5.3 AIR QUALITY

This section of the Draft Environmental Impact Report (DEIR) evaluates the potential for the Rancho San Gorgonio Specific Plan to impact air quality in a local and regional context. The analysis in this section is based in part on the following technical report:

- *Air Quality Impact Analysis, Rancho San Gorgonio Specific Plan, City of Banning, Riverside County, California,* LSA Associates, April 2016.

A complete copy of this study is included in the Technical Appendices to this Draft EIR (Volume II, Appendix C).

The South Coast Air Quality Management District (SCAQMD) submitted a Notice of Preparation (NOP) comment letter addressing air quality. SCAQMD states that the EIR should identify any potentially adverse air quality impacts from all phases of the project (i.e., construction and operations per phase) and all air pollutant sources related to the project, both direct and indirect (e.g., generated or attracted vehicular traffic). SCAQMD recommends quantifying criteria pollutant emissions and comparing the results to the regional significance thresholds; calculating localized air quality impacts and comparing the results to localized significance thresholds; and performing a mobile source health risk assessment if the project generates or attracts vehicular trips, especially heavy-duty diesel-fueled vehicles. The NOP comment letter is included in Appendix B.

5.3.1 Environmental Setting

South Coast Air Basin

The project site is in the nondesert portion of Riverside County, California, which is part of the South Coast Air Basin (Basin) and is under the jurisdiction of the SCAQMD.

Climate

Air quality is not only affected by various emission sources (mobile, industry, etc.), but also by atmospheric conditions such as wind speed, wind direction, temperature, rainfall, etc. The combination of topography, low mixing height, abundant sunshine, and emissions from the second largest urban area in the United States gives the Basin the worst air pollution problem in the nation.

The annual average temperature varies little throughout the Basin, 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 closest to the site is the Beaumont station. The monthly average maximum temperature recorded at this station in the past ranged from 60.3°F in January to 95.5°F in July, with an annual average maximum of 76.6°F. The monthly average minimum temperature recorded at this station ranged from 38.4°F in January to 58.8°F in August, with an annual average minimum of 46.9°F. Either January or December is typically the coldest month, and August is typically the warmest month in this area of the Basin.

Precipitation

The majority of annual rainfall in the Basin occurs between November and April. Summer rainfall is minimal and is generally limited to scattered thundershowers in coastal regions and slightly heavier showers in the eastern portion of the Basin and along the coastal side of the mountains. The Beaumont station is representative of the area precipitation. Average monthly rainfall measured between 1939 and 2012 varied from 3.52 inches in January to 0.65 inch or less between May and October, with an annual total of 17.81 inches. Patterns in monthly and yearly rainfall totals are unpredictable due to fluctuations in the weather.

Winds and Inversions

The Basin experiences a persistent temperature inversion (increasing temperature with increasing altitude) as a result of the Pacific high. This inversion limits the vertical dispersion of air contaminants, holding them relatively near the ground. As the sun warms the ground and the lower air layer, the temperature of the lower air layer approaches the temperature of the base of the inversion (upper) layer until the inversion layer finally breaks, allowing vertical mixing with the lower layer. This phenomenon is observed in mid- to late afternoon on hot summer days, when the smog appears to clear up suddenly. Winter inversions frequently break by midmorning.

Winds in the vicinity of the project area blow predominantly from the south-southwest, with relatively low velocities. Wind speeds in the project area average about 4 miles per hour (mph). Summer wind speeds average slightly higher than winter wind speeds. Low average wind speeds, together with a persistent temperature inversion, limit the vertical dispersion of air pollutants throughout the Basin. Strong, dry, north or northeasterly winds, known as Santa Ana winds, occur during the fall and winter months, dispersing air contaminants. The Santa Ana conditions tend to last for several days at a time.

The combination of stagnant wind conditions and low inversions produces the greatest pollutant concentrations. On days of no inversion or high wind speeds, ambient air pollutant concentrations are the lowest. During periods of low inversions and low wind speeds, air pollutants generated in urbanized areas are transported predominantly on shore into Riverside and San Bernardino counties. In the winter, the greatest pollution problems are carbon monoxide (CO) and oxides of nitrogen (NO_X) because of extremely low inversions and air stagnation during the night and early morning hours. In the summer, the longer daylight hours and the brighter sunshine combine to cause a reaction between hydrocarbons and NO_X to form photochemical smog.

5.3.1.1 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 project site is in the South Coast Air Basin and is subject to the rules and regulations imposed by SCAQMD as well as the California AAQS adopted by California Air Resources Board (ARB) 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 project are summarized below.

Federal

Pursuant to the Federal Clean Air Act (CAA) of 1970, the EPA established National AAQS for six major pollutants, termed "criteria" pollutants. Criteria pollutants are defined as pollutants for which the federal and state governments have established AAQS, or criteria, for outdoor concentrations in order to protect public health.

Data collected at permanent monitoring stations are used by the EPA to classify regions as "attainment" or "nonattainment," depending on whether the regions met the requirements stated in the primary National AAQS. Nonattainment areas are imposed with additional restrictions required by the EPA.

The EPA has designated the Southern California Association of Governments (SCAG) as the Metropolitan Planning Organization responsible for ensuring compliance with the requirements of the CAA for the Basin.

The EPA established revised national air quality standards for ground-level oxides (O_3) and fine particulate matter in 1997. On May 14, 1999, the Court of Appeals for the District of Columbia Circuit issued a decision ruling that the CAA, as applied in setting the new public health standards for O_3 and particulate matter, was unconstitutional as an improper delegation of legislative authority to the EPA. On February 27, 2001, the U.S. Supreme Court upheld the way the government sets air quality standards under the CAA. The Court unanimously rejected industry arguments that the EPA must consider financial costs as well as health benefits in writing standards. The justices also rejected arguments that the EPA took too much lawmaking power from Congress when it set tougher standards for O_3 and soot in 1997. Nevertheless, the court dismissed the EPA's policy for implementing new O_3 rules, saying that the agency ignored a section of the law that restricts its authority to enforce such rules.

In April 2003, the EPA was cleared by the White House Office of Management and Budget (OMB) and issued the proposed rule implementing the 8-hour ground-level O_3 standard. The EPA completed final 8-hour nonattainment status on April 15, 2004. The EPA revoked the 1-hour O_3 standard on June 15, 2005, and lowered the 8-hour O_3 standard from 0.08 parts per million (ppm) to 0.075 ppm on April 1, 2008 and to 0.070 pm on October 1, 2015.

The EPA issued the final Respirable Fine Particulate Matter ($PM_{2.5}$) implementation rule in fall 2004. The EPA lowered the 24-hour $PM_{2.5}$ standard from 65 to 35 micrograms per cubic meter ($\mu g/m^3$) and revoked the annual Respirable Coarse Particulate Matter (PM_{10}) standard on December 17, 2006. Final designations for the 2006 24-hour $PM_{2.5}$ standard were issued on December 12, 2008.

State

In 1967, the California Legislature passed the Mulford-Carrell Act, which combined two Department of Health bureaus, the Bureau of Air Sanitation and the Motor Vehicle Pollution Control Board, in order to establish the ARB. Since its formation, the ARB has worked with the public, the business sector, and local governments to find solutions to California's air pollution problems.

The ARB identified particulate emissions from diesel-fueled engines (diesel particulate matter [DPM]) as TACs in August 1998. Following the identification process, the ARB was required by law to determine

whether there is a need for further control. In September 2000, the ARB adopted the Diesel Risk Reduction Plan, which recommends many control measures to reduce the risks associated with DPM and to achieve the goal of 85 percent DPM reduction by 2020.

Regional

Regional Air Quality Planning Framework

The 1976 Lewis Air Quality Management Act established the SCAQMD and other air districts throughout the state. The CAA amendments of 1977 required that each state adopt an implementation plan outlining pollution control measures to attain the federal standards in nonattainment areas of the state.

The ARB is responsible for incorporating air quality management plans for local air basins into a State Implementation Plan (SIP) for EPA approval. Significant authority for air quality control within the local air basins has been given to local air districts that regulate stationary source emissions and develop local nonattainment plans.

Regional Air Quality Management Plan

The SCAQMD and SCAG are responsible for formulating and implementing the air quality management plan (AQMP) for the Basin. Every three years the SCAQMD prepares a new AQMP, updating the previous plan and the 20-year horizon.

The SCAQMD adopted the 2007 AQMP on June 1, 2007, which it describes as a regional and multiagency effort (the SCAQMD Governing Board, ARB, SCAG, and EPA). An inventory of existing emissions from industrial facilities is included in the baseline inventory in the 2007 AQMP. The 2007 AQMP also identifies emission reductions from existing sources and air pollution control measures that are necessary in order to comply with applicable state and federal ambient air quality standards. State and federal planning requirements will include developing control strategies, attainment demonstration, reasonable further progress, and maintenance plans. The 2007 AQMP also incorporates significant new scientific data, primarily in the form of updated emission inventories, ambient measurements, new meteorological episodes, and new air quality modeling tools. The ARB has adopted the SCAQMD 2007 AQMP as part of the 2007 SIP and forwarded it to the EPA for review and approval. On November 22, 2010, the EPA published its notice of proposed partial approval and partial disapproval of the 2007 AQMP $PM_{2.5}$ Plan primarily because the attainment demonstration relies heavily on emissions reductions from several state rules that have not been finalized or submitted to the EPA for approval. The proposed revision to the $PM_{2.5}$ and O_3 SIP addresses the critical issues of the proposed disapproval. It updates the implementation status of the AQMP control measures to meet the 2015 $PM_{2.5}$ attainment, retains the SCAQMD's proposal for contingency measures, and also references and relies on ARB's proposed contingency measures. In addition, the SIP revision will reinitiate its request that the EPA voluntarily accept reduction responsibility for 10 tons per day NO_X emissions in 2014, but will propose that SCAQMD and ARB jointly provide a "fair-share" backstop emissions reduction proposal, if necessary. SCAQMD is proposing to submit a revision to the $PM_{2.5}$ and O_3 SIP to update the implementation status of the SCAQMD control measures to meet the 2015 $PM_{2.5}$ attainment, revisions to the control measure adoption schedule, and modifications to the emissions reduction

commitment to reflect changes made to the inventory resulting from ARB's December 2010 revisions to the on-road truck and off-road equipment rules.

