

## 5. Environmental Analysis

### 5.3 AIR QUALITY

This section evaluates the potential for the San Bernardino Countywide Plan (proposed Project or Countywide Plan) to impact air quality in a local and regional context. This evaluation is based on the methodology recommended by the South Coast Air Quality Management District (SCAQMD) for growth within the Valley and Mountain Regions, and the Mojave Desert Air Quality Management District (MDAQMD) for growth within the North Desert and East Desert Regions. Because no single site-specific land use development project over the time frame of the Countywide Plan is large enough individually to cause a region to be in nonattainment, air quality impacts of the program-level Countywide Plan are considered on a cumulative basis. Cumulative impacts related to air quality are based on the regional boundaries of the South Coast Air Basin (SoCAB) and the Mojave Desert Air Basin (MDAB). Figure 5.3-1, *Air Basin Boundaries*, shows the location of the air basins relative to the unincorporated areas of San Bernardino County.

The criteria air pollutant emissions inventory and forecast is included in Appendix B, *Air Quality and Greenhouse Gas Data*, of this Draft EIR. The emissions inventory and forecast are based on the vehicle miles traveled (VMT) provided by Fehr and Peers for the on-road transportation emissions section (see Appendix L). Activity data for natural gas use is based on the San Bernardino County Community and Municipal Greenhouse Gas Inventory (Baseline Inventory) (see Appendix C). Emissions increases in the nontransportation sectors are associated with population and employment in the unincorporated County.

#### 5.3.1 Environmental Setting

##### 5.3.1.1 AIR BASINS

###### South Coast Air Basin

The Valley Region and the majority of the Mountain Region of unincorporated San Bernardino County (see Figure 5.3-1) are within the SoCAB, which includes all of Orange County and the nondesert portions of Los Angeles, Riverside, and San Bernardino counties. The SoCAB is in a coastal plain with connecting broad valleys and low hills and is bounded by the Pacific Ocean in the southwest quadrant, with high mountains forming the remainder of the perimeter. The general region lies in the 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.

In contrast to a very steady pattern of temperature, rainfall is seasonally and annually highly variable. Almost all rain falls from November through April. Summer rainfall is normally restricted to widely scattered thundershowers near the coast, with slightly heavier shower activity in the east and over the mountains.

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#### *Humidity*

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

#### *Wind*

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

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

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

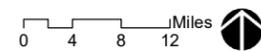
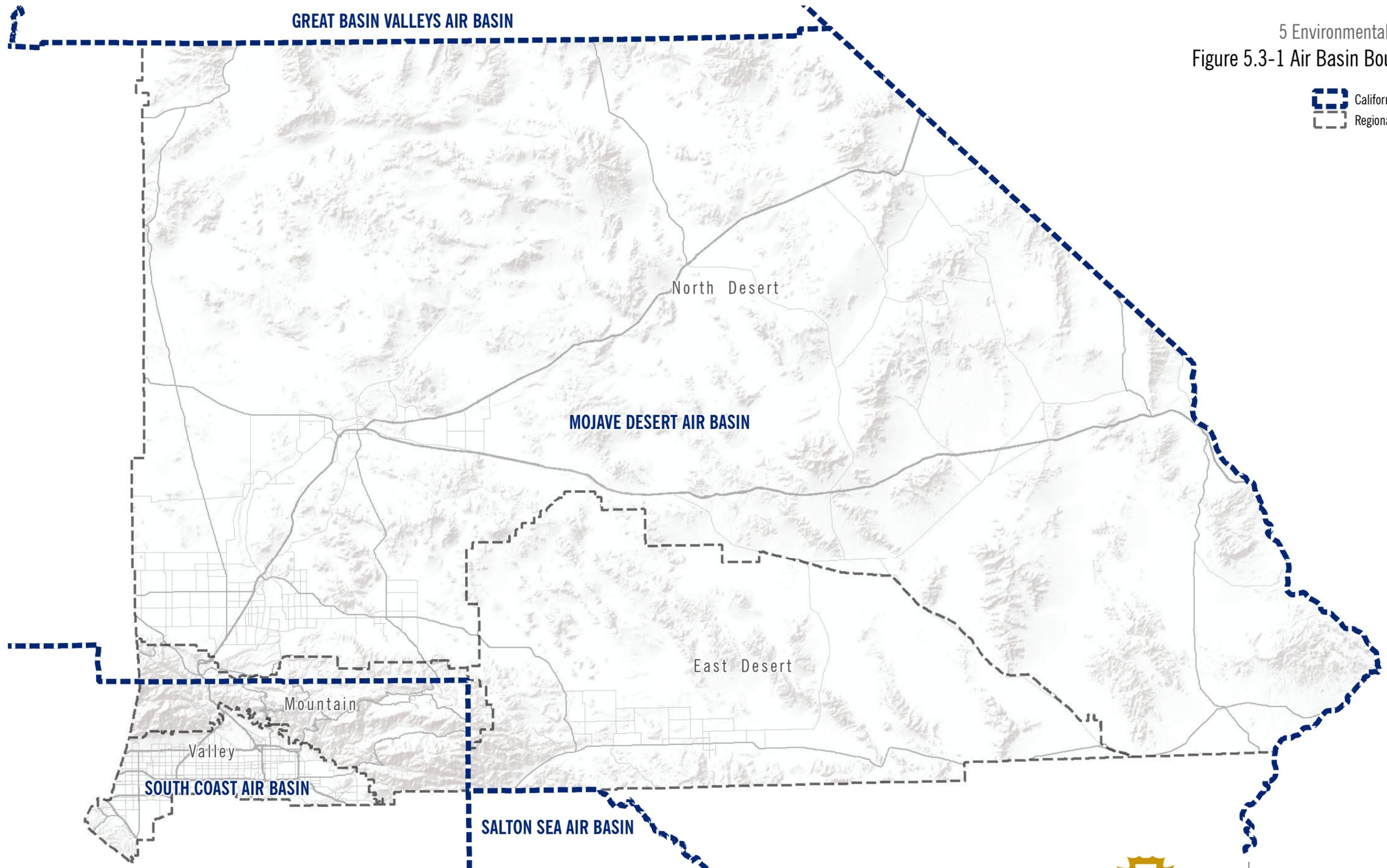
#### *Inversions*

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

#### **Mojave Desert Air Basin**

The North Desert Region, the East Desert Region, and the edges of the Mountain Region of San Bernardino County lie within the MDAB (see Figure 5.3-1). The MDAQMD has jurisdiction over the desert portion of San Bernardino County and the far eastern end of Riverside County. This region includes the incorporated communities of Adelanto, Apple Valley, Barstow, Blythe, Hesperia, Needles, Twentynine Palms, Victorville, and Yucca Valley. This region also includes the National Training Center at Fort Irwin, the Marine Corps Air Ground Combat Center, the Marine Corps Logistics Base, the eastern portion of Edwards Air Force Base, and a portion of the China Lake Naval Air Weapons Station.

 California Air Basins  
 Regional Boundaries



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#### *Topography and Climate*

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. 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 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. Antelope Valley is bordered in the northwest by the Tehachapi Mountains, separated from the Sierra Nevada in the north by the Tehachapi Pass (3,800 ft elevation). Antelope Valley is bordered in the south by the San Gabriel Mountains, bisected by Soledad Canyon (3,300 ft). The Mojave Desert is bordered in the southwest by the San Bernardino Mountains, separated from the San Gabriel Mountains by the Cajon Pass (4,200 ft). A lesser channel lies between the San Bernardino Mountains and the Little San Bernardino Mountains (Morongo Valley).

The Palo Verde Valley portion of the Mojave Desert lies in the low desert, at the eastern end of a series of valleys (notably the Coachella Valley), whose primary channel is the San Geronio Pass (2,300 ft) between the San Bernardino and San Jacinto Mountains. 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, because 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 with at least 0.01 inches of precipitation). The MDAB is classified as a dry-hot desert climate, with portions classified as dry-very hot desert, to indicate at least three months have maximum average temperatures over 100.4° F (MDAQMD 2016).

#### **5.3.1.2 REGULATORY SETTING**

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

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#### Federal and State Laws

##### *Ambient Air Quality Standards*

The Clean Air Act ((42 U.S.C. § 7401, et. seq.) was passed in 1963 by the US Congress and has been amended several times. The 1970 Clean Air Act amendments strengthened previous legislation and laid the foundation for the regulatory scheme of the 1970s and 1980s. In 1977, Congress again added several provisions, including nonattainment requirements for areas not meeting National AAQS and the Prevention of Significant Deterioration program. The 1990 amendments represent the latest in a series of federal efforts to regulate the protection of air quality in the United States. The Clean Air Act allows states to adopt more stringent standards or to include other pollution species. The California Clean Air Act, signed into law in 1988, requires all areas of the state to achieve and maintain the California AAQS by the earliest practical date. The California AAQS tend to be more restrictive than the National AAQS.

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

Both California and the federal government have established health-based AAQS for seven air pollutants, which are shown in Table 5.3-1, *Ambient Air Quality Standards for Criteria Pollutants*. These pollutants are ozone (O<sub>3</sub>), nitrogen dioxide (NO<sub>2</sub>), carbon monoxide (CO), sulfur dioxide (SO<sub>2</sub>), coarse inhalable particulate matter (PM<sub>10</sub>), fine inhalable particulate matter (PM<sub>2.5</sub>), and lead (Pb). In addition, the state has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety.

**Table 5.3-1 Ambient Air Quality Standards for Criteria Pollutants**

Pollutant	Averaging Time	California Standard <sup>1</sup>	Federal Primary Standard <sup>2</sup>	Major Pollutant Sources
Ozone (O <sub>3</sub> ) <sup>3</sup>	1 hour	0.09 ppm	*	Motor vehicles, paints, coatings, and solvents.
	8 hours	0.070 ppm	0.070 ppm	
Carbon Monoxide (CO)	1 hour	20 ppm	35 ppm	Internal combustion engines, primarily gasoline-powered motor vehicles.
	8 hours	9.0 ppm	9 ppm	
Nitrogen Dioxide (NO <sub>2</sub> )	Annual Arithmetic Mean	0.030 ppm	0.053 ppm	Motor vehicles, petroleum-refining operations, industrial sources, aircraft, ships, and railroads.
	1 hour	0.18 ppm	0.100 ppm	

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**Table 5.3-1 Ambient Air Quality Standards for Criteria Pollutants**

Pollutant	Averaging Time	California Standard <sup>1</sup>	Federal Primary Standard <sup>2</sup>	Major Pollutant Sources
Sulfur Dioxide (SO <sub>2</sub> )	Annual Arithmetic Mean	*	0.030 ppm	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
	1 hour	0.25 ppm	0.075 ppm	
	24 hours	0.04 ppm	0.14 ppm	
Respirable Coarse Particulate Matter (PM <sub>10</sub> )	Annual Arithmetic Mean	20 µg/m <sup>3</sup>	*	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	50 µg/m <sup>3</sup>	150 µg/m <sup>3</sup>	
Respirable Fine Particulate Matter (PM <sub>2.5</sub> ) <sup>4</sup>	Annual Arithmetic Mean	12 µg/m <sup>3</sup>	12 µg/m <sup>3</sup>	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	*	35 µg/m <sup>3</sup>	
Lead (Pb)	30-Day Average	1.5 µg/m <sup>3</sup>	*	Present source: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline.
	Calendar Quarter	*	1.5 µg/m <sup>3</sup>	
	Rolling 3-Month Average	*	0.15 µg/m <sup>3</sup>	
Sulfates (SO <sub>4</sub> ) <sup>5</sup>	24 hours	25 µg/m <sup>3</sup>	*	Industrial processes.
Visibility Reducing Particles	8 hours	ExCo =0.23/km visibility of 10≥ miles	*	Visibility-reducing particles consist of suspended particulate matter, which is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size and chemical composition, and can be made up of many different materials such as metals, soot, soil, dust, and salt.
Hydrogen Sulfide (H <sub>2</sub> S)	1 hour	0.03 ppm	*	Hydrogen sulfide (H <sub>2</sub> S) is a colorless gas with the odor of rotten eggs. It is formed during bacterial decomposition of sulfur-containing organic substances. Also, it can be present in sewer gas and some natural gas, and can be emitted as the result of geothermal energy exploitation.

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**Table 5.3-1 Ambient Air Quality Standards for Criteria Pollutants**

Pollutant	Averaging Time	California Standard <sup>1</sup>	Federal Primary Standard <sup>2</sup>	Major Pollutant Sources
Vinyl Chloride	24 hour	0.01 ppm	*	Vinyl chloride (chloroethene), a chlorinated hydrocarbon, is a colorless gas with a mild, sweet odor. Most vinyl chloride is used to make polyvinyl chloride (PVC) plastic and vinyl products. Vinyl chloride has been detected near landfills, sewage plants, and hazardous waste sites, due to microbial breakdown of chlorinated solvents.

Source: CARB 2016.

Notes: ppm: parts per million;  $\mu\text{g}/\text{m}^3$ : micrograms per cubic meter

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

<sup>1</sup> California standards for O<sub>3</sub>, CO (except 8-hour Lake Tahoe), SO<sub>2</sub> (1 and 24 hour), NO<sub>2</sub>, and particulate matter (PM<sub>10</sub>, PM<sub>2.5</sub>, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

<sup>2</sup> National standards (other than O<sub>3</sub>, PM, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The O<sub>3</sub> standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM<sub>10</sub>, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150  $\mu\text{g}/\text{m}^3$  is equal to or less than one. For PM<sub>2.5</sub>, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard.

