

5. Environmental Analysis

5.3 AIR QUALITY

This section of the Draft Environmental Impact Report (DEIR) evaluates the potential for implementation of the proposed Antelope Valley Area Plan (Proposed Project) to impact or be impacted by air quality. The analysis in this section is based on buildout of the Proposed Project, as modeled using the California Emissions Estimator Model (CalEEMod), Version 2013.2.2, and trip generation and vehicle miles traveled (VMT) provided by Fehr & Peers (see Appendix F to this DEIR). Criteria air pollutant emissions modeling for the Proposed Project is included in Appendix F of this DEIR.

5.3.1 Environmental Setting

5.3.1.1 REGULATORY SETTING

Ambient air quality standards (AAQS) have been adopted at state and federal levels for criteria air pollutants. In addition, both the State and federal government regulate the release of toxic air contaminants (TACs). The Proposed Project spans two air basins and air districts as shown in Figure 5.3-1, *Air Districts and Air Basins Within the Antelope Valley Area Plan*. The northern portions of the Project Area are within the Mojave Desert Air Basin (MDAB). The southern portion of the Project Area which consists of the Angeles National Forest is within the South Coast Air Basin (SoCAB). Depending on which air basin a site lies within, land use is subject to the rules and regulations imposed by the South Coast Air Quality Management District (SCAQMD) or the Antelope Valley Air Quality Management District (AVAQMD), as well as the California AAQS adopted by the California Air Resources Board (CARB) and National AAQS adopted by the United States Environmental Protection Agency (EPA). Federal, State, regional, and local laws, regulations, plans, or guidelines that are potentially applicable to the Proposed Project are summarized below.

Federal and State Laws

Ambient Air Quality Standards

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

The National and California AAQS are the levels of air quality considered to provide a margin of safety in the protection of the public health and welfare. They are designed to protect “sensitive receptors” most susceptible to further respiratory distress, such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can

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tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

Both California and the federal government have established health-based AAQS for seven air pollutants, which are shown in Table 5.3-1, *Ambient Air Quality Standards for Criteria Pollutants*. These pollutants are ozone (O₃), nitrogen dioxide (NO₂), carbon monoxide (CO), sulfur dioxide (SO₂), coarse inhalable particulate matter (PM₁₀), fine inhalable particulate matter (PM_{2.5}), and lead (Pb). In addition, the state has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety.

Table 5.3-1 Ambient Air Quality Standards for Criteria Pollutants

Pollutant	Averaging Time	California Standard	Federal Primary Standard	Major Pollutant Sources
Ozone (O ₃)	1 hour	0.09 ppm	*	Motor vehicles, paints, coatings, and solvents.
	8 hours	0.070 ppm	0.075 ppm	
Carbon Monoxide (CO)	1 hour	20 ppm	35 ppm	Internal combustion engines, primarily gasoline-powered motor vehicles.
	8 hours	9.0 ppm	9 ppm	
Nitrogen Dioxide (NO ₂)	Annual Average	0.030 ppm	0.053 ppm	Motor vehicles, petroleum-refining operations, industrial sources, aircraft, ships, and railroads.
	1 hour	0.18 ppm	0.100 ppm	
Sulfur Dioxide (SO ₂)	Annual Arithmetic Mean	*	* ¹	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
	1 hour	0.25 ppm	0.075 ppm	
	24 hours	0.04 ppm	* ¹	
Respirable Particulate Matter (PM ₁₀)	Annual Arithmetic Mean	20 µg/m ³	*	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g. wind-raised dust and ocean sprays).
	24 hours	50 µg/m ³	150 µg/m ³	
Respirable Particulate Matter (PM _{2.5})	Annual Arithmetic Mean	12 µg/m ³	12 µg/m ³	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g. wind-raised dust and ocean sprays).
	24 hours	*	35 µg/m ³	
Lead (Pb)	30-Day Average	1.5 µg/m ³	*	Present source: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline.
	Calendar Quarterly	*	1.5 µg/m ³	
	Rolling 3-Month Average	*	0.15 µg/m ³	
Sulfates (SO ₄)	24 hours	25 µg/m ³	*	Industrial processes.

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Table 5.3-1 Ambient Air Quality Standards for Criteria Pollutants

Pollutant	Averaging Time	California Standard	Federal Primary Standard	Major Pollutant Sources
Visibility Reducing Particles	8 hours	ExCo =0.23/km visibility of 10≥ miles	No Federal Standard	Visibility-reducing particles consist of suspended particulate matter, which is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size, and chemical composition, and can be made up of many different materials such as metals, soot, soil, dust, and salt.
Hydrogen Sulfide	1 hour	0.03 ppm	No Federal Standard	Hydrogen sulfide (H ₂ S) is a colorless gas with the odor of rotten eggs. It is formed during bacterial decomposition of sulfur-containing organic substances. Also, it can be present in sewer gas and some natural gas, and can be emitted as the result of geothermal energy exploitation.
Vinyl Chloride	24 hour	0.01 ppm	No Federal Standard	Vinyl chloride (chloroethene), a chlorinated hydrocarbon, is a colorless gas with a mild, sweet odor. Most vinyl chloride is used to make polyvinyl chloride (PVC) plastic and vinyl products. Vinyl chloride has been detected near landfills, sewage plants, and hazardous waste sites, due to microbial breakdown of chlorinated solvents.

Source: CARB 2013a.

Notes: ppm: parts per million; µg/m³: micrograms per cubic meter

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

¹ On June 2, 2010, a new 1-hour SO₂ standard was established, and the existing 24-hour and annual primary standards were revoked.

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. Carbon monoxide (CO), volatile organic compounds (VOC), nitrogen oxides (NO_x), sulfur dioxide (SO₂), coarse inhalable particulate matter (PM₁₀), fine inhalable particulate matter (PM_{2.5}), and lead (Pb) are primary air pollutants. Of these, CO, SO₂, NO₂, PM₁₀, and PM_{2.5} are “criteria air pollutants,” which means that AAQS have been established for them. VOC and NO_x are criteria pollutant precursors that form secondary criteria air pollutants through chemical and photochemical reactions in the atmosphere. Ozone (O₃) and nitrogen dioxide (NO₂) are the principal secondary pollutants.

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

- **Carbon Monoxide** is a colorless, odorless gas produced by incomplete combustion of carbon substances, such as gasoline or diesel fuel. CO is a primary criteria air pollutant. CO concentrations tend to be the highest during winter mornings with little to no wind, when surface-based inversions trap the pollutant at ground levels. The highest ambient CO concentrations are generally found near traffic-

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congested corridors and intersections. The primary adverse health effect associated with CO is interference with normal oxygen transfer to the blood, which may result in tissue oxygen deprivation (SCAQMD 2005; EPA 2012). Both the SoCAB and the Antelope Valley portion of the MDAB are designated under the California and National AAQS as being in attainment of CO criteria levels (CARB 2014a).

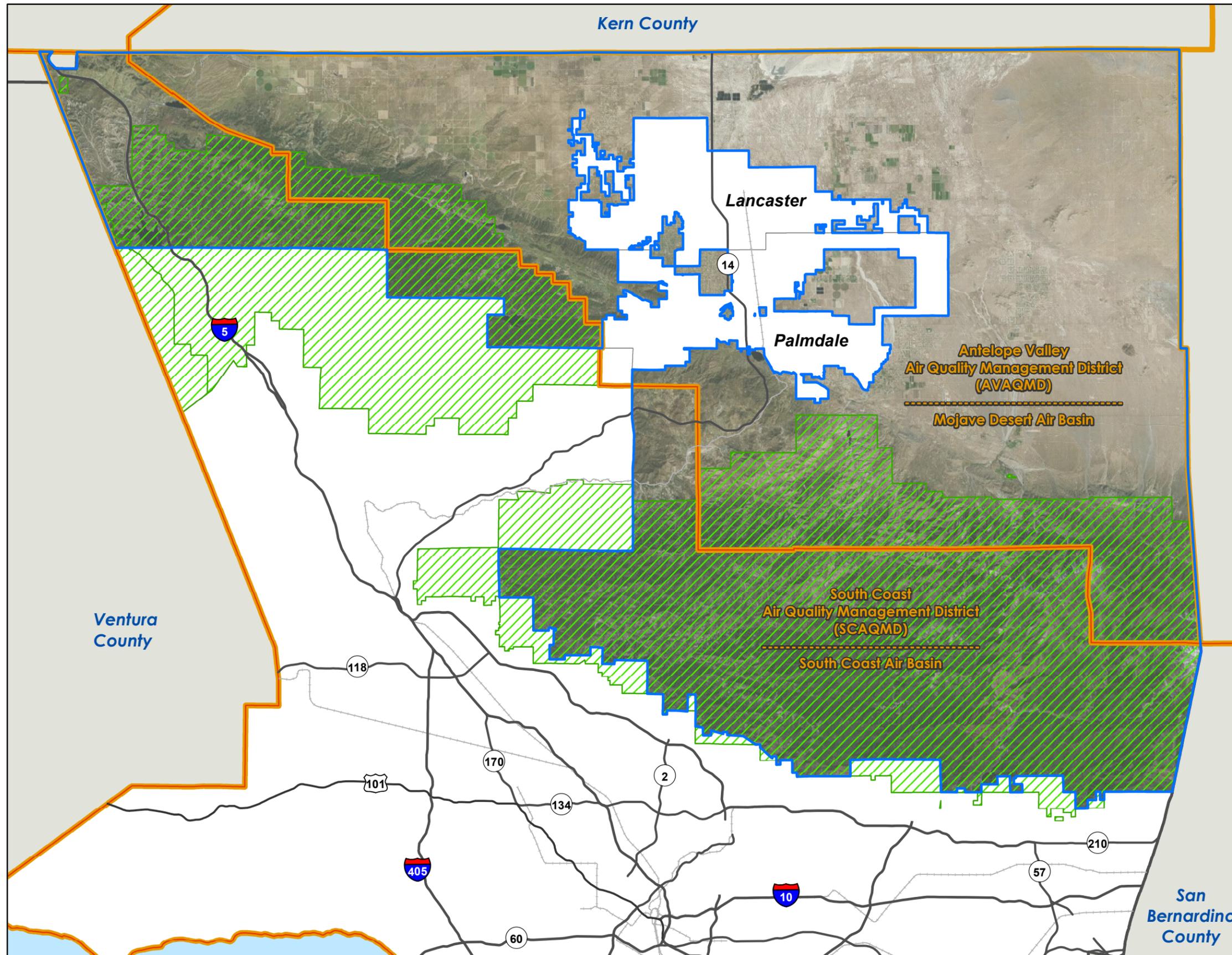
- **Volatile Organic Compounds** are comprised primarily of hydrogen and carbon atoms. Internal combustion associated with motor vehicle usage is the major source of VOCs. Other sources of VOCs include evaporative emissions associated with paints and solvents, asphalt paving, and household consumer products such as aerosols (SCAQMD 2005). There are no ambient air quality standards established for VOCs. However, because they contribute to the formation of O₃, SCAQMD and AVAQMD have established a significance threshold for this pollutant.
- **Nitrogen Oxides** are a by-product of fuel combustion and contribute to the formation of ground-level O₃, PM₁₀, and PM_{2.5}. The two major forms of NO_x are nitric oxide (NO) and nitrogen dioxide (NO₂). NO is a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperature and/or high pressure. The principal form of NO₂ produced by combustion is NO, but NO reacts quickly with oxygen to form NO₂, creating the mixture of NO and NO₂ commonly called NO_x. NO₂ is an acute irritant and more injurious than NO in equal concentrations. At atmospheric concentrations, however, NO₂ is only potentially irritating. NO₂ absorbs blue light; the result is a brownish-red cast to the atmosphere and reduced visibility. NO₂ exposure concentrations near roadways are of particular concern for susceptible individuals, including asthmatics, children, and the elderly. Current scientific evidence links short-term NO₂ exposures, ranging from 30 minutes to 24 hours, with adverse respiratory effects, including airway inflammation in healthy people and increased respiratory symptoms in people with asthma. Also, studies show a connection between elevated short-term NO₂ concentrations and increased visits to emergency departments and hospital admissions for respiratory issues, especially asthma (SCAQMD 2005, EPA 2012). Both the SoCAB and the Antelope Valley portion of the MDAB are designated as an attainment area for NO₂ under the California and National AAQS (CARB 2014a).