The Final 2012 AQMP was adopted by the SCAQMD on December 7, 2012. The 2012 AQMP includes the new and changing federal requirements, implementation of new technology measures, and the continued development of economically sound, flexible compliance approaches.

Ambient Air Quality Standards

Both the State of California and the federal government have established health-based AAQS for seven air pollutants. As shown in Table 5.3-1, these pollutants are ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), PM_{10}, $PM_{2.5}$, and lead. 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.

In addition to setting out primary and secondary AAQS, the State of California has established a set of episode criteria for O_3, CO, NO_2, SO_2, and PM_{10}. These criteria refer to episode levels representing periods of short-term exposure to air pollutants that actually threaten public health. Health effects are progressively more severe as pollutant levels increase from Stage One to Stage Three. An alert level is the concentration of pollutants at which, in the initial stage, the control actions are to begin. An alert will be declared when any one of the pollutant alert levels is reached at any monitoring site and meteorological conditions are such that the pollutant concentrations can be expected to remain at these levels for 12 or more hours or to increase, or as in the case of oxidants, the situation is likely to recur within the next 24 hours unless control actions are taken. Pollutant alert levels:

- O_3: 392 μg/m^3 (0.20 ppm), 1-hour average
- CO: 17 mg/m^3 (15 ppm), 8-hour average
- NO_2: 1,130 μg/m^3 (0.6 ppm) 1-hour average; 282 μg/m^3 (0.15 ppm) 24-hour average
- SO_2: 800 μg/m^3 (0.3 ppm), 24-hour average
- Particulates, measured as PM_{10}: 350 μg/m^3, 24-hour average

Table 5.3-1 Ambient Air Quality Standards

		California Standards[1]		Federal Standards[2]		
Pollutant	Averaging Time	Concentration[3]	Method[4]	Primary[3,5]	Secondary[3,6]	Method[7]
Ozone (O_3)[8]	1-Hour	0.09 ppm (180 μg/m^3)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8-Hour	0.070 ppm (137 μg/m^3)		0.070 ppm (137 μg/m^3)		
Respirable Particulate Matter (PM_{10})[9]	24-Hour	50 μg/m^3	Gravimetric or Beta Attenuation	150 μg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 μg/m^3		—		

5. Environmental Analysis
AIR QUALITY

Table 5.3-1 Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[1]		Federal Standards[2]		
		Concentration[3]	Method[4]	Primary[3,5]	Secondary[3,6]	Method[7]
Fine Particulate Matter ($PM_{2.5}$)[9]	24-Hour	No Separate State Standard		35 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	12.0 µg/m^3	15.0 µg/m^3	
Carbon Monoxide (CO)	8-Hour	9.0 ppm (10 mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m^3)	None	Non-Dispersive Infrared Photometry (NDIR)
	1-Hour	20 ppm (23 mg/m^3)		35 ppm (40 mg/m^3)		
	8-Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		—	—	—
Nitrogen Dioxide (NO_2)[10]	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)	Gas Phase Chemiluminescence	0.053 ppm (100 µg/m^3)	Same as Primary Standard	Gas Phase Chemiluminescence
	1-Hour	0.18 ppm (339 µg/m^3)		100 ppb (188 µg/m^3)	—	
Sulfur Dioxide (SO_2)[11]	Annual Arithmetic Mean	—	Ultraviolet Fluorescence	0.030 ppm (for certain areas)[11]	—	Ultraviolet Fluorescence; Spectrophotometry (Pararosaniline Method)
	24-Hour	0.04 ppm (105 µg/m^3)		0.14 ppm (for certain areas)[11]	—	
	3-Hour	—		—	0.5 ppm (1300 µg/m^3)	
	1-Hour	0.25 ppm (655 µg/m^3)		75 ppb (196 µg/m^3)	—	
Lead[12,13]	30-Day Average	1.5 µg/m^3	Atomic Absorption	—	—	High-Volume Sampler and Atomic Absorption
	Calendar Quarter	—		1.5 µg/m^3 (for certain areas)[13]	Same as Primary Standard	
	Rolling 3-Month Average[11]	—		0.15 µg/m^3		
Visibility-Reducing Particles[14]	8-Hour	See footnote 14	Beta Attenuation and Transmittance through Filter Tape	No Federal Standards		
Sulfates	24-Hour	25 µg/m^3	Ion Chromatography			
Hydrogen Sulfide	1-Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride[12]	24-Hour	0.01 ppm (26 µg/m^3)	Gas Chromatography			

Source: ARB 2015a.
Footnotes are located below.

°C = degrees Celsius
ARB = California Air Resources Board
EPA = United States Environmental Protection Agency
µg/m^3 = micrograms per cubic meter
mg/m^3 = milligrams per cubic meter
ppm = parts per million
ppb = parts per billion

Table 5.3-1 Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[1]		Federal Standards[2]		
		Concentration[3]	Method[4]	Primary[3,5]	Secondary[3,6]	Method[7]

Footnotes:

1 California standards for O_3; carbon monoxide (except Lake Tahoe); sulfur dioxide (1- and 24-hour); nitrogen dioxide; suspended particulate matter - PM_{10}, $PM_{2.5}$ and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

2 National standards (other than O_3, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once per year. The O_3 standard is attained when the fourth-highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard. Contact the EPA for further clarification and current Federal policies.

3 Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

4 Any equivalent procedure which can be shown to the satisfaction of ARB to give equivalent results at or near the level of the air quality standard may be used.

5 National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

6 National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

7 Reference method as described by the EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the EPA.

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

9 On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 µg/m^3 to 12 µg/m^3. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 µg/m^3, as was the annual secondary standard of 15. The existing 24-hour PM_{10} standards (primary and secondary) of 150 µg/m^3 also were retained. The form of the annual primary and secondary standards is the annual mean, average over 3 years.

10 To attain the 1-hour standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum 1-hour average at each monitor within an area must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards, the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

11 On June 2, 2010, the new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until 1 year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.
Note that 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.

12 The ARB has identified lead and vinyl chloride as "toxic air contaminants" with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

13 The national standard for lead was revised on October 15, 2008, to a rolling 3-month average. The 1978 lead standard (1.5 µg/m^3 as a quarterly average) remains in effect until 1 year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standards are approved.

14 In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basins, respectively.

Air Pollutants of Concern

Criteria Air Pollutants

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

Table 5.3-2 lists the primary health effects and sources of common air pollutants. Because the concentration standards were set at a level that protects public health with an adequate margin of safety, these health effects will not occur unless the standards are exceeded by a large margin or for a prolonged period of time. State

AAQS are more stringent than federal AAQS. Among the pollutants, O_3, $PM_{2.5}$, and PM_{10} are considered regional pollutants, and the others have more localized effects.

Table 5.3-2 Health Effects of Major Criteria Air Pollutants

Pollutant	Health Effects	Example of Sources
Particulate Matter (PM_{10}: less than or equal to 10 microns)	▪ Increased respiratory disease ▪ Lung damage ▪ Premature death	▪ Cars and trucks, especially diesels ▪ Fireplaces, wood stoves ▪ Windblown dust from roadways, agriculture, and construction
Ozone (O_3)	▪ Breathing difficulties ▪ Lung damage	▪ Formed by chemical reactions of air pollutants in ▪ the presence of sunlight; common sources are motor vehicles, industries, and consumer products
Carbon Monoxide (CO)	▪ Chest pain in heart patients ▪ Headaches, nausea ▪ Reduced mental alertness ▪ Death at very high levels	▪ Any source that burns fuel such as cars, trucks, ▪ construction and farming equipment, and residential heaters and stoves
Nitrogen Dioxide (NO_2)	▪ Lung damage	▪ See carbon monoxide sources
Toxic Air Contaminants	▪ Cancer ▪ Chronic eye, lung, or skin irritation ▪ Neurological and reproductive disorders	▪ Cars and trucks, especially diesels ▪ Industrial sources such as chrome platers ▪ Neighborhood businesses such as dry cleaners ▪ and service stations ▪ Building materials and products

Source: ARB 2010.

- **Ozone.** O_3 (smog) is formed by photochemical reactions between oxides of nitrogen and reactive organic gases rather than being directly emitted. O_3 is a pungent, colorless gas typical of southern California smog. Elevated O_3 concentrations result in reduced lung function, particularly during vigorous physical activity. This health problem is particularly acute in sensitive receptors such as the sick, the elderly, and young children. O_3 levels peak during summer and early fall. The entire Basin is designated as a nonattainment area for the state 1-hour and 8-hour O_3 standards. The EPA has officially designated the status for the Basin regarding the 8-hour O_3 standard as "extreme," which means the Basin has until 2024 to attain the federal 8-hour O_3 standard.

- **Carbon Monoxide.** CO is formed by the incomplete combustion of fossil fuels, almost entirely from automobiles. It is a colorless odorless gas that can cause dizziness, fatigue, and impairment to central nervous system functions. The entire Basin is in attainment for the state standards for CO. The Basin is designated an "attainment/maintenance" area under the federal CO standards.

- **Nitrogen Oxides.** NO_2, a reddish-brown gas, and nitric oxide (NO), a colorless odorless gas, are formed from fuel combustion under high temperature or pressure. These compounds are referred to as nitrogen oxides, or NO_X. NO_X is a primary component of the photochemical smog reaction.

It also contributes to other pollution problems, including a high concentration of fine particulate matter, poor visibility, and acid deposition (i.e., acid rain). NO_2 decreases lung function and may reduce resistance to infection. The entire Basin is designated nonattainment for the state NO_2 standard and an "attainment/maintenance" area under the federal NO_2 standard.

- **Sulfur Dioxide.** SO_2 is a colorless irritating gas formed primarily from incomplete combustion of fuels containing sulfur. Industrial facilities also contribute to gaseous SO_2 levels. SO_2 irritates the respiratory tract, can injure lung tissue when combined with fine particulate matter, and reduces visibility and the level of sunlight. The entire Basin is in attainment for both federal and state SO_2 standards.