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

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

<sup>5</sup> On June 2, 2010, a new 1-hour SO<sub>2</sub> standard was established and the existing 24-hour and annual primary standards were revoked. The 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

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

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

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

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

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

- **13 CCR Chapter 10 § 2485.** Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling
- **13 CCR Chapter 10 § 2480.** Airborne Toxic Control Measure to Limit School Bus Idling and Idling at Schools
- **13 CCR § 2477 and Article 8.** Airborne Toxic Control Measure for In-Use Diesel-Fueled Transport Refrigeration Units (TRU) and TRU Generator Sets and Facilities Where TRUs Operate

### Air Pollutants of Concern

#### *Criteria Air Pollutants*

The pollutants emitted into the ambient air by stationary and mobile sources are categorized as primary and/or secondary pollutants. Primary air pollutants are emitted directly from sources. Carbon monoxide (CO), volatile organic compounds (VOC), nitrogen oxides (NO<sub>x</sub>), sulfur dioxide (SO<sub>2</sub>), coarse inhalable particulate matter (PM<sub>10</sub>), fine inhalable particulate matter (PM<sub>2.5</sub>), and lead (Pb) are primary air pollutants. Of these, CO, SO<sub>2</sub>, NO<sub>2</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> are “criteria air pollutants,” which means that AAQS have been established for them. VOC and NO<sub>x</sub> are criteria pollutant precursors that form secondary criteria air pollutants through chemical and photochemical reactions in the atmosphere. Ozone (O<sub>3</sub>) and nitrogen dioxide (NO<sub>2</sub>) are the principal secondary pollutants.

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

- **Carbon Monoxide** is a colorless, odorless gas produced by incomplete combustion of carbon substances, such as gasoline or diesel fuel. CO is a primary criteria air pollutant. CO concentrations tend to be the highest during winter mornings with little to no wind, when surface-based inversions trap the pollutant at ground levels. The highest ambient CO concentrations are generally found near traffic-congested corridors and intersections. The primary adverse health effect associated with CO is interference with normal oxygen transfer to the blood, which may result in tissue oxygen deprivation (SCAQMD 2005; EPA 2018a). The SoCAB and the MDAB are designated under the California and National AAQS as being in attainment of CO criteria levels (CARB 2017).
- **Volatile Organic Compounds** are composed primarily of hydrogen and carbon atoms. Internal combustion associated with motor vehicle usage is the major source of VOCs. Other sources include evaporative emissions from paints and solvents, asphalt paving, and household consumer products such as

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aerosols (SCAQMD 2005). There are no AAQS for VOCs. However, because they contribute to the formation of O<sub>3</sub>, SCAQMD and MDAQMD has established a significance threshold.

- **Nitrogen Oxides** are a by-product of fuel combustion and contribute to the formation of ground-level O<sub>3</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub>. The two major forms of NO<sub>x</sub> are nitric oxide (NO) and nitrogen dioxide (NO<sub>2</sub>). NO is a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperature and/or high pressure. The principal form of NO<sub>x</sub> produced by combustion is NO, but NO reacts quickly with oxygen to form NO<sub>2</sub>, creating the mixture of NO and NO<sub>2</sub> commonly called NO<sub>x</sub>. NO<sub>2</sub> is an acute irritant and more injurious than NO in equal concentrations. At atmospheric concentrations, however, NO<sub>2</sub> is only potentially irritating. NO<sub>2</sub> absorbs blue light; the result is a brownish-red cast to the atmosphere and reduced visibility. NO<sub>2</sub> exposure concentrations near roadways are of particular concern for susceptible individuals, including asthmatics, children, and the elderly. Current scientific evidence links short-term NO<sub>2</sub> exposures, ranging from 30 minutes to 24 hours, with adverse respiratory effects, including airway inflammation in healthy people and increased respiratory symptoms in people with asthma. Also, studies show a connection between elevated short-term NO<sub>2</sub> concentrations and increased visits to emergency departments and hospital admissions for respiratory issues, especially asthma (SCAQMD 2005; EPA 2018a). The SoCAB and MDAB are designated an attainment area for NO<sub>2</sub> under the National and California AAQS (CARB 2017).
- **Sulfur Dioxide** is a colorless, pungent, irritating gas formed by the combustion of sulfurous fossil fuels. It enters the atmosphere as a result of burning high-sulfur-content fuel oils and coal and chemical processes at plants and refineries. Gasoline and natural gas have very low sulfur content and do not release significant quantities of SO<sub>2</sub>. When sulfur dioxide forms sulfates (SO<sub>4</sub>) in the atmosphere, together these pollutants are referred to as sulfur oxides (SO<sub>x</sub>). Thus, SO<sub>2</sub> is both a primary and secondary criteria air pollutant. At sufficiently high concentrations, SO<sub>2</sub> may irritate the upper respiratory tract. Current scientific evidence links short-term exposures to SO<sub>2</sub>, ranging from 5 minutes to 24 hours, with an array of adverse respiratory effects, including bronchoconstriction and increased asthma symptoms. These effects are particularly adverse for asthmatics at elevated ventilation rates (e.g., while exercising or playing) at lower concentrations and when combined with particulates, SO<sub>2</sub> may do greater harm by injuring lung tissue. Studies also show a connection between short-term exposure and increased visits to emergency facilities and hospital admissions for respiratory illnesses, particularly in at-risk populations such as children, the elderly, and asthmatics (SCAQMD 2005; EPA 2018a). The SoCAB and the MDAB area designated attainment under the California and National AAQS (CARB 2017).
- **Suspended Particulate Matter** consists of finely divided solids or liquids such as soot, dust, aerosols, fumes, and mists. Two forms of fine particulates are now recognized and regulated. Inhalable coarse particles, or PM<sub>10</sub>, include particulate matter with an aerodynamic diameter of 10 microns or less (i.e., ≤10 millionths of a meter or 0.0004 inch). Inhalable fine particles, or PM<sub>2.5</sub>, have an aerodynamic diameter of 2.5 microns or less (i.e., ≤2.5 millionths of a meter or 0.0001 inch). Particulate discharge into the atmosphere results primarily from industrial, agricultural, construction, and transportation activities. Both PM<sub>10</sub> and PM<sub>2.5</sub> may adversely affect the human respiratory system, especially in people who are naturally sensitive or susceptible to breathing problems. The EPA's scientific review concluded that PM<sub>2.5</sub>, which penetrates deeply into the lungs, is more likely than PM<sub>10</sub> to contribute to health effects and at far lower

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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 ultrafine particulates, which are even smaller particulates with an aerodynamic diameter of <0.1 microns or less (i.e.,  $\leq 0.1$  millionths of a meter or <0.000004 inch), have human health implications, because their toxic components may initiate or facilitate biological processes that may lead to adverse effects to the heart, lungs, and other organs (SCAQMD 2013). However, the EPA or CARB has yet to adopt AAQS to regulate these particulates. Diesel particulate matter is classified by CARB as a carcinogen (CARB 1998). Particulate matter can also cause environmental effects such as visibility impairment,<sup>1</sup> environmental damage,<sup>2</sup> and aesthetic damage<sup>3</sup> (SCAQMD 2005; EPA 2018a). The SoCAB is a nonattainment area for PM<sub>2.5</sub> under California and National AAQS and a nonattainment area for PM<sub>10</sub> under the California AAQS (CARB 2017).<sup>4</sup> For the MDAB, the San Bernardino County portion of the Federal Ozone Air Quality Management Area (AQMA) is a nonattainment area for PM<sub>2.5</sub> under California AAQS and unclassified/attainment under National AAQS (CARB 2017). The MDAB is a nonattainment area for PM<sub>10</sub> under California and National AAQS (CARB 2017).

- **Ozone** is commonly referred to as “smog” and is a gas that is formed when VOCs and NO<sub>x</sub>, both by-products of internal combustion engine exhaust, undergo photochemical reactions in sunlight. O<sub>3</sub> is a secondary criteria air pollutant. O<sub>3</sub> concentrations are generally highest during the summer months when direct sunlight, light winds, and warm temperatures create favorable conditions for its formation. O<sub>3</sub> poses a health threat to those who already suffer from respiratory diseases as well as to healthy people. Breathing O<sub>3</sub> can trigger a variety of health problems, including chest pain, coughing, throat irritation, and congestion. It can worsen bronchitis, emphysema, and asthma. Ground-level O<sub>3</sub> also can reduce lung function and inflame the linings of the lungs. Repeated exposure may permanently scar lung tissue. O<sub>3</sub> also affects sensitive vegetation and ecosystems, including forests, parks, wildlife refuges, and wilderness areas. In particular, O<sub>3</sub> harms sensitive vegetation during the growing season (SCAQMD 2005; EPA 2018a). The SoCAB is designated extreme nonattainment under the California AAQS (1-hour and 8-hour) and National AAQS (8-hour) (CARB 2017). The Western Mojave Desert portion of the MDAB is designated as nonattainment under the National AAQS (8-hour) and all of the MDAB is classified as nonattainment under the California AAQS (1-hour and 8-hour) and (CARB 2017).
- **Lead** is a metal found naturally in the environment as well as in manufactured products. Once taken into the body, lead distributes throughout the body in the blood and accumulates in the bones. Depending on the level of exposure, lead can adversely affect the nervous system, kidney function, immune system,

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

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

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

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

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reproductive and developmental systems, and the cardiovascular system. Lead exposure also affects the oxygen-carrying capacity of the blood. The effects of lead most commonly encountered in current populations are neurological effects in children and cardiovascular effects in adults (e.g., high blood pressure and heart disease). Infants and young children are especially sensitive to even low levels of lead, which may contribute to behavioral problems, learning deficits, and lowered IQ (SCAQMD 2005; EPA 2018a). The major sources of lead emissions have historically been mobile and industrial sources. As a result of the EPA's regulatory efforts to remove lead from gasoline, emissions of lead from the transportation sector dramatically declined by 95 percent between 1980 and 1999, and levels of lead in the air decreased by 94 percent between 1980 and 1999. Today, the highest levels of lead in air are usually found near lead smelters. The major sources of lead emissions today are ore and metals processing and piston-engine aircraft operating on leaded aviation gasoline. However, in 2008 the EPA and CARB adopted more strict lead standards, and special monitoring sites immediately downwind of lead sources recorded very localized violations of the new state and federal standards.<sup>5</sup> As a result of these violations, the Los Angeles County portion of the SoCAB is designated as nonattainment under the National AAQS for lead (SCAQMD 2012; CARB 2017). The MDAB is designated as an attainment area for lead (CARB 2017). Because emissions of lead are found only in projects that are permitted by SCAQMD and MDAQMD, lead is not a pollutant of concern for the Countywide Plan.

#### *Toxic Air Contaminants*

By the last update to the TAC list in December 1999, CARB had designated 244 compounds as TACs (CARB 1999). Additionally, CARB has implemented control measures for a number of compounds that pose high risks and show potential for effective control. The majority of the estimated health risks from TACs can be attributed to relatively few compounds, the most important being particulate matter from diesel-fueled engines.

#### *Diesel Particulate Matter*

In 1998, CARB identified diesel particulate matter 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.

### Regional Laws

The State is divided into Air Pollution Control Districts (APCD)/Air Quality Management Districts (AQMD). These agencies are county or regional governing authorities that have primary responsibility for controlling air pollution from stationary sources. CARB and local air districts are also responsible for developing clean air plans to demonstrate how and when California will attain AAQS established under both the federal and California Clean Air Acts. For the areas within California that have not attained air quality standards, CARB works with air districts to develop and implement state and local attainment plans. In general, attainment plans

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<sup>5</sup> Source-oriented monitors record concentrations of lead at lead-related industrial facilities in the SoCAB, which include Exide Technologies in the City of Commerce; Quemetco, Inc., in the City of Industry; Trojan Battery Company in Santa Fe Springs; and Exide Technologies in Vernon. Monitoring conducted between 2004 through 2007 showed that the Trojan Battery Company and Exide Technologies exceed the federal standards (SCAQMD 2012).

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contain a discussion of ambient air quality data and trends; a baseline emissions inventory; future year projections of emissions, which account for growth projections and already adopted control measures; a comprehensive control strategy of additional measures needed to reach attainment; an attainment demonstration, which generally involves complex modeling; and contingency measures. Plans may also include interim milestones for progress toward attainment. The SoCAB is managed by SCAQMD, and the San Bernardino County (and eastern Riverside County) part of the MDAB is managed by MDAQMD.

#### *South Coast Air Quality Management District*

SCAQMD is the air pollution control agency for all of Orange County and the urban portions of Los Angeles, Riverside, and San Bernardino counties. This area of 10,743 square miles is home to over 16.8 million people—about half the population of the whole state of California. It is the second most populated urban area in the United States and one of the smoggiest. SCAQMD operates 37 permanent monitoring stations and 5 single-pollutant source impact lead (Pb) air monitoring sites in the SoCAB and a portion of the Salton Sea Air Basin in Coachella Valley (SCAQMD 2018).

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

#### *2016 AQMP*

On March 3, 2017, SCAQMD adopted the 2016 AQMP, an update to the 2012 AQMP. The 2016 AQMP addresses strategies and measures to attain the following National AAQS:

- 2008 8-hour ozone standard by 2031
- 2012 annual PM<sub>2.5</sub> standard by 2025<sup>6</sup>
- 2006 24-hour PM<sub>2.5</sub> standard by 2019
- 1997 8-hour ozone standard by 2023
- 1979 1-hour ozone standard by year 2022

It is projected that total NO<sub>x</sub> emissions in the SoCAB would need to be reduced to 150 tons per day (tpd) by year 2023 and to 100 tpd in year 2031 to meet the 1997 and 2008 federal 8-hour ozone standards. The strategy to meet the 1997 federal 8-hour ozone standard would also lead to attaining the 1979 federal 1-hour ozone standard by year 2022 (SCAQMD 2017), which requires reducing NO<sub>x</sub> emissions in the SoCAB to 250 tpd. This is approximately 45 percent additional reductions above existing regulations for the 2023 ozone standard and 55 percent additional reductions above existing regulations to meet the 2031 ozone standard.

Reducing NO<sub>x</sub> emissions would also reduce PM<sub>2.5</sub> concentrations in the SoCAB. However, as the goal is to meet the 2012 federal annual PM<sub>2.5</sub> standard no later than year 2025, SCAQMD is seeking to reclassify the

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

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SoCAB from “moderate” to “serious” nonattainment under this federal standard. A “moderate” nonattainment would require meeting the 2012 federal standard by no later than 2021.

