3.3 Air Quality

This section describes the air quality conditions in the study area, which includes the San Joaquin Valley Air Basin (SJVAB), the Mojave Desert Air Basin (MDAB), and the South Coast Air Basin (SCAB). Global climate change is discussed in Section 3.9, Climate Change and Greenhouse Gases.

3.3.1 Regional Air Basins

The California Air Resources Board (CARB) has divided California into 15 regional air basins, based on topographic features. Some basins are true basins, that is, valleys surrounded by mountains. The Covered Lands are located in two air basins: the SJVAB (93,118 acres) and the MDAB (46,668 acres), and are adjacent to the SCAB (Figure 3.3-1).[1] General geographic characteristics of each air basin are discussed below.

3.3.1.1 San Joaquin Valley Air Basin Characteristics

The SJVAB is approximately 250 miles long, averages 80 miles wide, and is the second largest air basin in the state. The basin is defined by the Sierra Nevada in the east, the Coast Ranges in the west, and the Tehachapi Mountains in the south. The valley is basically flat with a slight downward gradient to the northwest.

The SJVAB is characterized by warm, dry summers and cooler winters. High summer temperatures often exceed 100°F, with average temperatures in the lower 90s in the northern valley and the high 90s in the south. Temperatures of 32°F and below occur about 22 days per year. Nearly 90% of the annual precipitation falls in the six months between November and April.

Winds tend to blow parallel to the valley and mountain range orientation. In spring and early summer, thermal low-pressure systems develop over the interior basins east of the Sierra Nevada mountain range and an area of high pressure moves northward. These developments and the topography of the area produce relatively strong northwesterly winds in the spring and early summer. To the south, steady winds quickly disperse air pollutants.

Air pollutants in the SJVAB can be transported to the MDAB as a result of prevailing wind patterns, primarily from June through September. This is particularly relevant with respect to ozone (O_3), but can also occur to a lesser extent with particulate matter less than 2.5 microns in diameter ($PM_{2.5}$) (California Air Resources Board 2009, WZI 1994, Sonoma Technology 2006).

3.3.1.2 Mojave Desert Air Basin Characteristics

The MDAB includes the desert portions of Los Angeles, Kern, San Bernardino, and Riverside Counties. Most of this area is commonly referred to as the high desert because elevations range from approximately 2,000 to 5,000 feet above mean sea level (amsl). The MDAB is generally above the regional inversion layer and experiences relatively good dispersion conditions.

[1] A total of 114 acres of the 93,118 acres in the San Joaquin Valley Air Basin may appear to be in the South Coast Air Basin. Mapping of the air basins shows a small part of the extreme southern edge of the Covered Lands in the South Coast Air Basin. This land was once in Los Angeles County but was transferred to Kern County. The mapping has not been changed, but South Coast Air Quality Management District personnel have stated that the South Coast Air Basin does not include any Kern County land (Smith 2009).

The MDAB is characterized by extreme temperature fluctuations, strong seasonal winds, and clear skies. The average temperature is approximately 60°F, with summertime temperatures occasionally exceeding 100°F, and wintertime temperatures occasionally dropping below 25°F. Average wind speeds are approximately 9 miles per hour, with peak speeds over 30 miles per hour.

With respect to ozone, the greatest air pollution effects throughout the MDAB occur from June through September. This condition is generally attributed to the large amount of pollutant transport from the SCAB and the SJVAB to the MDAB (California Air Resources Board 2009, WZI 1994, Sonoma Technology 2006). Transport of $PM_{2.5}$ into the MDAB from adjacent air basins can also occur, though transport of ozone is generally considered a greater concern due to its gaseous form.

3.3.1.3 South Coast Air Basin Characteristics

The SCAB includes the nondesert portions of Los Angeles, San Bernardino, and Riverside Counties, and all of Orange County. The basin encompasses 6,745 square miles and is bounded by the Pacific Ocean to the west, and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east.