- **Lead.** Lead is found in old paints and coatings, plumbing, and a variety of other materials. Once in the blood stream, lead can cause damage to the brain, nervous system, and other body systems. Children are highly susceptible to the effects of lead. The Los Angeles County portion of the Basin was redesignated as nonattainment for the state and federal standards for lead in 2010.

- **Particulate Matter.** Particulate matter is the term used for a mixture of solid particles and liquid droplets found in the air. Coarse particles, PM_{10}, derive from a variety of sources, including windblown dust and grinding operations. Fuel combustion and resultant exhaust from power plants and diesel buses and trucks are primarily responsible for fine particle ($PM_{2.5}$) levels. Fine particles can also be formed in the atmosphere through chemical reactions. PM_{10} can accumulate in the respiratory system and aggravate health problems such as asthma. The EPA's scientific review concluded that $PM_{2.5}$, which penetrates deeply into the lungs, is more likely than PM_{10} to contribute to the health effects listed in a number of recently published community epidemiological studies at concentrations that extend well below those allowed by the current PM_{10} standards. These health effects include premature death; increased hospital admissions and emergency room visits (primarily the elderly and individuals with cardiopulmonary disease); increased respiratory symptoms and disease (children and individuals with cardiopulmonary disease such as asthma); decreased lung functions (particularly in children and individuals with asthma); and alterations in lung tissue and structure and in respiratory tract defense mechanisms. The Basin is a nonattainment area for the state PM_{10} and $PM_{2.5}$ standards and a nonattainment area for the federal $PM_{2.5}$ standards. The Basin was redesignated as attainment/maintenance for the federal PM_{10} standard in 2013.

- **Reactive Organic Compounds.** Reactive organic compounds (ROCs, which are also known as reactive organic gases [ROGs] and VOCs), also known as reactive organic gases and VOCs, are formed from combustion of fuels and evaporation of organic solvents. ROC is not a defined criteria pollutant but is a prime component of the photochemical smog reaction. Consequently, ROCs accumulate in the atmosphere more quickly during the winter when sunlight is limited and photochemical reactions are slower.

- **Sulfates.** Sulfates occur in combination with metal and/or hydrogen ions. In California, emissions of sulfur compounds occur primarily from the combustion of petroleum-derived fuels (e.g., gasoline and diesel fuel) that contain sulfur. This sulfur is oxidized to SO_2 during the combustion process and subsequently converted to sulfate compounds in the atmosphere. The conversion of SO_2 to sulfates takes

place comparatively rapidly and completely in urban areas of California due to regional meteorological features. The entire Basin is in attainment for the state standard for sulfates.

- **Hydrogen Sulfide.** Hydrogen sulfide (H_2S) is a colorless gas with the odor of rotten eggs. It is formed during bacterial decomposition of sulfur-containing organic substances. Also, it can be present in sewer gas and some natural gas and can be emitted as the result of geothermal energy exploitation. In 1984, an ARB committee concluded that the ambient standard for H_2S is adequate to protect public health and to reduce odor annoyance significantly. The entire Basin is unclassified for the state standard for H_2S.

- **Visibility-Reducing Particles.** 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. The statewide standard is intended to limit the frequency and severity of visibility impairment due to regional haze. The entire Basin is unclassified for the state standard for visibility-reducing particles.

5.3.1.2 EXISTING CONDITIONS

Air Pollution Constituents and Attainment Status

The ARB coordinates and oversees both state and federal air pollution control programs in California. The ARB oversees activities of local air quality management agencies and maintains air quality monitoring stations throughout the state in conjunction with the EPA and local air districts. The ARB has divided the state into 15 air basins based on meteorological and topographical factors of air pollution. Data collected at these stations are used by the ARB and EPA to classify air basins as attainment, nonattainment, nonattainment transitional, or unclassified, based on air quality data for the most recent three calendar years compared with the AAQS. Nonattainment areas are imposed with additional restrictions as required by the EPA. The air quality data are also used to monitor progress in attaining air quality standards.

Table 5.3-3 lists the attainment status for criteria pollutants in the Basin.

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

	State	Federal
1-hour Ozone	Nonattainment	N/A
8-hour Ozone	Nonattainment	Extreme nonattainment
PM_{10}	Nonattainment	Attainment/Maintenance
$PM_{2.5}$	Nonattainment	Nonattainment
CO	Attainment	Attainment/Maintenance
NO_2	Attainment	Attainment/Maintenance
SO_2	Attainment	Attainment
Lead	Attainment (except Los Angeles County)	Attainment (except Los Angeles County)
All others	Attainment/Unclassified	Attainment/Unclassified

Source: ARB 2015b.
CO = carbon monoxide; NO_2 = nitrogen dioxide; PM_{10} = particulate matter less than 10 microns in diameter
N/A = not available; SO_2 = sulfur dioxide; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter

Existing Ambient Air Quality

The SCAQMD, together with the ARB, maintains ambient air quality monitoring stations in the Basin. The air quality monitoring station closest to the site is the Banning Station. This station monitors O_3, PM_{10}, $PM_{2.5}$, and NO_2. This monitoring station characterizes the air quality representative of the ambient air quality in the project area. The next closest monitoring station is the Palm Springs Station, which monitors CO. The closest monitoring station that monitors SO_2 is the Riverside-Rubidoux Station. Ambient air quality data in Table 5.3-4 show that CO, NO_2, and SO_2 levels are consistently below the relevant State and Federal standards in the project vicinity. O_3, PM_{10}, and $PM_{2.5}$ levels all exceed State and Federal standards regularly.

Table 5.3-4 Ambient Air Quality Monitored at Banning, Palm Springs, and Riverside-Rubidoux Stations

Pollutant	Standard	2011	2012	2013
Carbon Monoxide (CO) – from Palm Springs Station				
Maximum 8-hour concentration (ppm)		0.64	0.45	1.5
Number of days exceeded:	State: ≥ 9.0 ppm	0	0	0
	Federal: ≥ 9 ppm	0	0	0
Ozone (O_3) – from Banning Station				
Maximum 1-hour concentration (ppm)		0.127	0.117	0.115
Number of days exceeded:	State: ≥ 0.09 ppm	35	40	24
Maximum 8-hour concentration (ppm)		0.111	0.098	0.103
Number of days exceeded:	State: > 0.08 ppm	59	71	66
	Federal: >0.075 ppm	41	53	41
Coarse Particulates (PM_{10}) – from Banning Station				
Maximum 24-hour concentration ($\mu g/m^3$)		47	41	60
Number of days exceeded:	State: > 50 μg/m3	0	0	1
	Federal: > 150 μg/m3	0	0	0
Annual arithmetic average concentration ($\mu g/m^3$)		17.84	17.72	18.96
Exceeded for the year:	State: > 20 $\mu g/m^3$	No	No	No
Fine Particulates ($PM_{2.5}$) – from Banning Station				
Maximum 24-hour concentration ($\mu g/m^3$)		46.7	41.5	65.5
Number of days exceeded:	Federal: > 35 $\mu g/m^3$	4	2.	4
Annual arithmetic average concentration ($\mu g/m^3$)		NA	NA	NA
Exceeded for the year:	State: > 12 $\mu g/m^3$	NA	NA	NA
	Federal: > 15 $\mu g/m^3$	NA	NA	NA
Nitrogen Dioxide (NO_2) – from Banning Station				
Maximum 1-hour concentration (ppm)		0.061	0.072	0.052
Number of days exceeded:	State: > 0.18 ppm	0	0	0
Annual arithmetic average concentration ($\mu g/m^3$)		0.009	0.009	0.008
Exceeded for the year:	State: > 0.030 ppm	No	No	No
	Federal: > 0.053 ppm	No	No	No
Sulfur Dioxide (SO_2) – from Riverside-Rubidoux Station				
Maximum 24-hour concentration (ppm)		0.051	0.004	0.008
Number of days exceeded:	State: > 0.04 ppm	0	0	0
	Federal: > 0.14 ppm	0	0	0

Sources: USEPA 2016, ARB 2016.
ARB = California Air Resources Board
$\mu g/m^3$ = micrograms per cubic meter
EPA = United States Environmental Protection Agency
NA = Not Available
ppm = parts per million

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 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 working population is generally the healthiest segment of the public.

The closest offsite sensitive receptors to the planning area are the surrounding residential land uses along its boundaries—Westward Avenue, Sunset Avenue, and San Gorgonio Avenue. In addition, Banning High School and Mt. San Jacinto College San Gorgonio Pass Campus are adjacent to the northeast and northwest corners of the Specific Plan area, respectively.

5.3.2 Thresholds of Significance

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

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

AQ-2 Violate any air quality standard or contribute substantially to an existing or projected air quality violation.

AQ-3 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 (including releasing emissions which exceed quantitative thresholds for ozone precursors).

AQ-4 Expose sensitive receptors to substantial pollutant concentrations.

AQ-5 Create objectionable odors affecting a substantial number of people.

South Coast Air Quality Management District Thresholds

In addition to the federal and state AAQS, there are daily and quarterly emissions thresholds for construction and operation of a proposed project in the Basin. The Basin is administered by the SCAQMD, and guidelines and emissions thresholds established by the SCAQMD in its *CEQA Air Quality Handbook* (SCAQMD 1993), and associated updates are used in this analysis. It should be noted that the emissions thresholds were established based on the attainment status of the air basin in regard to air quality standards for specific criteria pollutants. Because the concentration standards were set at a level that protects public health with an adequate margin of safety, these emissions thresholds are regarded as conservative and would overstate an individual project's contribution to health risks.

Construction Emissions Thresholds

The following CEQA significance thresholds for construction emissions have been established for the Basin:

- 75 pounds per day (lbs/day) of VOCs
- 100 lbs/day of NO_X
- 550 lbs/day of CO
- 150 lbs/day of PM_{10}
- 55 lbs/day of $PM_{2.5}$
- 150 lbs/day of sulfur oxides (SO_X)

Projects in the Basin with construction-related emissions that exceed any of the emission thresholds are considered to have significant impacts under the SCAQMD guidelines.