Overall, the 2016 AQMP is composed of stationary and mobile-source emission reductions from regulatory control measures, incentive-based programs, co-benefits from climate programs, mobile-source strategies, and reductions from federal sources such as aircrafts, locomotives, and ocean-going vessels. Strategies outlined in the 2016 AQMP would be implemented in collaboration between CARB and the EPA (SCAQMD 2017).

#### *Lead Implementation Plan*

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

#### *SCAQMD Rules and Regulations*

All projects in the SoCAB are subject to SCAQMD rules and regulations in effect at the time of activity, including:

- **Rule 201, Permit to Construct, and Rule 203, Permit to Operate.** This rule requires that new or replacement equipment (stationary sources) that generates air pollutant emissions obtain a permit from the SCAQMD prior to installation (Rule 201) and operation (Rule 203).
- **Rule 401, Visible Emissions.** This rule is intended to prevent the discharge of pollutant emissions from an emissions source that results in visible emissions. Specifically, the rule prohibits the discharge of any air contaminant into the atmosphere by a person from any single source of emission for a period or periods aggregating more than three minutes in any one hour that is as dark as or darker than designated No. 1 on the Ringelmann Chart, as published by the U.S. Bureau of Mines.
- **Rule 402, Nuisance.** This rule is intended to prevent the discharge of pollutant emissions from an emissions source that results in a public nuisance. Specifically, this rule prohibits any person from discharging quantities of air contaminants or other material from any source such that it would result in an injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public. Additionally, the discharge of air contaminants would also be prohibited where it would endanger the comfort, repose, health, or safety of any number of persons or the public, or that cause, or have a natural tendency to cause, injury or damage to business or property. This rule does not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals.

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- **Rule 403, Fugitive Dust.** This rule is intended to reduce the amount of particulate matter entrained in the ambient air as a result of anthropogenic (human-made) fugitive dust sources by requiring actions to prevent, reduce, or mitigate fugitive dust emissions. Rule 403 applies to any activity or human-made condition capable of generating fugitive dust, and requires best available control measures to be applied to earth moving and grading activities.
- **Rule 1113, Architectural Coatings.** This rule limits the VOC content of architectural coatings used on projects in the SCAQMD. Any person who supplies, sells, offers for sale, or manufactures any architectural coating for use on projects in the SCAQMD must comply with the current VOC standards set in this rule.
- **Regulation XIII, New Source Review.** This regulation sets forth pre-construction review requirements for new, modified, or relocated facilities, to ensure that the operation of such facilities does not interfere with progress in attainment of the national AAQS, and that future economic growth within the SCAQMD is not unnecessarily restricted. The specific air quality goal of this regulation is to achieve no net increases from new or modified permitted sources of nonattainment air contaminants or their precursors. In addition to nonattainment air contaminants, this regulation will also limit emission increases of ammonia, and ozone depleting compounds from new, modified or relocated facilities by requiring the use of best available control technology.

#### *Mojave Desert Air Quality Management District*

MDAQMD is geographically the second largest of the state's 35 air districts. Air Monitoring staff operates and maintains six monitoring stations (Barstow, Hesperia, Phelan, Trona, Twentynine Palms, & Victorville) in the District's 20,000-square-mile jurisdiction. The MDAQMD is the agency responsible for preparing the AQMP for the San Bernardino and Riverside County portions of the MDAB. MDAQMD has adopted the following attainment plans for nonattainment pollutants that are applicable in the Project area (MDAQMD 2016):

#### *Ozone Attainment Plans*

- 2008 Federal 8-Hour Ozone Attainment Plan (Western Mojave Desert Nonattainment Area)
- 2004 Ozone Attainment Plan (State and Federal)
- 1996 Triennial Revision to the 1991 Air Quality Attainment Plan
- 1994 Reasonable Further Progress Rate-of-Progress Plan
- Post-1996 Attainment Demonstration and Reasonable Further Progress Plan
- 1991 Air Quality Attainment Plan<sup>7</sup>

#### *Particulate Matter Attainment Plans*

- 1995 Mojave Desert Planning Area Federal Particulate Matter Attainment Plan
- 1995 Searles Valley PM<sub>10</sub> Plan, San Bernardino County Portion of Searles Valley Planning Area

<sup>7</sup> The 1991 Air Quality Attainment Plan and the Post 1996 Attainment Demonstration and Reasonable Further Progress Plan were adopted by the San Bernardino County Air Pollution Control District, which was disbanded in 1993 when the SBCAPCD separated from the County.

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#### *MDAQMD Rules and Regulations*

All projects in the MDAB are subject to MDAQMD rules and regulations in effect at the time of activity, including:

- **Rule 201, Permit to Construct, and Rule 203, Permit to Operate.** This rule requires that new or replacement equipment (stationary sources) that generate air pollutant emissions obtain a permit from the MDAQMD prior to their installation (Rule 201) and operation (Rule 203).
- **Rule 401, Visible Emissions.** This rule is intended to prevent the discharge of pollutant emissions from an emissions source that results in visible emissions. Specifically, the rule prohibits the discharge of any air contaminant into the atmosphere by a person from any single source of emission for a period or periods aggregating more than three minutes in any one hour that is as dark as or darker than designated No. 1 on the Ringelmann Chart, as published by the U.S. Bureau of Mines.
- **Rule 402, Nuisance.** This rule is intended to prevent the discharge of pollutant emissions from an emissions source that results in a public nuisance. Specifically, this rule prohibits any person from discharging quantities of air contaminants or other material from any source such that it would result in an injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public. Additionally, the discharge of air contaminants would also be prohibited where it would endanger the comfort, repose, health, or safety of any number of persons or the public, or that cause, or have a natural tendency to cause, injury or damage to business or property. This rule does not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals.
- **Rule 403, Fugitive Dust, Rule 403.1, Fugitive Dust Control for the Searles Valley Planning Area, and Rule 403.2, Fugitive Dust Control for the Mojave Desert Area Planning Area.** This rule is intended to reduce the amount of particulate matter entrained in the ambient air as a result of anthropogenic (human-made) fugitive dust sources by requiring actions to prevent, reduce, or mitigate fugitive dust emissions. Rule 403 applies to any activity or human-made condition capable of generating fugitive dust, and requires best available control measures to be applied to earth moving and grading activities. Rule 403.1 and 403.2 require implementation of additional control measures outlined in the Searles Valley PM<sub>10</sub> State Implementation Plan and the Mojave Desert Planning Area Federal PM<sub>10</sub> Attainment Plan, respectively, to ensure that construction contractors implement additional soil stabilization techniques to minimize impacts from windblown dust (blowsand) during construction. These rules apply to construction/demolition activity, heavily traveled publicly maintained unpaved roads, weed suppression activity, limestone processing in the Lucerne Valley Area, and activities on Bureau of Land Management Land.
- **Regulation XIII, New Source Review (NSR).** This rule sets forth the requirements for the preconstruction review of all new or modified facilities (stationary and area sources) to ensure that (1) new sources do not interfere with the attainment and maintenance of the AAQS, (2) that is no net increase in the emissions of any nonattainment air pollutant from new or modified major facilities which emit or have the potential to emit any nonattainment air pollutant in an amount greater than or equal to the in MDAQMD Rule 1303(B)(1), (3) the construction or modification of facilities subject to NSR comply with

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the preconstruction review requirements for TACs set forth in MDAQMD Rule 1320; and (4) the construction or modification of facilities subject to this Regulation or District Regulation XVI: Prevention of Significant Deterioration comply with the preconstruction review requirements set forth in MDAQMD Rule 1600.

#### *AB 617, Community Air Protection Program*

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

Air districts are required to host workshops in order to help identify disadvantaged communities disproportionately affected by poor air quality. Once the criteria for identifying the highest priority locations has been identified and the communities have been selected, new community monitoring systems would be installed to track and monitor community-specific air pollution goals. Under AB 617, CARB must prepare an air monitoring plan by October 1, 2018, that evaluates the availability and effectiveness of air monitoring technologies and existing community air monitoring networks.

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

#### 5.3.1.3 EXISTING CONDITIONS

##### Criteria Air Pollutants

##### *Nonattainment Areas*

The air quality management plans provide 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. Ozone nonattainment has a range of severity classifications: marginal, moderate, serious, severe, and extreme.

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

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- Nonattainment/Transitional.** A subcategory of the nonattainment designation. An area is designated nonattainment/transitional to signify that the area is close to attaining the AAQS for that pollutant.

The attainment status for the SoCAB and MDAB is shown in Table 5.3-2, *Attainment Status of Criteria Pollutants in the South Coast Air Basin and Mojave Desert Air Basin*.

**Table 5.3-2 Attainment Status of Criteria Pollutants in the South Coast Air Basin and Mojave Desert Air Basin**

Pollutant	SoCAB		MDAB	
	State	Federal	State	Federal
Ozone – 1-hour	Nonattainment	No Federal Standard	Nonattainment	No Federal Standard
Ozone – 8-hour	Extreme Nonattainment	Extreme Nonattainment <sup>1</sup>	Severe 15 Nonattainment	Severe 15 Nonattainment <sup>1,2</sup>
PM <sub>10</sub>	Serious Nonattainment	Attainment	Nonattainment	Moderate Nonattainment <sup>3</sup>
PM <sub>2.5</sub>	Nonattainment	Nonattainment	Nonattainment <sup>4</sup>	Unclassified/Attainment
CO	Attainment	Attainment	Attainment	Unclassified/Attainment
NO <sub>2</sub>	Attainment	Attainment/Maintenance	Attainment	Unclassified/Attainment
SO <sub>2</sub>	Attainment	Attainment	Attainment	Unclassified
Lead	Attainment	Nonattainment (Los Angeles County only) <sup>5</sup>	Attainment	Unclassified/Attainment
All others	Attainment/Unclassified	Attainment/Unclassified	Nonattainment H <sub>2</sub> S (Searles Valley only) <sup>6</sup>	Unclassified/Attainment

Source: CARB 2017 and EPA 2018b. Based on the latest adopted standard.

Notes: SoCAB: South Coast Air Basin; MDAB: Mojave Desert Air Basin.

<sup>1</sup> Severity classification under the 2015 ozone standard is to be determined.

<sup>2</sup> Only the southwest portion of San Bernardino County is designated nonattainment for ozone under the federal standard. The portions of MDAQMD outside of Western Mojave Desert Ozone Nonattainment Area are unclassifiable/attainment

<sup>3</sup> Only the San Bernardino County portion of the MDAB is designated nonattainment for PM10 under the federal AAQS.

<sup>4</sup> Only the southwest portion of San Bernardino County is designated nonattainment for PM2.5 under the State standard. The portions of MDAQMD outside of Western Mojave Desert Ozone Nonattainment Area are unclassifiable/attainment.

<sup>5</sup> In 2010, the Los Angeles portion of the SoCAB was designated nonattainment for lead under the new 2008 federal AAQS as a result of large industrial emitters. Remaining areas in the SoCAB are unclassified.

<sup>6</sup> The Searles Valley planning area shares its boundaries with the MDAQMD, Great Basin Unified APCD and Kern County APCD. The Searles Valley (Trona) complex produces emissions associated with the Searles Dry Lake, mining activities, and associated industrial operations (MDAQMD 1995b)

### Pollution Sources

#### SCAQMD

On- and off-road mobile sources of emissions are the major contributors to air pollution in the SoCAB. Overall, total mobile source emissions account for almost 60 percent of the VOC and 90 percent of the NO<sub>x</sub> emissions for these two ozone-forming pollutants and 95 percent of the CO emissions. The on-road mobile category alone contributes over 30 percent of the VOC and 56 percent of the NO<sub>x</sub> emissions. For directly emitted PM<sub>2.5</sub>, mobile sources represent 34 percent of the emissions, and another 13 percent is due to vehicle-related entrained road dust. Stationary sources emit the majority of the SO<sub>x</sub> emissions, and the point source category contributes 50 percent of the SO<sub>x</sub> emissions in the SoCAB. Area sources play a major role in VOC emissions, emitting about 3.5 times more than point sources. Area sources, including sources such as commercial cooking, are the predominant source of directly emitted PM<sub>2.5</sub> emissions (42 percent) (SCAQMD 2017).

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#### *MDAQMD*

Within the MDAQMD's boundaries, sources of air pollution range from a large mining operations to the corner gas station. By far, the largest contributor of air pollution within MDAQMD's boundaries is motor vehicles. NOx from on-road vehicles accounts for 40 percent of these types of emissions within the MDAQMD. NOx emissions from stationary sources—which includes factories, boilers, cement plants, and power plants—account for only 27 percent of the MDAQMD's inventory (MDAQMD 2018).

#### **Air Toxics**

##### *Multiple Air Toxics Exposure Study IV: SoCAB*

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

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

#### **Existing Emissions**

Table 5.3-3, *Unincorporated San Bernardino County Communitywide Criteria Air Pollutant Emissions Inventory*, provides an estimate of existing criteria air pollutants generated by land uses in the unincorporated San Bernardino County. Industrial sources of air pollutants that require a permit from SCAQMD or MDAQMD are not shown in this inventory since they are regulated separately by these agencies.

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**Table 5.3-3 Unincorporated San Bernardino County Communitywide Criteria Air Pollutant Emissions Inventory**

Phase	Existing (2016) Criteria Air Pollutant Emissions (pounds/day)					
	VOC	NO <sub>x</sub>	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
<b>SoCAB – Valley and Mountain Regions</b>						
Transportation <sup>1</sup>	496	4,189	12,167	30	299	248
Energy <sup>2</sup>	84	460	196	3	37	37
Offroad Equipment <sup>3</sup>	164	1,082	3,720	1	62	55
Consumer Products <sup>4</sup>	3,738	—	—	—	—	—
Hearth <sup>4</sup>	5,191	84	6,214	11	866	866
<b>Subtotal SoCAB</b>	<b>9,672</b>	<b>5,814</b>	<b>22,296</b>	<b>45</b>	<b>1,264</b>	<b>1,206</b>
<b>MDAB – East Desert and North Desert</b>						
Transportation <sup>1</sup>	646	5,327	14,121	34	414	260
Energy <sup>2</sup>	49	426	220	3	34	34
Offroad Equipment <sup>3</sup>	42	310	851	0	17	15
Consumer Products	2,519	—	—	—	—	—
Hearth <sup>4</sup>	3,264	55	3,908	7	545	545
<b>Subtotal MDAB</b>	<b>6,521</b>	<b>6,118</b>	<b>19,099</b>	<b>43</b>	<b>1,009</b>	<b>854</b>
<b>Total Unincorporated County</b>						
Transportation <sup>1</sup>	1,141	9,517	26,287	64	713	509
Energy	133	886	415	6	71	71
Area	206	1,391	4,571	2	79	70
Consumer Products	6,257	—	—	—	—	—
Hearth	8,456	139	10,122	18	1,410	1,410
<b>TOTAL</b>	<b>16,193</b>	<b>11,932</b>	<b>41,395</b>	<b>89</b>	<b>2,274</b>	<b>2,060</b>

Notes: Emissions generated by land uses in the Mountain Region are proportioned to the SoCAB portion of the county.