The climate of the SCAB is semi-arid, and characterized by warm summers, mild winters, infrequent seasonal rainfall, moderate daytime onshore breezes, and moderate humidity. The average annual temperature varies little throughout the SCAB, averaging approximately 75°F. However, with a less pronounced oceanic influence, the eastern inland portions of the SCAB show greater variability in annual minimum and maximum temperatures. All portions of the SCAB have had recorded temperatures over 100°F in recent years. January is usually the coldest month at all locations, while July and August are usually the hottest months of the year. Precipitation in the SCAB is typically 9 to 14 inches annually and is rarely in the form of snow or hail due to typically warm weather.

Although the SCAB has a semi-arid climate, air near the surface is generally moist because of the presence of a shallow marine layer. With very low average wind speeds, there is a limited capacity to disperse air contaminants horizontally. The dominant daily wind pattern is an onshore daytime breeze of 8 to 12 miles per hour and an offshore nighttime breeze of 3 to 5 miles per hour. The typical wind flow pattern fluctuates only with occasional winter storms or strong northeasterly Santa Ana winds from the mountains and deserts northeast of the SCAB.

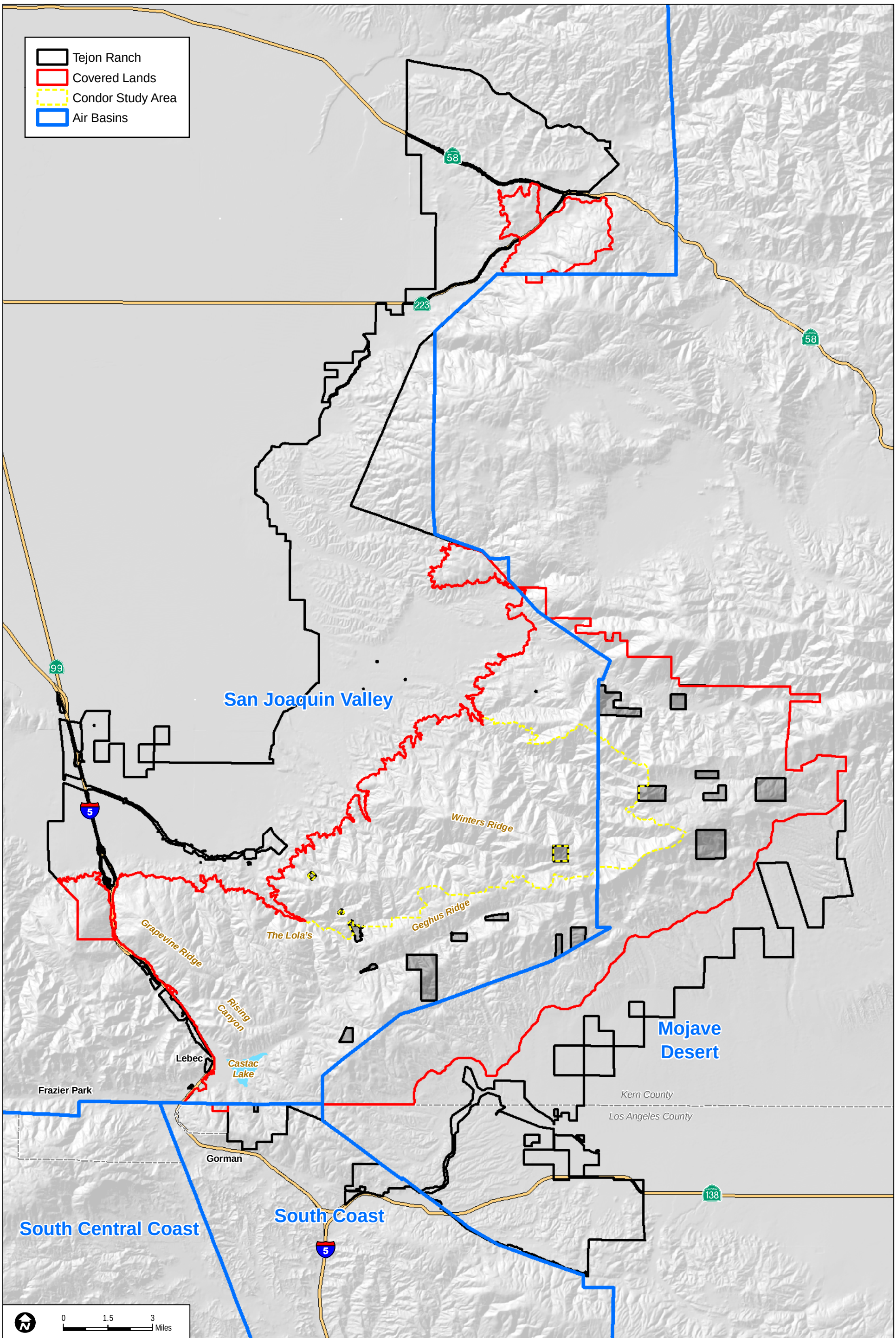
As discussed above, ozone transport from the SCAB to the MDAB can occur. $PM_{2.5}$ can also be transported to the MDAB, though ozone is generally considered more of a concern due to its gaseous form.