Operational Emissions Thresholds

The daily operational emissions significance thresholds for regional and local impacts are listed below.

Emission Thresholds for Pollutants with Regional Effects

Projects with operation-related emissions that exceed any of the emission thresholds listed are considered significant under the SCAQMD guidelines.

- 55 lbs/day of VOCs
- 55 lbs/day of NO_X
- 550 lbs/day of CO
- 150 lbs/day of PM_{10}
- 55 lbs/day of $PM_{2.5}$
- 150 lbs/day of SO_X

Local Microscale Concentration Standards

The significance of localized project impacts under CEQA depends on whether ambient CO levels in the vicinity of the project are above or below state and federal CO standards. If ambient levels are below the standards, a project is considered to have a significant impact if project emissions result in an exceedance of one or more of these standards. If ambient levels already exceed a state or federal standard, project emissions are considered significant if they increase 1-hour CO concentrations by 1.0 ppm or more or 8-hour CO concentrations by 0.45 ppm or more. The applicable local emission concentration standards for CO are:

- California 1-hour CO standard of 20.0 ppm
- California 8-hour CO standard of 9.0 ppm

Localized Significance Thresholds

SCAQMD has developed localized significance threshold (LST) methodology that can be used to determine whether or not a project may generate significant adverse localized air quality impacts. LSTs represent the maximum emissions from a project that will not cause or contribute to an exceedance of the most stringent applicable federal or state AAQS and are developed based on the ambient concentrations of that pollutant for each source receptor area. SCAQMD's current guidelines, "Final Localized Significance Threshold Methodology" (June 2003, revised July 2008) and "Final–Methodology to Calculate Particulate Matter $(PM)_{2.5}$ and $PM_{2.5}$ Significance Thresholds" (October 2006) were adhered to in the assessment of air quality impacts for the proposed project.

In the case of CO and NO_2, if ambient levels are below the standards, a project is considered to have a significant impact if project emissions result in an exceedance of one or more of these standards. If ambient levels already exceed a state or federal standard, then project emissions are considered significant if they increase ambient concentrations by a measurable amount. This would apply to PM_{10} and $PM_{2.5}$, both of which are nonattainment pollutants. For these two, the significance criteria are the pollutant concentration thresholds in SCAQMD Rules 403 and 1301. The Rule 403 threshold of 10.4 $\mu g/m^3$ applies to construction emissions (and may apply to operational emissions at aggregate handling facilities). The Rule 1301 threshold of 2.5 $\mu g/m^3$ applies to nonaggregate handling operational activities.

To avoid the need for every air quality analysis to perform air dispersion modeling, the SCAQMD performed air dispersion modeling for a range of construction sites less than or equal to 5 acres in size and created look-up tables that correlate pollutant emissions rates with project size to screen out projects that are unlikely to generate enough emissions to result in a localized significant concentration of any criteria pollutant. These look-up tables can also be used as screening criteria for larger projects to determine whether or not dispersion modeling may be required.

For this project, the appropriate Source Receptor Area (SRA) is Banning Airport (SRA 29), according to the SRA/City Table on the SCAQMD LST website. The following thresholds apply for this project:

- Based on the level of construction activity required for the proposed project, up to 5 acres would be disturbed on any day. Construction thresholds for a 5-acre site at 25 meters (m) are:
  - 236 lbs/day of NO_X
  - 2,817 lbs/day of CO
  - 21 lbs/day of PM_{10}
  - 11 lbs/day of $PM_{2.5}$

- Operational thresholds for a 5-acre site at 25 m are:
  - 236 lbs/day of NO_X
  - 2,817 lbs/day of CO
  - 6 lbs/day of PM_{10}
  - 3 lbs/day of $PM_{2.5}$

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.

5.3.3 Environmental Impacts

A number of modeling tools are available to assess air quality impacts of projects. In addition, certain air districts, such as the SCAQMD, have created guidelines and requirements to conduct air quality analysis. SCAQMD's current guidelines, *CEQA Air Quality Handbook*, April 1993, were adhered to in the assessment of air quality impacts for the proposed project. The air quality models identified in the document are outdated; therefore, the current model, CalEEMod version 2013.2.2, was used to estimate project-related mobile and stationary source emissions in this air quality assessment. The air quality assessment includes estimating emissions associated with short-term construction and long-term operation of the proposed project.

For purposes of evaluating the traffic impacts at different stages of development, the proposed project has been divided into six phases. Based on the best estimate of absorption rates, Phase 1 is anticipated to be completed by 2017, Phase 2 by 2019, Phase 3 by 2022, Phase 4 by 2025, and Phase 5 by 2029. The project buildout (Phase 6) is anticipated to be complete by 2035.

Criteria pollutants with regional impacts would be emitted by project-related vehicular trips, as well as by emissions associated with stationary sources used onsite. Localized air quality impacts, including higher CO concentrations near intersections or roadway segments in the project vicinity, would be potentially caused by project-related traffic increases. The net increase in pollutant emissions determines the significance and impact on regional air quality as a result of the proposed project. The results also allow the local government to determine whether the proposed project would deter the region from achieving the goal of reducing pollutants in accordance with the AQMP in order to comply with federal and state AAQS.

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 5.3-1: Construction activities associated with the proposed project would generate short-term emissions in exceedance of SCAQMD's threshold criteria for NO_x in Phases 1 through 4. [Thresholds AQ-2 and AQ-3]

Impact Analysis: Construction activities produce combustion emissions from various sources, such as site grading, utility engines, on-site heavy-duty construction vehicles, asphalt paving, and motor vehicles transporting the construction crew. Exhaust emissions from construction activities onsite would vary daily as construction activity levels change. Implementation of the proposed project would include site preparation

and grading operations and construction of the new facilities that would utilize architectural coatings and paving operations.

The most recent version of the CalEEMod model (version 2013.2.2) was used to calculate the construction emissions for each phase of the Specific Plan, as shown in Tables 5.3-5 through 5.3-10. The emissions rates shown in Table 5.3-5 are from the CalEEMod output tables listed as "Mitigated Construction," even though the only measures that have been applied to the analysis are the required construction emissions control measures or the standard conditions. They are also the combination of the on- and offsite emissions. As shown in Tables 5.3-5 through 5.3-10, construction equipment and vehicle emissions during project construction of Phases 1 through 3 would exceed the SCAQMD emission thresholds for NO_X, and in Phase 4 would exceed emission thresholds for ROG and NO_X. The exceedance in ROGs in Phase 4 would primarily be from architectural coatings.

Table 5.3-5 Short-Term Regional Phase 1 Construction Emissions (2017)

	Total Regional Emissions (pounds/day)							
Construction Phase	ROG	NO_X	CO	SO_X	Fugitive PM_{10}	Exhaust PM_{10}	Fugitive $PM_{2.5}$	Exhaust $PM_{2.5}$
Site Preparation	5.2	55	42	0.042	7.2	2.9	3.9	2.7
Grading	6.6	75	50	0.065	3.6	3.6	1.5	3.3
Building Construction	4.2	32	30	0.051	1.5	2.0	0.40	1.9
Paving	23	2.3	3.2	0.0062	0.26	0.18	0.068	0.18
Architectural Coatings	2.0	20	16	0.024	0.17	1.1	0.045	1.0
Peak Daily Emissions	41	180	140	0.19	23		15	
SCAQMD Threshold	75	100	550	150	150		55	
Significant?	No	Yes	No	No	No		No	

Source: LSA Associates, April 2016.
Notes: The peak daily emissions assume that all of the phases could overlap to occur all on 1 day.
The emission rates for fugitive PM_{10} and $PM_{2.5}$ shown are from the CalEEMod output tables listed as "Mitigated Construction," because CalEEMod does not include the fugitive dust construction emission control measures required by SCAQMD. The only way to include them in the model is to specify them as mitigation.

CO = carbon monoxide
lbs/day = pounds per day
NO_x = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
ROG = reactive organic compounds
SCAQMD = South Coast Air Quality Management District
SO_X = sulfur oxides

Table 5.3-6 Short-Term Regional Phase 2 Construction Emissions (2019)

	Total Regional Emissions (pounds/day)							
Construction Phase	ROG	NO_X	CO	SO_x	Fugitive PM_{10}	Exhaust PM_{10}	Fugitive $PM_{2.5}$	Exhaust $PM_{2.5}$
Site Preparation	4.9	52	40	0.042	7.2	2.8	3.9	2.5
Grading	6.2	70	48	0.065	3.6	3.3	1.5	3.1
Building Construction	3.9	30	29	0.053	1.7	1.8	0.45	1.7
Paving	16	2.3	3.4	0.0067	0.29	0.18	0.077	0.18
Architectural Coatings	1.7	17	15	0.024	0.17	0.94	0.045	0.86
Peak Daily Emissions	33	170	140	0.19	22		14	
SCAQMD Threshold	75	100	550	150	150		55	
Significant?	No	Yes	No	No	No		No	

Source: LSA Associates, April 2016.
Notes: The peak daily emissions assume that all of the phases could overlap to occur all on 1 day.
The emission rates for fugitive PM_{10} and $PM_{2.5}$ shown are from the CalEEMod output tables listed as "Mitigated Construction," because CalEEMod does not include the fugitive dust construction emission control measures required by SCAQMD. The only way to include them in the model is to specify them as mitigation.
CO = carbon monoxide
lbs/day = pounds per day
NO_x = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
ROG = reactive organic compounds
SCAQMD = South Coast Air Quality Management District
SO_X = sulfur oxides

Table 5.3-7 Short-Term Regional Phase 3 Construction Emissions (2022)

	Total Regional Emissions (pounds/day)							
Construction Phase	ROG	NO_X	CO	SO_x	Fugitive PM_{10}	Exhaust PM_{10}	Fugitive $PM_{2.5}$	Exhaust $PM_{2.5}$
Site Preparation	4.4	46	37	0.042	7.2	2.4	3.9	2.2
Grading	5.4	60	43	0.065	3.6	2.8	1.5	2.6
Building Construction	3.6	28	30	0.060	2.1	1.6	0.56	1.5
Paving	6.4	2.2	3.6	0.010	0.36	0.15	0.09	0.15
Architectural Coatings	1.1	11	15	0.024	0.17	0.56	0.045	0.51
Peak Daily Emissions	21	150	130	0.20	21		13	
SCAQMD Threshold	75	100	550	150	150		55	
Significant?	No	Yes	No	No	No		No	