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FIGURE 5.3-1

**AIR DISTRICTS AND AIR BASINS
WITHIN THE ANTELOPE VALLEY
AREA PLAN**

-  Antelope Valley Project Area
-  California Air Basin Boundary
-  Air Quality Management District Boundary
-  Angeles National Forest



ANTELOPE VALLEY
AREA PLAN UPDATE
DRAFT EIR

COLA-03.0E 8/18/2014 10:58:55 AM
0 2.5 5 Miles



Source: Air Resources Board, California Environmental Protection, Agency, 2014

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- **Sulfur Dioxide** a colorless, pungent, irritating gas formed by the combustion of sulfurous fossil fuels. It enters the atmosphere as a result of burning high-sulfur-content fuel oils and coal and chemical processes at plants and refineries. Gasoline and natural gas have very low sulfur content and do not release significant quantities of SO₂. When sulfur dioxide forms sulfates (SO₄) in the atmosphere, together these pollutants are referred to as sulfur oxides (SO_x). Thus, SO₂ is both a primary and secondary criteria air pollutant. At sufficiently high concentrations, SO₂ may irritate the upper respiratory tract. Current scientific evidence links short-term exposures to SO₂, ranging from 5 minutes to 24 hours, with an array of adverse respiratory effects, including bronchoconstriction and increased asthma symptoms. These effects are particularly adverse for asthmatics at elevated ventilation rates (e.g., while exercising or playing.) At lower concentrations and when combined with particulates, SO₂ may do greater harm by injuring lung tissue. Studies also show a connection between short-term exposure and increased visits to emergency facilities and hospital admissions for respiratory illnesses, particularly in at-risk populations such as children, the elderly, and asthmatics (SCAQMD 2005; EPA 2012). The SoCAB portion of the Antelope Valley Area Plan is designated attainment under the California and National AAQS (CARB 2014a). The MDAB portion is designated attainment and unclassified under the California and National AAQS, respectively (CARB 2014a).
- **Suspended Particulate Matter** consists of finely divided solids or liquids such as soot, dust, aerosols, fumes, and mists. Two forms of fine particulates are now recognized and regulated. Inhalable coarse particles, or PM₁₀, include particulate matter with an aerodynamic diameter of 10 microns or less (i.e., ≤10 millionths of a meter or 0.0004 inch). Inhalable fine particles, or PM_{2.5}, have an aerodynamic diameter of 2.5 microns or less (i.e., ≤2.5 millionths of a meter or 0.0001 inch). Particulate discharge into the atmosphere results primarily from industrial, agricultural, construction, and transportation activities. Both PM₁₀ and PM_{2.5} may adversely affect the human respiratory system, especially in people who are naturally sensitive or susceptible to breathing problems. The EPA's scientific review concluded that PM_{2.5}, which penetrates deeply into the lungs, is more likely than PM₁₀ to contribute to health effects and at far lower concentrations. These health effects include premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms (e.g., irritation of the airways, coughing, or difficulty breathing) (SCAQMD 2005). There has been emerging evidence that even smaller particulates with an aerodynamic diameter of <0.1 microns or less (i.e., ≤0.1 millionths of a meter or <0.000004 inch), known as ultrafine particulates (UFPs), have human health implications because UFPs toxic components may initiate or facilitate biological processes that may lead to adverse effects to the heart, lung, and other organs (SCAQMD 2013). However, the EPA or CARB have yet to adopt AAQS to regulate the even smaller fractions of PM. Diesel particulate matter (DPM) is classified by CARB as a carcinogen. Particulate matter can also cause environmental effects such as visibility impairment,¹ environmental damage,² and aesthetic

¹ PM_{2.5} is the main cause of reduced visibility (haze) in parts of the United States.

² Particulate matter can be carried over long distances by wind and then settle on ground or water, making lakes and streams acidic; changing the nutrient balance in coastal waters and large river basins; depleting the nutrients in soil; damaging sensitive forests and farm crops; and affecting the diversity of ecosystems.

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damage³ (SCAQMD 2005; EPA 2012). The SoCAB is a nonattainment area for PM_{2.5} under California and National AAQS and a nonattainment area for PM₁₀ under the California AAQS (CARB 2014a).⁴ The Antelope Valley portion of the MDAB is identified as unclassified/attainment for PM_{2.5} under California and National AAQS, attainment for PM₁₀ under the National AAQS, and a nonattainment area for PM₁₀ under the California AAQS (CARB 2014a).⁵

- **Ozone** is commonly referred to as “smog” and is a gas that is formed when VOCs and NO_x, both by-products of internal combustion engine exhaust, undergo photochemical reactions in sunlight. O₃ is a secondary criteria air pollutant. O₃ concentrations are generally highest during the summer months when direct sunlight, light winds, and warm temperatures create favorable conditions for its formation. O₃ poses a health threat to those who already suffer from respiratory diseases as well as to healthy people. Breathing O₃ can trigger a variety of health problems, including chest pain, coughing, throat irritation, and congestion. It can worsen bronchitis, emphysema, and asthma. Ground-level O₃ also can reduce lung function and inflame the linings of the lungs. Repeated exposure may permanently scar lung tissue. O₃ also affects sensitive vegetation and ecosystems, including forests, parks, wildlife refuges, and wilderness areas. In particular, O₃ harms sensitive vegetation, including forest trees and plants during the growing season (SCAQMD 2005; EPA 2012). The SoCAB is designated extreme nonattainment under the California AAQS (1-hour and 8-hour) and National AAQS (8-hour) (CARB 2014a). The Antelope Valley portion of the MDAB is designated extreme nonattainment under the California AAQS (1-hour and 8-hour) and serious-17 nonattainment under the National AAQS (8-hour) (CARB 2014a).
- **Lead** is a metal found naturally in the environment as well as in manufactured products. Once taken into the body, lead distributes throughout the body in the blood and accumulates in the bones. Depending on the level of exposure, lead can adversely affect the nervous system, kidney function, immune system, reproductive and developmental systems, and the cardiovascular system. Lead exposure also affects the oxygen-carrying capacity of the blood. The effects of lead most commonly encountered in current populations are neurological effects in children and cardiovascular effects in adults (e.g., high blood pressure and heart disease). Infants and young children are especially sensitive to even low levels of lead, which may contribute to behavioral problems, learning deficits, and lowered IQ (SCAMQD 2005; EPA 2012). The major sources of lead emissions have historically been mobile and industrial sources. As a result of the EPA’s regulatory efforts to remove lead from gasoline, emissions of lead from the transportation sector dramatically declined by 95 percent between 1980 and 1999, and levels of lead in the air decreased by 94 percent between 1980 and 1999. Today, the highest levels of lead in air are usually found near lead smelters. The major sources of lead emissions today are ore and metals processing and

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

⁴ CARB approved the SCAQMD’s request to redesignate the SoCAB from serious nonattainment for PM₁₀ to attainment for PM₁₀ under the National AAQS on March 25, 2010, because the SoCAB did not violate federal 24-hour PM₁₀ standards from 2004 to 2007. In June 2013, the EPA approved the State of California’s request to redesignate the South Coast PM₁₀ nonattainment area to attainment of the PM₁₀ National AAQS, effective on July 26, 2013.

⁵ CARB approved the SCAQMD’s request to redesignate the SoCAB from serious nonattainment for PM₁₀ to attainment for PM₁₀ under the National AAQS on March 25, 2010, because the SoCAB did not violate federal 24-hour PM₁₀ standards from 2004 to 2007. In June 2013, the EPA approved the State of California’s request to redesignate the South Coast PM₁₀ nonattainment area to attainment of the PM₁₀ National AAQS, effective on July 26, 2013.

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piston-engine aircraft operating on leaded aviation gasoline. However, in 2008 the EPA and CARB adopted more strict lead standards, and special monitoring sites immediately downwind of lead sources recorded very localized violations of the new state and federal standards, all outside the Project Area.⁶ As a result of these violations, the Los Angeles County portion of the SoCAB is designated as nonattainment under the National AAQS for lead (SCAQMD 2012a; CARB 2014a). The Antelope Valley portion of the MDAB is designated in attainment under the California and National AAQS for lead (CARB 2014a). Because emissions of lead are found only in projects that are permitted by SCAQMD and AVAQMD, lead is not a pollutant of concern for the Proposed Project.

Toxic Air Contaminants (TACs)

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

California regulates TACs primarily through AB 1807 (Tanner Air Toxics Act) and AB 2588 (Air Toxics “Hot Spot” Information and Assessment Act of 1987). The Tanner Air Toxics Act set up a formal procedure for CARB to designate substances as TACs. Once a TAC is identified, CARB adopts an “airborne toxics control measure” for sources that emit that TAC. If there is a safe threshold for a substance (i.e., a point below which there is no toxic effect), the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate toxics best available control technology to minimize emissions. To date, CARB has established formal control measures for 11 TACs that are identified as having no safe threshold.

Air toxics from stationary sources are also regulated in California under the Air Toxics “Hot Spot” Information and Assessment Act of 1987. Under AB 2588, TAC emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High priority facilities are required to perform an HRA, and if specific thresholds are exceeded, are required to communicate the results to the public through notices and public meetings.

By the last update to the TAC list in December 1999, CARB had designated 244 compounds as TACs (CARB 1999). Additionally, CARB has implemented control measures for a number of compounds that pose high risks and show potential for effective control. The majority of the estimated health risks from TACs can be

⁶ Source-oriented monitors record concentrations of lead at lead-related industrial facilities in the SoCAB, which include Exide Technologies in the City of Commerce; Quemetco, Inc., in the City of Industry; Trojan Battery Company in Santa Fe Springs; and Exide Technologies in Vernon. Monitoring conducted between 2004 through 2007 showed that the Trojan Battery Company and Exide Technologies exceed the federal standards (SCAQMD 2012a).

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attributed to relatively few compounds, the most important being particulate matter from diesel-fueled engines.

In 1998, CARB identified DPM as a TAC. Previously, the individual chemical compounds in diesel exhaust were considered TACs. Almost all diesel exhaust particles are 10 microns or less in diameter. Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lungs.

SoCAB Multiple Air Toxics Exposure Study III

In 2000, SCAQMD conducted a study on ambient concentrations of TACs and estimated the potential health risks from air toxics. The results showed that the overall risk for excess cancer from a lifetime exposure to ambient levels of air toxics was about 1,400 in a million. The largest contributor to this risk was diesel exhaust, accounting for 71 percent of the air toxics risk. In 2008, SCAQMD conducted its third update to its study on ambient concentrations of TACs and estimated the potential health risks from air toxics. The results showed that the overall risk for excess cancer from a lifetime exposure to ambient levels of air toxics was about 1,200 in one million. The largest contributor to this risk was diesel exhaust, accounting for approximately 84 percent of the air toxics risk in the SoCAB (SCAQMD 2008a).

5.3.1.2 EXISTING CONDITIONS

South Coast Air Quality Management District

SCAQMD is the agency responsible for assuring that the National and California AAQS are attained and maintained in the SoCAB.

Air Quality Management Planning

SCAQMD is responsible for preparing the air quality management plan (AQMP) for the SoCAB in coordination with the Southern California Association of Governments (SCAG). Since 1979, a number of AQMPs have been prepared.

2012 AQMP

On December 7, 2012, SCAQMD adopted the 2012 AQMP, which employs the most up-to-date science and analytical tools and incorporates a comprehensive strategy aimed at controlling pollution from all sources, including stationary sources, on- and off-road mobile sources, and area sources. It also addresses several state and federal planning requirements, incorporating new scientific information, primarily in the form of updated emissions inventories, ambient measurements, and new meteorological air quality models. The 2012 AQMP builds upon the approach identified in the 2007 AQMP for attainment of federal PM and ozone standards and highlights the significant amount of reductions needed. It also highlights the urgent need to engage in interagency coordinated planning to identify additional strategies, especially in the area of mobile sources, to meet all federal criteria air pollutant standards within the time frames allowed under the CAA. The 2012 AQMP demonstrates attainment of federal 24-hour PM_{2.5} standard by 2014 and the federal 8-hour ozone standard by 2023. It includes an update to the revised EPA 8-hour ozone control plan with new

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commitments for short-term NO_x and VOC reductions. The plan also identifies emerging issues—ultrafine (PM_{1.0}) particulate matter and near-roadway exposure and an analysis of energy supply and demand.

Lead State Implementation Plan

In 2008, the EPA designated the Los Angeles County portion of the SoCAB as a nonattainment area under the federal lead classification due to the addition of source-specific monitoring under the new federal regulation. This designation was based on two source-specific monitors in the City of Vernon and in the City of Industry exceeding the new standard in the 2007 to 2009 period. The remainder of the SoCAB, outside the Los Angeles County nonattainment area, remains in attainment of the new standard. On May 24, 2012, CARB approved the State Implementation Plan (SIP) revision for the federal lead standard, which the EPA revised in 2008. Lead concentrations in this nonattainment area have been below the level of the federal standard since December 2011. The SIP revision was submitted to the EPA for approval.