3.3.1.4 Pollutants

Federal and/or California ambient air quality standards have been set for all of the following pollutants (which include the ozone precursors) pursuant to the Federal Clean Air Act or the California Health and Safety Code. Additionally, toxic air contaminants are discussed in this analysis because they have potential for concern in the study area. Data for pollutants monitored in the study area by CARB are presented in Section 3.3.3, Ambient Air Monitoring Data.

Ozone

Ozone (O_3) occurs in two layers of the atmosphere, the troposphere, and the stratosphere. The troposphere starts at ground level and wraps the earth's surface. In this layer, ground-level or "bad" ozone is an air pollutant that damages human health, vegetation, and many common materials. It is a key ingredient of urban smog. The troposphere extends to a level approximately 10 miles above ground level until it meets the second atmospheric layer, the stratosphere. The stratospheric or



SOURCE: Air Resources Board 2004

FIGURE 3.3-1

Air Basins in Covered Lands

"good" ozone layer extends upward from approximately 10 to 30 miles above the earth's surface and protects life on earth from the sun's harmful ultraviolet rays.

Unlike other pollutants, ozone is not emitted directly into the air by specific sources. Rather, ozone is a photochemical pollutant created by sunlight acting on other air pollutants known as precursors, specifically reactive organic gases (ROG) and oxides of nitrogen (NO_X). In order to reduce ozone concentrations, it is necessary to control the emissions of these ozone precursors. Significant ozone formation generally requires an adequate amount of precursors in the atmosphere and several hours in a stable atmosphere with strong sunlight. ROGs and NO_X are emitted from various sources throughout Kern County.

Ozone is a regional air pollutant. It is generated over a large area and is transported and spread by wind. Ozone, the primary constituent of smog, is the most complex, difficult to control, and pervasive of the criteria pollutants. Sources of ozone precursor gases number in the thousands. Common sources include consumer products, gasoline vapors, chemical solvents, and combustion products of various fuels. The ozone-forming chemical reactions originating from gas stations, motor vehicles, large industrial facilities, and small businesses such as bakeries and dry cleaners, often take place in another location from the source of the precursors, catalyzed by sunlight and heat. High ozone concentrations can form over large regions when emissions from motor vehicles and stationary sources are carried hundreds of miles from their origins. While the ozone in the upper atmosphere absorbs harmful ultraviolet light, ground-level ozone is damaging to the tissues of plants, animals, and humans, as well as a wide variety of inanimate materials such as plastics, metals, fabrics, rubber, and paints. Societal costs from ozone damage include increased medical costs, the loss of human and animal life, accelerated replacement of industrial equipment, and reduced crop yields.

