceeded the federal PM<sub>2.5</sub> standard.

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<sup>7</sup> Per SCAQMD 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 SCAQMD's jurisdiction.

<sup>8</sup> 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>.

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**Table 5.2-3 Ambient Air Quality Monitoring Summary**

Pollutant/Standard	Number of Days Thresholds Were Exceeded and Maximum Levels				
	2013	2014	2015	2016	2017
<b>Ozone (O<sub>3</sub>)</b>					
State 1-Hour ≥ 0.09 ppm (days exceed threshold)	0	2	1	2	0
Federal 8-hour ≥ 0.07 ppm (days exceed threshold)	0	6	1	4	4
Federal 8-Hour > 0.075 ppm (days exceed threshold)	0	4	1	0	2
Max. 1-Hour Conc. (ppm)	0.084	0.111	0.100	0.103	0.090
Max. 8-Hour Conc. (ppm)	0.070	0.081	0.080	0.074	0.076
<b>Nitrogen Dioxide (NO<sub>2</sub>)</b>					
State 1-Hour ≥ 0.18 ppm (days exceed threshold)	0	0	0	0	0
Federal 1-Hour ≥ 0.100 ppm (days exceed threshold)	0	0	0	0	0
Max. 1-Hour Conc. (ppm)	0.081	0.075	0.059	0.064	0.081
<b>Coarse Particulates (PM<sub>10</sub>)</b>					
State 24-Hour > 50 µg/m <sup>3</sup> (days exceed threshold)	1	2	2	*	*
Federal 24-Hour > 150 µg/m <sup>3</sup> (days exceed threshold)	0	0	0	0	0
Max. 24-Hour Conc. (µg/m <sup>3</sup> )	77	85	59	74	95.7
<b>Fine Particulates (PM<sub>2.5</sub>)</b>					
Federal 24-Hour > 35 µg/m <sup>3</sup> (days exceed threshold)	1	4	3	1	7
Max. 24-Hour Conc. (µg/m <sup>3</sup> )	37.8	45.0	45.8	44.4	53.9

Source: CARB 2018. Data obtained from the Orange – Anaheim-Pampas Lane Monitoring Station.  
ppm: parts per million; ppb: parts per billion; µg/m<sup>3</sup>: micrograms per cubic meter  
Notes: \* Data not available.

### Existing Emissions

The Project Site is currently developed with an occupied commercial center known as the Serrano Center with seven 1-story buildings. The buildings have been leased out by various commercial and neighborhood businesses, such as a gym, dry cleaner, and swim school. The following table summarizes existing emissions associated with the daily activities at the Serrano Center.

**Table 5.2-4 Existing Criteria Air Pollutant Emissions**

Phase	Operation-Related Regional Emissions (pounds/day)					
	VOC	NO <sub>x</sub>	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Area	1	<1	<1	<1	<1	<1
Energy	<1	<1	<1	<1	<1	<1
Mobile <sup>1</sup>	2	3	24	<1	7	2
<b>Total</b>	<b>3</b>	<b>3</b>	<b>24</b>	<b>&lt;1</b>	<b>7</b>	<b>2</b>

Source: CalEEMod Version 2016.3.2.

Note: Based on highest winter or summer emissions generated from CalEEMod.

<sup>1</sup> Based on year 2019 emission factors. Approximately 1,003 ADTs are assumed for weekdays and 1,115 ADTs for weekends.

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#### Sensitive Receptors

Some land uses are considered more sensitive to air pollution 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 nearest sensitive receptors to the Project Site are the single-family residences to the north, east, and south and the Anaheim Hills Elementary School to the southwest.

#### 5.2.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. 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.

The Initial Study, included as Appendix A, substantiates that impacts associated with the following thresholds would be less than significant:

- Threshold AQ-4

This impact will not be addressed in the following analysis.

#### 5.2.2.1 SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT THRESHOLDS

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. SCAQMD has established thresholds of significance for regional air quality emissions for construction activities and project operation based on

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substantial evidence. The analysis of the Proposed Project's air quality impacts follows the guidance and methodologies recommended in SCAQMD's *CEQA Air Quality Handbook* and the significance thresholds on SCAQMD's website (SCAQMD 1993).<sup>9</sup>

#### Regional Significance Thresholds

SCAQMD has adopted regional construction and operational emissions thresholds to determine a project's cumulative impact on air quality in the SoCAB, shown in Table 5.2-5. 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, SCAQMD has not developed thresholds for them.