Source: LSA Associates, Inc., April 2016.
Notes: The peak daily emissions assume that all of the phases could overlap to occur all on 1 day.
The emission rates for fugitive PM_{10} and $PM_{2.5}$ shown are from the CalEEMod output tables listed as "Mitigated Construction," because CalEEMod does not include the fugitive dust construction emission control measures required by SCAQMD. The only way to include them in the model is to specify them as mitigation.
CO = carbon monoxide
lbs/day = pounds per day
NOx = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
ROG = reactive organic compounds
SCAQMD = South Coast Air Quality Management District
SO_X = sulfur oxides

Table 5.3-8 Short-Term Regional Phase 4 Construction Emissions (2025)

Construction Phase	Total Regional Emissions (pounds/day)							
	ROG	NO_X	CO	SO_x	Fugitive PM_{10}	Exhaust PM_{10}	Fugitive $PM_{2.5}$	Exhaust $PM_{2.5}$
Site Preparation	3.8	39	34	0.042	7.2	1.9	3.9	1.8
Grading	4.6	49	39	0.065	3.6	2.3	1.5	2.1
Building Construction	9.0	61	100	0.28	18	2.3	5.2	2.1
Paving	17	2.2	11	0.036	2.6	0.10	0.68	0.10
Architectural Coatings	1.2	8.5	15	0.024	0.17	0.41	0.045	0.38
Peak Daily Emissions	36	160	200		39		18	
SCAQMD Threshold	75	100	550	150	150		55	
Significant?	No	Yes	No	No	No		No	

Source: LSA Associates, Inc., April 2016.
Notes: The peak daily emissions assume that all of the phases could overlap to occur all on 1 day.
The emission rates for fugitive PM_{10} and $PM_{2.5}$ shown are from the CalEEMod output tables listed as "Mitigated Construction," because CalEEMod does not include the fugitive dust construction emission control measures required by SCAQMD. The only way to include them in the model is to specify them as mitigation.
CO = carbon monoxide
lbs/day = pounds per day
NOx = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
ROG = reactive organic compounds
SCAQMD = South Coast Air Quality Management District
SO_X = sulfur oxides

Table 5.3-9 Short-Term Regional Phase 5 Construction Emissions (2029)

Construction Phase	Total Regional Emissions (pounds/day)							
	ROG	NO_X	CO	SO_x	Fugitive PM_{10}	Exhaust PM_{10}	Fugitive $PM_{2.5}$	Exhaust $PM_{2.5}$
Site Preparation	2.5	24	25	0.042	7.2	1	3.9	0.95
Grading	3	27	32	0.065	3.6	1.2	1.5	1.1
Building Construction	2.7	16	35	0.1	5.1	0.63	1.4	0.59
Paving	16	1.4	4.5	0.015	0.93	0.059	0.25	0.058
Architectural Coatings	1.4	7	16	0.03	0.17	0.32	0.045	0.32
Peak Daily Emissions	26	75	110	0.25	20		10	
SCAQMD Threshold	75	100	550	150	150		55	
Significant?	No	No	No	No	No		No	

Source: LSA Associates, April 2016.
Notes: The peak daily emissions assume that all of the phases could overlap to occur all on 1 day.
The emission rates for fugitive PM_{10} and $PM_{2.5}$ shown are from the CalEEMod output tables listed as "Mitigated Construction," because CalEEMod does not include the fugitive dust construction emission control measures required by SCAQMD. The only way to include them in the model is to specify them as mitigation.
CO = carbon monoxide
lbs/day = pounds per day
NOx = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
ROG = reactive organic compounds
SCAQMD = South Coast Air Quality Management District
SO_X = sulfur oxides

Table 5.3-10 Short-Term Regional Phase 6 Construction Emissions (2035)

Construction Phase	Total Regional Emissions (pounds/day)							
	ROG	NO_X	CO	SO_x	Fugitive PM_{10}	Exhaust PM_{10}	Fugitive $PM_{2.5}$	Exhaust $PM_{2.5}$
Site Preparation	2.5	13	17	0.045	7.2	0.42	3.9	0.42
Grading	3.3	14	26	0.071	3.6	0.50	1.5	0.50
Building Construction	1.4	8.3	18	0.038	0.43	0.16	0.12	0.16
Paving	4.0	0.87	2.0	0.0040	0.078	0.021	0.021	0.021
Architectural Coatings	1.1	4.8	16	0.030	0.17	0.18	0.045	0.18
Peak Daily Emissions	12	41	79	0.19	13		6.9	
SCAQMD Threshold	75	100	550	150	150		55	
Significant?	No	No	No	No	No		No	

Source: LSA Associates, April 2016.
Notes: The peak daily emissions assume that all of the phases could overlap to occur all on 1 day.
The emission rates for fugitive PM_{10} and $PM_{2.5}$ shown are from the CalEEMod output tables listed as "Mitigated Construction," because CalEEMod does not include the fugitive dust construction emission control measures required by SCAQMD. The only way to include them in the model is to specify them as mitigation.
CO = carbon monoxide
lbs/day = pounds per day
NOx = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
ROG = reactive organic compounds
SCAQMD = South Coast Air Quality Management District
SO_X = sulfur oxides

The EPA has implemented non-road diesel emissions reductions in phases called tiers. Tier 1 emission standards for construction equipment were adopted in 1990. Tier 2 emission standards were phased in from 2001 to 2005. Tier 3 was implemented between 2006 and 2008. Tier 4 began in the 2013–2015 time period. Thus, for all four construction phases, Tier 4 will be readily available. By the time Phase 4 is constructed, Tier 4 equipment will be all that is available and thus no longer a mitigation measure.

Construction activities would also be required to comply with Title 13, Section 2449(d)(d) of the California Code of Regulations, which requires an operator of applicable off-road vehicles to limit idling to no more than five minutes. Thus, all construction vehicles shall be prohibited from idling in excess of five minutes both on- and offsite.

Fugitive Dust

Fugitive dust emissions are generally associated with land clearing and exposing soils to the air and wind, and cut-and-fill grading operations. Dust generated during construction varies substantially on a project-by-project basis, depending on the level of activity, the specific operations, and weather conditions at the time of construction.

Construction emissions can vary greatly depending on the level of activity, the specific operations taking place, the equipment being operated, local soils, weather conditions, and other factors. The proposed project would be required to comply with SCAQMD Rule 403 to control fugitive dust from creating a nuisance off-site. Implementation of these dust suppression techniques can reduce the fugitive dust generation (and thus the PM_{10} component). Applicable dust suppression techniques from Rule 403 are summarized below:

- Apply nontoxic chemical soil stabilizers according to manufacturers' specifications to all inactive construction areas (previously graded areas inactive for 10 days or more).
- Water active sites at least twice daily. (Locations where grading is to occur will be thoroughly watered prior to earthmoving.)
- Cover all trucks hauling dirt, sand, soil, or other loose materials, or maintain at least 6 inches of freeboard (vertical space between the top of the load and top of the trailer) in accordance with the requirements of California Vehicle Code (CVC) Section 23114.
- Pave construction access roads at least 30 m (100 feet) onto the site from the main road.
- Reduce traffic speeds on all unpaved roads to 15 mph or less.

As shown in Tables 5.3-5 through 5.3-10, with these standard control measures, fugitive dust emissions would be below SCAQMD thresholds, and impacts would be less than significant.

Architectural Coatings

Architectural coatings contain VOCs similar to ROGs and are part of the O_3 precursors. Based on the project plans, it is estimated that the application of architectural coatings on the proposed buildings using standard application techniques (standard spray) with a 25-percent transfer efficiency would result in as much as approximately 280 pounds (lbs) of VOCs per day during the coating phase. These emissions of VOC would be more than the SCAQMD VOC threshold of 75 lbs/day.

Emissions associated with architectural coatings could be reduced by using pre-coated/natural-colored building materials, using water-based or low-VOC coating, and using coating transfer or spray equipment with high transfer efficiency. For example, a high-volume, low-pressure spray method is a coating application system operated at air pressure between 0.1 and 10 pounds per square inch gauge, with 65 percent transfer efficiency. The use of this spray method would increase the transfer efficiency from 25 percent with the standard spray technique to 65 percent. Mitigation is provided to ensure VOC emissions are reduced during project construction.

Naturally Occurring Asbestos

The project site is in Riverside County, which is not among the counties found to have serpentine and ultramafic rock in their soils. Therefore, the potential risk for naturally occurring asbestos during project construction is small and less than significant.

Impact 5.3-2: Long-term operation of the project would generate additional vehicle trips and associated emissions in exceedance of SCAQMD's threshold criteria for ROG, NO_x, CO, PM_{10}, and $PM_{2.5}$. [Thresholds AQ-2 and AQ-3]

Impact Analysis: Long-term project operations produce air pollutant emissions from the proposed mix of residential and commercial land uses. Based on the project traffic study, long-term operational emissions associated with the proposed project by phase were calculated with CalEEMod and are shown in Table 5.3-11. Area sources include architectural coatings, consumer products, and landscaping maintenance performed on the project site. Energy sources include natural gas consumption for heating and electricity for the lighting in the buildings and at outdoor areas. Mobile sources (vehicles associated with the proposed residential and commercial land uses) combine traffic volumes from the traffic study with regional data on typical trip lengths to derive vehicle miles traveled. Table 5.3-11 shows that during operations, peak daily emissions would exceed the SCAQMD daily thresholds for ROG, NO_X, CO, PM_{10}, and $PM_{2.5}$, but not for SO_X. The majority of the emissions causing the exceedances are from privately owned vehicles operating as a result of the project.