<sup>1</sup> Source: Fehr & Peers; EMFAC2017, Version 1.0.2.

<sup>2</sup> Source: SoCalGas and Southwest Gas; CalEEMod User's Guide.

<sup>3</sup> Source: OFFROAD 2017.

<sup>4</sup> Source: CalEEMod User's Guide and EIA 2018.

### Sensitive Receptors

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

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

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the majority of the workers tend to stay indoors most of the time. In addition, the workforce is generally the healthiest segment of the population.

### 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 SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT THRESHOLDS

The Valley Region and the majority of the Mountain Region of unincorporated San Bernardino County are in the SoCAB. The analysis of the Countywide Plan's air quality impacts follows the guidance and methodologies recommended in SCAQMD's *CEQA Air Quality Handbook* and the significance thresholds on SCAQMD's website (SCAQMD 1993).<sup>8</sup> CEQA allows the significance criteria established by the applicable air quality management or air pollution control district to be used to assess impacts of a project on air quality. SCAQMD has established thresholds of significance for regional air quality emissions for construction activities and project operation. In addition to the daily thresholds listed in Table 5.3-4, projects are also subject to the AAQS. These are addressed through an analysis of localized CO impacts and localized significance thresholds (LSTs).

#### Regional Significance Thresholds

SCAQMD has adopted regional construction and operational emissions thresholds to determine a project's cumulative impact on air quality in the SoCAB, shown in Table 5.3-4, *SCAQMD Regional Significance Thresholds*. The table lists thresholds that are applicable for all projects uniformly, regardless of size or scope. There is growing evidence that although ultrafine particulates 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 and CARB have not adopted AAQS to regulate ultrafine particulates; therefore, SCAQMD has not developed thresholds for them.

<sup>8</sup> SCAQMD's Air Quality Significance Thresholds are current as of March 2015 and can be found at: <http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook>.

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**Table 5.3-4 SCAQMD Significance Thresholds**

Air Pollutant	Construction Phase	Operational Phase
Reactive Organic Gases (ROGs)/Volatile Organic Compounds (VOCs)	75 lbs/day	55 lbs/day
Nitrogen Oxides (NO <sub>x</sub> )	100 lbs/day	55 lbs/day
Carbon Monoxide (CO)	550 lbs/day	550 lbs/day
Sulfur Oxides (SO <sub>x</sub> )	150 lbs/day	150 lbs/day
Particulates (PM <sub>10</sub> )	150 lbs/day	150 lbs/day
Particulates (PM <sub>2.5</sub> )	55 lbs/day	55 lbs/day

Source: SCAQMD 2015b.

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

- Increases cancer risk (PM<sub>2.5</sub>, TACs)
- Aggravates respiratory disease (O<sub>3</sub>, PM<sub>2.5</sub>)
- Increases bronchitis (O<sub>3</sub>, PM<sub>2.5</sub>)
- Causes chest discomfort, throat irritation, and increased effort to take a deep breath (O<sub>3</sub>)
- Reduces resistance to infections and increases fatigue (O<sub>3</sub>)
- Reduces lung growth in children (PM<sub>2.5</sub>)
- Contributes to heart disease and heart attacks (PM<sub>2.5</sub>)
- Contributes to premature death (O<sub>3</sub>, PM<sub>2.5</sub>)
- Contributes to lower birth weight in newborns (PM<sub>2.5</sub>) (SCAQMD 2015c)

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

Mass emissions in Table 5.3-4 are not correlated with concentrations of air pollutants but contribute to the cumulative air quality impacts in the SoCAB. Therefore, regional emissions from a single project do not trigger a regional health impact, and it is speculative to identify how many more individuals in the air basin would be affected by the health effects listed above. In addition, the analysis to determine how exceeding the regional thresholds would affect the number of days the region is in nonattainment is within the scope of the AQMP. SCAQMD is the primary agency responsible for ensuring the health and welfare of sensitive individuals exposed to elevated concentrations of air pollutants in the SoCAB. To achieve the health-based standards established by the EPA, SCAQMD prepares an AQMP that details regional programs to attain the AAQS.

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#### CO Hotspots

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

In 2007, the SoCAB was designated in attainment for CO under both the California AAQS and National AAQS. The CO hotspot analysis conducted for the attainment by SCAQMD did not predict a violation of CO standards at the busiest intersections in Los Angeles during the peak morning and afternoon periods.<sup>9</sup> As identified in SCAQMD's 2003 AQMP and the 1992 Federal Attainment Plan for Carbon Monoxide, peak carbon monoxide concentrations in the SoCAB in years before redesignation were a result of unusual meteorological and topographical conditions and not of congestion at a particular intersection (SCAQMD 1992; SCAQMD 1992). Under existing and future vehicle emission rates, a project would have to increase traffic volumes at a single intersection by more than 44,000 vehicles per hour—or 24,000 vehicles per hour where vertical and/or horizontal air does not mix—in order to generate a significant CO impact (BAAQMD 2017).

#### Localized Significance Thresholds

SCAQMD identifies localized significance thresholds, shown in Table 5.3-5, *SCAQMD Localized Significance Thresholds*. Emissions of NO<sub>2</sub>, CO, PM<sub>10</sub>, and PM<sub>2.5</sub> generated at a project site (offsite mobile-source emissions are not included in the LST analysis) could expose sensitive receptors to substantial concentrations of criteria air pollutants. A project that generates emissions that trigger a violation of the AAQS when added to the local background concentrations would generate a significant impact.

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<sup>9</sup> The four intersections were: Long Beach Boulevard and Imperial Highway; Wilshire Boulevard and Veteran Avenue; Sunset Boulevard and Highland Avenue; and La Cienega Boulevard and Century Boulevard. The busiest intersection evaluated (Wilshire and Veteran) had a daily traffic volume of approximately 100,000 vehicles per day with LOS E in the morning peak hour and LOS F in the evening peak hour.

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**Table 5.3-5 SCAQMD Localized Significance Thresholds**

Air Pollutant (Relevant AAQS)	Concentration
1-Hour CO Standard (CAAQS)	20 ppm
8-Hour CO Standard (CAAQS)	9.0 ppm
1-Hour NO <sub>2</sub> Standard (CAAQS)	0.18 ppm
Annual NO <sub>2</sub> Standard (CAAQS)	0.03 ppm
24-Hour PM <sub>10</sub> Standard – Construction (SCAQMD) <sup>1</sup>	10.4 µg/m <sup>3</sup>
24-Hour PM <sub>2.5</sub> Standard – Construction (SCAQMD) <sup>1</sup>	10.4 µg/m <sup>3</sup>
24-Hour PM <sub>10</sub> Standard – Operation (SCAQMD) <sup>1</sup>	2.5 µg/m <sup>3</sup>
24-Hour PM <sub>2.5</sub> Standard – Operation (SCAQMD) <sup>1</sup>	2.5 µg/m <sup>3</sup>
Annual Average PM <sub>10</sub> Standard (SCAQMD) <sup>1</sup>	1.0 µg/m <sup>3</sup>

Source: SCAQMD 2015c.

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

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

#### 5.3.2.2 MOJAVE DESERT AIR QUALITY MANAGEMENT DISTRICT THRESHOLDS

Air quality impacts in the North Desert and East Desert Regions of San Bernardino County follow the guidance, methodologies, and significance thresholds in MDAQMD’s *CEQA and Federal Conformity Guidelines* (2016). 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. MDAQMD has established thresholds of significance for regional air quality emissions for construction activities and project operation.

#### Consistency with Air Quality Management Plans

MDAQMD requires a consistency evaluation with adopted federal and state AQMPs. If a project is deemed consistent with the existing land use plan, it is considered consistent with the AQMPs. Zoning changes, specific plans, general plan amendments, and similar land use plan changes that do not increase dwelling unit density, do not increase vehicle trips, and do not increase vehicle miles traveled are also deemed to not exceed this threshold (MDAQMD 2016).

#### Regional Significance Thresholds

MDAPCD’s significance criteria are shown in Table 5.3-6, *MDAQMD Regional Significance Thresholds*. The thresholds in this table are applied to both construction and operational phases of a project regardless of whether they are stationary or mobile sources, resulting in a conservative estimate of air quality impacts of the project. Projects with phases shorter than one year (e.g., construction activities) should be compared to the daily value.

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**Table 5.3-6 MDAQMD Regional Significance Thresholds**

Air Pollutant	Annual	Daily
Reactive Organic Gases (ROGs)/ Volatile Organic Compounds (VOCs)	25 tons/year	137 lbs/day
Carbon Monoxide (CO)	100 tons/year	548 lbs/day
Nitrogen Oxides (NO <sub>x</sub> )	25 tons/year	137 lbs/day
Sulfur Oxides (SO <sub>x</sub> )	25 tons/year	137 lbs/day
Particulates (PM <sub>10</sub> )	15 tons/year	82 lbs/day
Particulates (PM <sub>2.5</sub> )	12 tons/year	65 lbs/day

Source: MDAQMD 2016.

Notes:

Lead and hydrogen sulfide are not air quality pollutants of concern for most projects and are typically generated by industrial (MDAQMD permitted) projects only.

Project with phases shorter than one year, including construction activities, can be compared to the daily value.

**Localized Significance Thresholds**

MDAQMD also considers projects that cause or contribute to an exceedance of the California or National AAQS to result in significant impacts. Emissions that do not exceed the daily or annual emission in Table 5.3-6 are considered to result in less than significant localized impacts.

**5.3.2.3 HEALTH RISK THRESHOLDS**

Whenever a project would use chemical compounds that are: 1) identified in SCAQMD Rule 1401, New Source Review of Toxic Air Contaminants, or MDAQMD Regulation XIII, New Source Review; 2) placed on CARB’s air toxics list pursuant to Assembly Bill 1807, Air Contaminant Identification and Control Act (1983); or 3) placed on the EPA’s National Emissions Standards for Hazardous Air Pollutants, a health risk assessment (HRA) is required by SCAQMD or MDAQMD. Table 5.3-7, *Toxic Air Contaminants Incremental Risk Thresholds*, lists the TAC incremental risk thresholds for operation of a project. Projects that do not generate emissions that exceed the values in Table 5.3-7 would not substantially contribute to cumulative air quality hazards or exacerbate an existing environmental hazard. Residential, commercial, office, and institutional uses do not use substantial quantities of TACs and typically do not exacerbate existing hazards. Therefore, these thresholds are typically applied to new industrial projects.

**Table 5.3-7 Toxic Air Contaminants Incremental Risk Thresholds**

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

Source: MDAQMD 2016; SCAQMD 2015.

In addition, MDAQMD requires that project types listed below be evaluated using the significance threshold criteria in Table 5.3-7 when located within a certain distance of an existing or planned (zoned) sensitive receptor land use:

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- Industrial projects 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 (MDAQMD 2016)

### 5.3.3 Regulatory Requirements and General Plan Policies

#### 5.3.3.1 REGULATORY REQUIREMENTS

RR AIR-1 New buildings are required to achieve the current California Building Energy and Efficiency Standards (Title 24, Part 6) and California Green Building Standards Code (CALGreen) (Title 24, Part 11). The 2016 Building Energy Efficiency Standards and CALGreen are effective starting on January 1, 2017 while the 2019 standards are effective starting January 1, 2020. The Building Energy Efficiency Standards and CALGreen are updated tri-annually, and may ultimately require zero net energy (ZNE) construction.

RR AIR-2 Construction activities are required to adhere to Title 13 California Code of Regulations (CCR) Section 2499, which requires that nonessential idling of construction equipment is restricted to five minutes or less.

RR AIR-3 Construction activities in the South Coast Air Basin (SoCAB) will be conducted in compliance with any applicable South Coast Air Quality Management District (SCAQMD) rules and regulations, including but not limited to:

- Rules 201, 203, and 219, which regulate permits for installation and use of equipment that may generate air contaminants.
- Rule 402, Nuisance, which states that a project shall not “discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.” Additionally, Rule 415, Odors from Rendering Facilities, requires nuisance odor at rendering facilities be controlled.
- Rule 403, Fugitive Dust, for controlling fugitive dust and avoiding nuisance.
- Rule 445, for limiting the installment of wood-burning fireplaces.
- Rule 1113, which limits the volatile organic compound content of architectural coatings.
- Rule 1186, for controlling fugitive dust from vehicular travel on paved and unpaved roads.
- Rule 1403, for minimizing asbestos emissions during building demolition.

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- Regulation IX, Standards of Performance for New Stationary Sources (NSPS), and XXIII, New Source Review.
- Regulation XI, Source Specific Standards.
- Regulation XX, Regional Clean Air Incentives Market (RECLAIM).
- Regulation XVI, Mobile Source Offset Programs, and Regulation XXII, Mobile Source Emissions Reduction Programs (Rule 2202).

RR AIR-4 Construction activities within the Mojave Desert Air Basin (MDAB) will be conducted in compliance with any applicable Mojave Desert Air Quality Management District (MDAQMD) rules and regulations, including but not limited to.