**Table 5.2-5 SCAQMD 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 <sub>x</sub> )	100 lbs/day	55 lbs/day
Carbon Monoxide (CO)	550 lbs/day	550 lbs/day
Sulfur Oxides (SO <sub>x</sub> )	150 lbs/day	150 lbs/day
Particulates (PM <sub>10</sub> )	150 lbs/day	150 lbs/day
Particulates (PM <sub>2.5</sub> )	55 lbs/day	55 lbs/day

Source: SCAQMD 2015b.

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<sub>2.5</sub>, TACs)
- Aggravates respiratory disease (O<sub>3</sub>, PM<sub>2.5</sub>)
- Increases bronchitis (O<sub>3</sub>, PM<sub>2.5</sub>)
- Causes chest discomfort, throat irritation, and increased effort to take a deep breath (O<sub>3</sub>)
- Reduces resistance to infections and increases fatigue (O<sub>3</sub>)
- Reduces lung growth in children (PM<sub>2.5</sub>)
- Contributes to heart disease and heart attacks (PM<sub>2.5</sub>)

<sup>9</sup> SCAQMD'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>.

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- Contributes to premature death ( $O_3$ ,  $PM_{2.5}$ )
- Contributes to lower birth weight in newborns ( $PM_{2.5}$ ) (SCAQMD 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 (SCAQMD 2015c).

Mass emissions in Table 5.2-5 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, and it is speculative to identify how many more individuals in the air basin would be affected by the health effects listed above. SCAQMD 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, SCAQMD prepares an AQMP that details regional programs to attain the AAQS. The Proposed Project's consistency with the AQMP is analyzed in Impact 5.2-1.

### 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 SCAQMD did not predict a violation of CO standards at the busiest intersections in Los Angeles during the peak morning and afternoon periods.<sup>10</sup> As identified in SCAQMD'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

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<sup>10</sup> 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.

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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).<sup>11</sup>

#### Localized Significance Thresholds

SCAQMD identifies localized significance thresholds (LST), shown in Table 5.2-6. Emissions of NO<sub>2</sub>, CO, PM<sub>10</sub>, and PM<sub>2.5</sub> generated at a project site (offsite mobile-source emissions are not included in the localized significance threshold 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.

**Table 5.2-6 SCAQMD 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 <sub>2</sub> Standard (CAAQS)	0.18 ppm
Annual NO <sub>2</sub> Standard (CAAQS)	0.03 ppm
24-Hour PM <sub>10</sub> Standard – Construction (SCAQMD) <sup>1</sup>	10.4 µg/m <sup>3</sup>
24-Hour PM <sub>2.5</sub> Standard – Construction (SCAQMD) <sup>1</sup>	10.4 µg/m <sup>3</sup>
24-Hour PM <sub>10</sub> Standard – Operation (SCAQMD) <sup>1</sup>	2.5 µg/m <sup>3</sup>
24-Hour PM <sub>2.5</sub> Standard – Operation (SCAQMD) <sup>1</sup>	2.5 µg/m <sup>3</sup>
Annual Average PM <sub>10</sub> Standard (SCAQMD) <sup>1</sup>	1.0 µg/m <sup>3</sup>

Source: SCAQMD 2015b.

ppm: parts per million; µg/m<sup>3</sup>: micrograms per cubic meter

<sup>1</sup> Threshold is based on SCAQMD Rule 403. Since the SoCAB is in nonattainment for PM<sub>10</sub> and PM<sub>2.5</sub>, the threshold is established as an allowable change in concentration. Therefore, background concentration is irrelevant.

To assist lead agencies, SCAQMD developed screening-level LSTs to back-calculate the mass amount (pounds per day) of emissions generated onsite that would trigger the levels shown in Table 5.2-7 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 screening-level LSTs in SRA 17 are shown in Table 5.2-7, *SCAQMD Screening-Level Localized Significance Thresholds*. For construction activities, LSTs are based on the acreage disturbed per day based on equipment use

<sup>11</sup> 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 SCAQMD prepared as part of its 2003 AQMP to provide support in seeking CO attainment for the SoCAB. Based on the analysis prepared by SCAQMD, 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.