Table 5.3-11 Long-Term Regional Operational Emissions

Source	Pollutant Emissions (pounds/day)					
	ROG	NO_X	CO	SO_x	PM_{10}	$PM_{2.5}$
Phase 1 –2017						
Area Sources	12	0.23	20	0.0011	0.43	0.43
Energy Sources	0.26	2.2	1.0	0.014	0.18	0.18
Mobile Sources	12	36	140	0.36	25	6.9
Total Emissions	24	38	160	0.38	26	7.5
SCAQMD Thresholds	55	55	550	150	150	55
Significant?	No	No	No	No	No	No
Phase 2 – 2019						
Area Sources	28	0.58	50	0.0026	1.1	1.1
Energy Sources	0.61	5.3	2.3	0.034	0.42	0.42
Mobile Sources	21	63	240	0.73	50	14
Total Emissions	50	69	290	0.77	52	16
SCAQMD Thresholds	55	55	550	150	150	55
Significant?	No	Yes	No	No	No	No
Phase 3 – 2022						
Area Sources	48	1.0	86	0.0046	1.9	1.9
Energy Sources	1.1	9.0	3.9	0.058	0.73	0.73
Mobile Sources	31	80	340	1.2	81	23
Total Emissions	80	90	430	1.3	84	26
SCAQMD Thresholds	55	55	550	150	150	55
Significant?	Yes	Yes	No	No	No	No
Phase 4 – 2025						
Area Sources	86	2.2	190	0.01	4.2	4.2
Energy Sources	1.8	15	6.5	0.096	1.2	1.2
Mobile Sources	60	140	630	2.5	170	46
Total Emissions	150	160	830	2.6	180	51

Table 5.3-11 Long-Term Regional Operational Emissions

Source	Pollutant Emissions (pounds/day)					
	ROG	NO_X	CO	SO_x	PM_{10}	$PM_{2.5}$
SCAQMD Thresholds	55	55	550	150	150	55
Significant?	Yes	Yes	Yes	No	Yes	No
Phase 5 – 2029						
Area Sources	110	2.9	250	0.013	5.5	5.4
Energy Sources	2.2	19	8.2	0.12	1.5	1.5
Mobile Sources	66	150	700	3.1	210	58
Total Emissions	180	170	960	3.2	220	65
SCAQMD Thresholds	55	55	550	150	150	55
Significant?	Yes	Yes	Yes	No	Yes	Yes
Phase 6 – 2035						
Area Sources	110	3.0	260	0.014	5.6	5.6
Energy Sources	2.3	20	8.5	0.13	1.6	1.6
Mobile Sources	63	150	690	3.2	210	60
Total Project Emissions	180	170	960	3.3	220	67
SCAQMD Thresholds	55	55	550	150	150	55
Significant?	Yes	Yes	Yes	No	Yes	Yes

Source: Source: LSA Associates, Inc., April 2016.
Note: Numbers in table may appear to not add up correctly due to rounding of all numbers to two significant digits.
CO = carbon monoxide
CO_2 = carbon dioxide
lbs/day = pounds per day
NOx = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
ROCs = reactive organic compounds
SCAQMD = South Coast Air Quality Management District
SO_X = sulfur oxides

The Specific Plan identifies alternative land uses (overlays) for Planning Area (PA) 9 and PA 16-C. A Residential Overlay Alternative of Medium-High Density Residential (MHDR, 12.1 – 18.0 dwelling units per acre) is allowed on PA 9 in lieu of the Neighborhood Commercial designation, if PA 9 does not develop as commercial. If PA 9 was developed as residential, there would not be a 103,300 square foot retail center (and 93 fewer employees) but there would be an additional 168 multi-family residential units (with 449 people). A Residential Overlay Alternative of Low Density Residential (LDR, 2.6 – 6.0 dwelling units per acre) is allowed on PA 16-C in lieu of the School use designation, if the Banning Unified School District does not acquire PA 16-C and the site is not developed with a school use. If this PA 16-Cwas developed as residential, there would not be an 800-student school but there would be an additional 84 multifamily residential units (with 224 people). Based on data provided to the traffic engineer, these alternative residential alternatives for PA 9 and PA 16-C would result in similar or less operational traffic and thus similar or less operational air quality impacts.

Impact 5.3-3: The proposed project could expose sensitive receptors to substantial pollutant concentrations. [Threshold AQ-4]

Impact Analysis: An NOP comment received from SCAQMD recommended performing a mobile source health risk assessment (HRA) if the project generates or attracts vehicular trips, especially heavy-duty diesel-

fueled vehicles. Residential and commercial projects generate nominal amounts of diesel particulate matter or TACs. Land uses that have the potential to generate substantial emissions would require a permit from SCAQMD and include industrial land uses, such as chemical processing, and warehousing operations where substantial truck idling could occur onsite. Therefore, HRAs are typically only evaluated for industrial projects and projects that generate a substantial number of trucks trips, such as warehouse and logistics projects. These types of industrial land uses are not proposed under the Rancho San Gorgonio Specific Plan.

Construction LSTs

Land uses surrounding the project site include single-family and multifamily residences, Banning High School, Mt. San Jacinto College San Gorgonio Campus, park, and vacant land. The single-family and multifamily residences surround the proposed project on the north, west, and eastern boundary. Banning High School and Mt. San Jacinto College are adjacent to the northeastern and northwestern corners of the site, respectively. These land uses could be exposed to increased pollutant concentrations from construction emissions. Additionally, during construction of the subsequent phases of the Specific Plan, there could be residents of the earlier phases similarly exposed.

The SCAQMD has issued guidance on applying CalEEMod modeling results to localized impacts analysis. Sensitive receptors include residences, schools, hospitals, and similar uses that are sensitive to adverse air quality. The existing and proposed sensitive land uses within the project area could be located within 50 to 100 feet of the project construction. Table 5.3-12 identifies the onsite construction emissions on the peak day of construction for each phase of the Specific Plan. As shown, emissions associated with each phase of construction would be below the SCAQMD thresholds of significance. Therefore, the project would not expose sensitive receptors to substantial pollutant concentrations generated by construction of the project.

Table 5.3-12 Construction LST Impacts

Phase	NOx	CO	PM10	PM2.5
Phase 1	75	49	10	6.6
Phase 2	70	47	9.8	6.4
Phase 3	60	42	9.4	6.0
Phase 4	49	38	9.0	5.6
Phase 5	27	31	8.1	4.8
Phase 6	14	26	7.5	4.3
LST Thresholds	236	2,817	21	11
Significant?	No	No	No	No

Source: LSA Associates, (April 2016.
SRA: Banning Airport, 5 acres, 25 meter distance
CO = carbon monoxide
lbs/day = pounds per day
LST = local significance threshold
NO_X = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size

As stated above, SCAQMD Rule 403 also requires implementation of dust suppression techniques to prevent fugitive dust from creating a nuisance off site. Implementation of applicable dust suppression techniques can

reduce the fugitive dust generation (and thus the PM_{10} component), which would aid in reducing impacts on nearby sensitive receptors.

Operational LSTs

Table 5.3-13 shows the calculated emissions for the proposed operational activities compared with the appropriate localized significance thresholds. The emissions shown include all stationary and two percent of the mobile sources, which is an estimate of the amount of project-related vehicle traffic that will occur at any one location onsite.

Table 5.3-13 Summary of Operational Localized Significance

Phase	Emission Rates (pounds/day)			
	NO_x	CO	PM_{10}	$PM_{2.5}$
Phase 1 –2017	0.78	8.0	0.61	0.25
Phase 2 –2019	1.4	17	1.3	0.56
Phase 3 –2022	1.8	28	2.1	0.94
Phase 4 – 2025	2.8	60	3.8	1.8
Phase 5 – 2029	3.3	70	5.0	2.4
Phase 6 – 2035	3.4	80	5.0	2.4
Localized Significance Thresholds	236	2,817	6	3
Significant?	No	No	No	No

Source: LSA Associates, April 2016.

Table 5.3-13 shows that the maximum emissions from project operation would neither cause nor contribute to an exceedance of the most stringent applicable Federal or State AAQS. Therefore, the proposed operational activity would not cause any localized significant air quality impacts.

CO Hotspot Analysis

Vehicular trips associated with the proposed project would contribute to congestion at intersections and along roadway segments in the project vicinity. Localized air quality effects would occur if emissions from vehicular traffic increase in local areas as a result of the proposed project. The primary mobile source pollutant of local concern is CO, which is a direct function of vehicle idling time and, thus, traffic flow conditions. CO transport is extremely limited; it disperses rapidly with distance from the source under normal meteorological conditions. However, under certain extreme meteorological conditions, CO concentrations near a congested roadway or intersection may reach unhealthful levels, affecting local sensitive receptors (residents, school children, the elderly, hospital patients, etc.). Typically, high CO concentrations are associated with roadways or intersections operating at unacceptable levels of service or with extremely high traffic volumes. In areas with high ambient background CO concentration, modeling is recommended to determine a project's effect on local CO levels.

The highest CO concentrations would occur during peak traffic hours; hence, CO impacts calculated under peak traffic conditions represent a worst-case analysis. Based on the traffic impact analysis prepared for this project, CO hotspot analyses were conducted for existing and future cumulative conditions. The impact on

local CO levels was assessed with the ARB-approved CALINE4 air quality model, which allows microscale CO concentrations to be estimated along roadway corridors or near intersections. This model is designed to identify CO hotspots.

Based on the modeling, the proposed project would contribute to increased CO concentrations at intersections in the project vicinity. Under existing and existing plus project conditions, all six intersections analyzed would have 1-hour and 8-hour CO concentrations below the federal and state standards. The proposed project would contribute at most a 0.7 ppm increase to the 1-hour CO concentrations and 0.5 ppm increase to the 8-hour CO concentrations at these intersections (see Table Q of Appendix C).

For the future scenarios, traffic volumes projected for 2017, 2022, 2029, and 2035 were used, with 2017, 2022, 2029, and 2035 emission factors for CO. The current year background CO concentrations at the San Bernardino station (24302 4th Street) were used for the future year conditions. Under the 2017, 2019, 2022, 2025, 2029, and 2035 conditions, none of the intersections analyzed would exceed either the 1-hour or the 8-hour CO concentration federal and state standards (see Tables T through Y of Appendix C). Therefore, the proposed project would not have a significant impact on local air quality for CO hotspots, and no mitigation measures would be required.