High concentrations of ground-level ozone can adversely affect the human respiratory system, causing inflammation and irritation, and can induce symptoms such as coughing, chest tightness, shortness of breath, and worsening of asthma symptoms. Many respiratory ailments, as well as cardiovascular disease, are aggravated by exposure to high ozone levels. Ozone in sufficient doses increases the permeability of lung cells, rendering them more susceptible to toxins and microorganisms. High levels of ozone may negatively affect immune systems, making people more susceptible to respiratory illnesses including bronchitis and pneumonia. Ozone also accelerates aging and exacerbates preexisting asthma and bronchitis and, in cases of high concentrations, can lead to the development of asthma in active children. Active people, both children and adults, appear to be more at risk from ozone exposure than those with a low level of activity. Additionally, the elderly and those with respiratory disease are also considered sensitive populations for ozone.

Reactive Organic Gases and Volatile Organic Compounds

Hydrocarbons are organic gases that are formed of hydrogen and carbon. There are several subsets of organic gases, including volatile organic compounds (VOCs) and ROGs. Hydrocarbons are organic gases that are formed solely of hydrogen and carbon. ROGs include all hydrocarbons except those exempted by CARB. Therefore, ROGs are a set of organic gases based on state rules and regulations. VOCs are similar to ROGs in that they include all organic gases except those exempted by Federal law.

The primary health effects of hydrocarbons result from the formation of ozone. High levels of hydrocarbons in the atmosphere can interfere with oxygen intake by reducing the amount of available oxygen through displacement. There are no separate Federal or California ambient air quality standards for ROGs. Carcinogenic forms of ROGs are considered toxic air contaminants (TACs). An example is the carcinogen benzene. The health effects of individual ROGs are described below.

Oxides of Nitrogen

NO_X are a family of highly reactive gases that are a primary precursor to the formation of ground-level ozone and that react in the atmosphere to form acid rain. NO_X are ozone precursors that react with ROGs to form ozone (see above). NO_X are emitted from the use of solvents and combustion processes in which fuel is burned at high temperatures, principally from motor vehicle exhaust and stationary sources, such as electric utilities and industrial boilers. Nitrogen dioxide (NO_2) is a strong oxidizing agent that reacts in the air to form corrosive nitric acid as well as toxic organic nitrates.

Direct inhalation of NO_2 can also cause a wide range of health effects. NO_2 can irritate the lungs, cause lung damage, and lower resistance to respiratory infections such as influenza. Short-term exposures (i.e., less than 3 hours) to low levels of NO_2 may lead to changes in airway responsiveness and lung function in individuals with preexisting respiratory illnesses. These exposures may also increase respiratory illnesses in children. Long-term exposures to NO_2 may lead to increased susceptibility to respiratory infection and may cause irreversible alterations in lung structure. Other health effects associated with NO_2 are an increase in the incidence of chronic bronchitis and lung irritation. Chronic exposure to NO_2 may lead to eye and mucus membrane aggravation, along with pulmonary dysfunction. NO_X can cause fading of textile dyes and additives, deterioration of cotton and nylon, and corrosion of metals due to production of particulate nitrates. Airborne NO_X can also impair visibility. NO_2 is a major component of acid deposition in California. NO_X may affect both terrestrial and aquatic ecosystems. NO_2 in the air is a potentially significant contributor to a number of environmental effects such as acid rain and eutrophication in coastal waters. Eutrophication occurs when a body of water suffers an increase in nutrients that reduces the amount of oxygen in the water, resulting in excessive algae growth that produces an environment that is destructive to fish and other animal life.

Carbon Monoxide

Carbon monoxide (CO) is emitted by mobile and stationary sources as a result of incomplete combustion of hydrocarbons or other carbon-based fuels. CO is an odorless, colorless, poisonous gas that is highly reactive. CO is a byproduct of motor vehicle exhaust, which contributes more than two-thirds of all CO emissions nationwide. In cities, automobile exhaust can cause as much as 95% of all CO emissions. These emissions can result in high concentrations of CO, particularly in local areas with heavy traffic congestion. Other sources of CO emissions include industrial processes and fuel combustion in sources such as boilers and incinerators. Despite an overall downward trend in concentrations and emissions of CO, some metropolitan areas still experience high levels of the gas.