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(SCAQMD 2011). The different types of construction activities would require different equipment mixes, resulting in multiple LSTs. For operation, the screening-level LSTs are based on project site size up to five acres per SCAQMD methodology (SCAQMD 2008b).

**Table 5.2-7 SCAQMD Screening-Level Localized Significance Thresholds**

Acreage Disturbed	Threshold (lbs/day)			
	Nitrogen Oxides (NO <sub>x</sub> ) <sup>1</sup>	Carbon Monoxide (CO) <sup>1</sup>	Coarse Particulates (PM <sub>10</sub> ) <sup>2</sup>	Fine Particulates (PM <sub>2.5</sub> ) <sup>2</sup>
<b>Construction Phase</b>				
1.00-Acre or Less LSTs	81	485	4	3
1.31-Acre or Less LSTs	92	557	5	3
2.50-Acre or Less LSTs	126	805	7	5
3.15-Acre or Less LSTs	141	921	9	5
<b>Operational Phase</b>				
3.15-acre LST	141	921	2	1

Source: SCAQMD 2008b, 2011. Based on receptors in SRA 17.

<sup>1</sup> Construction and operation LSTs are based on sensitive receptors within 82 feet (25 meters) of the Project Site.

### Health Risk Thresholds

Whenever a project would require use of chemical compounds that have been identified in SCAQMD Rule 1401, placed on CARB's air toxics list pursuant to AB 1807, or placed on the EPA's National Emissions Standards for Hazardous Air Pollutants, a health risk assessment is required by the SCAQMD. Table 5.2-8, *Toxic Air Contaminants Incremental Risk Thresholds*, lists the TAC incremental risk thresholds for operation of a project. The purpose of this environmental evaluation is to identify the significant effects of the Proposed Project on the environment, not the significant effects of the environment on the Proposed Project. *California Building Industry Association v. Bay Area Air Quality Management District* (2015) 62 Cal.4th 369 (Case No. S213478). CEQA does not require an analysis of the environmental effects of attracting development and people to an area. However, the environmental document must analyze the impacts of environmental hazards on future users when a proposed project exacerbates an existing environmental hazard or condition. Residential, commercial, and office uses do not use substantial quantities of TACs and typically do not exacerbate existing hazards, so these thresholds are typically applied to new industrial projects.

**Table 5.2-8 SCAQMD Toxic Air Contaminants Incremental Risk Thresholds**

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

Source: SCAQMD 2015b.

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### 5.2.3 Plans, Programs, and Policies

#### Regulatory Requirements

- RR AIR-1 New buildings are required to achieve the current California Building Energy and Efficiency Standards (Title 24, Part 6) and California Green Building Standards Code (CALGreen) (Title 24, Part 11). The 2016 Building and Energy Efficiency Standards were effective starting January 1, 2017, and the 2019 Building and Energy Efficiency Standards will become effective January 1, 2020. The Building Energy and Efficiency Standards and CALGreen are updated tri-annually with a goal to achieve zero net energy (ZNE) for residential buildings by 2020 and nonresidential buildings by 2030.
- RR AIR-2 New buildings are required to adhere to the California Green Building Standards Code (CALGreen) requirement to provide bicycle parking for new nonresidential 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).
- RR AIR-3 Construction activities will be conducted in compliance with the California Code of Regulations, Title 13, Section 2499, which requires that nonessential idling of construction equipment be restricted to five minutes or less.
- RR 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 the following:
- 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.

### 5.2.4 Environmental Impacts

#### 5.2.4.1 METHODOLOGY

This air quality evaluation was prepared in accordance with the requirements of CEQA to determine if significant air quality impacts are likely in conjunction with the type and scale of development associated with the Proposed Project. Air quality emissions modeling was completed for the Proposed Project using the California Emissions Estimator Model (CalEEMod) recommended by the SCAQMD. Air quality modeling datasheets are in Appendix C of this DEIR and are based on the following:

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- **Transportation:** Average trip generation data was provided by LSA (see Appendix O). The existing land uses generate 1,003 average daily weekday trips (ADT) and 1,115 weekend ADTs and the Proposed Project generates 439 weekday ADTs, 472 Saturday ADTs, and 364 Sunday ADTs. The CalEEMod default vehicle mix was adjusted to exclude buses and motorhomes emissions.
- **Area Sources:** Area and stationary sources are based on the CalEEMod defaults for emissions generated from the use of consumer products and cleaning supplies. Additionally, emissions from wood-burning stoves and fireplaces have been excluded based on the project description and site plans.
- **Energy:** The proposed buildings would be built to meet the 2019 Building Energy Efficiency Standards.
- **Construction:** A construction schedule of the Proposed Project is based on CalEEMod defaults and projected out over a two-year time frame with a 2022 buildout. A demolition phase for the Proposed Project would involve the removal of the existing structures and asphalt. All demolition debris will be hauled to an off-site location. The remaining construction activities and equipment mix are based on CalEEMod defaults, as are worker and vendor trips. Vendor trips have been adjusted to account for additional concrete and water trucks. Hauling trips have also been adjusted based on the demolition hauling capacity. Table 5.2-9 shows the assumed construction activities, their duration, and equipment mix for each activity.

**Table 5.2-9 Construction Activities, Phasing, and Equipment**

Activities	Duration (Days) <sup>1</sup>	Equipment
Demolition	39	1 concrete/industrial saw; 3 excavators; 2 rubber-tired dozers
Site Preparation	6	3 rubber-tired dozers; 4 tractors/loaders/backhoes; 1 water truck
Grading	12	1 excavator; 1 grader; 1 rubber-tired dozer; 3 tractors/loaders/backhoes
Building Construction	427	1 crane; 3 forklifts; 1 generator set; 3 tractors/loaders/backhoes; 1 welder
Asphalt Paving	19	2 cement and mortar mixers; 1 paver; 2 paving equipment; 2 rollers; 1 tractor/loader/backhoe
Architectural Coating	19	1 air compressor

<sup>1</sup> Based on CalEEMod defaults projected over two years.

#### 5.2.4.2 IMPACT ANALYSIS

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

#### **Impact 5.2-1: The Proposed Project is consistent with SCAQMD's 2016 Air Quality Management Plan. [Threshold AQ-1]**

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

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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 regional emissions inventory for the SoCAB is compiled by SCAQMD and SCAG. Regional population, housing, and employment projections developed by SCAG are based in part on cities' general plan land use designations. These projections form the foundation for the emissions inventory of the AQMP. These demographic trends are incorporated into the regional transportation plan/sustainable communities strategy, compiled by SCAG to determine priority transportation projects and vehicle miles traveled in the SCAG region. As a result, changes in population, housing, or employment growth projections have the potential to affect SCAG's demographic projections and therefore the assumptions in SCAQMD's AQMP. Typically, only large, regionally significant projects have the potential to affect the regional growth projections. In addition, the consistency analysis is generally only required in connection with the adoption of general plans, specific plans, and significant projects.

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 of more than 500 dwelling units. The Proposed Project would result a growth of the population in the area by adding 58 residential units, and therefore would not be considered a regionally significant project that would warrant Intergovernmental Review by SCAG under CEQA Guidelines Section 15206. As discussed in Section 3.14(a) of the IS/NOP (Appendix A of this DEIR), the Proposed Project would be within the projected growth anticipated by the City. Furthermore, the long-term emissions generated by the Proposed Project would not generate criteria air pollutants that exceed the SCAQMD significance thresholds, which were established to determine whether a project has the potential to cumulatively contribute to the SoCAB's nonattainment designations (see Impacts 5.2-2 and 5.2-3). Therefore, implementation of the Proposed Project would not interfere with or obstruct implementation of the AQMP, and impacts would be less than significant.

*Level of Significance before Mitigation:* Less than significant.

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**Impact 5.2-2 Construction activities associated with the Proposed Project would not generate short-term emissions in exceedance of SCAQMD's threshold criteria, and therefore would not cumulatively contribute to the nonattainment designations of the SoCAB. [Thresholds AQ-2]**

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The SoCAB is designated nonattainment for O<sub>3</sub> and PM<sub>2.5</sub> under the California and National AAQS, nonattainment for PM<sub>10</sub> under the California AAQS,<sup>12</sup> and nonattainment for lead (Los Angeles County only) under the National AAQS. According to SCAQMD methodology, any project that does not exceed or can be mitigated to less than the daily threshold values would not add significantly to a cumulative impact (SCAQMD 1993).