SoCAB Nonattainment Areas

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

Transportation conformity for nonattainment and maintenance areas is required under the federal CAA to ensure federally supported highway and transit projects conform to the SIP. The EPA approved California's SIP revisions for attainment of the 1997 8-hour O₃ National AAQS for the SoCAB in March 2012. Findings for the new 8-hour O₃ emissions budgets for the SoCAB and consistency with the recently adopted SCAG 2012 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) were submitted to the EPA for approval.

The attainment status for the SoCAB is shown in Table 5.3-2, *Attainment Status of Criteria Pollutants in the South Coast Air Basin*. The SoCAB is designated in attainment of the California AAQS for sulfates. It will have to meet the new federal 8-hour O₃ standard by 2023 and the federal 24-hour PM_{2.5} standards by 2014 (with the possibility of up to a five-year extension to 2019, if needed). The SoCAB is designated a nonattainment area for lead (Los Angeles County only) under the National AAQS.

Table 5.3-2 Attainment Status of Criteria Pollutants in the South Coast Air Basin

Pollutant	State	Federal
Ozone – 1-hour	Extreme Nonattainment	No Federal Standard
Ozone – 8-hour	Extreme Nonattainment	Extreme Nonattainment
PM ₁₀	Serious Nonattainment	Attainment/Maintenance
PM _{2.5}	Nonattainment	Nonattainment
CO	Attainment	Attainment
NO ₂	Attainment	Attainment/Maintenance
SO ₂	Attainment	Attainment
Lead	Attainment	Nonattainment (Los Angeles County only) ¹

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Table 5.3-2 Attainment Status of Criteria Pollutants in the South Coast Air Basin

Pollutant	State	Federal
All others	Attainment/Unclassified	Attainment/Unclassified

Source: CARB 2014a.
¹ In 2010, the Los Angeles portion of the SoCAB was designated nonattainment for lead under the new National AAQS as a result of large industrial emitters. Remaining areas within the SoCAB are unclassified.

South Coast Air Basin (SoCAB)

Part of the Project Area is in the SoCAB, which includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties. With the exception of the area surrounding State Route 14 (SR-14) south of Palmdale, the majority of the Project Area within the SoCAB is in the mountainous areas and is largely undeveloped. The SoCAB is in a coastal plain with connecting broad valleys and low hills and is bounded by the Pacific Ocean in the southwest, with high mountains forming the remainder of the perimeter. The general region lies in the semipermanent high-pressure zone of the eastern Pacific. As a result, the climate is mild, tempered by cool sea breezes. This usually mild weather pattern is interrupted infrequently by periods of extremely hot weather, winter storms, and Santa Ana winds (SCAQMD 2005).

Temperature and Precipitation

The annual average temperature varies little throughout the SoCAB, ranging from the low to middle 60s, measured in degrees Fahrenheit (°F). With a more pronounced oceanic influence, coastal areas show less variability in annual minimum and maximum temperatures than inland areas.

Humidity

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

Wind

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

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

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The mountain ranges to the east inhibit the eastward transport and diffusion of pollutants. Air quality in the SoCAB generally ranges from fair to poor and is similar to air quality in most of coastal Southern California. The entire region experiences heavy concentrations of air pollutants during prolonged periods of stable atmospheric conditions (SCAQMD 2005).

Inversions

In conjunction with the two characteristic wind patterns that affect the rate and orientation of horizontal pollutant transport, two distinct types of temperature inversions control the vertical depth through which pollutants are mixed. These inversions are the marine/subsidence inversion and the radiation inversion. The height of the base of the inversion at any given time is known as the “mixing height.” The combination of winds and inversions are critical determinants in leading to the highly degraded air quality in summer and the generally good air quality in the winter in the Project Area (SCAQMD 2005).

Antelope Valley Air Quality Management District

The desert portion of Los Angeles County broke away from SCAQMD and established a new air district as of July 1, 1997. The Antelope Valley portion of the MDAB is bounded by Kern County to the north, San Bernardino County to the east, and has a jagged southwest boundary that runs roughly from the Gorman area in the northwest to the San Bernardino County line in the Angeles Forest in the southeast (see Figure 5.3-1). The AVAQMD portion of the MDAB covers approximately 1,300 square miles and includes the cities of Lancaster and Palmdale. AVAQMD is the agency responsible for assuring that the National and California AAQS are attained and maintained in the Antelope Valley portion of the MDAB.

Air Quality Management Planning

AVAQMD is responsible for preparing an AQMP to attain the federal ozone standard for the western (Antelope Valley) portion of the MDAB.

Ozone Attainment Plan

The AVAQMD’s most recent O₃ attainment plan is the *AVAQMD Federal 8-Hour Ozone Attainment Plan, Western Mojave Desert Non-Attainment Area*, which was adopted on May 20, 2008. The Antelope Valley portion of the MDAB is downwind of the SoCAB, and to a lesser extent, downwind of the San Joaquin Valley. Prevailing winds transport ozone and ozone precursors from both regions into and through the Antelope Valley portion of the MDAB during the summer ozone season. Local Antelope Valley emissions contribute to exceedances of both the National AAQS and California AAQS for ozone, but the Antelope Valley portion of the MDAB would be in attainment of both standards without the influence of this transported air pollution from upwind regions. The 2008 Ozone Attainment Plan provides for the implementation, maintenance, and enforcement of the National AAQS, enforceable emission limitations, a monitoring program, a permit program (including a new source review program), contingency measures, and air quality modeling. The 2008 Ozone Attainment Plan demonstrates that the AVAQMD will be in attainment of the 8-hour National AAQS by 2021 (AVAQMD 2008).

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Antelope Valley Portion of the MDAB Nonattainment Areas

The attainment status for the Antelope Valley portion of the MDAB is shown in Table 5.3-3, *Attainment Status of Criteria Pollutants in the Antelope Valley Portion of the Mojave Desert Air Basin*. The Antelope Valley portion of the MDAB is designated nonattainment of the National and California AAQS for ozone and PM_{2.5}.

Table 5.3-3 Attainment Status of Criteria Pollutants in the Antelope Valley Portion of the Mojave Desert Air Basin

Pollutant	State	Federal
Ozone – 1-hour	Severe-17 Nonattainment	No Federal Standard
Ozone – 8-hour	Severe-17 Nonattainment	Severe-17 Nonattainment
PM ₁₀	Attainment	Attainment/Unclassified
PM _{2.5}	Nonattainment	Nonattainment
CO	Attainment	Attainment
NO ₂	Attainment	Attainment/Maintenance
SO ₂	Attainment	Attainment
Lead	Attainment	Attainment
All others	Attainment/Unclassified	Attainment/Unclassified

Source: CARB 2014a.

Mojave Desert Air Basin

The MDAB is an assemblage of mountain ranges interspersed with long broad valleys that often contain dry lakes. Many of the lower mountains that dot the vast terrain rise from 1,000 to 4,000 feet above the valley floor (AVAQMD 2011). Elevations in the Antelope Valley portion of the MDAB range from 2,300 to over 8,000 feet (AVAQMD 2008). Prevailing winds in the MDAB are out of the west and southwest. These prevailing winds are due to the proximity of the MDAB to coastal and central regions and the blocking nature of the Sierra Nevada mountains to the north; air masses pushed onshore in Southern California by differential heating are channeled through the MDAB. The MDAB is separated from the Southern California coastal and central California valley regions by mountains (highest elevation approximately 10,000 feet) whose passes form the main channels for these air masses. The Antelope Valley portion of the MDAB is bordered in the northwest by the Tehachapi Mountains, which are separated from the Sierra Nevada in the north by the Tehachapi Pass (3,800 feet elevation). The Antelope Valley portion of the MDAB is bordered to the south by the San Gabriel Mountains, which are bisected by Soledad Canyon (3,300 feet) (AVAQMD 2011).

Temperature and Precipitation

During the summer the MDAB is generally influenced by a Pacific subtropical high cell that sits off the coast, inhibiting cloud formation and encouraging daytime solar heating. The MDAB is rarely influenced by cold air masses moving south from Canada and Alaska, as these frontal systems are weak and diffuse by the time they reach the desert. Most desert moisture arrives from infrequent warm, moist, and unstable air masses from the south. The MDAB averages between three and seven inches of precipitation per year (from 16 to 30 days

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with at least 0.01 inches of precipitation). The MDAB is classified a dry-hot desert climate, with portions classified as dry-very-hot desert, that is, at least three months have maximum average temperatures over 100.4°F (AVAQMD 2011). Most of the Antelope Valley portion of the MDAB is classified high desert, although small portions extend into the San Gabriel Mountains. Annual precipitation averages 7 inches in the desert portions of the Antelope Valley to over 20 inches in the mountain areas. In the City of Lancaster, summer daily maximum temperatures average 96°F, and winter daily maximum temperatures average 57°F (AVAQMD 2008).

Existing Ambient Air Quality

Existing levels of ambient air quality and historical trends and projections in the Proposed Area Plan are best documented by measurements collected at the Lancaster – 43301 Division Street Monitoring Station. However, this station does not monitor for SO₂. Data from this station is summarized in Table 5.3-4, *Ambient Air Quality Monitoring Summary*. The data show that the Project Area regularly exceeds the state one-hour and the state and federal eight-hour O₃ standards. Additionally, the Project Area has exceeded the federal PM_{2.5} standard once in the last five years and occasionally exceeds the state and federal PM₁₀ standards.

Table 5.3-4 Ambient Air Quality Monitoring Summary

Pollutant/Standard	Number of Days Threshold Were Exceeded and Maximum Levels during Such Violations ¹				
	2009	2010	2011	2012	2013
Ozone (O₃)					
State 1-Hour ≥ 0.09 ppm	22	11	19	13	8
State 8-hour ≥ 0.07 ppm	70	78	76	72	53
Federal 8-Hour > 0.075 ppm	44	45	53	39	34
Max. 1-Hour Conc. (ppm)	0.122	0.107	0.115	0.112	0.108
Max. 8-Hour Conc. (ppm)	0.102	0.096	0.100	0.095	0.094
Carbon Monoxide (CO)					
State 8-Hour > 9.0 ppm	0	0	0	0	*
Federal 8-Hour ≥ 9.0 ppm	0	0	0	0	*
Max. 8-Hour Conc. (ppm)	1.00	1.23	1.33	1.00	*
Nitrogen Dioxide (NO₂)					
State 1-Hour ≥ 0.18 ppm	0	0	0	0	0
Max. 1-Hour Conc. (ppm)	0.065	0.056	0.058	0.049	0.0477
Coarse Particulates (PM₁₀)					
State 24-Hour > 50 µg/m ³	1	1	0	0	2
Federal 24-Hour > 150 µg/m ³	1	0	0	0	1
Max. 24-Hour Conc. (µg/m ³)	199.0	43.6	81.9	47.0	185.4
Fine Particulates (PM_{2.5})					
Federal 24-Hour > 35 µg/m ³	0	0	1	0	0
Max. 24-Hour Conc. (µg/m ³)	20.0	15.0	50.0	14.0	11.9

Source: CARB 2014b.

ppm: parts per million; µg/m³: or micrograms per cubic meter.

¹ Data obtained from the Lancaster – 43301 Division Street Monitoring Station.

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Existing Emissions

Table 5.3-5, *Existing Antelope Valley Area Plan Criteria Air Pollutant Emissions Inventory*, identifies the existing criteria air pollutant emissions inventory of the Antelope Valley Area Plan. The majority of emissions are generated within the developed portions of the Antelope Valley Area Plan, which are primarily located within the MDAB (see Figure 5.3-1). The inventory is calculated using the California Emissions Estimator Model (CalEEMod), Version 2013.2.2 and is based on existing land uses within the Project Area. These uses currently generate criteria air pollutants from natural gas use for energy, heating and cooking, vehicle trips associated with each land use, and area sources such as landscaping equipment and consumer cleaning products.

Table 5.3-5 Existing Antelope Valley Area Plan Criteria Air Pollutant Emissions Inventory

Sector	Criteria Air Pollutant Emissions (pounds per day) ¹					
	VOC	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
Energy	40,697	539	48,780	18	6,564	6,564
Area	28	242	123	2	19	19
Transportation	1,709	2,584	30,793	44	3,500	947
Existing Land Uses Total	42,434	3,366	79,696	64	10,083	7,530
Sector	Criteria Air Pollutant Emissions (tons per year) ¹					
	VOC	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
Energy	2,063	23	2,105	1	270	270
Area	5	44	22	0	4	4
Transportation	282	495	4,909	7	625	169
Existing Land Uses Total	2,351	563	7,037	8	898	443

Source: Values may not sum to 100 percent due to rounding. Daily emissions are based on the highest summer or winter emissions output.

¹ CalEEMod Version 2013.2.2. Based on 2014 emission rates.

Sensitive Receptors

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

Residential areas are also considered sensitive receptors 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.