- Rules 201, 203, and 219, which regulate permits for installation and use of equipment that may generate air contaminants.
- Rule 402, Nuisance, which states that a project shall not “discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.” Additionally Rule 472, Reduction of Animal, requires that gases or vapors are minimized from animal rendering; and Rule 223, Emissions Reductions Permits for Large Confined Animal Facilities, requires odors from large animal facilities be controlled.
- Rule 403.1, Fugitive Dust for the Searles Valley Planning Area, and Rule 403.2, Fugitive Dust for the Mojave Desert Planning Area, for controlling fugitive dust and avoiding nuisance.
- Regulation IX, Standards of Performance for New Stationary Sources (NSPS), and XXIII, New Source Review.
- Regulation XIV, Emissions Reductions Credit Banking.
- Regulations XI, Source Specific Standards; Regulation, X, Emissions Standards for Additional Specific Air Contaminants; and XV, Emissions Standards for Specific Toxic Air Contaminants.
- Regulation XVII, Indirect Sources and Transportation Control.

#### 5.3.3.2 POLICY PLAN

The Countywide Plan Policy Plan includes goals and policies that support the SCAQMD’s and MDAQMD’s air quality goals:

**Goal NR-1:** **Air Quality.** Air quality that promotes health and wellness of residents in San Bernardino County through improvements in locally-generated emissions.

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- Policy NR-1.1**      **Land use.** We promote compact and transit-oriented development countywide and regulate the types and locations of development in unincorporated areas to minimize vehicle miles traveled and greenhouse gas emissions.
- Policy NR-1.2**      **Indoor air quality.** We promote the improvement of indoor air quality through the California Building and Energy Codes and through the provision of public health programs and services.
- Policy NR-1.3**      **Coordination on air pollution.** We collaborate with air quality management districts and other local agencies to monitor and reduce major pollutants affecting the county at the emission source.
- Policy NR-1.4**      **Military coordination on air quality.** We collaborate with the military to avoid or minimize impacts on military training and operations from air pollution and haze.
- Policy NR-1.5**      **Sensitive land uses.** We consider recommendations from the California Air Resources Board on the siting of new sensitive land uses and exposure to specific source categories.
- Policy NR-1.6**      **Fugitive dust emissions.** We coordinate with air quality management districts on requirements for dust control plans, revegetation, and soil compaction to prevent fugitive dust emissions.
- Policy NR-1.8**      **Construction and operations.** We invest in County facilities and fleet vehicles to improve energy efficiency and reduce emissions. We encourage County contractors and other builders and developers to use low-emission construction vehicles and equipment to improve air quality and reduce emissions.
- Policy NR-1.9**      **Building design and upgrades.** We use the CALGreen Code to meet energy efficiency standards for new buildings and encourage the upgrading of existing buildings to incorporate design elements, building materials, and fixtures that improve environmental sustainability and reduce emissions.
- Policy TM-1.4**      **Unpaved roadways.** The County does not accept new unpaved roads into the County Maintained Road System, and we require all-weather treatment for all new unpaved roads.
- Policy TM-1.5**      **Upgrading unpaved roads.** We support the paving of unpaved roads when funding is contributed through a local area funding and financing mechanism.
- Policy TM-1.6**      **Paved roads.** For any new development for which paved roads are required, we require the developer to construct the roads and we require the establishment of a special funding and financing mechanism to pay for roadway operation, maintenance, and set-aside reserves.
- Policy HZ-3.1**      **Cumulative health risk assessment.** We require a cumulative health risk assessment when a project potentially effects sensitive receptors in unincorporated environmental

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justice focus areas. We require such assessments to evaluate impacts of truck traffic from the project to freeways.

- Policy HZ-3.2**     **Studying and monitoring.** We coordinate with state and regional regulatory entities to monitor pollution exposure and identify solutions in unincorporated environmental justice focus areas. We work with state and regional regulatory entities to obtain grant funding to study cumulative health risks affecting such areas.
- Policy HZ-3.3**     **Relocation of nonconforming residential units.** We pursue grant funding and other assistance to relocate residents living in residential units that are nonconforming uses in unincorporated environmental justice focus areas and to eliminate those nonconforming residential units.
- Policy HZ-3.8**     **Indoor air quality.** We educate and raise awareness in unincorporated environmental justice focus areas about indoor air quality, and we pursue grant funding for public health initiatives targeting asthma and other respiratory illnesses.
- Policy HW-3.1**     **Healthy environments.** We collaborate with other public agencies, not-for-profit organizations, community groups, and private developers to improve the physical and built environment in which people live. We do so by improving such things as walkability, bicycle infrastructure, transit facilities, universal design, safe routes to school, indoor and outdoor air quality, gardens, green space and open space, and access to parks and recreation amenities.

The Countywide Plan Policy Plan also includes goals and policies that encompass multi-modal and active transit improvements within the unincorporated communities (see also Section 5.10, *Land Use and Planning*, and Section 5.16, *Transportation and Traffic*):

- Policy LU-1.2**     **Infill development.** We prefer new development to take place on existing vacant and underutilized lots where public services and infrastructure are available.
- Policy TM-1.9**     **New transportation options.** We support the use of transportation network companies, autonomous vehicles, micro transit, and other emerging transportation options that reduce congestion, minimize land area needed for roadways, create more pedestrian- and bicycle-friendly streets, reduce VMT, or reduce dependence on privately-owned vehicles.
- Policy TM-3.1**     **VMT Reduction.** We promote new development that will reduce household and employment VMT relative to existing conditions.
- Policy TM-3.2**     **Trip reduction strategies.** We support the implementation of transportation demand management techniques, mixed use strategies, and the placement of development in proximity to job and activity centers to reduce the number and length of vehicular trips.

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- Policy TM-3.3** **First mile/last mile connectivity.** We support strategies that strengthen first/last mile connectivity to enhance the viability and expand the utility of public transit in unincorporated areas and countywide.
- Policy TM-4.1** **Complete streets network.** We maintain a network of complete streets within mobility focus areas that provide for the mobility of all users of all ages and all abilities, while reflecting the local context.
- Policy TM-4.2** **Complete streets improvements.** We evaluate the feasibility of installing elements of complete street improvements when planning roadway improvements in mobility focus areas, and we require new development to contribute to complete street improvements in mobility focus areas.
- Policy TM-4.3** **Funding.** We partner with SBCTA, Caltrans, and local agencies to fund active transportation systems in the county. We encourage unincorporated communities to apply for funding and cooperate with them in their funding applications for active transportation improvements that are identified in a non-motorized transportation plan that is accepted or adopted by the County.
- Policy TM-4.4** **Transit access for residents in unincorporated areas.** We support and work with local transit agencies to generate a public transportation system, with fixed routes and on-demand service, that provide residents of unincorporated areas with access to jobs, public services, shopping, and entertainment throughout the county.
- Policy TM-4.5** **Transit access to job centers and tourist destinations.** We support and work with local transit agencies to generate public transportation systems that provide access to job centers and reduce congestion in tourist destinations in unincorporated areas.
- Policy TM-4.6** **Transit access to public service, health, and wellness.** In unincorporated areas where public transit is available, we prefer new public and behavioral health facilities, other public facilities and services, education facilities, grocery stores, and pharmacies to be located within one-half mile of a public transit stop. We prefer to locate new County health and wellness facilities within one-half mile of a public transit stop in incorporated jurisdictions. We encourage public K-12 education and court facilities to be located within one-half mile of public transit.
- Policy TM-4.7** **Regional bicycle network.** We work with SBCTA and other local agencies to develop and maintain a regional backbone bicycle network.
- Policy TM-4.8** **Local bicycle and pedestrian networks.** We support local bike and pedestrian facilities that serve unincorporated areas, connect to facilities in adjacent incorporated areas, and connect to regional trails. We prioritize bicycle and pedestrian network improvements that provide safe and continuous pedestrian and bicycle access to mobility focus areas, schools, parks, and major transit stops.

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- Policy TM-4.9** **Bike and pedestrian safety.** We promote pedestrian and bicyclist safety by providing separated pedestrian and bike crossings when we construct or improve bridges over highways, freeways, rail facilities, and flood control areas. We monitor pedestrian and bicycle traffic accidents and promote safety improvements in unincorporated high-accident areas.
- Policy TM-4.10** **Shared parking.** We support the use of shared parking facilities that provide safe and convenient pedestrian connectivity between adjacent uses.
- Policy TM-4.11** **Parking areas.** We require publicly accessible parking areas to ensure that pedestrians and bicyclists can safely access the site and onsite businesses from the public right-of-way.
- Policy TM-5.1** **Efficient goods movement network.** We advocate for the maintenance of an efficient goods movement network in southern California.
- Policy NR-3.12** **Rights-of-way and easements.** We consider reserving portions of rights-of-way and easements found to be unnecessary for the ultimate buildout of roadways or flood control facilities for use as local pedestrian, bicycle, and/or equestrian trails.

### 5.3.4 Environmental Impacts

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 Countywide Plan. The criteria air pollutant emissions inventory includes the following sectors:

- **Transportation.** The on-road transportation sector consists of fuel consumption emissions from vehicle trips related to land uses in the unincorporated county. The emissions inventory and forecast are based on CARB's EMFAC2017 Web Database, Version 1.0.2, for 2016 and 2040. Model runs are based on daily VMT data provided by Fehr & Peers using the San Bernardino Transportation Analysis Model and using an origin-destination approach adjusted for the population and employment in the unincorporated county. For emissions modeling, VMT is based on jurisdictional responsibility, consistent with CARB's Regional Targets Advisory Committee, and accounts for the full trip length for internal-to-internal trips in the unincorporated areas and a 50 percent reduction in the trip length for external-internal/internal-external trips (see Appendix B).
- **Off-Road Equipment.** OFFROAD2017 was used to estimate emissions from light commercial and portable equipment, agricultural equipment, and construction equipment in the county. OFFROAD is a database of equipment use and associated emissions for each county compiled by CARB. Annual emissions were compiled using OFFROAD2017 for the County of San Bernardino for year 2016. In order to determine the percentage of emissions attributable to the unincorporated areas, landscaping and light commercial and portable equipment are estimated based on employment for the unincorporated areas as a percentage of county. Forecasts for landscaping and light commercial equipment are adjusted for increases in population and employment in the unincorporated county. Agricultural equipment is estimated based

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on acreage for the unincorporated areas as a percentage of agricultural land in the county. The change in emissions is based on the net change in agricultural land in the unincorporated county in 2040. To approximate the percentage of construction offroad equipment emissions in the unincorporated county, emissions are based on the increase in units constructed between 2015 and 2016 in the unincorporated county compared to the county. For construction emissions, modeling assumes similar annual construction exhaust emissions to current levels.

- **Consumer Products.** Consumer product emissions are based on the California Emissions Estimator Model (CalEEMod) defaults for emissions generated from use of consumer products and cleaning supplies.
- **Energy.** Criteria air pollutant emissions from energy use (natural gas used for cooking, heating, etc.) are based on natural gas usage data identified in the Baseline Inventory (see Appendix C). Forecasts are adjusted for increases in population and employment in the unincorporated county. Emission factors from natural gas are based on emission factors in the CalEEMod User's Guide.
- **Hearths.** Criteria air pollutant emissions from woodburning in residential hearths are based on the default emissions factors identified in the CalEEMod User's Guide. Fireplace use is based on the percentage of homes that use firewood as a primary or secondary source of fuel in the Pacific region from the US Energy Information Administration's residential energy consumption survey. In the Pacific region, 12 percent of homes use firewood (33 percent of those as a primary source of heat). The modeling assumes that residential houses that have a fireplace in the Valley Region burn an average of two bundles of firewood, houses in the Mountain Region that have a fireplace burn an average of one cord of wood, and houses in the North Desert and East Desert that have a fireplace burn ½ cord of wood on average.

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

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**Impact 5.3-1: Growth associated with the Countywide Plan would not exceed the SCAG forecast for the unincorporated county; however, emissions generated by growth have the potential to affect the emissions forecasts in the SCAQMD and MDAQMD Air Quality Management Plans. [Threshold AQ-1]**

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CEQA requires that projects be evaluated for consistency with the AQMPs. A consistency determination plays an important role in local agency project review by linking local planning and individual projects to the AQMPs. It fulfills the CEQA goal of informing decision makers of the environmental effects of a project under consideration at a stage early enough to ensure that air quality concerns are fully addressed. It also provides the local agency with ongoing information as to whether they are contributing to the clean air goals of the AQMPs.

The County of San Bernardino falls under the jurisdiction of two air quality management districts, SCAQMD and MDAQMD, and one metropolitan planning organization, SCAG. The regional emissions inventories for the Valley and Mountain regions of the unincorporated county are compiled by SCAQMD, and the regional inventories for the North Desert and East Desert regions are compiled by MDAQMD. The emissions forecast

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by both MDAQMD and SCAQMD are based in part on the demographic projections provided by SCAG. Regional population, housing, and employment projections developed by SCAG are based in part on the local jurisdictions' general plan land use designations. These projections form the foundation for the emissions inventory of the AQMPs. These demographic trends are incorporated into the 2014–2040 Regional Transportation Plan/Sustainable Communities Strategy, compiled by SCAG to determine priority transportation projects in the SCAG region. Projects that are consistent with the local general plan are considered consistent with the air quality–related regional plan. Typically, only new or amended general plan elements, specific plans, and major projects that have the potential to affect the regional population and employment forecasts need to undergo a consistency review.

SCAQMD and MDAQMD are tasked with implementing programs and regulations required by the federal and California Clean Air Act. SCAQMD and MDAQMD have prepared several plans to attain the National AAQS and California AAQS.

A wide variety of control measures are included in the AQMPs, such as reducing or offsetting emissions from construction and operations associated with land use developments. Future development projects allowed under the Countywide Plan would be required to adhere to the SCAQMD and MDAQMD control measures, as outlined in the air quality plans and implemented through SCAQMD and MDAQMD rules and regulations. However, as discussed in Impact 5.13-1 (PEIR Section 5.13, *Population and Housing*), while the anticipated employment growth under the Countywide Plan at the 2040 horizon year is less than the SCAG projected growth, the projected population growth exceeds SCAG projections by 0.5 percent. This overage is the direct result of persons per household assumption differences between SCAG and the proposed Policy Plan's buildout methodologies. In addition, overall, as identified in Table 5.3-8 (below), implementation of the Countywide Plan would generate a substantial increase in long-term criteria air pollutants that would exceed the SCAQMD's and MDAQMD's significance thresholds. Because dispersion modeling is not applicable for a program EIR, since specific development land uses are not yet known, projects under the Countywide Plan with emissions that exceed these values are considered to have the potential to exceed the AAQS. The SoCAB and portions of the MDAB are designated nonattainment for O<sub>3</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub>. Consequently, emissions generated by development projects in addition to existing sources within the unincorporated area are considered to cumulatively contribute to the nonattainment designations of the SoCAB and MDAB. Development allowed under the proposed land use plan 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 AQMPs.