Construction activities produce combustion emissions from various sources, such as onsite heavy-duty construction vehicles, vehicles hauling materials to and from the site, and motor vehicles transporting the construction crew. Site preparation activities produce fugitive dust emissions (PM<sub>10</sub> and PM<sub>2.5</sub>) from demolition

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<sup>12</sup> Portions of the SoCAB along SR-60 in Los Angeles, Riverside, and San Bernardino counties are proposed nonattainment for NO<sub>2</sub> under the California AAQS.

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and soil-disturbing activities, such as grading. Air pollutant emissions from construction activities onsite would vary daily as construction activity levels change.

The Proposed Project is anticipated to be constructed over an approximately 24-month period from January 2020 to January 2022. Construction air pollutant emissions are based on the preliminary information in Table 5.2-9. Construction would entail demolition of existing asphalt and buildings, site preparation, grading, construction of the proposed structures and buildings, paving, and architectural coating. An estimate of maximum daily construction emissions for the Proposed Project is provided in Table 5.2-10. As shown in the table, Project-related construction activities would not generate emissions that would exceed the SCAQMD regional significance thresholds for construction and would not cumulatively contribute to the nonattainment of the SoCAB. Therefore, Project-related construction activities would result in less than significant regional air quality impacts.

**Table 5.2-10 Maximum Daily Regional Construction Emissions**

Construction Phase	Pollutants (pounds per day) <sup>1, 2</sup>					
	VOC	NO <sub>x</sub>	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Asphalt and Building Demolition	3	36	23	<1	3	2
Site Preparation	4	43	22	<1	10	6
Grading	2	26	17	<1	4	3
Building Demolition	2	21	19	<1	2	1
Paving	1	11	13	<1	1	1
Architectural Coating	40	2	2	<1	<1	<1
Maximum Daily Emissions	12	55	34	<1	6	4
SCAQMD Regional Construction Threshold	75	100	550	150	150	55
<b>Significant?</b>	No	No	No	No	No	No

Source: CalEEMod Version 2016.3.2

Emissions totals may not equal 100 percent due to rounding.

<sup>1</sup> Based on the preliminary information provided by the Applicant. Where specific information regarding Project-related construction activities was not available, construction assumptions were based on CalEEMod defaults, which are based on construction surveys conducted by SCAQMD of construction equipment.

<sup>2</sup> Includes implementation of fugitive dust control measures required by SCAQMD 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.

*Level of Significance before Mitigation:* Less than significant.

**Impact 5.2-3: Long-term operation of the Proposed Project would not generate emissions in exceedance of SCAQMD's threshold criteria, and therefore would not cumulatively contribute to the nonattainment designations of the SoCAB. [Thresholds AQ-2]**

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The SoCAB is designated nonattainment for O<sub>3</sub> and PM<sub>2.5</sub> under the California and National AAQS, nonattainment for PM<sub>10</sub> under the California AAQS<sup>13</sup>, and nonattainment for lead (Los Angeles County only) under the National AAQS. According to SCAQMD methodology, any project that does not exceed or can be mitigated to less than the daily threshold values would not add significantly to a cumulative impact (SCAQMD 1993).

Buildout of the Proposed Project would result in generation of criteria air pollutant emissions from transportation (i.e., vehicle trips associated with the proposed new use), area (e.g., landscaping equipment, architectural coating), and energy (i.e., natural gas used for heating and cooking) sources. Criteria air pollutant emissions were modeled using CalEEMod, version 2016.3.2. The following discusses the potential operation phase regional air quality impacts associated with the Proposed Project.

As mentioned, ADTs associated with the Proposed Project were estimated to be 439 on weekdays, 472 on Saturdays, and 364 on Sundays. When compared to the Project Site's existing use, the Proposed Project would result in a net decrease of 564 weekday, 643 Saturday, and 751 ADTs. The net difference between the existing land use operations emissions and the proposed land use operations is shown in Table 5.2-11. As indicated in the table, the Proposed Project would not exceed the regional significance thresholds for operation-related emissions, and therefore would not cumulatively contribute to the nonattainment designations of the SoCAB.