Impact 5.3-4: Development of the proposed project would not be consistent with applicable air quality management plans. [Threshold AQ-1]

Impact Analysis: A measure of determining if the project is consistent with applicable AQMPs is if the project would not result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards of the interim emission reductions specified in the air quality plans.

The region has a nonattainment status for O_3, $PM_{2.5}$, and PM_{10}. Therefore, if project-generated emissions of either O_3 precursor (i.e., ROGs and NO_X), $PM_{2.5}$ or PM_{10}, the project would exceed the SCAQMD significance thresholds, and would conflict with the attainment plans.

The proposed Specific Plan would require a general plan amendment to allow the land uses proposed under the Rancho San Gorgonio Specific Plan. In addition, as indicated in the analysis above, the proposed project would exceed several SCAQMD emission thresholds during both construction and operation. Therefore, the emissions associated with occupation and uses of the project are expected to exceed the general plan projections and could contribute to air quality deterioration beyond current SCAQMD projections. Impacts are, therefore, potentially significant.

Impact 5.3-5: Future projects in accordance with the Specific Plan would not create objectionable odors. [Threshold AQ-5]

Impact Analysis: Diesel exhaust from heavy-duty construction equipment on the project site and volatile organic compounds from architectural coatings and paving activities may generate odors. However, these odors would be low in concentration, temporary, and are not expected to affect a substantial number of people. All construction operations planned are of sufficient distance from existing and, during later phase

development, future sensitive receptors that the natural dissipation in the air over that distance would prevent any significant impact from objectionable odor. No other sources of objectionable odors are expected during project construction.

Additionally, the proposed residential, commercial, and mixed land uses do not include any recognized sources of long-term objectionable odors. Therefore, objectionable odors at potential onsite and existing offsite uses would not occur during operation of the proposed project.

SCAQMD Rule 402 states: "A person 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." The type of facilities that are considered to have objectionable odors include wastewater treatments plants, compost facilities, landfills, solid waste transfer stations, fiberglass manufacturing facilities, paint/coating operations (e.g., auto body shops), dairy farms, petroleum refineries, asphalt batch plants, chemical manufacturing, and food manufacturing facilities. The proposed Specific Plan would consist primarily of residential homes, parks and open space, and a small portion of neighborhood commercial.

In compliance with Rule 402, development in accordance with the Rancho San Gorgonio Specific Plan would not emit any objectionable odors during construction or operations. Therefore, impacts would be less than significant.

5.3.4 Cumulative Impacts

Construction

During construction, the project would temporarily contribute criteria pollutants to the area above the SCAQMD thresholds. Other projects in the area may be under construction at the same time as the proposed project. The concurrent construction of two or more projects would generate fugitive dust and equipment emissions that could result in substantial short-term increases in air pollutants in the local area. Each project would be required to comply with the SCAQMD's standard construction measures in Rule 403. However, because the proposed project itself would result in a significant adverse air quality impact during construction related to ROG and NO_X that cannot be mitigated to below a level of significance, it would also potentially contribute to a significant short-term cumulative adverse air quality impact in the project area. Because there is no feasible mitigation available to reduce the construction-related ROG and NO_X impacts of the project to below a level of significance, there is no mitigation that would reduce the project's contribution to cumulative short-term adverse air quality impacts to below a level of significance. Therefore, construction air quality impacts are considered cumulatively significant.

Operation

The traffic analysis for the project is a cumulative impact assessment because the traffic model forecasts total traffic based on known cumulative projects and the City's General Plan. Because this air quality impact analysis uses this same cumulative traffic data, it also assesses cumulative impacts. As stated above, operation

of the project would result in emissions of ROG, NO_X, CO, PM_{10}, and $PM_{2.5}$ that exceed the SCAQMD's daily thresholds. Because there is no feasible mitigation available to reduce the ROG, NO_X, CO, PM_{10} and $PM_{2.5}$ impacts of the project to below a level of significance, there is no mitigation that would reduce the project's contribution to cumulative long-term adverse air quality impacts to below a level of significance. Therefore, operational air quality impacts are considered cumulatively significant.

5.3.5 Existing Regulations

State

- Clean Car Standards – Pavley (AB 1493)
- California Advanced Clean Cars ARB (Title 13 CCR)
- Low-Emission Vehicle Program – LEV III (Title 13 CCR)
- Statewide Retail Provider Emissions Performance Standards (SB 1368).
- Airborne Toxics Control Measure to Limit School Bus Idling and Idling at Schools (13 CCR 2480)
- Airborne Toxic Control Measure to Limit Diesel-Fuel Commercial Vehicle Idling (13 CCR 2485)
- In-Use Off-Road Diesel Idling Restriction (13 CCR 2449)
- Building Energy Efficiency Standards (Title 24, Part 6)
- California Green Building Code (Title 24, Part 11)
- Appliance Energy Efficiency Standards (Title 20)

South Coast Air Quality Management District

- SCAQMD Rule 201: Permit to Construct
- SCAQMD Rule 402: Nuisance Odors
- SCAQMD Rule 403: Fugitive Dust
- SCAQMD Rule 1113: Architectural Coatings
- SCAQMD Rule 1186: Street Sweeping
- SCAQMD Rule 1403: Asbestos Emissions from Demolition/Renovation Activities

5.3.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, the following impacts would be less than significant: 5.3-3 and 5.3-5.

Without mitigation, the following impacts would be potentially significant:

- **Impact 5.3-1** Construction activities associated with the proposed project would generate short-term emissions in exceedance of SCAQMD's threshold criteria for NO_X in Phases 1 through 4.

- **Impact 5.3-2** From Phase 2 onwards, operational activities of the proposed project would generate peak daily emissions in exceedance of the SCAQMD daily thresholds for ROG, NO_X, CO, PM_{10}, and $PM_{2.5}$.

- **Impact 5.3-4** The Rancho San Gorgonio Specific Plan is a regionally significant project that would contribute to an increase in frequency or severity of air quality violations in the South Coast Air Basin and conflict with the implementation of the applicable air quality management plan.

5.3.7 Mitigation Measures

Impact 5.3-1

3-1 **Application of Architectural Coatings.** Prior to issuance of any grading permits, the City of Banning Public Works Department, or designee, shall verify that construction contracts provided by future applicants include a statement specifying that the Construction Contractor shall comply with the SCAQMD Rule 1113 and any other SCAQMD rules and regulations on the use of architectural coatings or high-volume, low-pressure (HVLP) spray methods. Emissions associated with architectural coatings would be reduced by complying with these rules and regulations, which include using pre-coated/natural colored building materials, using water-based or low-VOC coating, and using coating transfer or spray equipment with high transfer efficiency. As the emissions from architectural coatings will exceed the SCAQMD's thresholds, the use of low-VOC (e.g., 50 grams per liter [g/L] of VOC content or lower) shall be required for interior and exterior painting using an HVLP method.

3-2 **EPA Tier 4-Final Emissions Standards.** The applicant shall make available to the City of Banning, or designee, for review and approval, a comprehensive inventory of all off-road construction equipment equal to or greater than 50 horsepower that will be used an aggregate of 40 or more hours during any portion of construction activities for the project. The inventory shall include the horsepower rating, engine production year, and certification of the specified tier standard. A copy of each such unit's certified tier specification, Best Available Control Technology documentation, and ARB or SCAQMD operating permit shall be provided on site at the time of mobilization of each applicable unit of equipment. Off-road diesel-powered equipment that will be used an aggregate of 40 or more hours during any portion of the construction activities for the project shall meet the EPA Tier 4 final emissions standards.

In the event that such equipment is not available, the use of Tier 3 construction equipment is sufficient so long as it can be demonstrated to the City that similar Tier 4 construction equipment is not readily available

3-3 **Equipment Maintenance.** All construction equipment shall be properly tuned and maintained in accordance with manufacturer's specifications.

3-4 **Equipment Operation.** General contractors shall maintain and operate construction equipment so as to minimize exhaust emissions. During construction, trucks and vehicles in loading and unloading queues would turn their engines off when not in use to reduce vehicle emissions. Construction emissions should be phased and scheduled to avoid emissions peaks and discontinued during second-stage smog alerts.

3-5 **Generator Use.** Electricity from power poles rather than temporary diesel- or gasoline-powered generators shall be used to the extent feasible.

Impact 5.3-2

3-6 **Operational Mitigation Measures.** Prior to issuance of any construction permits, future development applicants shall submit for review and approval by the City of Banning, building plans that incorporate operational mitigation measures such as, but not limited to, the following:

- Transportation
  - Applicants for future development projects shall provide evidence to the City that they would provide one electric car charging station for every 10 high-density residence and provisions for electric car charging stations in the garages of all very low density, low density, medium density, and medium-high density housing.
  - Applicants for future development projects shall provide evidence to the City that they would provide at least two designated parking spots for parking of zero-emission vehicles (ZEVs) or for car-sharing programs in all employee/worker parking areas.
  - Applicants for future development projects shall provide evidence to the City that they would provide incentives for employees and the public to use public transportation such as discounted transit passes, reduced ticket prices at local events, and/or other incentives.
  - Applicants for future development projects shall provide evidence to the City that they would implement a rideshare program for employees at retail/commercial sites.
- Energy Efficiency
  - Applicants for future development projects shall provide evidence to the City that they would design all structures to use passive heating, natural cooling, and reduced pavement to the extent feasible. All residences shall use either high-efficiency or solar hot water systems.
  - Applicants for future development projects shall provide evidence to the City that they would limit the hours of operation of outdoor lighting in publicly accessible areas.

- Applicants for future development projects shall provide evidence to the City that they would install light-colored "cool" roofs on all commercial structures and cool pavements throughout the project site.
- Applicants for future development projects shall provide evidence to the City that they would require the use of electric/energy-efficient appliances (e.g., stoves) in all residences.