### Summary

Although the Countywide Plan would result in a substantial increase in long-term criteria pollutant emissions compared to existing conditions, it would support a more sustainable development pattern for the unincorporated areas. The goals and policies of the Countywide Plan would, accommodate future growth in the unincorporated county, while minimizing long-term emissions of criteria air pollutants by promoting infill mixed-use development, complete streets, and increased capacity for alternative transportation modes and active transit, which would help reduce mobile-source air pollutant emissions.

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The County has identified several goals and policies in the Countywide Plan to reduce VMT and other sources of criteria air pollutant emissions. The land use plan for the County of San Bernardino minimizes VMT by promoting compact and transit-oriented development (Policies NR-1.1, TM-3.1, LU-1.2). The Policy Plan provides transportation strategies that reduce VMT and trips by providing trip reduction strategies, first/last mile connectivity, and new transportation options (Policies TM-3.2, TM-3.3, TM-1.10, TM-3.1, TM-4.2, TM-4.7, TM 4-8, TM-4.9). The Countywide Plan directs the County to actively work with transit agencies to provide transit access for residents in unincorporated areas (Policies TM-4.3, TM-4.4, TM-4.5, TM-4.6). The Policy Plan and policies in the existing Renewable Energy and Conservation Element includes several measures that reduce energy use in the built environment through energy conservation and greater access to and reliance of renewable energy systems (Policies NR-1.9, RE-1.2, RE-1.4, RE-2.1, RE-2.2, RE-2.3, RE-2.4, RE-2.6, RE-3.1 through RE-3.7, RE 6.1 through RE-6.7).

However, despite furthering the regional transportation and planning objectives, as stated, development allowed under the Countywide Plan would represent a substantial increase in emissions compared to existing conditions and would exceed SCAQMD and MDAQMD's regional operational significance thresholds (see Impact AQ-2 and Impact AQ-3). As a result, the Countywide Plan could slightly (0.5 percent) exceed the growth assumptions in the SCAG region and would not be considered consistent with the emissions forecast in the AQMPs. Therefore, impacts are considered significant.

*Level of Significance before Mitigation:* Impact 5.3-1 would be potentially significant.

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**Impact 5.3-2: Buildout of the Countywide Plan would generate a net increase of 49,680 people and 12,546 jobs, resulting in an increase in criteria air pollutant emissions from transportation, energy, and area sources that would exceed the SCAQMD and MDAQMD significance thresholds and would contribute to the nonattainment designations of the SoCAB and MDAB. [Thresholds AQ-2 and AQ-3]**

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San Bernardino is the largest county in the United States at approximately 12.78 million acres, of which 12.27 million acres is in the unincorporated areas. However, federal agencies administer 85 percent of the unincorporated land area (10.37 million acres). The County's land use authority only extends to approximately 13 percent of the total unincorporated land area (1.58 million acres). Of the land in the County's jurisdictional control, over half (0.83 million acres) is under Resource/Land Management or Open Space, and only 0.74 million acres are designated for residential and nonresidential land uses. Development allowed under the Countywide Plan would contribute to the nonattainment designations of the SoCAB and MDAB through direct and indirect emissions of criteria air pollutants from land uses in the unincorporated county.

### **2040 Unincorporated San Bernardino County Community Criteria Air Pollutant Emissions Forecast**

Although implementation of the proposed Project is not linked to a specific development time frame, by the horizon year of 2040, the Countywide Plan would result in a net increase of 49,680 people and 12,546 jobs in the unincorporated communities in San Bernardino, resulting in a net increase of approximately 1.31 million vehicle miles per day. The majority of the growth would occur in the Valley and North Desert Regions. Approximately 50 percent of the population growth and 92 percent of the employment growth would occur in the Valley Region, and the North Desert would experience a 42 percent increase in population growth and

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6 percent increase in employment growth. Very little growth is anticipated in the Mountain and East Desert regions. Table 5.3-8, *Unincorporated San Bernardino County Communitywide Criteria Air Pollutant Emissions Forecast*, provides an estimate of the criteria air pollutant emissions at the Plan horizon year of 2040.

**Table 5.3-8 Unincorporated San Bernardino County Communitywide Criteria Air Pollutant Emissions Forecast**

Phase	Criteria Air Pollutant Emissions (pounds/day)					
	VOC	NO <sub>x</sub>	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
<b>SoCAB – Valley and Mountain Regions</b>						
<b>Existing Land Uses in 2040</b>						
Transportation <sup>1</sup>	82	1,157	3,519	19	258	208
Energy <sup>2</sup>	84	460	196	3	37	37
Offroad Equipment <sup>3</sup>	164	1082	3720	1	62	55
Consumer Products <sup>4</sup>	3,738					
Hearth <sup>4</sup>	5,191	84	6,214	11	866	866
<b>Subtotal SoCAB</b>	<b>9,259</b>	<b>2,782</b>	<b>13,648</b>	<b>34</b>	<b>1,223</b>	<b>1,165</b>
<b>Proposed Project</b>						
Transportation <sup>1</sup>	98	1,390	4,226	22	318	246
Energy <sup>2</sup>	112	983	614	6	77	77
Offroad Equipment <sup>3</sup>	181	1,172	4,216	1	67	59
Consumer Products <sup>4</sup>	4,593					
Hearth <sup>4</sup>	5,282	87	6,328	11	882	882
<b>Subtotal SoCAB</b>	<b>10,266</b>	<b>3,631</b>	<b>15,384</b>	<b>41</b>	<b>1,345</b>	<b>1,264</b>
<b>Net Change</b>						
Transportation <sup>1</sup>	16	233	707	4	60	38
Energy <sup>2</sup>	28	523	418	3	40	40
Offroad Equipment <sup>3</sup>	17	90	496	0	5	4
Consumer Products <sup>4</sup>	855					
Hearth <sup>4</sup>	90	3	114	0	16	16
<b>Subtotal SoCAB</b>	<b>1,007</b>	<b>849</b>	<b>1,736</b>	<b>7</b>	<b>122</b>	<b>99</b>
SCAQMD Threshold	55	55	150	550	150	55
Exceeds Threshold	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	No	<b>Yes</b>	<b>Yes</b>
<b>MDAB – East Desert and North Desert</b>						
<b>Existing Land Uses in 2040</b>						
Transportation <sup>1</sup>	139	1,346	3,573	20	352	199
Energy <sup>2</sup>	49	426	220	3	34	34
Offroad Equipment <sup>3</sup>	206	1391	4571	2	79	70
Consumer Products <sup>4</sup>	2,519					
Hearth <sup>4</sup>	3,264	55	3,908	7	545	545
<b>Subtotal MDAB</b>	<b>6,014</b>	<b>2,136</b>	<b>8,551</b>	<b>30</b>	<b>947</b>	<b>793</b>
<b>Proposed Project</b>						
Transportation <sup>1</sup>	167	1,613	4,283	25	433	234
Energy <sup>2</sup>	71	610	301	4	49	49
Offroad Equipment <sup>3</sup>	224	1,487	5,087	2	84	74

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**Table 5.3-8 Unincorporated San Bernardino County Communitywide Criteria Air Pollutant Emissions Forecast**

Phase	Criteria Air Pollutant Emissions (pounds/day)					
	VOC	NO <sub>x</sub>	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Consumer Products <sup>4</sup>	2,890					
Hearth <sup>4</sup>	3,646	61	4,365	8	608	608
<b>Subtotal MDAB</b>	<b>6,816</b>	<b>2,599</b>	<b>9,820</b>	<b>36</b>	<b>1,107</b>	<b>906</b>
<b>Net Change</b>						
Transportation <sup>1</sup>	28	268	710	4	81	35
Energy <sup>2</sup>	21	183	81	1	15	15
Offroad Equipment <sup>3</sup>	18	95	517	0	5	5
Consumer Products <sup>4</sup>	371					
Hearth <sup>4</sup>	382	6	457	1	64	64
<b>Subtotal MDAB</b>	<b>802</b>	<b>463</b>	<b>1,269</b>	<b>6</b>	<b>160</b>	<b>114</b>
MDAQMD Threshold	137	137	548	137	82	65
Exceeds Threshold	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	No	<b>Yes</b>	<b>Yes</b>
<b>Total Unincorporated County</b>						
<b>Existing Land Uses in 2040</b>						
Transportation <sup>1</sup>	221	2,503	7,091	39	609	407
Energy <sup>2</sup>	133	886	415	6	71	71
Offroad Equipment <sup>3</sup>	371	2,473	8,290	3	141	124
Consumer Products <sup>4</sup>	6,257					
Hearth <sup>4</sup>	8,456	139	10,122	18	1,410	1,410
<b>Subtotal Unincorporated</b>	<b>15,273</b>	<b>4,919</b>	<b>22,199</b>	<b>64</b>	<b>2,170</b>	<b>1,958</b>
<b>Proposed Project</b>						
Transportation <sup>1</sup>	265	3,003	8,509	47	751	480
Energy <sup>2</sup>	182	1,593	915	10	126	126
Offroad Equipment <sup>3</sup>	406	2,658	9,303	3	152	133
Consumer Products <sup>4</sup>	7,482					
Hearth <sup>4</sup>	8,928	148	10,692	19	1,490	1,490
<b>Subtotal Unincorporated</b>	<b>17,082</b>	<b>6,230</b>	<b>25,203</b>	<b>77</b>	<b>2,451</b>	<b>2,170</b>
<b>Net Change</b>						
Transportation <sup>1</sup>	44	500	1,418	8	141	73
Energy <sup>2</sup>	49	707	500	4	55	55
Offroad Equipment <sup>3</sup>	35	185	1,013	0	10	9
Consumer Products <sup>4</sup>	1,226					
Hearth <sup>4</sup>	472	10	571	1	80	80
<b>Subtotal Unincorporated</b>	<b>1,809</b>	<b>1,312</b>	<b>3,005</b>	<b>13</b>	<b>281</b>	<b>212</b>

Notes: Emissions generated by land uses in the Mountain Region are proportioned to the SoCAB portion of the county.

<sup>1</sup> Source: Fehr & Peers; EMFAC2017, Version 1.0.2.

<sup>2</sup> Source: SoCalGas and Southwest Gas; CalEEMod User's Guide.

<sup>3</sup> Source: OFFROAD 2017.

<sup>4</sup> Source: CalEEMod User's Guide.

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As shown in Table 5.3-8, development allowed under the Countywide Plan would generate long-term air pollutant emissions that exceed SCAQMD's and MDAQMD's regional significance thresholds. Emissions of VOC and NO<sub>x</sub> that exceed the regional threshold would cumulatively contribute to the O<sub>3</sub> nonattainment designation of the SoCAB and MDAB. Emissions of NO<sub>x</sub> that exceed regional significance thresholds would cumulatively contribute to the O<sub>3</sub> and particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>) nonattainment designations of the SoCAB and MDAB. Emissions of PM<sub>10</sub> and PM<sub>2.5</sub> would contribute to the PM<sub>10</sub> and PM<sub>2.5</sub> nonattainment designations.

The County has identified several goals and policies in the Countywide Plan that would reduce emissions, to the extent feasible. Policy NR-1.3 directs the County to collaborate with air quality management districts and other local agencies to monitor and reduce major pollutants affecting the county at the emission source. The land use plan minimizes VMT and associated GHG emissions by promoting compact and transit-oriented development (Policies NR-1.1, TM-3.1, LU-1.2). The Policy Plan provides transportation strategies that reduce VMT and trips by providing trip reduction strategies, first/last mile connectivity, and new transportation options (Policies TM-3.2, TM-3.3, TM-1.10, TM-3.1, TM-4.2, TM-4.7, TM 4-8, TM-4.9). The Countywide Plan directs the County to actively work with transit agencies to provide transit access for residents in the unincorporated areas (Policies TM-4.3, TM-4.4, TM-4.5, TM-4.6). The Policy Plan includes several measures that reduce energy use in the built environment through energy conservation and greater access to and reliance on renewable energy systems (Policies NR-1.9, RE-1.2, RE-1.4, RE-2.1, RE-2.2, RE-2.3, RE-2.4, RE-2.6, RE-3.1 through RE-3.7, RE 6.1 through RE-6.7). The County also requires that construction activities reduce fugitive dust and utilize low-emissions equipment (Policies NR-1.6 and NR-1.8).

While SCAQMD and MDAQMD rules and the goals and policies of the Countywide Plan may reduce operation-related regional air quality impacts of individual projects, due to the magnitude of development allowed, the projected cumulative emissions associated with future development projects would exceed the thresholds. Therefore, implementation of the proposed Project would significantly contribute to the nonattainment designations of the SoCAB and MDAB, resulting in a significant impact.

*Level of Significance before Mitigation:* Impact 5.3-2 would be potentially significant.

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**Impact 5.3-3: Short-term construction activities associated with the Countywide Plan would exceed the SCAQMD and MDAQMD significance thresholds and would contribute to the nonattainment designations of the SoCAB and MDAB. [Thresholds AQ-2 and AQ-3]**

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Construction activities associated with development allowed under the Countywide Plan would occur through 2040 and cause short-term emissions of criteria air pollutants. Construction activities would temporarily increase PM<sub>10</sub>, PM<sub>2.5</sub>, VOC, NO<sub>x</sub>, SO<sub>x</sub>, and CO regional emissions within the SoCAB and MDAB. The primary source of NO<sub>x</sub>, CO, and SO<sub>x</sub> emissions is the operation of construction equipment. The primary sources of particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>) emissions are activities that disturb the soil, such as grading and excavation, road construction, and building demolition and construction. The primary source of VOC emissions is the application of architectural coating and off-gas emissions associated with asphalt paving.