**Table 5.2-11 Net Change in Maximum Daily Regional Operational Phase Emissions**

Source	Criteria Air Pollutants (lbs/day)					
	VOC	NO <sub>x</sub>	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
<b>Existing Land Use 2022 Emissions</b>						
Area	1	<1	<1	<1	<1	<1
Energy	<1	<1	<1	<1	<1	<1
Mobile	1	2	19	<1	7	2
Total	2	2	19	<1	7	2
<b>Proposed Land Use 2022 Emissions</b>						
Area	3	<1	5	<1	<1	<1
Energy	<1	<1	<1	<1	<1	<1
Mobile	1	1	8	<1	3	1
Total	3	1	13	<1	3	1
<b>Net Change in Emissions</b>						
Area	2	<1	5	<1	<1	<1
Energy	<1	<1	<1	<1	<1	<1
Mobile	(-) <1	(-) <1	(-) <1	(-) <1	(-) <1	(-) <1

<sup>13</sup> Portions of the SoCAB along SR-60 in Los Angeles, Riverside, and San Bernardino counties are proposed nonattainment for NO<sub>2</sub> under the California AAQS.

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**Table 5.2-11 Net Change in Maximum Daily Regional Operational Phase Emissions**

Source	Criteria Air Pollutants (lbs/day)					
	VOC	NO <sub>x</sub>	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Total	1	(-) <1	(-) <1	(-) <1	(-) <1	(-) <1
SCAQMD Regional Thresholds	55	55	550	150	150	55
<b>Exceeds Regional Thresholds?</b>	No	No	No	No	No	No

Source: CalEEMod Version 2016.3.2. Highest winter or summer emissions are reported.  
lbs/day = pounds per day  
(-) = negative value

*Level of Significance before Mitigation:* Less than significant.

**Impact 5.2-4: The Proposed Project could expose sensitive receptors to substantial pollutant concentrations. [Threshold AQ-3]**

A project could expose sensitive receptors to elevated pollutant concentrations during construction activities if it would cause or contribute significantly to elevated levels. The following describes changes in localized impacts from short-term construction activities and long-term operation of the Proposed Project.

**Localized Construction Impacts**

The Proposed Project could expose sensitive receptors to elevated pollutant concentrations during construction activities if it would cause or contribute significantly to elevated levels. Unlike the mass of construction and operations emissions shown in the regional emissions analysis in Tables 5.2-10 and 5.2-11, which are described in pounds per day, localized concentrations refer to an amount of pollutant in a volume of air (ppm or µg/m<sup>3</sup>) and can be correlated to potential health effects.

*Construction-Phase LSTs*

Screening-level LSTs (pounds per day) are the amount of Project-related mass emissions generated at which localized concentrations (ppm or µg/m<sup>3</sup>) could exceed the AAQs for criteria air pollutants for which the SoCAB is designated nonattainment. The screening-level LSTs are based on the Project Site size and distance to the nearest sensitive receptor and are based on the California AAQS, which are the most stringent AAQS, established to protect sensitive receptors most susceptible to further respiratory distress. Table 5.2-12 shows the maximum daily construction emissions (pounds per day) generated during onsite construction activities at the Project Site compared with the SCAQMD's screening-level LSTs thresholds. Onsite emissions include fugitive dust emissions and exhaust emissions associated with operation of off-road construction equipment in addition to fugitive dust from the movement of dirt.

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**Table 5.2-12 Maximum Daily Onsite Construction Emissions**

Source	Pollutants (pounds per day) <sup>1,2</sup>			
	NO <sub>x</sub>	CO	PM <sub>10</sub>	PM <sub>2.5</sub>
Demolition	33	22	2	2
Paving	11	12	<1	<1
Architectural Coating	2	2	<1	<1
1.00-Acre or Less LSTs	81	485	4	3
<b>Exceeds LST?</b>	No	No	No	No
Building Construction	20	17	1	1
1.31-Acre or Less LSTs	92	557	4.62	3.31
<b>Exceeds LST?</b>	No	No	No	No
Grading	26	16	4	3
2.50-Acre or Less LSTs	126	805	7	5
<b>Exceeds LST?</b>	No	No	No	No
Site Preparation	42	22	10	6
3.15-Acre or Less LSTs	141	921	9	5
<b>Exceeds LST?</b>	No	No	<b>Yes</b>	<b>Yes</b>

Source: CalEEMod Version 2016.3.2; SCAQMD 2008, 2011. In accordance with SCAQMD methodology, only on-site stationary sources and mobile equipment on the Project Site are included in the analysis. Construction LSTs are based on sensitive receptors within 82 feet (25 meters) of the Project Site. Emissions totals may not equal 100 percent due to rounding.