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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.

5.3.2.1 AIR QUALITY MANAGEMENT DISTRICT THRESHOLDS

The analysis of the Proposed Project’s air quality impacts follows the guidance and methodologies recommended in SCAQMD’s *CEQA Air Quality Handbook*, the significance thresholds on SCAQMD’s website,⁷ and AVAQMD’s *CEQA and Federal Conformity Guidelines* (2011). CEQA allows the significance criteria established by the applicable air quality management or air pollution control district to be used to assess impacts of a project on air quality. SCAQMD and AVAQMD have established regional thresholds of significance. In addition to the regional thresholds, projects are also subject to the AAQS.

SCAQMD Regional Significance Thresholds

SCAQMD has adopted regional construction and operational emissions thresholds to determine a project’s cumulative impact on air quality in the SoCAB. Table 5.3-6, *SCAQMD Significance Thresholds*, lists SCAQMD’s regional significance thresholds. There is growing evidence that while ultrafine particulates (UFPs) contribute a very small portion of the overall atmospheric mass concentration they represent a greater proportion of the health risk from PM. However, the EPA or CARB have yet to adopt AAQS to regulate UFPs, and therefore SCAQMD has not developed thresholds for UFPs at this time.

Table 5.3-6 SCAQMD Significance Thresholds

Air Pollutant	Construction Phase	Operational Phase
Reactive Organic Gases (ROGs)/Volatile Organic Compounds (VOCs)	75 lbs/day	55 lbs/day
Carbon Monoxide (CO)	550 lbs/day	550 lbs/day
Nitrogen Oxides (NO _x)	100 lbs/day	55 lbs/day
Sulfur Oxides (SO _x)	150 lbs/day	150 lbs/day

⁷ SCAQMD’s Air Quality Significance Thresholds are current as of March 2011 and can be found at: <http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2>.

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Particulates (PM ₁₀)	150 lbs/day	150 lbs/day
Particulates (PM _{2.5})	55 lbs/day	55 lbs/day

Source: SCAQMD 2011a.

AVAQMD Regional Significance Thresholds

AVAQMD has adopted regional emissions thresholds to determine a project's cumulative impact on air quality in the Antelope Valley portion of the MDAB. Table 5.3-7, *AVAQMD Annual Significance Thresholds*, lists AVAQMD's regional significance thresholds. AVAQMD also has daily thresholds for multi-phased projects with phases shorter than one year. These thresholds are not applicable to the Proposed Project, and they are not included in the table.

Table 5.3-7 AVAQMD Annual Significance Thresholds

Air Pollutant	Annual ¹
Reactive Organic Gases (ROGs)/ Volatile Organic Compounds (VOCs)	25 tons/year
Carbon Monoxide (CO)	100 tons/year
Nitrogen Oxides (NO _x)	25 tons/year
Sulfur Oxides (SO _x)	25 tons/year
Particulates (PM ₁₀)	15 tons/year
Particulates (PM _{2.5})	15 tons/year

Source: AVAQMD 2011.

¹ AVAQMD's daily thresholds for multi-phases projects with phases shorter than one year are not applicable to the Proposed Project and not included in the table.

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 parts per million (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. Typically, for an intersection to exhibit a significant CO concentration, it would operate at level of service (LOS) E or worse without improvements (Caltrans 1997).

Localized Significance Thresholds

Both the SCAQMD and AVAQMD identify localized significance thresholds. Emissions of NO₂, CO, PM₁₀, and PM_{2.5} generated at a project site (offsite mobile-source emissions are not included in the LST analysis) could expose sensitive receptors to substantial concentrations of criteria air pollutants. Table 5.3-8, *Localized Significance Thresholds*, shows the localized significance thresholds. A project that generates emissions that trigger a violation of the AAQS when added to the local background concentrations would generate a significant impact.

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Table 5.3-8 Localized Significance Thresholds

Air Pollutant (Relevant AAQS)	Concentration
1-Hour CO Standard (CAAQS)	20 ppm
8-Hour CO Standard (CAAQS)	9.0 ppm
1-Hour NO ₂ Standard (CAAQS)	0.18 ppm
Annual NO ₂ Standard (CAAQS)	0.03 ppm
24-Hour PM ₁₀ Standard (AVAQMD)	50 µg/m
24-Hour PM _{2.5} Standard (AVAQMD)	35 µg/m
24-Hour PM ₁₀ Standard – Construction (SCAQMD) ¹	10.4 µg/m ³
24-Hour PM _{2.5} Standard – Construction (SCAQMD) ¹	10.4 µg/m ³
24-Hour PM ₁₀ Standard – Operation (SCAQMD) ¹	2.5 µg/m ³
24-Hour PM _{2.5} Standard – Operation (SCAQMD) ¹	2.5 µg/m ³

Source: SCAQMD 2011a and CARB 2013a.

ppm – parts per million; µg/m³ – micrograms per cubic meter

¹ Threshold is based on SCAQMD Rule 403. Since the SoCAB is in nonattainment for PM₁₀ and PM_{2.5}, the threshold is established as an allowable change in concentration. Therefore, background concentration is irrelevant.

Health Risk Thresholds

Whenever a project would require use of chemical compounds that have been identified in SCAQMD Rule 1401, placed on CARB’s air toxics list pursuant to AB 1807, or placed on the EPA’s National Emissions Standards for Hazardous Air Pollutants, a health risk assessment is required by the SCAQMD or AVAQMD. Table 5.3-9, *Toxic Air Contaminants Incremental Risk Thresholds*, lists the TAC incremental risk thresholds for operation of a project. Residential, commercial, and office uses do not use substantial quantities of TACs, so these thresholds are typically applied to new industrial projects. Although not officially adopted by SCAQMD, these thresholds are also commonly used to determine the air quality land use compatibility when major sources of TACs are within 1,000 feet of a proposed project.

Table 5.3-9 Toxic Air Contaminants Incremental Risk Thresholds

Maximum Incremental Cancer Risk	≥ 10 in 1 million
Hazard Index (project increment)	≥ 1.0

Source: SCAQMD 2011a and AVAQMD 2011.

In the AVAQMD, the following project types proposed for sites within the specified distance of an existing or planned (zoned) sensitive receptor land use must be evaluated for potential health risk using significance threshold criteria identified in Table 5.3-9:

- Any industrial project within 1,000 feet;
- A distribution center (40 or more trucks per day) within 1,000 feet;
- A major transportation project (50,000 or more vehicles per day) within 1,000 feet;
- A dry cleaner using perchloroethylene within 500 feet;
- A gasoline dispensing facility within 300 feet.

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5.3.3 Relevant Area Plan Goals and Policies

Land Use Element

Goal LU 5: A land use pattern that decreases greenhouse gas emissions.

- **Policy LU 5.1:** Reduce the total amount of potential development requiring vehicle trips in the unincorporated Antelope Valley.
- **Policy LU 5.2:** Encourage the continued development of rural town centers that provide for the daily needs of surrounding residents, reducing the number of vehicle trips and providing local employment opportunities.
- **Policy LU 5.3:** Preserve open space areas to provide large contiguous carbon sequestering basins.
- **Policy LU 5.4:** Ensure that there is an appropriate balance of residential uses and employment opportunities within close proximity of each other.

Mobility Element

Goal M 1: Land use patterns that promote alternatives to automobile travel.

- **Policy M 1.1:** Direct the majority of unincorporated Antelope Valley's growth to rural town center areas, rural town areas, and where appropriate, to economic opportunity areas, to minimize travel time and reduce the number of vehicle trips.
- **Policy M 1.2:** Encourage the continued development of rural town center areas that provide for the daily needs of local residents, reducing the number of vehicle trips and providing local employment opportunities.
- **Policy M 1.3:** Encourage new parks, recreation areas, and public facilities to locate to rural town center areas and rural town areas.
- **Policy M 1.4:** Ensure that new developments have a balanced mix of residential uses and employment opportunities as well as park, recreation areas, and public facilities within close proximity of each other.
- **Policy M 1.5:** Promote alternatives to automobile travel in rural town center areas and rural town areas by linking these areas through pedestrian walkways, trails, and bicycle routes.

Goal M 2: Reduction of vehicle trips and emissions through effective management of travel demand, transportation systems, and parking.

- **Policy M 2.1:** Encourage the reduction of home-to-work trips through the promotion of home-based businesses, live-work units, and telecommuting.

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- **Policy M 2.2:** Encourage trip reduction through promotion of carpools, vanpools, shuttles, and public transit.
- **Policy M 2.3:** In evaluating new development proposals, require trip reduction measures to relieve congestion and reduce air pollution from vehicle emissions.
- **Policy M 2.4:** Develop multi-modal transportation systems that offer alternatives to automobile travel by implementing the policies regarding regional transportation, local transit, bicycle routes, trails, and pedestrian access contained in this Mobility Element.
- **Policy M 2.5:** As residential development occurs in communities, require transportation routes, including alternatives to automotive transit, to link to important local destination points such as shopping, services, employment, and recreation.

Goal M 5: Long-haul truck traffic is separated from local traffic, reducing the impacts of truck traffic on local streets and residential areas.

- **Policy M 5.4:** Add rest stops along designated truck routes to provide stopping locations away from residential uses.
- **Policy M 5.5:** Adopt regulations for truck parking on local streets to avoid impacts to residential areas.

Goal M 6: A range of transportation options to connect the Antelope Valley to other regions.

- **Policy M 6.4:** Support increases in Metrolink commuter rail service, and support the expansion of commuter rail service on underutilized rail lines where appropriate.
- **Policy M 6.5:** Support the development of the California High Speed Rail System, with a station in Palmdale to provide links to Northern California and other portions of Southern California, and encourage the participation of private enterprise and capital.
- **Policy M 6.6:** Support the development of a high-speed rail system linking Palmdale to Victorville and Las Vegas, and encourage the participation of private enterprise and capital.
- **Policy M 6.7:** Establish a regional transportation hub in Palmdale with feeder transit service to the rural areas of the unincorporated Antelope Valley.

Goal M 7: Bus service is maintained and enhanced through the Antelope Valley.

- **Policy M 7.1:** Maintain and increase funding to the Antelope Valley Transit Authority for bus service.
- **Policy M 7.2:** Support increases in bus service to heavily traveled areas and public facilities, such as parks and libraries.

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- **Policy M 7.3:** Support increases in bus service to rural communities, linking them to a regional transportation hub in Palmdale and shopping and employment centers in Lancaster and Palmdale.
- **Policy M 7.4:** Improve access for all people, including seniors, youth, and the disabled, by maintaining off-peak service and equipping transit services for wheelchairs and bicycles.
- **Policy M 7.5:** Encourage the use of advanced technologies in the planning and operation of the transit system.

Goal M 8: Alternative transit options in areas not reached by bus service.

- **Policy M 8.1:** Support the expansion of dial-a-ride services to rural communities, linking them to a regional transportation hub in Palmdale and shopping and employment centers in Lancaster and Palmdale.
- **Policy M 8.2:** Evaluate the feasibility of alternative transit options, such as community shuttle services and privately operated transit, to increase accessibility.

Goal M 9: A unified and well-maintained bicycle transportation system throughout the Antelope Valley with safe and convenient routes for commuting, recreation, and daily travel.

- **Policy M 9.1:** Implement the adopted Bikeway Plan for the Antelope Valley in cooperation with the cities of Lancaster and Palmdale. Ensure adequate funding on an ongoing basis.
- **Policy M 9.2:** Along streets and highways in rural areas, add safe bicycle routes that link to public facilities, a regional transportation hub in Palmdale, and shopping and employment centers in Lancaster and Palmdale.
- **Policy M 9.3:** Ensure that bikeways and bicycle routes connect communities and offer alternative travel modes within communities.
- **Policy M 9.4:** Encourage provision of bicycle racks and other equipment and facilities to support the use of bicycles as an alternative means of travel.

Goal M 11: A continuous, integrated system of safe and attractive pedestrian routes linking residents to rural town center areas, schools, services, transit, parks, and open space areas.

- **Policy M 11.1:** Improve existing pedestrian routes and create new pedestrian routes, where appropriate and feasible. If paving is deemed necessary, require permeable paving consistent with rural community character instead of concrete sidewalks.

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- **Policy M 11.2:** Within rural town center areas, require that highways and streets provide pleasant pedestrian environments and implement traffic calming methods to increase public safety for pedestrians, bicyclists, and equestrian riders.
- **Policy M 11.3:** Within rural town center areas, promote pedestrian-oriented scale and design features, including public plazas, directional signage, and community bulletin boards.
- **Policy M 11.4:** Within rural town center areas, encourage parking to be located behind or beside structures, with primary building entries facing the street. Encourage also the provision of direct and clearly delineated pedestrian walkways from transit stops and parking areas to building entries.
- **Policy M 11.5:** Implement traffic calming methods in areas with high pedestrian usage, such as school zones.