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Construction activities associated with development allowed under the Countywide Plan are anticipated to occur sporadically over an approximately 20-year period or longer. Implementation would consist of multiple smaller projects, each having its own construction timeline and activities. Development of multiple properties could occur at the same time. However, there is no defined development schedule for these future projects at this time. 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. Some of the future individual projects accommodated under the Countywide Plan may not generate construction air pollutant emissions that exceed the SCAQMD or MDAQMD regional significance thresholds. However, due to the scale of development activity associated with the Countywide Plan, emissions would likely exceed the SCAQMD or MDAQMD regional significance thresholds and would cumulatively contribute to the nonattainment designations of the SoCAB or MDAB.

The San Bernardino County portion of SoCAB is currently designated nonattainment for O<sub>3</sub> and particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>) (CARB 2017). Portions of the MDAB are designated nonattainment for O<sub>3</sub>, particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>), and hydrogen sulfide (CARB 2017). Emissions of VOC and NO<sub>x</sub> are precursors to the formation of O<sub>3</sub>. In addition, NO<sub>x</sub> is a precursor to the formation of particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>). Therefore, growth in the unincorporated county regions would cumulatively contribute to the existing nonattainment designations of the SoCAB and MDAB for O<sub>3</sub> and particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>). The Countywide Plan includes policies to reduce construction emissions, to the extent feasible. The County requires that construction activities reduce fugitive dust and utilize low-emissions equipment (Policies NR-1.6 and NR-1.8).

Although adherence to existing and proposed regulations may reduce short-term emissions, the likely scale and extent of construction activities associated with the Countywide Plan would likely continue to exceed the SCAQMD and the MDAQMD thresholds for some projects. Therefore, construction-related regional air quality impacts associated with implementation of the proposed project are deemed significant.

*Level of Significance before Mitigation:* Impact 5.3-3 would be potentially significant.

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

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Development and operation of new land uses consistent with the Countywide Plan could generate new sources of criteria air pollutants and TACs in the unincorporated County from area/stationary sources and mobile sources. The following describes potential localized operational air quality impacts from implementation of the Countywide Plan.

#### 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 1-hour standard of 20 ppm or the 8-hour standard of 9.0 ppm. However, emissions from motor vehicles, the largest source of CO emissions, have been declining since 1985 despite increases in VMT due to the introduction of new automotive emission controls and fleet turnover. Under existing and future vehicle emission rates, a project would have to increase traffic volumes at a single intersection

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by more than 44,000 vehicles per hour—or 24,000 vehicles per hour where vertical and/or horizontal air does not mix—in order to generate a significant CO impact (BAAQMD 2017). Because this volume at a single intersection in a single hour is not possible, no CO hotspots have been reported in the SoCAB or MDAB even at the most congested intersections. Therefore, implementation of the Countywide Plan would not have the potential to substantially increase CO hotspots at intersections in the vicinity of sensitive receptors in the unincorporated County, and impacts would be less than significant.

#### **Health Risk: Toxic Air Contaminants**

Various industrial and commercial processes (e.g., manufacturing, dry cleaning) allowed under the Countywide Plan would be expected to release TACs. TAC emissions generated by stationary and point sources of emissions within the SoCAB and MDAB are regulated and controlled by SCAQMD and MDAQMD, respectively. However, emissions of TACs from mobile sources when operating at a property (e.g., truck idling) are regulated by statewide rules and regulations, not by SCAQMD or MDAQMD, and have the potential to generate substantial concentrations of air pollutants.

#### *Permitted Stationary Sources*

Land uses that would require a permit from SCAQMD or MDAQMD for emissions of TACs include chemical processing facilities, chrome-plating facilities, dry cleaners, and gasoline-dispensing facilities. Emissions of TACs from stationary sources would be controlled by SCAQMD or MDAQMD through permitting and would be subject to further study and health risk assessment prior to the issuance of any necessary air quality permits. Adherence to SCAQMD's and MDAQMD's New Source Review program would ensure that stationary source emissions (permitted sources) would be reduced or mitigated below SCAQMD and MDAQMD significance thresholds of ten in one million cancer risk and one for acute risk at the maximally exposed individual. Though these sources would incrementally contribute to the Countywide Plan's inventory individually, they would be mitigated to the standards identified in Table 5.3-7. In addition to the permitting process, the County collaborates with SCAQMD and MDAQMD to monitor and reduce major pollutants affecting the county at the emission source (Policy NR-1.3).

#### *Nonpermitted Sources*

Mobile sources of TACs are not regulated by SCAQMD or MDAQMD. The primary driver of health risk in the SoCAB and MDAB is diesel particulate matter (DPM). Mobile sources of DPM in the unincorporated areas are truck travel, truck idling, and use of off-road equipment. New warehousing operations could generate substantial diesel particulate matter emissions from off-road equipment use and truck idling. In addition, some warehousing and industrial facilities may include use of transport refrigeration units (TRUs) for cold storage. New land uses in the unincorporated area that would be permitted under the Countywide Plan that use trucks, including trucks with TRUs, could generate an increase in DPM that would contribute to cancer and noncancer health risk in the SoCAB and MDAB. Additionally, these types of facilities could also generate particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>) that may cause an exceedance or contribute to the continuing exceedance of the federal and state AAQS. These new land uses could be near existing sensitive receptors within and outside the unincorporated areas. In addition, trucks would travel on regional transportation routes through the SoCAB and MDAB, contributing to near-roadway DPM concentrations.

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For this programmatic general plan-level assessment, it is not feasible to conduct dispersion modeling to determine the contribution of health risks associated with individual land use types since site-specific information on emissions and emissions quantities is not known. This is because a general plan does not directly result in development without additional approvals. Before any development can occur in the county, it must be analyzed for consistency with the Countywide Plan, zoning requirements, and other applicable local and state requirements; comply with CEQA requirements; and obtain necessary clearances and permits. The Countywide Plan includes policies that require a cumulative health risk assessment (HRA) when a project potential effects sensitive-receptors in the unincorporated environmental justice focus areas (Policy HZ-3.2). This includes evaluating the effect of truck travel on local arterials to the freeway. However, as identified previously, MATES modeling conducted by SCAQMD identified that portions of the Valley Region in the SoCAB are exposed to elevated levels of cancer risk. Individual projects may result in emissions under the 10 in a million cancer risk threshold. However, when clustered warehouse/industrial projects could cumulatively exceed the 10 in a million threshold. Therefore, for this program-level analysis, health risk impacts from nonpermitted sources associated with development of industrial and commercial land uses are conservatively considered significant.

#### Localized Significant Thresholds

With a 2040 horizon-year, implementation of the Countywide Plan would occur over an extended period and would consist of smaller individual projects with their own construction time frames, construction equipment, and operational characteristics. Due to the broad, policy nature of the Countywide Plan, specific details of future land use development projects that would be accommodated are currently unknown. As stated previously, the Policy Plan would generally support a sustainable development pattern in accommodating future growth within the unincorporated areas, which would generally contribute in reducing long-term criteria air pollutant emissions. However, construction and operation of future individual development projects allowed under the Countywide Plan could potentially result in an exceedance of SCAQMD's or MDAQMD's localized thresholds. Therefore, impacts to air quality would be significant.

*Level of Significance before Mitigation:* Impact 5.3-4 would be potentially significant.

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**Impact 5.3-5: Some land uses associated with buildout of the Countywide Plan have the potential to create objectionable odors. [Threshold AQ-5]**

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The following discusses potential operation- and construction-related odor impacts associated with implementation of the Countywide Plan.

#### Operation-Related Odors

Development allowed under the Countywide Plan could generate new sources of odors. Odors from the types of land uses that could generate objectionable odors are regulated under SCAQMD Rule 402 and MDAQMD Rule 402, which states:

A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number

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of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property. The provisions of this rule shall not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals.

Industrial land uses, including indoor agricultural uses, are the primary types of land uses that have the potential to generate objectionable odors. Future environmental review could be required for industrial projects to ensure that sensitive land uses are not exposed to nuisance odors. SCAQMD Rule 402 and MDAQMD Rule 402 require abatement of any nuisance generating an odor complaint. Typical abatement includes passing air through a drying agent followed by two successive beds of activated carbon to generate odor-free air. Facilities would need to consider measures to reduce odors as part of their CEQA review.

Consequently, review of projects proximate to sensitive land uses is necessary to ensure that odor impacts are minimized. Odor impacts could be significant for new projects that have the potential to generate odors within the odor screening distances.

#### **Construction-Related Odors**

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

*Level of Significance before Mitigation:* Impact 5.3-5 would be potentially significant for operation-related odors.

#### **5.3.5 Cumulative Impacts**

The cumulative setting for air quality is the SoCAB and MDAB. In accordance with the SCAQMD and MDAQMD methodology, any project that produces a significant project-level regional air quality impact in an area that is in nonattainment contributes to the cumulative impact. Cumulative projects include new development and general growth within the SoCAB and MDAB. The San Bernardino County portions of the SoCAB and MDAB are nonattainment for ozone, PM<sub>10</sub>, and PM<sub>2.5</sub>, and the MDAB is nonattainment for H<sub>2</sub>S in the Searles Valley Planning Area. Due to the extent of the area potentially impacted from cumulative project emissions, SCAQMD and MDAQMD consider a project cumulatively significant when project-related emissions exceed the regional emissions thresholds. As identified in Impact 5.3-2 (operation) and Impact 5.3-3 (construction), implementation of the Countywide Plan would cumulatively contribute to the nonattainment designations of the air basins, and cumulative impacts are significant.

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#### Construction

The SoCAB and MDAB are designated nonattainment for O<sub>3</sub>, PM<sub>2.5</sub>, PM<sub>10</sub>, lead (SoCAB: Los Angeles County only), and hydrogen sulfide (MDAB: Searles Valley Planning Area only) under the California and/or National AAQS. Construction of cumulative projects would further degrade the regional and local air quality. Air quality would be temporarily impacted during construction activities. Implementation of mitigation measures for related projects would reduce cumulative impacts. However, project-related construction emissions could still potentially exceed the SCAQMD and MDAQMD significance thresholds on a project and cumulative basis. Consequently, the proposed Countywide Plan's contribution to cumulative air quality impacts would be cumulatively considerable and would therefore 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 SCAQMD and MDAQMD to be a substantial source of air pollution and does not add significantly to a cumulative impact. Operation of the Countywide Plan would result in emissions in excess of the SCAQMD and MDAQMD regional emissions thresholds for VOC, NO<sub>x</sub>, CO, PM<sub>10</sub>, and PM<sub>2.5</sub> for long-term operation. Additionally, development under the Countywide Plan would generate TACs that could contribute to elevated levels of risk. Therefore, the proposed Countywide Plan's air pollutant emissions would be cumulatively considerable and therefore significant.

### 5.3.6 Level of Significance Before Mitigation

Without mitigation, these impacts would be potentially significant:

- **Impact 5.3-1:** Development allowed under the Countywide Plan would represent a substantial increase in emissions compared to existing conditions and would exceed SCAQMD and MDAQMD's regional operational significance thresholds; and therefore, would have the potential to affect the emissions forecasts in the SCAQMD and MDAQMD Air Quality Management Plans.
- **Impact 5.3-2:** Buildout of the Countywide Plan would result in an increase in criteria air pollutant emissions from transportation, energy, and area sources that would exceed the SCAQMD and MDAQMD significance thresholds and would contribute to the nonattainment designations of the SoCAB and MDAB.
- **Impact 5.3-3:** Short-term construction activities associated with the Countywide Plan would exceed the SCAQMD and MDAQMD significance thresholds and would contribute to the nonattainment designations of the SoCAB and MDAB.
- **Impact 5.3-4:** The proposed Project could expose sensitive receptors to substantial pollutant concentrations.

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- **Impact 5.3-5:** Some land uses associated with buildout of the Countywide Plan have the potential to create objectionable odors.

### 5.3.7 Mitigation Measures

#### Impact 5.3-1

Mitigation Measures identified for Impact 5.3-2 and 5.3-3 would reduce emissions to the extent feasible.

#### Impact 5.3-2

AQ-1

Prior to discretionary approval by the County for development projects subject to California Environmental Quality Act (CEQA) review (i.e., nonexempt projects), project applicants shall prepare a technical assessment evaluating potential air quality impacts related to the project operation phase and submit it to the County Land Use Services Department for review and approval. The evaluation shall be prepared in conformance with South Coast Air Quality Management District (SCAQMD) methodology, for projects in the South Coast Air Basin (SoCAB), and conformance with the Mojave Desert Air Quality Management District (MDAQMD) for projects in the Mojave Desert Air Basin (MDAB). If operation-related air pollutants are determined to have the potential to exceed the SCAQMD/MDAQMD-adopted thresholds of significance, the County Land Use Services Department shall require that applicants for new development projects incorporate mitigation measures to reduce air pollutant emissions during operational activities. The identified measures shall be included as part of the conditions of approval. Possible mitigation measures to reduce long-term emissions can include, but are not limited to:

- For site-specific development that requires refrigerated vehicles, the construction documents shall demonstrate an adequate number of electrical service connections at loading docks for plug-in of the anticipated number of refrigerated trailers to reduce idling time and emissions.
- Applicants for manufacturing and light industrial uses shall consider energy storage and combined heat and power in appropriate applications to optimize renewable energy generation systems and avoid peak energy use.
- Site-specific developments with truck delivery and loading areas and truck parking spaces shall include signage as a reminder to limit idling of vehicles while parked for loading/unloading in accordance with Section 2485 of 13 CCR Chapter 10.
- Provide changing/shower facilities as specified, at minimum, or greater than in the guidelines in Section A5.106.4.3 of the CALGreen Code (Nonresidential Voluntary Measures).
- Provide bicycle parking facilities equivalent to or greater than as specified in Section A4.106.9 (Residential Voluntary Measures) of the CALGreen Code.