- Other
  - Prior to issuance of a building permit, the applicant shall submit a Construction Plan to the City for review and approval that demonstrates that the development will install photovoltaic panels on a minimum of 25 percent of the units within the development. The panels shall be capable of generating 25 percent of the projected electricity demand of each proposed housing unit. For non-residential projects, photovoltaic panels shall be installed, which shall provide a minimum of 25 percent of the electrical demand of the non-residential building.
  - Applicants for future development projects shall provide evidence to the City that they would provide outlets for electric and propane barbecues in every residence with an outside patio.
  - Applicants for future development projects shall provide evidence to the City that they would require that all homeowner associations' covenants, conditions and restrictions (CC&Rs) mandate the use of electric lawn mowers and leaf blowers by all residents.

Impact 5.3-4

Mitigation measures incorporated into future development projects in accordance with the proposed project area described under Impacts 5.3-1 and 5.3-2, above, and would reduce criteria air pollutant emissions associated with buildout of the project. However, no mitigation measures are available that would reduce impacts associated with inconsistency with the air quality management plans due to the magnitude of growth and associated emissions that would be generated by the buildout of the project.

5.3.8 Level of Significance After Mitigation

Impact 5.3-1

With the EPA Tier 4-Final Emissions Standards mitigation measure described above, Tables 5.3-14 through 5.3-19 show that all construction emissions would be reduced to less than significant.

Table 5.3-14 Short-Term Regional Phase 1 Construction Emissions, 2017, With Mitigation

	Total Regional Pollutant Emissions (lbs/day)							
Construction Phase	ROG	NO_X	CO	SO_X	Fugitive PM_{10}	Exhaust PM_{10}	Fugitive $PM_{2.5}$	Exhaust $PM_{2.5}$
Site Preparation	1.0	20	25	0.042	7.2	0.96	3.9	0.96
Grading	1.6	30	39	0.065	3.6	1.3	1.5	1.3
Building Construction	2.0	18	30	0.051	1.5	1.0	0.4	1.0
Architectural Coating	23	1.5	3.2	0.0062	0.26	0.097	0.068	0.097
Paving	0.61	11	18	0.024	0.17	0.60	0.045	0.60
Peak Daily Emissions[1]	28	81	120	0.19	17		9.9	
SCAQMD Thresholds	75	100	550	150	150		55	
Significant Emissions?	No	No	No	No	No		No	

Source: LSA Associates, April 2016.
Note: All equipment Tier 3.
[1] The peak daily emissions assume that all of the phases could overlap to occur all on 1 day.
CO = carbon monoxide
lbs/day = pounds per day
NO_X = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
ROG = reactive organic compounds
SCAQMD = South Coast Air Quality Management District
SO_X = sulfur oxides

Table 5.3-15 Short-Term Regional Phase 2 Construction Emissions, 2019, With Mitigation

	Total Regional Pollutant Emissions (lbs/day)							
Construction Phase	ROG	NO_X	CO	SO_X	Fugitive PM_{10}	Exhaust PM_{10}	Fugitive $PM_{2.5}$	Exhaust $PM_{2.5}$
Site Preparation	1	20	24	0.042	7.2	0.96	3.9	0.96
Grading	1.6	30	39	0.065	3.6	1.3	1.5	1.3
Building Construction	1.9	18	30	0.053	1.7	0.99	0.45	0.98
Architectural Coating	16	1.5	3.4	0.0067	0.29	0.097	0.077	0.097
Paving	0.6	11	18	0.024	0.17	0.6	0.045	0.6
Peak Daily Emissions[1]	21	81	110	0.19	17		9.9	
SCAQMD Thresholds	75	100	550	150	150		55	
Significant Emissions?	No	No	No	No	No		No	

Source: LSA Associates, April 2016.
Note: All equipment Tier 3.
[1] The peak daily emissions assume that all of the phases could overlap to occur all on 1 day.
CO = carbon monoxide
lbs/day = pounds per day
NO_X = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
ROG = reactive organic compounds
SCAQMD = South Coast Air Quality Management District
SO_X = sulfur oxides

Table 5.3-16 Short-Term Regional Phase 3 Construction Emissions, 2022, With Mitigation

	Total Regional Pollutant Emissions (lbs/day)							
Construction Phase	ROG	NO_X	CO	SO_X	Fugitive PM_{10}	Exhaust PM_{10}	Fugitive $PM_{2.5}$	Exhaust $PM_{2.5}$
Site Preparation	1.0	20	24	0.042	7.2	0.96	3.9	0.96
Grading	1.6	30	39	0.065	3.6	1.3	1.5	1.3
Building Construction	1.9	18	31	0.060	2.1	0.98	0.56	0.98
Architectural Coating	6.1	1.5	3.5	0.010	0.36	0.10	0.090	0.10
Paving	0.59	11	18	0.024	0.17	0.60	0.045	0.6
Peak Daily Emissions[1]	11	81	120	0.2	17		10	
SCAQMD Thresholds	75	100	550	150	150		55	
Significant Emissions?	No	No	No	No	No		No	

Source: LSA Associates, April 2016.
Note: All equipment Tier 3.
[1] The peak daily emissions assume that all of the phases could overlap to occur all on 1 day.
CO = carbon monoxide
lbs/day = pounds per day
NO_X = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
ROG = reactive organic compounds
SCAQMD = South Coast Air Quality Management District
SO_X = sulfur oxides

Table 5.3-17 Short-Term Regional Phase 4 Construction Emissions, 2025, With Mitigation

	Total Regional Pollutant Emissions (lbs/day)							
Construction Phase	ROG	NO_X	CO	SO_X	Fugitive PM_{10}	Exhaust PM_{10}	Fugitive $PM_{2.5}$	Exhaust $PM_{2.5}$
Site Preparation	0.53	2.1	22	0.042	7.2	0.065	3.9	0.065
Grading	0.82	3.4	36	0.065	3.6	0.10	1.5	0.10
Building Construction	5.6	19	100	0.28	18	0.43	5.2	0.41
Architectural Coating	17	0.93	11	0.036	2.6	0.024	0.68	0.022
Paving	0.62	1.2	17	0.024	0.17	0.038	0.045	0.038
Peak Daily Emissions[1]	25	27	190	0.45	32		12	
SCAQMD Thresholds	75	100	550	150	150		55	
Significant Emissions?	No	No	No	No	No		No	

Source: LSA Associates, April 2016.
Note: All equipment Tier 3.
[1] The peak daily emissions assume that all of the phases could overlap to occur all on 1 day.
CO = carbon monoxide
lbs/day = pounds per day
NO_X = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
ROG = reactive organic compounds
SCAQMD = South Coast Air Quality Management District
SO_X = sulfur oxides

Table 5.3-18 Short-Term Regional Phase 5 Construction Emissions, 2029, With Mitigation

	Total Regional Pollutant Emissions (lbs/day)							
Construction Phase	ROG	NO_X	CO	SO_X	Fugitive PM_{10}	Exhaust PM_{10}	Fugitive $PM_{2.5}$	Exhaust $PM_{2.5}$
Site Preparation	0.52	2.1	22	0.042	7.2	0.065	3.9	0.065
Grading	0.80	3.3	35	0.065	3.6	0.10	1.5	0.10
Building Construction	1.8	6.3	36	0.10	5.1	0.18	1.4	0.17
Architectural Coating	16	0.35	4.5	0.015	0.93	0.011	0.25	0.011
Paving	0.30	1.2	17	0.030	0.17	0.038	0.045	0.038
Peak Daily Emissions[1]	19	13	110	0.25	17		7.5	
SCAQMD Thresholds	75	100	550	150	150		55	
Significant Emissions?	No	No	No	No	No		No	

Source: LSA Associates, April 2016.
Note: All equipment Tier 3.
[1] The peak daily emissions assume that all of the phases could overlap to occur all on 1 day.
CO = carbon monoxide
lbs/day = pounds per day
NO_X = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
ROG = reactive organic compounds
SCAQMD = South Coast Air Quality Management District
SO_X = sulfur oxides

Table 5.3-19 Short-Term Regional Phase 6 Construction Emissions, 2035, With Mitigation

	Total Regional Pollutant Emissions (lbs/day)							
Construction Phase	ROG	NO_X	CO	SO_X	Fugitive PM_{10}	Exhaust PM_{10}	Fugitive $PM_{2.5}$	Exhaust $PM_{2.5}$
Site Preparation	0.50	2.1	22	0.045	7.2	0.065	3.9	0.065
Grading	0.79	3.3	35	0.071	3.6	0.10	1.5	0.10
Building Construction	0.55	2.8	19	0.038	0.43	0.066	0.12	0.065
Architectural Coating	3.9	0.14	2.0	0.0040	0.078	0.0046	0.021	0.0045
Paving	0.30	1.2	17	0.030	0.17	0.038	0.045	0.038
Peak Daily Emissions[1]	6.0	9.5	95	0.19	12		5.9	
SCAQMD Thresholds	75	100	550	150	150		55	
Significant Emissions?	No	No	No	No	No		No	

Source: LSA Associates, April 2016.
Note: All equipment Tier 3.
[1] The peak daily emissions assume that all of the phases could overlap to occur all on 1 day.
CO = carbon monoxide
lbs/day = pounds per day
NO_X = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
ROG = reactive organic compounds
SCAQMD = South Coast Air Quality Management District
SO_X = sulfur oxides

Impact 5.3-2

Incorporation of Mitigation Measure 3-6 would reduce operation-related criteria air pollutants and encourage and accommodate use of alternative-fueled vehicles, multimodal transportation, and energy efficient technology. However, despite adherence to mitigation, Impact 5.3-2 would remain significant and unavoidable.

Impact 5.3-4

The proposed Specific Plan would require a general plan amendment to allow the land uses as contained in the Rancho San Gorgonio Specific Plan. In addition, the proposed project would exceed several SCAQMD emission thresholds during both construction and operation. Mitigation Measures 3-1 through 3-6 would reduce the project's regional construction-related and operational phase criteria air pollutant emissions to the extent feasible. However, the emissions associated with the project are expected to exceed the General Plan projections and could contribute to air quality deterioration beyond current SCAQMD projections. Therefore, the proposed project would not be consistent with assumptions in the regional AQMP, and impacts would remain significant and unavoidable.

5.3.9 References

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5. Environmental Analysis
AIR QUALITY

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