CO enters the bloodstream and binds more readily to hemoglobin, the oxygen-carrying protein in blood, which reduces the capacity of blood to carry oxygen and thus reduces oxygen delivery to organs and tissues. The health threat from CO is most serious for those who suffer from cardiovascular disease. Healthy individuals are also affected but only at higher levels of exposure. Exposure to CO near the levels of the ambient air quality standards can lead to fatigue, headaches, confusion, and dizziness. CO exposure has been associated with aggravation of angina pectoris and other aspects of coronary heart disease, decreased exercise tolerance in people with peripheral vascular disease and lung disease, impairment of central nervous system functions, and possible increased health risks to fetuses. At high altitudes, these effects are worsened.

Sulfur Dioxide

Sulfur dioxide (SO_2) is a colorless, irritating gas with a “rotten egg” smell formed primarily by the combustion of sulfur-containing fossil fuels. In the late 1970s in the SJVAB portion of Kern County, SO_2 was a pollutant of concern. With the successful application of regulations, the levels have been reduced significantly.

Effects from SO_2 exposures at levels near the 1-hour standard include bronchoconstriction accompanied by symptoms that may include wheezing, shortness of breath, and chest tightness, especially during exercise or physical activity. Children, the elderly, and people with asthma, cardiovascular disease, or chronic lung disease, such as bronchitis or emphysema, are most susceptible to these symptoms. Continued exposure at elevated levels of SO_2 results in increased incidence of pulmonary symptoms and disease, decreased pulmonary function, and increased risk of mortality. SO_2 also is a major precursor to $PM_{2.5}$, which is a significant health concern and is a main contributor to poor visibility.

Particulate Matter

Particulate matter pollution consists of very small liquid and solid particles floating in the air. Some particles are large or dark enough to be seen, such as soot or smoke. Others are so small they can be detected only with an electron microscope. Particulate matter is a mixture of materials that can include smoke, soot, dust, salt, acids, and metals. Particulate matter also forms when gases emitted from motor vehicles and industrial sources undergo chemical reactions in the atmosphere. PM_{10} refers to particles less than or equal to 10 microns in diameter. $PM_{2.5}$ refers to particles less than or equal to 2.5 microns in diameter and are a subset of PM_{10}.

In the western United States, there are sources of PM_{10} in both urban and rural areas. PM_{10} and $PM_{2.5}$ are emitted from stationary and mobile sources, including diesel trucks and other motor vehicles, power plants, industrial processing, wood-burning stoves and fireplaces, wildfires, dust from roads, construction, landfills, agriculture, and fugitive windblown dust. Because particles originate from a variety of sources, their chemical and physical compositions vary widely.

PM_{10} and $PM_{2.5}$ particles are small enough (about one-seventh the thickness of a human hair, or smaller) to be inhaled into and lodged in the deepest portion of the lung, evading the respiratory system's natural defenses. Health problems begin as the body reacts to these foreign particles. Acute and chronic health effects associated with high particulate levels include the aggravation of chronic respiratory disease, heart and lung disease, coughing, bronchitis, and respiratory illnesses in children. Particulates can also increase the number and severity of asthma attacks and reduce the body's ability to fight infection. Recent mortality studies have shown a statistically significant direct association between mortality and daily concentrations of particulate matter in the air. Non-health-related effects include reduced visibility and soiling of buildings.

Lead

Lead is a metal that is a natural constituent of air, water, and the biosphere (the portion of the earth and its atmosphere that can support life). Lead is neither created nor destroyed in the environment, so it essentially persists forever. Lead was used until recently to increase the octane rating in auto fuel; gasoline-powered automobile engines were a major source of airborne lead with the use of leaded fuels. Because the use of leaded fuel has been mostly phased out, the ambient concentrations of lead have dropped dramatically. The San Joaquin Valley Air Pollution Control District (SJVAPCD) no longer monitors lead in the ambient air of the SJVAB.