<sup>1</sup> Based on the information provided by the Applicant. Where specific information regarding Project-related construction activities was not available, construction assumptions were based on CalEEMod defaults, which are based on construction surveys conducted by SCAQMD of construction equipment.

<sup>2</sup> Includes implementation of fugitive dust control measures required by SCAQMD 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.

### Health Risk

SCAQMD currently does not require health risk assessments to be conducted for short-term emissions from construction equipment. Emissions from construction equipment primarily consist of diesel particulate matter. In March 2015 the OEHHA adopted an updated guidance document for the preparation of health risk assessments. OEHHA developed a cancer risk factor and noncancer chronic reference exposure level for DPM, but these factors are based on continuous exposure over a 30-year time frame. No short-term acute exposure levels have been developed for DPM. The Proposed Project would be constructed in stages over approximately two years, which would limit the exposure to receptors. Additionally, construction activities would not exceed the screening-level LST significance thresholds with the implementation of Mitigation Measure AQ-1. For these reasons, it is anticipated that construction emissions would not pose a threat to off-site receptors near the Proposed Project, and Project-related construction health impacts would be less than significant.

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**Localized Operational Impacts**

*Operational Phase LSTs*

Operation of the Proposed Project would not generate substantial quantities of emissions from onsite, stationary sources. Land uses that have the potential to generate substantial stationary sources of emissions that would require a permit from SCAQMD include industrial land uses, such as chemical processing and warehousing operations where substantial truck idling could occur onsite. The Proposed Project does not fall within these categories of uses. While operation of the Proposed Project could result in the use of standard onsite mechanical equipment such as heating, ventilation, and air conditioning units in addition to occasional use of landscaping equipment for Project Site maintenance, air pollutant emissions generated from these activities compared to the existing land use would be nominal, as shown in Table 5.2-13, and would not exceed SCAQMD’s screening-level thresholds for onsite operational emissions. Therefore, net localized air quality impacts from Project-related operations would be less than significant.

**Table 5.2-13 Net Maximum Daily Onsite Localized Operation Emissions**

Source	Pollutants (pounds per day)			
	NO <sub>x</sub>	CO	PM <sub>10</sub>	PM <sub>2.5</sub>
Area	<1	5	<1	<1
SCAQMD 3.15-acre LST	141	921	2	1
<b>Exceeds LST?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

Sources: CalEEMod Version 2016.3.2.; SCAQMD 2008.  
Notes: Operation LSTs are based on sensitive receptors within 82 feet (25 meters) of the Project Site.  
Emissions totals may not equal 100 percent due to rounding.

*CO Hotspots*

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 mixing is substantially limited—in order to generate a significant CO impact. The Proposed Project would result in a high of up to approximately 21 peak hour trips and would be below the CO hotspots screening criteria (LSA 2018). Thus, implementation of the Proposed Project would not produce the volume of traffic required to generate a CO hotspot. Therefore, implementation of the Proposed Project would not have the potential to substantially increase CO hotspots at intersections near the Project Site, and impacts would be less than significant.

**Level of Significance before Mitigation:** Localized operational impacts would be less than significant, but construction emissions could exceed the California AAQS and expose sensitive receptors to substantial pollutant concentrations. Therefore, Impact 5.2-4 would be potentially significant.

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#### 5.2.5 Cumulative Impacts

In accordance with SCAQMD's 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. Consistent with the methodology, projects that do not exceed the regional significance thresholds would not result in significant cumulative impacts. Cumulative projects in the local area include new development and general growth in the Proposed Project area. The greatest source of emissions in the SoCAB is mobile sources. Due to the extent of the area potentially impacted by cumulative emissions (i.e., the SoCAB), SCAQMD considers a project cumulatively significant when Project-related emissions exceed the SCAQMD regional emissions thresholds shown in Table 5.2-5 (SCAQMD 1993).

##### Construction

The SoCAB is designated nonattainment for O<sub>3</sub> and PM<sub>2.5</sub> under the California and National AAQS and nonattainment for PM<sub>10</sub> under the California AAQS,<sup>14</sup> and nonattainment for lead (Los Angeles County only) under the National AAQS. Construction of cumulative projects will further degrade the regional and local air quality. Air quality will be temporarily impacted during construction activities. The Proposed Project's contribution to cumulative air quality impacts would be cumulatively considerable and significant. However, as discussed below, implementation of mitigation would reduce Project-related construction emissions to below the SCAQMD significance thresholds on a project and cumulative basis.