Conservation and Open Space Element

Goal COS 9: Improved air quality in the Antelope Valley.

- **Policy COS 9.1:** Implement land use patterns that reduce the number of vehicle trips, reducing potential air pollution, as directed in the policies of the Land Use Element.
- **Policy COS 9.2:** Develop multi-modal transportation systems that offer alternatives to automobile travel to reduce the number of vehicle trips, including regional transportation, local transit, bicycle routes, trails, and pedestrian networks, as directed in the policies of the Mobility Element.
- **Policy COS 9.3:** In evaluating new development proposals, consider requiring trip reduction measures to relieve congestion and reduce air pollution from vehicle emissions.
- **Policy COS 9.4:** Promote recycling and composting through the Antelope Valley to reduce air quality impacts from waste disposal activities and landfill operations.
- **Policy COS 9.5:** Encourage use of alternative fuel vehicles throughout the Antelope Valley.
- **Policy COS 9.6:** Educate Antelope Valley industries about new, less polluting equipment, and promote incentives for industries to use such equipment.
- **Policy COS 9.7:** Encourage reforestation and the planting of trees to sequester greenhouse gas emissions.
- **Policy COS 9.8:** Coordinate with the Antelope Valley Air Quality Management District and other local, regional, state, and federal agencies to develop and implement regional air quality policies and programs.

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5.3.4 Environmental Impacts

Methodology

This air quality evaluation was prepared in accordance with the requirements of CEQA to determine if significant air quality impacts are likely to occur in conjunction with future development that would be accommodated by the Proposed Project. Both the SCAQMD and the AVAQMD have published guidelines that are intended to provide local governments with guidance for analyzing and mitigating air quality impacts, which were used in this analysis. The analysis also makes use of CalEEMod, Version 2013.2.2, for determination of daily and annual operational emissions.

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

Impact 5.3-1: The Proposed Project would generate less growth than the Adopted Area Plan; however, it would not be consistent with the SCAQMD's and AVAQMD's air quality management plans because buildout of the Proposed Project would cumulatively contribute to the nonattainment designations of the SoCAB and MDAB. [Threshold AQ-1]

Impact Analysis: The following describes potential air quality impacts of consistency with the SCAQMD and AVAQMD AQMPs from the implementation of the Proposed Project.

CEQA requires that general plans be evaluated for consistency with the air quality management plan(s). A consistency determination plays an important role in local agency project review by linking local planning and individual projects to the air quality management plan(s). It fulfills the CEQA goal of informing decision makers of the environmental efforts of the project under consideration early enough to ensure that air quality concerns are fully addressed. It also provides the local agency with ongoing information as to whether they are contributing to clean air goals in the air quality management plan(s). Only new or amended general plan elements, specific plans, and major projects need to undergo a consistency review. This is because the air quality management plan strategy is based on projections from local general plans. There are two key indicators of consistency:

- **Indicator 1:** Whether the project would result in an increase in the frequency or severity of existing air quality violations, cause or contribute to new violations, or delay timely attainment of the AAQS or interim emission reductions in the AQMP.
- **Indicator 2:** Whether the project would exceed the assumptions in the AQMP. The AQMP strategy is, in part, based on projections from local general plans.

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Indicator 1

The SoCAB is designated nonattainment for O₃ and PM_{2.5}⁸ under the California and National AAQS, for PM₁₀ under the California AAQS, and for lead (Los Angeles County only) under the National AAQS. The MDAB is designated nonattainment for O₃ and PM_{2.5} under the California and National AAQS. Because the Proposed Project involves long-term growth associated with buildout of the Proposed Area Plan, cumulative emissions generated by construction and operation of individual development projects would exceed the SCAQMD and AVAQMD regional thresholds (see Impact 5.2-2 and Impact 5.2-3). Consequently, emissions generated by development projects in addition to existing sources within the Project Area are considered to cumulatively contribute to the nonattainment designations of the SoCAB and MDAB. Buildout of the Proposed Project would therefore contribute to an increase in frequency or severity of air quality violations and delay attainment of the AAQS or interim emission reductions in the AQMP, and emissions generated from buildout of the Proposed Project would result in a significant air quality impact. Thus, the Proposed Project would not be consistent with the AQMPs under the first indicator.

Indicator 2

AVAQMD and SCAQMD consider a project consistent with the air quality management plan if it is consistent with the existing land use plan. Zoning changes, specific plans, general plan amendments, and similar land use plan changes that do not increase dwelling unit density, vehicle trips, or vehicle miles traveled are deemed to not exceed this threshold (SCAQMD 1993; AVAQMD 2011). SCAG projections for the Project Area are partially based on the Adopted Area Plan within the 2012 RTP/SCS. The horizon year for the 2012 RTP/SCS is 2035. Table 5.3-10 compares the population, employment, and daily VMT generation of the Proposed Project compared to the population, employment, and daily VMT generation of the Adopted Area Plan, which is used for regional air quality management planning. As shown in Table 5.3-10, *Comparison of Population, Employment, and VMT Forecasts*, buildout of the Proposed Project would result in higher population and generate more employment for the Project Area than SCAG forecasts.

Table 5.3-10 Comparison of Population, Employment, and VMT Forecasts

Scenario	Population	Employment	Service Population (SP)	Daily VMT
Adopted Area Plan	1,070,924	51,319	1,122,243	33,787,619
Proposed Area Plan	405,410	134,351	539,761	17,065,721
Net Change from Adopted Area Plan	-665,514	83,032	-582,482	-16,721,898
Percent Change from Adopted Area Plan	-62%	162%	-52%	-49%

Source: Fehr & Peers 2014.

As shown in the table, the Proposed Project would result in overall less growth compared to the Adopted Area Plan. Thus, the Proposed Project would be consistent with the AQMPs under this indicator as it would not exceed the forecasts assumed in the plans.

⁸ CARB approved the SCAQMD's request to redesignate the SoCAB from serious nonattainment for PM₁₀ to attainment for PM₁₀ under the National AAQS on March 25, 2010 because the SoCAB did not violated federal 24-hour PM₁₀ standards during the period from 2004 to 2007. However, the EPA has not yet approved this request.

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Summary

As described above, the Proposed Project would result in less overall growth and VMT generated compared to the Adopted Area Plan. Thus, emissions associated with the Project Area would already be accounted for in the current regional emissions inventories for the SoCAB and MDAB. However, buildout of the Proposed Project would exceed the SCAQMD and AVAQMD thresholds and cumulatively contribute to the nonattainment designations in the SoCAB and MDAB (Antelope Valley portion). Therefore, the Proposed Project would be considered inconsistent with the SCAQMD's AQMP and AVAQMD's Ozone Attainment Plan, resulting in a significant impact in this regard.

Impact 5.3-2: Construction activities indirectly associated with the Proposed Area Plan would generate a substantial increase in short-term criteria air pollutant emissions that exceed the SCAQMD and AVAQMD significance thresholds and would cumulatively contribute to the nonattainment designations of the SoCAB and Antelope Valley portion of the MDAB. [Thresholds AQ-2, AQ-3, and AQ-4]

Impact Analysis: Construction activities associated with development that would be accommodated by the Proposed Project would occur over the buildout horizon (post-2035) of the Proposed Project and cause short-term emissions of criteria air pollutants. The primary source of NO_x, CO, and SO_x emissions is the operation of construction equipment. The primary sources of particulate matter (PM₁₀ and PM_{2.5}) emissions are activities that disturb the soil, such as grading and excavation, road construction, building demolition and construction, and off-road vehicle exhaust. The primary source of VOC emissions is the application of architectural coating and off-gas emissions associated with asphalt paving. A discussion of health impacts associated with air pollutant emissions generated by construction activities is included under "Air Pollutants of Concern" in Section 5.3-1, *Environmental Setting*.

Information regarding specific development projects, soil types, and the locations of receptors would be needed in order to quantify the level of impact associated with construction activity. Due to the scale of development activity associated with buildout of the Proposed Project, emissions would likely exceed the SCAQMD and AVAQMD regional significance thresholds and therefore, in accordance with the SCAQMD and AVAQMD methodology, would cumulatively contribute to the nonattainment designations of the SoCAB and Antelope Valley portion of the MDAB, respectively. The MDAB is currently designated nonattainment for O₃ and particulate matter (PM_{2.5}). The SoCAB is designated nonattainment for O₃ and PM_{2.5} under the California and National AAQS, PM₁₀ under the California AAQS, and lead (Los Angeles County only) under the National AAQS.^{9, 10} Emissions of VOC and NO_x are precursors to the formation of O₃. In addition, NO_x is a precursor to the formation of particulate matter (PM₁₀ and PM_{2.5}). Therefore, the Proposed Project would cumulatively contribute to the existing nonattainment designations of the SoCAB and Antelope Valley portion of the MDAB.

⁹ CARB approved the SCAQMD's request to redesignate the SoCAB from serious nonattainment for PM₁₀ to attainment for PM₁₀ under the national AAQS on March 25, 2010, because the SoCAB has not violated federal 24-hour PM₁₀ standards during the period from 2004 to 2007. In June 2013, the EPA approved the State of California's request to redesignate the South Coast PM₁₀ nonattainment area to attainment of the PM₁₀ National AAQS, effective on July 26, 2013.

¹⁰ CARB has proposed to redesignate the SoCAB as attainment for lead and NO₂ under the California AAQS (CARB 2014).

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Valley Fever

Valley Fever is an infectious disease caused by the fungus *Coccidioides immitis* and *Coccidioides psadasii*. According to the County Department of Public Health (2014), this fungus is a major cause of community-acquired pneumonia in the southwestern United States. Valley Fever fungus is most prevalent in the San Joaquin Valley and the Central Valley, where land is arid to semi-arid and receives moderate rainfall (5 to 20 inches per year). Several factors indicate a project's potential to expose sensitive receptors to Valley Fever: disturbance of the topsoil of undeveloped land, dust storms, strong winds, earthquakes, archaeological digs, agricultural activities, and construction activities. There is the potential that construction activities could result in exposure of sensitive receptors to Valley Fever in the arid, desert portions of the unincorporated areas, including the Project Area. Individual projects developed under the Proposed Project would be required to reduce potential risk of exposing sensitive receptors to Valley Fever through implementation of AVAQMD and SCAQMD fugitive dust control measures. SCAQMD and AVAQMD dust control rules would reduce fugitive dust emissions as well as exposure to on-site workers. Implementation of SCAQMD and AVAQMD measures would limit exposure of sensitive receptors to Valley Fever.

Summary

Air quality emissions related to construction must be addressed on a project-by-project basis. For this broad-based Proposed Project, it is not possible to determine whether the scale and phasing of individual projects would result in the exceedance of SCAQMD's or AVAQMD's short-term regional or localized construction emissions thresholds. Because of the likely scale and extent of construction activities pursuant to the future development that would be accommodated by the Proposed Project, at least some projects would likely continue to exceed the relevant SCAQMD and AVAQMD thresholds. Consequently, construction-related air quality impacts associated with development in accordance with the Proposed Project are deemed significant.

It should be noted that mass emissions from a project are not correlated with concentrations of air pollutants. Projects that exceed the regional significance threshold contribute to the nonattainment designation. As the attainment designation is based on the AAQS, which are set at levels of exposure that are determined to not result in adverse health, the Proposed Project would cumulatively contribute to health impacts within the SoCAB and Antelope Valley portion of the MDAB. Known health effects related to ozone include worsening of bronchitis, asthma, and emphysema and a decrease in lung function. Particulate matter can also lead to a variety of health effects in people. These include premature death of people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, decreased lung function, and increased respiratory symptoms. Regional emissions contribute to these known health effects, but it is speculative for this broad-based Proposed Project to determine how exceeding the regional thresholds would affect the number of days the region is in nonattainment since mass emissions are not correlated with concentrations of emissions or how many additional individuals in the air basin would be affected by the health effects cited above. The SCAQMD and AVAQMD are the primary agencies responsible for ensuring the health and welfare of sensitive individuals to elevated concentrations of air quality in the SoCAB and MDAB, respectively. To achieve the health-based standards established by the EPA, SCAQMD and AVAQMD prepare air quality management plans that detail regional programs to attain the AAQS. However, because cumulative development within the Project Area would exceed the regional significance thresholds, the

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project could contribute to an increase in health effects in the basin until such time as the attainment standard are met in the SoCAB and the Antelope Valley portion of the MDAB.