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- Provide preferential parking spaces for low-emitting, fuel-efficient, and carpool/van vehicles equivalent to or greater than Section A5.106.5.1 of the CALGreen Code (Nonresidential Voluntary Measures).
- Provide facilities to support electric charging stations per Section A5.106.5.3 (Nonresidential Voluntary Measures) and Section A5.106.8.2 (Residential Voluntary Measures) of the CALGreen Code.
- Applicant-provided appliances shall be Energy Star-certified appliances or appliances of equivalent energy efficiency (e.g., dishwashers, refrigerators, clothes washers, and dryers). Installation of Energy Star-certified or equivalent appliances shall be verified by Building & Safety during plan check.
- Applicants for future development projects along existing and planned transit routes shall coordinate with the County of San Bernardino and the applicable transit agency to ensure that bus pad and shelter improvements are incorporated, as appropriate.

### Impact 5.3-3

AQ-2

Prior to issuance of any construction permits for development projects subject to California Environmental Quality Act review (i.e., non-exempt projects), development project applicants shall prepare and submit to the County Land Use Services Department a technical assessment evaluating potential project construction-related air quality impacts. The evaluation shall be prepared in conformance with South Coast Air Quality Management District (SCAQMD) methodology for projects within the South Coast Air Basin (SoCAB), and conformance with the Mojave Desert Air Quality Management District (MDAQMD) for projects in the Mojave Desert Air Basin (MDAB). If construction-related criteria air pollutants are determined to have the potential to exceed the adopted thresholds of significance of the applicable air district, the County Land Use Development Services Department shall require that applicants for new development projects incorporate mitigation measures to reduce air pollutant emissions during construction activities to below these thresholds. These identified measures shall be incorporated into appropriate construction documents (e.g., construction management plans) submitted to the County and shall be verified by the County's Public Works Department. Mitigation measures to reduce construction-related emissions could include, but are not limited to:

- Use of 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. A list of construction equipment by type and model year shall be maintained by the construction contractor on-site and available for County review upon request.
- Ensure construction equipment is properly serviced and maintained to the manufacturer's standards.

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- Use of alternative-fueled or catalyst-equipped diesel construction equipment, if available and feasible.
- Clearly posted signs that require operators of trucks and construction equipment to minimize idling time (e.g., five minute maximum).
- Preparation and implementation of a fugitive dust control plan that may include the following measures:
  - Disturbed areas (including storage piles) that are not being actively utilized for construction purposes shall be effectively stabilized using water or chemical stabilizer/suppressant, or covered with a tarp or other suitable cover (e.g., revegetated).
  - On-site unpaved roads and offsite unpaved access roads shall be effectively stabilized using water or chemical stabilizer/suppressant.
  - Land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall be effectively controlled utilizing application of water or by presoaking.
  - Material shall be covered or effectively wetted to limit visible dust emissions, and at least six inches of freeboard space from the top of the container shall be maintained when materials are transported off-site.
  - Operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. (The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. Use of blower devices is expressly forbidden.)
  - Following the addition of materials to or the removal of materials from the surface of outdoor storage piles, said piles shall be effectively stabilized to prevent fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant.
  - Within urban areas, trackout shall be immediately removed when it extends 50 or more feet from the site and at the end of each workday.
  - Any site with 150 or more vehicle trips per day shall prevent carryout and trackout.
  - Limit traffic speeds on unpaved roads to 15 mph.
  - Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than 1 percent.
  - Install wheel washers for all exiting trucks or wash off all trucks and equipment leaving the project area.

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#### Impact 5.3-4

AQ-3 Applicants for new discretionary industrial or warehousing projects or commercial land uses that would generate substantial diesel truck travel—i.e., 100 diesel trucks per day or 40 or more trucks with diesel-powered transport refrigeration units per day based on the California Air Resources Board recommendations for siting new sensitive land uses—shall contact the South Coast Air Quality Management District (SCAQMD) or Mojave Desert Air Quality Management District (MDAQMD) in conjunction with County staff to determine the appropriate level of health risk assessment (HRA) required. If preparation of an HRA is required, all HRAs shall be submitted to the County Land Use Services Department and the SCAQMD or MDAQMD for evaluation.

The HRA shall be prepared in accordance with policies and procedures of the State Office of Environmental Health Hazard Assessment and SCAQMD, for projects within the South Coast Air Basin (SoCAB), or MDAQMD for projects within the Mojave Desert Air Basin (MDAB). The HRA shall consider cumulative impacts from industrial/warehouse projects within 1,000 feet of the boundary of the project site. If the HRA shows that the project-level or cumulative incremental cancer risk exceeds ten in one million (10E 06) or the risk thresholds in effect at the time a project is considered, or that the appropriate noncancer hazard index exceeds 1.0 or the thresholds as determined by SCAQMD or MDAQMD at the time a project is considered, the applicant will be required to identify and demonstrate that measures are capable of reducing potential cancer and noncancer risks to an acceptable level, including appropriate enforcement mechanisms.

Measures to reduce risk impacts may include but are not limited to:

- Restricting idling onsite beyond Air Toxic Control Measures idling restrictions, as feasible.
- Electrifying warehousing docks.
- Requiring use of newer equipment and/or vehicles.
- Restricting offsite truck travel through the creation of truck routes.

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.

#### Impact 5.3-5

AQ-4 If it is determined during project-level environmental review that a discretionary project has the potential to emit nuisance odors beyond the property line, an odor management plan shall be prepared and submitted by the project applicant prior to project approval to ensure compliance with the South Coast Air Quality Management District (SCAQMD) Rule 402 for projects in the South Coast Air Basin (SoCAB) or Mojave Desert Air Quality Management District (MDAQMD) Rule 402 for projects in the Mojave Desert Air Basin (MDAB). The

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following facilities that are within the specified buffer distances from sensitive receptors (in parentheses) have the potential to generate substantial odors:

- Wastewater Treatment Plan (2 miles)
- Sanitary Landfill (1 mile)
- Transfer Station (1 mile)
- Composting Facility (1 mile)
- Petroleum Refinery (2 miles)
- Asphalt Batch Plan (1 mile)
- Chemical Manufacturing (1 mile)
- Fiberglass Manufacturing (1 mile)
- Painting/Coating Operations (1 mile)
- Food Processing Facility (1 mile)
- Feed Lot/ Dairy (1 mile)
- Rendering Plant (1 mile)

The Odor Management Plan prepared for these facilities shall identify control technologies that will be utilized to reduce potential odors to acceptable levels, including appropriate enforcement mechanisms. Control technologies may include but are not limited to scrubbers (e.g., air pollution control devices) at an industrial facility. Control technologies identified in the odor management plan shall be identified as mitigation measures in the environmental document and/or incorporated into the site plan.

### 5.3.8 Level of Significance After Mitigation

#### Impact 5.3-1

Mitigation Measures identified for Impact 5.3-1 and 5.3-2 would reduce emissions to the extent feasible. Additionally, the various goals and policies of the Countywide Plan outlined above, in addition to applicable SCAQMD and MDAQMD rules and regulations, would contribute to reducing regional criteria air pollutant during construction and operational phases of development projects. However, due to the magnitude and intensity of development accommodated by the Countywide Plan, as well as regional air quality influences beyond the control of the County, Impact 5.3-1 would remain **significant and unavoidable**.

#### Impact 5.3-2

Application of State, SCAQMD, and MDAQMD rules and regulations, and implementation of the Countywide Plan goals and policies would contribute to reducing operation-related criteria air pollutants generated from energy, area, and mobile sources to the extent feasible. Incorporation of Mitigation Measure AQ-1 would also contribute to reducing criteria air pollutants. Implementation of the aforementioned rules, goals and policies,

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and mitigation could contribute to reducing operation-phase regional air quality impacts of future individual projects to a less than significant level. Further, compared to existing conditions, emissions of NO<sub>x</sub>, CO, and SO<sub>x</sub> are projected to decrease from current levels despite growth associated with the Countywide Plan (see Table 5.3-9).

**Table 5.3-9 Unincorporated San Bernardino County Communitywide Criteria Air Pollutant Emissions Forecast – Change from Existing**

Phase	Criteria Air Pollutant Emissions (pounds/day)					
	VOC	NO <sub>x</sub>	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
<b>SoCAB – Valley and Mountain Regions</b>						
<b>Net Change</b>						
Transportation <sup>1</sup>	-397	-2,800	-7,941	-8	19	-3
Energy <sup>2</sup>	28	523	418	3	40	40
Offroad Equipment <sup>3</sup>	17	90	496	0	5	4
Consumer Products <sup>4</sup>	855	0	0	0	0	0
Hearth <sup>4</sup>	90	3	114	0	16	16
Subtotal SoCAB	594	-2,183	-6,912	-4	80	58
SCAQMD Threshold	55	55	150	550	150	55
Exceeds Threshold	<b>Yes</b>	No	No	No	No	<b>Yes</b>
<b>MDAB – East Desert and North Desert</b>						
<b>Net Change</b>						
Transportation <sup>1</sup>	-479	-3,714	-9,838	-9	19	-26
Energy <sup>2</sup>	21	183	81	1	15	15
Offroad Equipment <sup>3</sup>	1	5	20	0	0	0
Consumer Products <sup>4</sup>	371	0	0	0	0	0
Hearth <sup>4</sup>	382	6	457	1	64	64
Subtotal MDAB	295	-3,519	-9,279	-7	98	53
MDAQMD Threshold	137	137	548	137	82	65
Exceeds Threshold	<b>Yes</b>	No	No	No	<b>Yes</b>	No
<b>Total Unincorporated County</b>						
<b>Net Change</b>						
Transportation <sup>1</sup>	-876	-6,514	-17,778	-17	38	-29
Energy <sup>2</sup>	49	707	500	4	55	55
Offroad Equipment <sup>3</sup>	18	95	517	0	5	5
Consumer Products <sup>4</sup>	1,226	0	0	0	0	0
Hearth <sup>4</sup>	472	10	571	1	80	80
Subtotal Unincorporated	889	-5,702	-16,191	-11	178	111

Notes: Emissions generated by land uses in the Mountain Region are proportioned to the SoCAB portion of the county. Compares existing emissions in Table 5.3-3 with buildout emissions in Table 5.3-8.

<sup>1</sup> Source: Fehr & Peers; EMFAC2017, Version 1.0.2.

<sup>2</sup> Source: SoCalGas and Southwest Gas; CalEEMod User's Guide.

<sup>3</sup> Source: OFFROAD 2017.

<sup>4</sup> Source: CalEEMod User's Guide.

However, Impact 5.3-2 would remain **significant and unavoidable** due to the magnitude of the overall land use development associated with the Countywide Plan. Contributing to the nonattainment status would

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contribute in elevating health effects associated to these criteria air pollutants. Known health effects related to ozone include worsening of bronchitis, asthma, and emphysema and a decrease in lung function. Health effects associated with particulate matter include premature death of people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, decreased lung function, and increased respiratory symptoms. Reducing emissions would further contribute to reducing possible health effects related to criteria air pollutants.

As stated it is speculative for this broad based Countywide Plan 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. SCAQMD and MDAQMD 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 and at the present time, it has not provided methodology to assess the specific correlation between mass emissions generated and the effect on health in order to address the issue raised in the *Friant Ranch* case.

Ozone concentrations are dependent upon a variety of complex factors, including the presence of sunlight and precursor pollutants, natural topography, nearby structures that cause building downwash, atmospheric stability, and wind patterns. Because of the complexities of predicting ground-level ozone concentrations in relation to the National AAQS and California AAQS, it is not possible to link health risks to the magnitude of emissions exceeding the significance thresholds. To achieve the health-based standards established by the EPA, the air districts prepare air quality management plans that details regional programs to attain the AAQS. However, because cumulative development within the Plan Area would exceed the regional significance thresholds, the Project could contribute to an increase in health effects in the basin until such time the attainment standard are met in the SoCAB and MDAB.

#### **Impact 5.3-3**

Implementation of the proposed Project would occur over 20 years or longer. Construction activities associated with development allowed under the Countywide Plan could generate short-term emissions that exceed the SCAQMD and MDAQMD significance thresholds during this time and cumulatively contribute to the nonattainment designations of the SoCAB and MDAB. Implementation of Mitigation Measure AQ-2, in addition to applicable regulatory measures and Policy Plan goals and policies related to reducing construction-related emissions, would reduce criteria air pollutant emissions from construction-related activities to the extent feasible and may result in reducing construction-related regional air quality impacts of subsequent individual projects to less than significant. However, due to the programmatic nature of the proposed Project, construction time frames and equipment for individual site-specific projects are not available, and there is a potential for multiple developments to be constructed at any one time, resulting in significant construction-related emissions. Therefore, despite adherence to Mitigation Measure AQ-2, Impact 5.3-3 would remain **significant and unavoidable**.

#### **Impact 5.3-4**

Development allowed by the Countywide Plan could result in new sources of criteria air pollutant emissions and/or TACs near existing or planned sensitive receptors. Review of development projects by SCAQMD or MDAQMD for permitted sources of air toxics (e.g., industrial facilities, dry cleaners, and gasoline dispensing

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facilities) in addition to Countywide Plan Policies NR-1.2, NR-1.3, NR-1.5, NR-1.8 and HZ-3.8 would ensure that health risks are minimized. Additionally, Mitigation Measure AQ-3 would ensure mobile sources of TACs not covered under SCAQMD or MDAQMD permits are considered during subsequent project-level environmental review by the County. Individual development projects would be required to achieve the incremental risk thresholds established by SCAQMD or MDAQMD, and TAC project-level impacts would be less than significant

However, implementation of the Countywide Plan would generate TACs that could contribute to elevated levels in the air basins. While individual projects would achieve the project-level risk threshold of 10 per million, they would nonetheless contribute to the higher levels of risk in the SoCAB. Therefore, the Countywide Plan's cumulative contribution to health risk is **significant and unavoidable**.

#### Impact 5.3-5

Mitigation Measure AQ-4 would ensure that sources identified by SCAQMD or MDAQMD are mitigated through adherence to an odor control plan and comply with Rule 402. Therefore, Impact 5.3-6 would be mitigated to a less-than-significant level.

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