##### 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 SCAQMD to be a substantial source of air pollution and does not make a cumulatively considerable contribution to a cumulative air quality impact. Operation of the Proposed Project would not result in emissions in excess of the SCAQMD regional emissions thresholds for VOC, CO, NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> (see Table 5.2-11); therefore, the Proposed Project would not cumulatively contribute to significant health impacts in the SoCAB. Air pollutant emissions associated with operation of the Proposed Project would not be cumulatively considerable.

*Level of Significance before Mitigation:* Cumulative impacts would be less than significant.

#### 5.2.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, some impacts would be less than significant: 5.2-1, 5.2-2, and 5.2-3.

Without mitigation, this impact would be **potentially significant**:

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<sup>14</sup> Portions of the SoCAB along SR-60 in Los Angeles, Riverside, and San Bernardino counties are proposed nonattainment for NO<sub>2</sub> under the California AAQS.

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- **Impact 5.2-4** The Proposed Project could potentially expose sensitive receptors to substantial pollutant concentrations.

### 5.2.7 Mitigation Measures

#### Impact 5.2-4

AQ-1

Construction contractors shall be required to use equipment that meets the EPA Tier 4 Interim emissions standards for off-road diesel-powered construction equipment with more than 50 horsepower, unless it can be demonstrated to the City that such equipment is not available. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 4 diesel emissions control strategy for a similarly sized engine, as defined by CARB's regulations.

Prior to construction, the Project engineer shall ensure that all demolition and grading plans clearly show the requirement for EPA Tier 4 Interim or higher emissions standards for construction equipment over 50 horsepower. During construction, the construction contractor shall maintain a list of all operating equipment in use on the construction site for verification by the City. The construction equipment list shall state the makes, models, and numbers of construction equipment onsite. 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 five minutes or less in compliance with Section 2449 of the California Code of Regulations, Title 13, Article 4.8, Chapter 9.

### 5.2.8 Level of Significance After Mitigation

#### Impact 5.2-4

Implementation of Mitigation Measure AQ-1 would require use of construction equipment with US EPA Tier 4 engines and would limit the exhaust emissions from the operation of construction equipment. As shown in Table 5.2-14, with the implementation of Mitigation Measure AQ-1, construction-related PM<sub>10</sub> and PM<sub>2.5</sub> emissions would be reduced to below the SCAQMD screening-level LST. Because PM<sub>10</sub> and PM<sub>2.5</sub> would be reduced to below the screening-level LSTs, Impact 5.2-4 would be reduced to less than significant.

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**Table 5.2-14 Maximum Daily Onsite Construction Emissions, With Mitigation**

Source	Pollutants (pounds per day) <sup>1, 2, 3</sup>			
	NO <sub>x</sub>	CO	PM <sub>10</sub>	PM <sub>2.5</sub>
Demolition	14	25	1	<1
Paving	8	14	<1	<1
Architectural Coating	1	2	<1	<1
1.00-Acre or Less LSTs	81	485	4	3
<b>Exceeds LST?</b>	No	No	No	No
Building Construction	11	18	<1	<1
1.31-Acre or Less LSTs	92	557	4.62	3.31
<b>Exceeds LST?</b>	No	No	No	No
Grading	10	19	3	1
2.50-Acre or Less LSTs	126	805	7	5
<b>Exceeds LST?</b>	No	No	No	No
Site Preparation	12	23	8	4
3.15-Acre or Less LSTs	141	921	9	5
<b>Exceeds LST?</b>	No	No	No	No

Source: CalEEMod Version 2016.3.2; SCAQMD 2008, 2011.

Notes: In accordance with SCAQMD methodology, only on-site stationary sources and mobile equipment occurring on the Project Site are included in the analysis.

Construction LSTs are based on sensitive receptors within 82 feet (25 meters) of the Project Site.

Emissions totals may not equal 100 percent due to rounding.

<sup>1</sup> Based on the information provided by the Applicant. Where specific information regarding Project-related construction activities was not available, construction assumptions were based on CalEEMod defaults, which are based on construction surveys conducted by SCAQMD of construction equipment.

<sup>2</sup> Includes implementation of fugitive dust control measures required by SCAQMD 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.

<sup>3</sup> Includes implementation of Mitigation Measure AQ-1.

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