Impact 5.3-3: Long-term operation of the Proposed Project would generate a substantial increase in criteria air pollutant emissions that exceed the threshold criteria and would cumulatively contribute to the nonattainment designations of the SoCAB and Antelope Valley portion of the MDAB. [Thresholds AQ-2 and AQ-3]

Impact Analysis: The following describes potential regional operational air quality impacts in the Proposed Area Plan from implementation of the Proposed Project. It is important to note that, based on the requirements of CEQA, this analysis is based on a comparison of the Proposed Project land use map to existing land uses and not to the existing Adopted Area Plan land use map. It is also important to note that the Proposed Project is a regulatory document that sets up the framework for future growth and development and does not directly result in development in and of itself. Before any development can occur within the Project Area, all such development is required to be analyzed for conformance with the Proposed Area Plan, zoning requirements, and other applicable local and state requirements; comply with the requirements of CEQA; and obtain all necessary clearances and permits.

The Proposed Project guides growth and development within the Project Area by designating land uses in the Proposed Project and through implementation of the goals and policies of the Proposed Project. New development would increase air pollutant emissions in the Project Area and contribute to the overall emissions inventory in the SoCAB and Antelope Valley portion of the MDAB. A discussion of health impacts associated with air pollutant emissions generated by operational activities is included in the Air Pollutants of Concern discussion in Section 5.3.1, *Environmental Setting*.

Proposed Project Buildout

The increase in criteria air pollutant emissions for the full buildout scenario is based on the difference between existing land uses and land uses associated with buildout of the Proposed Project. Buildout of the Proposed Project is not linked to any development timeframe. The timeframe of buildout would extend far beyond the 2035 horizon year used to forecast travel characteristics. Table 5.3-11, *Antelope Valley Area Plan Criteria Air Pollutant Emissions Buildout Forecast – Daily Emissions*, and Table 5.3-12, *Antelope Valley Area Plan Criteria Air Pollutant Emissions Buildout Forecast – Annual Emissions*, shows a forecast of the Antelope Valley Area Plan criteria air pollutant emissions inventory at buildout compared to the daily and annual emissions thresholds, respectively. The majority of new growth would occur in the MDAB.¹¹

¹¹ A portion of the new growth planned in the northwestern portion of the Project Area in the West Economic Opportunity Area is located within the SoCAB.

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Table 5.3-11 Antelope Valley Area Plan Criteria Air Pollutant Emissions Buildout Forecast – Daily Emissions

Sector	Criteria Air Pollutant Emissions (pounds per day) ^{1,2}					
	VOC	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
Existing						
Energy	40,689	538	48,721	18	6,564	6,564
Area	28	242	123	2	19	19
Transportation	838	1,285	15,907	57	4,300	1,165
Existing Land Uses Total	41,555	2,065	64,751	77	10,884	7,748
Buildout						
Energy	175,254	2,306	208,977	79	28,173	28,172
Area	137	1,200	726	7	94	94
Transportation	2,555	3,915	48,467	173	13,102	3,549
Buildout Land Uses Total	177,945	7,421	258,170	259	41,370	31,815
Net Change in Emissions						
Net Change Buildout Land Uses Total	136,390	5,356	193,420	182	30,486	24,067
Daily Significance Threshold (SCAQMD)	55	55	550	150	150	55
Exceeds Daily Significance Threshold	Yes	Yes	Yes	Yes	Yes	Yes

Notes:

¹ CalEEMod, Version 2013.2.2. Based on 2035 emission rates.

² The emissions shown are the total emissions associated with the Proposed Project that would occur in both the SCAQMD and AVAQMD. Therefore, for purposes of this analysis, the emissions shown and that are compared to the threshold are conservative.

Table 5.3-12 Antelope Valley Area Plan Criteria Air Pollutant Emissions Buildout Forecast – Annual Emissions

Sector	Criteria Air Pollutant Emissions (Tons per Year) ^{1,2}					
	VOC	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
Existing						
Energy	2,062	23	2,100	1	270	270
Area	5	44	22	0	4	4
Transportation	140	246	2,493	9	767	208
Existing Land Uses Total	2,208	314	4,615	10	1,041	481
Buildout						
Energy	8,966	100	8,999	3	888	1,157
Area	25	219	133	1	14	17
Transportation	427	750	7,595	29	2,332	634
Horizon Year Buildout Land Uses Total	9,418	1,069	16,727	33	3,233	1,809
Net Change in Emissions						
Net Change Buildout Land Uses Total	7,210	755	12,112	23	2,472	1,328
Annual Significance Threshold (AVAQMD)	25	100	25	25	15	15
Exceeds Daily Significance Threshold	Yes	Yes	Yes	No	Yes	Yes

Notes:

¹ CalEEMod, Version 2013.2.2. Based on 2035 emission rates.

² The emissions shown are the total emissions associated with the Proposed Project that would occur in both the SCAQMD and AVAQMD. Therefore, for purposes of this analysis, the emissions shown and that are compared to the threshold are conservative.

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As shown in Table 5.3-11, buildout of the Proposed Project would generate long-term emissions that exceed the daily SCAQMD thresholds for all the criteria air pollutants. Similarly, as shown in Table 5.3-12, except for SO₂, the annual AVAQMD thresholds for all criteria pollutants would also be exceeded. The MDAB is currently designated nonattainment for O₃ and particulate matter (PM_{2.5}). The SoCAB is designated nonattainment for O₃ and PM_{2.5}, under the California and National AAQS, PM₁₀ under the California AAQS, and lead (Los Angeles County only) under the National AAQS.¹² Emissions of VOC and NO_x are precursors to the formation of O₃. In addition, NO_x is a precursor to the formation of particulate matter (PM₁₀ and PM_{2.5}). Thus, the Proposed Project would cumulatively contribute to the existing nonattainment designations of the SoCAB and Antelope Valley portion of the MDAB. Implementation of the Proposed Project goals and policies (see Section 5.3.3, *Relevant Area Plan Goals and Policies*) would reduce air quality impacts to the extent feasible. For example, Policies LU 5.1, LU 5.2, M 1.1, M 2.2, M 2.3, M 7.3, and M 9.2 would contribute to a reduction in vehicle trips. However, operational phase-related air quality impacts associated with future development under the Proposed Project would be significant.

It should be noted that mass emissions from a project are not correlated with concentrations of air pollutants. Projects that exceed the regional significance threshold contribute to the nonattainment designation. As the attainment designation is based on the AAQS, which are set at levels of exposure that are determined to not result in adverse health, the Proposed Project would cumulatively contribute to health impacts within the SoCAB and MDAB. Known health effects related to ozone include worsening of bronchitis, asthma, and emphysema and a decrease in lung function. Particulate matter can also lead to a variety of health effects in people. These include premature death of people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, decreased lung function, and increased respiratory symptoms. Regional emissions contribute to these known health effects but it is speculative for this broad-based Proposed Project to determine how exceeding the regional thresholds would affect the number of days the region is in nonattainment, since mass emissions are not correlated with concentrations of emissions, or how many additional individuals in the air basin would be affected by the health effects cited above. The SCAQMD and AVAQMD are the primary agencies responsible for ensuring the health and welfare of sensitive individuals to elevated concentrations of air quality in the SoCAB and MDAB, respectively. To achieve the health-based standards established by the EPA, SCAQMD and AVAQMD prepare air quality management plans that detail regional programs to attain the AAQS. However, because cumulative development within the Project Area would generate emissions that exceed the regional significance thresholds, the Proposed Project could contribute to an increase in health effects in the basin until such time as the attainment standards are met in the SoCAB and the MDAB.

¹² CARB approved the SCAQMD's request to redesignate the SoCAB from serious nonattainment for PM₁₀ to attainment for PM₁₀ under the national AAQS on March 25, 2010, because the SoCAB has not violated federal 24-hour PM₁₀ standards during the period from 2004 to 2007. In June 2013, the EPA approved the State of California's request to redesignate the South Coast PM₁₀ nonattainment area to attainment of the PM₁₀ National AAQS, effective on July 26, 2013.

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Impact 5.3-4: Buildout of the Proposed Project could result in new source sources of criteria air pollutant emissions and/or toxic air contaminants proximate to existing or planned sensitive receptors. [Threshold AQ-4]

Impact Analysis: The following describes potential localized operational air quality impacts in the Project Area from the implementation of the Proposed Project.

Operation of new land uses, consistent with the land use plan of the Proposed Project, would generate new sources of criteria air pollutants and TACs.

Localized Significance Thresholds

SCAQMD and AVAQMD consider projects that cause or contribute to an exceedance of the California or National AAQS to result in significant impacts. Information regarding specific development projects, soil types, and the locations of receptors would be needed in order to quantify the level of impact associated with future development projects. Due to the scale of development activity associated with the theoretical buildout of the Proposed Project, emissions could exceed the SCAQMD and AVAQMD regional significance thresholds and therefore, in accordance with the SCAQMD and AVAQMD methodology, may result in significant localized impacts. Air quality emissions would be addressed on a project-by-project basis. For this broad-based Antelope Valley Area Plan, it is not possible to determine whether the scale and phasing of individual projects would result in the exceedance of localized emissions thresholds. Nevertheless, because of the likely scale of future development that would be accommodated by the Proposed Project, at least some projects would likely exceed the AAQS.

Toxic Air Contaminants (TACs)

Operation of new land uses, consistent with the Proposed Project, could also generate new sources of TACs within the Project Area from various industrial and commercial processes (e.g., manufacturing, dry cleaning). Stationary sources used as emergency power supply to communication equipment could also generate new sources of TACs and particulate matter (PM₁₀, PM_{2.5}, and UFP). Land uses that have the potential to generate substantial stationary sources of emissions that would require a permit from SCAQMD or AVAQMD include industrial land uses, such as chemical processing facilities, dry cleaners, and gasoline-dispensing facilities. In Los Angeles County, operators of certain types of facilities must submit emissions inventories. The Air Toxics Program categorizes each facility as being high, intermediate, or low priority based on the potency, toxicity, quantity, and volume of its emissions. If the risks are above established levels, facilities are required to notify surrounding populations and to develop and implement a risk reduction plan. In addition, the County Department of Public Health has a significant proactive role in working with regulatory agencies to address these potential hot spots.

In addition to stationary/area sources of TACs, warehousing operations could generate a substantial amount of diesel particulate matter emissions from off-road equipment use and truck idling. New land uses in the Project Area that generate trucks trips (including trucks with transport refrigeration units) could generate an increase in DPM that would contribute to cancer and noncancer health risk in the SoCAB or Antelope Valley

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portion of the MDAB. These new land uses could be near existing sensitive receptors within the Project Area.

Stationary sources of emissions would be controlled by SCAQMD or AVAQMD through permitting and would be subject to further study and health risk assessment prior to the issuance of any necessary air quality permits under SCAQMD's or AVAQMD's New Source Review, as described above. In addition, AVAQMD identifies the following project types (and associated buffer distance) that would require further evaluation to ensure that sensitive receptors would not be exposed to substantial pollutant concentrations:

- Any industrial project within 1,000 feet;
- A distribution center (40 or more trucks per day) within 1,000 feet;
- A major transportation project (50,000 or more vehicles per day) within 1,000 feet;
- A dry cleaner using perchloroethylene within 500 feet;
- A gasoline dispensing facility within 300 feet.

Because the nature of those emissions cannot be determined at this time and they are subject to further regulation and permitting, they will not be addressed further in this analysis, but are considered a potentially significant impact of the Proposed Project.

Impact 5.3-5: Placement of new sensitive receptors near major sources of toxic air contaminants in the Project Area could expose people to substantial pollutant concentrations. [Threshold AQ-4]

Impact Analysis: The following describes potential impacts of TACs on new sensitive receptors in the Project Area from implementation of the Proposed Project.

Because placement of sensitive land uses falls outside CARB jurisdiction, CARB developed and approved the *Air Quality and Land Use Handbook: A Community Health Perspective* (2005) to address the siting of sensitive land uses in the vicinity of freeways, distribution centers, rail yards, ports, refineries, chrome-plating facilities, dry cleaners, and gasoline-dispensing facilities. This guidance document was developed to assess compatibility and associated health risks when placing sensitive receptors near existing pollution sources.

AVAQMD identifies the following project types (and associated buffer distance) that would require further evaluation to ensure that sensitive receptors would not be exposed to substantial pollutant concentrations:

- Any industrial project within 1,000 feet;
- A distribution center (40 or more trucks per day) within 1,000 feet;
- A major transportation project (50,000 or more vehicles per day) within 1,000 feet;
- A dry cleaner using perchloroethylene within 500 feet;
- A gasoline dispensing facility within 300 feet.

Table 5.3-13, *CARB Recommendations for Siting New Sensitive Land Uses*, shows a summary of CARB recommendations for siting new sensitive land uses within the vicinity of air-pollutant-generating sources.

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Recommendations shown in the table are based on data that show that localized air pollution exposures can be reduced by as much as 80 percent by following CARB minimum distance separations.

Table 5.3-13 CARB Recommendations for Siting New Sensitive Land Uses

Source Category	Advisory Recommendations
Freeways and High-Traffic Roads	<ul style="list-style-type: none"> Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day.
Distribution Centers	<ul style="list-style-type: none"> Avoid siting new sensitive land uses within 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units [TRUs] per day, or where TRU unit operations exceed 300 hours per week). Take into account the configuration of existing distribution centers and avoid locating residences and other sensitive land uses near entry and exit points.
Rail Yards	<ul style="list-style-type: none"> Avoid siting new sensitive land uses within 1,000 feet of a major service and maintenance rail yard. Within one mile of a rail yard, consider possible siting limitations and mitigation approaches.
Ports	<ul style="list-style-type: none"> Avoid siting of new sensitive land uses immediately downwind of ports in the most heavily impacted zones. Consult local air districts or CARB on the status of pending analyses of health risks.
Refineries	<ul style="list-style-type: none"> Avoid siting new sensitive land uses immediately downwind of petroleum refineries. Consult with local air districts and other local agencies to determine an appropriate separation.
Chrome Platers	<ul style="list-style-type: none"> Avoid siting new sensitive land uses within 1,000 feet of a chrome plater.
Dry Cleaners Using Perchloroethylene	<ul style="list-style-type: none"> Avoid siting new sensitive land uses within 300 feet of any dry cleaning operation. For operations with two or more machines, provide 500 feet. For operations with three or more machines, consult with the local air district. Do not site new sensitive land uses in the same building with perchloroethylene dry cleaning operations.
Gasoline Dispensing Facilities	<ul style="list-style-type: none"> Avoid siting new sensitive land uses within 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater). A 50-foot separation is recommended for typical gas dispensing facilities.

Source: CARB 2005.

CARB's recommendations were based on a compilation of studies that evaluated data on the adverse health effects ensuing from proximity to air pollution sources. The key observation in these studies is that proximity to air pollution sources substantially increases both exposure and the potential for adverse health effects. There are three carcinogenic toxic air contaminants that constitute the majority of the known health risks from motor vehicle traffic: DPM from trucks and benzene and 1,3 butadiene from passenger vehicles. Potential sources of TACs in the Project Area include stationary sources permitted by SCAQMD and AVAQMD and roadways with more than 100,000 average daily traffic volumes.

Other near-roadway pollutants include UFPs. UFPs have also been shown to be toxic and have health impacts. UFPs are emitted from almost every fuel combustion process, including diesel, gasoline, and jet engines, as well as external combustion processes such as wood burning. Consequently, there is growing concern that people living in close proximity to highly trafficked roadways and other sources of combustion-related pollutants (e.g., airports and rail yards) may be exposed to significant levels of UFPs and other air

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toxics. However, UFPs are not specifically regulated since EPA or CARB have yet to adopt AAQS for these even smaller fractions of PM (SCAQMD 2013).

Table 5.3-14 Existing Unincorporated Areas Land Uses Within 500 Feet of a Freeway

Unincorporated Community	Total acreage within buffer	Number of Parcels ¹	Units ²	Total Number of Schools ³
Antelope Valley	6,182.79	613	406	3

Notes:

¹ Based on latest Assessor Data. Parcel count and Unit totals are the estimated values within the 500 foot freeway buffer.

² Based on 2010 Census Blocks. Totals are the estimated values within the 500 foot freeway buffer.

³ Data from Los Angeles County Enterprise GIS - collaboration between various departments - includes Public and Private Schools, Universities and Community Colleges.

The Project Area contains or is in proximity to various sources of pollution. Freeways within the Project Area include Interstate 5 (I-5), State Route 138 (SR-138), and SR-14. Table 5.3-14, *Existing Antelope Valley Area Plan Land Uses Within 500 Feet of a Freeway*, identifies existing land uses within 500 feet of a freeway in the Proposed Area Plan. There are no roadways with daily roadway volumes of 50,000 or more either within or near the plan's boundaries. A Union Pacific/Metrolink rail line runs through the community of Acton and up north through Palmdale and beyond the northern boundary of the Project Area. Additionally, an east-west transecting Union Pacific rail line starting in the City of Palmdale bisects a portion of the Project Area. The Union Pacific/Metrolink line serves both freight and commuter trains. The Metrolink Antelope Valley Line ends in Lancaster. In addition to freeways and railroads, there are also multiple AVAQMD and SCAQMD-permitted land uses within and near the Project Area that may generate stationary or mobile sources of TACs. Under the Proposed Project, development of new residential land uses would be permitted in proximity to existing and future industrial uses. Additionally, new residential land uses could also potentially be sited near I-5, SR-138, and SR-14 and the existing rail lines. Therefore, air quality compatibility impacts for new sensitive land uses are potentially significant.

Impact 5.3-6: Industrial land uses associated with the Proposed Project could create objectionable odors. [Threshold AQ-5]

Impact Analysis: The following describes potential odor impacts in Los Angeles County from the implementation of the Proposed Project.

Growth in the Project Area could generate new sources of odors and place sensitive receptors near existing sources of odors. Nuisance odors from land uses in the SoCAB are regulated under SCAQMD Rule 402, *Nuisance*, while odors within the Antelope Valley portion of the MDAB are regulated under AVAQMD Rule 402, *Nuisance*. Major sources of odors include wastewater treatment plants, chemical manufacturing facilities, food processing facilities, agricultural operations, and waste facilities (e.g., landfills, transfer stations, compost facilities).

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There are two types of odor impacts: 1) siting sensitive receptors near nuisance odors, and 2) siting new sources of nuisance odors near sensitive receptors. The Proposed Project designates residential areas and industrial areas of the Project Area to prevent potential mixing of incompatible land use types.

- Future non-industrial development would involve minor odor-generating activities, such as lawn mower exhaust and application of exterior paints for building improvement. It should be noted that while restaurants can generate odors, these sources are not typically identified as nuisance odors since they typically do not generate significant odors that affect a substantial number of people.
- Industrial uses, including food processing facilities and waste transfer stations, have the potential to generate substantial odors. Individual projects associated with the Project Area, including commercial, industrial, and office, are also required to comply with SCAQMD's or AVAQMD's Rule 402 to prevent public nuisances. While these odors would be required to be controlled, additional measures may be warranted to prevent a nuisance, depending on the nature of the proposed use. Consequently, industrial land uses associated with the buildout of the Proposed Project may generate odors that affect a substantial number of people.
- Construction activities would require the operation of equipment that may generate exhaust from either gasoline or diesel fuel. Construction and development would also require the application of paints and the paving of roads, which could generate odors. These types and concentrations of odors are typical of developments and are not considered significant air quality impacts.

SCAQMD and AVAQMD Rule 402, Nuisance, requires abatement of any nuisance generated by an odor complaint. Because existing sources of odors are required to comply with SCAQMD's or AVAQMD Rule 402, impacts to siting of new sensitive land uses would be less than significant. Future environmental review for major sources of odors are required to ensure that sensitive land uses are not exposed to nuisance odors. Rule 402 requires abatement of any nuisance generating an odor complaint. However, additional measures may be necessary to prevent an odor nuisance. Therefore, industrial land uses associated with the Proposed Project may generate a potentially significant odor impact to a substantial number of people.

5.3.5 Cumulative Impacts

Any project that produces a significant project-level regional air quality impact in an area that is nonattainment adds to the cumulative impact. The greatest source of emissions within the SoCAB and MDAB is from mobile sources. Due to the extent of the area potentially impacted from cumulative project emissions, the SCAQMD and AVAQMD considers a project cumulatively significant when project-related emissions exceed the regional emissions thresholds shown in Tables 5.3-11 and 5.3-12.

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Construction

The MDAB is currently designated nonattainment for O₃ and particulate matter (PM_{2.5}). The SoCAB is designated nonattainment for O₃ and PM_{2.5}¹³ under the California and National AAQS, PM₁₀ under the California AAQS, and lead (Los Angeles County only) under the National AAQS. Construction of cumulative projects will further degrade the regional air quality. Already-imposed mitigation measures from certified EIRs prepared for cumulative projects as well as existing regulatory programs will assist in mitigating these cumulative impacts. However, even with the implementation of mitigation measures and existing regulatory programs, construction emissions for major development projects would still exceed the SCAQMD or AVAQMD significance thresholds for VOC, NO_x, CO, PM₁₀, and PM_{2.5}. Therefore, construction emissions associated with future development pursuant to the Proposed Project would be significant.

Operation

For operational air quality emissions, any project that does not exceed or can be mitigated to less than the daily regional threshold values is not considered by the SCAQMD or the AVAQMD to be a substantial source of air pollution and does not add significantly to a cumulative impact. As discussed above, operation of future development pursuant to the Proposed Project would result in emissions in excess of the SCAQMD or AVAQMD regional daily emissions thresholds for VOC, NO_x, CO, SO₂, PM₁₀ and PM_{2.5}. Therefore, the Proposed Project's contribution to cumulative operational air quality impacts would be significant.

5.3.6 Existing Regulations and Standard Conditions

State

- Clean Car Standards – Pavley (AB 1493)
- California Advanced Clean Cars CARB (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)

¹³ CARB approved the SCAQMD's request to redesignate the SoCAB from serious nonattainment for PM₁₀ to attainment for PM₁₀ under the National AAQS on March 25, 2010 because the SoCAB did not violated federal 24-hour PM₁₀ standards during the period from 2004 to 2007. However, the EPA has not yet approved this request.

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SCAQMD

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

AVAQMD

- AVAQMD Rule 201: Permit to Construct
- AVAQMD Rule 203: Permit to Operate
- AVAQMD Rule 402: Nuisances
- AVAQMD Rule 403 and 403.2: Fugitive Dust Control
- AVAQMD Regulation XIII, New Source Review

Local

- Control of Hazardous Dust Conditions (County Code Chapter 12.32)

5.3.7 Level of Significance Before Mitigation

Without mitigation, the following impacts would be **potentially significant**:

- **Impact 5.3-1** The Proposed Project would generate less growth than the Adopted Area Plan; however, it would not be consistent with the SCAQMD's and AVAQMD's air quality management plans as buildout of the Proposed Project would cumulatively contribute to the nonattainment designations of the SoCAB and Antelope Valley portion of the MDAB.
- **Impact 5.3-2** Construction activities associated with the Antelope Valley Area Plan would generate a substantial increase in short-term criteria air pollutant emissions that exceed the SCAQMD and AVAQMD significance thresholds and would cumulatively contribute to the nonattainment designations of the SoCAB and Antelope Valley portion of the MDAB.
- **Impact 5.3-3** Long-term operation of the Proposed Project would generate a substantial increase in criteria air pollutant emissions that exceed the threshold criteria and would cumulative contribute to the nonattainment designations of the SoCAB and Antelope Valley portion of the MDAB.

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- **Impact 5.3-4** Buildout of the Proposed Project could result in new source sources of criteria air pollutant emissions and/or toxic air contaminants proximate to existing or planned sensitive receptors.
- **Impact 5.3-5** Placement of new sensitive receptors near major sources of toxic air contaminants in the Project Area could expose people to substantial pollutant concentrations.
- **Impact 5.3-6** Industrial land uses associated with the Proposed Project could create objectionable odors.

5.3.8 Mitigation Measures

Impact 5.3-1

Mitigation measures incorporated into future development projects and adherence to the Proposed Project policies for operation and construction phases described under Impacts 5.3-2 and 5.3-3 below would reduce criteria air pollutant emissions associated with buildout of the Proposed Project. Goals and policies in the Proposed Project would facilitate continued County participation/cooperation with SCAQMD, AVAQMD, and SCAG to achieve regional air quality improvement goals, promote energy conservation design and development techniques, encourage alternative transportation modes, and implement transportation demand management strategies. 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 Area in accordance with the Proposed Project.

Impact 5.3-2

AQ-1 If, during subsequent project-level environmental review, construction-related criteria air pollutants are determined to have the potential to exceed the applicable air quality management district (AQMD) adopted thresholds of significance, applicants for new development projects shall be required to comply with mitigation measures as identified in the CEQA document prepared for the individual development project to reduce air pollutant emissions during construction activities. Mitigation measures that may be identified during the environmental review include but are not limited to:

- Construction contractors of development projects shall use construction equipment rated by the United States Environmental Protection Agency as having Tier 3 (model year 2006 or newer) or Tier 4 (model year 2008 or newer) emission limits, applicable for engines between 50 and 750 horsepower. Use of Tier 3 construction equipment shall be included as a note on grading plans submitted to the County.
- Grading plans shall include a note that construction contractors shall ensure construction equipment is properly serviced and maintained to the manufacturer's standards.

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- Grading plans shall include a note that, if feasible, construction contractors shall consider use of off-road equipment that is tire-based rather than track-based, which creates more ground disturbance.
- Grading plans shall include a note that construction contractors shall limit nonessential idling of construction equipment to no more than five consecutive minutes.
- Grading plans shall include a note that construction contractors shall water all active construction areas at least three times daily, or as often as needed to control dust emissions. Watering should be sufficient to prevent airborne dust from leaving the site. Increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour. Reclaimed water should be used whenever possible.
- Grading plans shall include a note that construction contractors shall cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard (i.e., the minimum required space between the top of the load and the top of the trailer).
- Grading plans shall include a note that construction contractors shall pave, apply water three times daily or as often as necessary to control dust, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites.
- Grading plans shall include a note that construction contractors shall sweep daily (with water sweepers using reclaimed water if possible), or as often as needed, all paved access roads, parking areas, and staging areas at the construction site to control dust.
- Grading plans shall include a note that construction contractors shall sweep public streets daily (with water sweepers using reclaimed water if possible) in the vicinity of the project site, or as often as needed, to keep streets free of visible soil material.
- Grading plans shall include a note that construction contractors shall hydroseed or apply non-toxic soil stabilizers to inactive construction areas (i.e., areas not being actively disturbed for 10 or more days).
- Grading plans shall include a note that construction contractors shall enclose, cover, water three times daily, or apply non-toxic soil binders to exposed stockpiles (dirt, sand, etc.).
- Grading plans shall include a note that construction contractors shall minimize ground disturbance (e.g., vegetation removal and mowing), to the extent feasible.

Impact 5.3-3

Goals and policies are included in the Proposed Project that would reduce air pollutant emissions. However, due to the magnitude of emissions generated by the buildout of residential, office, commercial, industrial, and warehousing land uses in the Project Area, no mitigation measures are available that would reduce impacts below SCAQMD's or AVAQMD's thresholds.

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Impact 5.3-4

AQ-2 New industrial or warehousing land uses that: 1) have the potential to generate 40 or more diesel trucks per day and 2) are located within 1,000 feet of a sensitive land use (e.g. residential, schools, hospitals, nursing homes), as measured from the property line of the project to the property line of the nearest sensitive use, shall submit a health risk assessment (HRA) to the County prior to future discretionary project approval. When required, the HRA shall be prepared in accordance with policies and procedures of the state Office of Environmental Health Hazard Assessment and the applicable air quality management district. If the HRA shows that the incremental cancer risk exceeds ten in one million (10E-06), particulate matter concentrations would exceed $2.5 \mu\text{g}/\text{m}^3$, or the appropriate noncancer hazard index exceeds 1.0, the applicant will be required to identify and demonstrate that best available control technologies for toxics (T-BACTs) that are capable of reducing potential cancer and noncancer risks to an acceptable level, including appropriate enforcement mechanisms. T-BACTs may include, but are not limited to, restricting idling onsite or electrifying warehousing docks to reduce diesel particulate matter, or requiring use of newer equipment and/or vehicles. T-BACTs identified in the HRA shall be identified as mitigation measures in the environmental document and/or incorporated into the site development plan as a component of the proposed project.

Impact 5.3-5

AQ-3 Applicants for sensitive land uses in proximity to the following facilities and within the following distances as measured from the property line of the project to the property line of the source/edge of the nearest travel lane, shall submit a health risk assessment (HRA) to the County prior to future discretionary project approval:

- Industrial facilities within 1,000 feet
- Distribution centers (40 or more trucks per day) within 1,000 feet
- Major transportation projects (50,000 or more vehicles per day) within 1,000 feet
- Dry cleaners using perchloroethylene within 500 feet
- Gasoline dispensing facilities within 300 feet

When required, the HRA shall be prepared in accordance with policies and procedures of the state Office of Environmental Health Hazard Assessment (OEHHA) and the applicable Air Quality Management District. The latest OEHHA guidelines shall be used for the analysis, including age sensitivity factors, breathing rates, and body weights appropriate for children age 0 to 6 years. If the HRA shows that the incremental cancer risk exceeds ten in one million (10E-06) or the appropriate noncancer hazard index exceeds 1.0, the applicant will be required to identify and demonstrate that mitigation measures are capable of reducing potential cancer and non-cancer risks to an acceptable level (i.e., below ten in one million or a hazard index of 1.0), including appropriate enforcement mechanisms. Measures to reduce risk may include but are not limited to:

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- Air intakes located away from high volume roadways and/or truck loading zones, unless it can be demonstrated to the County by the applicant that there are operational limitations.
- Heating, ventilation, and air conditioning systems of the buildings provided with appropriately sized maximum efficiency rating value (MERV) filters.

Mitigation measures identified in the HRA shall be identified as mitigation measures in the environmental document and/or incorporated into the site development plan as a component of the proposed project. The air intake design and MERV filter requirements shall be noted and/or reflected on all building plans submitted to the County.

Impact 5.3-6

AQ-4 If it is determined during project-level environmental review that a project has the potential to emit nuisance odors beyond the property line, an odor management plan may be required, subject to County's regulations. Facilities that have the potential to generate nuisance odors include but are not limited to:

- Wastewater treatment plants
- Composting, greenwaste, or recycling facilities
- Fiberglass manufacturing facilities
- Painting/coating operations
- Large-capacity coffee roasters
- Food-processing facilities

If an odor management plan is determined to be required through CEQA review, the County shall require the project applicant to submit the plan prior to approval to ensure compliance with the applicable Air Quality Management District's Rule 402, for nuisance odors. If applicable, the Odor Management Plan shall identify the Best Available Control Technologies for Toxics (T-BACTs) that will be utilized to reduce potential odors to acceptable levels, including appropriate enforcement mechanisms. T-BACTs may include, but are not limited to, scrubbers (e.g., air pollution control devices) at the industrial facility. T-BACTs identified in the odor management plan shall be identified as mitigation measures in the environmental document and/or incorporated into the site plan.

5.3.9 Level of Significance After Mitigation

Impact 5.3-1

Buildout of the Proposed Project would exceed the SCAQMD and AVAQMD significance thresholds and would cumulatively contribute to the nonattainment designations of the SoCAB and MDAB (Antelope Valley portion). Therefore, the Proposed Project would be inconsistent with SCAQMD's 2012 AQMP and AVAQMD's Ozone Attainment Plan. Mitigation measures incorporated into future development projects and

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adherence to the Proposed Project policies described in Section 5.3.3 above would reduce criteria air pollutant emissions associated with buildout of the Proposed Project. Goals and policies included in the Proposed Project would facilitate continued County participation/cooperation with SCAQMD, AVAQMD, and SCAG to achieve regional air quality improvement goals, promote energy conservation design and development techniques, encourage alternative transportation modes, and implement transportation demand management strategies. However, no mitigation measures are available that would reduce impacts associated with inconsistency with the air quality management plans due to the associated emissions that would be generated by the buildout of the Project Area in accordance with the Proposed Project. Impact 5.3-1 would remain Significant and Unavoidable.

Impact 5.3-2

Construction activities associated with the buildout of the Proposed Project would generate criteria air pollutant emissions that would exceed SCAQMD's and AVAQMD's regional significance thresholds and would contribute to the nonattainment designations of the SoCAB and Antelope Valley portion of the MDAB. Mitigation Measure AQ-1 would reduce air pollutant emissions. However, due to the magnitude of emissions generated by future construction activities associated with the buildout of the Proposed Project, no additional mitigation measures are available that would reduce impacts below SCAQMD's and AVAQMD's thresholds. Impact 5.3-2 would remain Significant and Unavoidable.

Impact 5.3-3

Buildout of the proposed land use plan would generate additional vehicle trips and area sources of criteria air pollutant emissions that exceed SCAQMD's and AVAQMD's regional significance thresholds and would contribute to the nonattainment designations of the SoCAB and Antelope Valley portion of the MDAB. Goals and policies are included in the Proposed Project that would reduce air pollutant emissions. However, due to the magnitude of emissions generated by the buildout of the Proposed Project, no mitigation measures are available that would reduce impacts below SCAQMD's or AVAQMD's thresholds. Impact 5.3-3 would remain Significant and Unavoidable.

Impact 5.3-4

Buildout of the Proposed Project could result in new sources of criteria air pollutant emissions and/or toxic air contaminants near existing or planned sensitive receptors. Goals and policies are included in the Proposed Project that would reduce concentrations of criteria air pollutant emissions and TACs generated by new development.

Review of projects by SCAQMD or AVAQMD for permitted sources of air toxics (e.g., industrial facilities, dry cleaners, and gasoline dispensing facilities) would ensure health risks are minimized. Mitigation Measure AQ-2 would ensure mobile sources of TACs not covered under SCAQMD or AVAQMD permits are considered during subsequent project-level environmental review. Development of individual projects would be required to achieve the incremental risk thresholds established by SCAQMD or AVAQMD, and TACs would be less than significant.

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However, localized emissions of criteria air pollutants could exceed the SCAQMD or AVAQMD regional significance thresholds because of the scale of development activity associated with theoretical buildout of the Proposed Project. For this broad-based Proposed Project, it is not possible to determine whether the scale and phasing of individual projects would result in the exceedance of the localized emissions thresholds. Therefore, in accordance with the SCAQMD and AVAQMD methodology, Impact 5.3-4 would remain Significant and Unavoidable.

Impact 5.3-5

Placement of new sensitive receptors within the Plan Area near major sources of TACs could expose people to substantial pollutant concentrations. Goals and policies are included in the Proposed Project that would reduce concentrations of criteria air pollutant emissions and air toxics generated by new development. Mitigation Measure AQ-3 would ensure that placement of sensitive receptors near major sources of air pollution would achieve the incremental risk thresholds established by SCAQMD and AVAQMD, and Impact 5.3-5 would be less than significant.

Impact 5.3-6

Mitigation Measure AQ-4 would ensure that odor impacts are minimized and facilities would comply with SCAQMD and AVAQMD Rule 402. Impact 5.3-6 would be less than significant.

5.3.10 References

- Antelope Valley Air Quality Management District (AVAQMD). 2011, August. California Environmental Quality Act (CEQA) and Federal Conformity Guidelines.
- . 2008, May 20. AVAQMD Federal 8-Hour Ozone Attainment Plan, Western Mojave Desert Non-attainment Area.
- Bay Area Air Quality Management District (BAAQMD). 2011, Revised. California Environmental Quality Act Air Quality Guidelines.
- California Air Resources Board (CARB). 2014a, June 27. Area Designations Maps/State and National. <http://www.arb.ca.gov/desig/adm/adm.htm>.
- . 2014b. Air Pollution Data Monitoring Cards (2009, 2010, 2011, 2012, and 2013). Accessed August 3, 2014, <http://www.arb.ca.gov/adam/topfour/topfour1.php>.
- . 2013a, June 4. Ambient Air Quality Standards. <http://www.arb.ca.gov/research/aaqs/aaqs2.pdf>.
- . 2013b, October 23. Proposed 2013 Amendments to Area Designations for State Ambient Air Quality Standards. <http://www.arb.ca.gov/regact/2013/area13/area13isor.pdf>.
- . 1999. California Air Resources Board (CARB). Final Staff Report: Update to the Toxic Air Contaminant List.

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- California Department of Transportation (Caltrans). 1997, December. Transportation Project-Level Carbon Monoxide Protocol. UCD-ITS-RR-97-21. Prepared by Institute of Transportation Studies, University of California, Davis.
- Los Angeles, County of. 2014. *Acute Communicable Disease Control, Coccidioidomycosis*. Accessed March 2014, <https://publichealth.lacounty.gov/acd/Diseases/Cocci.htm>.
- South Coast Air Quality Management District (SCAQMD). 2013, February. 2012 Final Air Quality Management Plan. <http://www.aqmd.gov/home/library/clean-air-plans/air-quality-mgt-plan/final-2012-air-quality-management-plan>
- . 2012a, May 4. Final 2012 Lead State Implementation Plan: Los Angeles County. <http://www.aqmd.gov/docs/default-source/clean-air-plans/lead-state-implementation-plan/revised-draft-2012-lead-sip.pdf?sfvrsn=2>
- . 2012b. Air Quality Analysis Handbook. Updates to CEQA Air Quality Handbook. <http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook>
- . 2011, March (Revised). SCAQMD Air Quality Significance Thresholds. <http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2>
- . 2008a, September. *Multiple Air Toxics Exposure Study in the South Coast Air Basin* (MATES III).
- . 2008b, June. Final Localized Significance Threshold Methodology.
- . 2005, May. Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning.
- . 1993. California Environmental Quality Act Air Quality Handbook.
- U.S. Environmental Protection Agency (EPA). 2013, December 5. The Green Book Nonattainment Areas for Criteria Air Pollutants. <http://www.epa.gov/air/oaqps/greenbk/index.html>.