Because lead is only slowly excreted, exposures to small amounts of lead from a variety of sources can accumulate to harmful levels. Effects from inhalation of lead near the level of the ambient air quality standard include impaired blood formation and nerve conduction in humans. Lead can adversely affect the nervous, reproductive, digestive, immune, and blood-forming systems. Symptoms can include fatigue, anxiety, short-term memory loss, depression, weakness in the extremities, and learning disabilities in children. Lead is also thought to cause cancer.

Sulfates

Sulfates are particulate products of the combustion of sulfur-containing fossil fuels. When sulfur monoxide (SO) or SO_2 is exposed to oxygen, it precipitates out into sulfates (SO_3^{2-} or SO_4^{2-}). Data collected in Kern County identify levels of sulfates that are significantly less than the applicable health standards.

Sulfates are the fully oxidized ionic form of sulfur. Sulfates occur in combination with metal and/or hydrogen ions. In California, emissions of sulfur compounds occur primarily from the combustion of petroleum-derived fuels that contain sulfur (e.g., gasoline and diesel fuel). Sulfur in fuels is oxidized to SO_2 during the combustion process and subsequently converted to sulfate compounds in the atmosphere. The conversion of SO_2 to sulfates takes place comparatively rapidly and completely in urban areas of California due to regional meteorological features.

CARB's sulfates standard is designed to prevent aggravation of respiratory symptoms. Effects of sulfate exposure at levels above the standard include a decrease in ventilatory function, aggravation of asthmatic symptoms, and an increased risk of cardiopulmonary disease. Sulfates are particularly effective in degrading visibility, and because they are usually acidic, they can harm ecosystems and damage materials and property.

Hydrogen Sulfide

Hydrogen sulfide (H_2S) is a colorless gas with the odor of rotten eggs. It is formed during bacterial decomposition of sulfur-containing organic substances. In addition, it can be present in sewer gas and some natural gas, and it can be emitted as the result of geothermal energy exploitation.

Extremely high levels of H_2S can be harmful, even deadly. Fortunately, H_2S can be detected by the human nose at an extremely low level, a concentration that is about 0.0025 times lower than the threshold for harmful effects to human health. Most of the injuries related to H_2S occur in occupational settings where the potential to be exposed to sudden bursts of H_2S are much greater than the residential setting. In 1984, a CARB committee concluded that the state standard for H_2S is adequate to protect public health and significantly reduce odor annoyance. Breathing H_2S at levels above the California standard will result in exposure to a very disagreeable odor.

Vinyl Chloride

Vinyl chloride (chloroethene), a chlorinated hydrocarbon, is a colorless gas with a mild, sweet odor. Vinyl chloride is mostly 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.

Short-term exposure to vinyl chloride has been linked with central nervous system effects, eye irritations, respiratory tract irritations, and inhibition of blood clotting. Long-term exposure has been linked with liver damage, changes to bones at the ends of fingers, joint and muscle pain, changes in the skin, and central nervous system effects. Several case studies have reported changes in reproductive health and child-development health during pregnancy related to vinyl chloride exposure.

Visibility-Reducing Particulates

Visibility-reducing particles consist of suspended particulate matter, which is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size, and chemical composition, and can be made up

of many different materials, such as metals, soot, soil, dust, and salt. The statewide standard is intended to limit the frequency and severity of visibility impairment due to regional haze.

Hazardous Air Pollutants and Toxic Air Contaminants

Hazardous air pollutants (HAP) is a term used by the Federal Clean Air Act that includes a variety of pollutants generated or emitted by industrial production activities. Additionally, TACs are regulated by the CARB and local air districts. Ten TACs have been identified through ambient air quality data as posing the most substantial health risks in California. Emissions of TACs have the potential to cause various health effects, including cancer; as well as irritation of or damage to eyes, skin and the respiratory tract; drowsiness, dizziness and other neurological symptoms; blood disorders and cardiovascular diseases; and damage to liver or kidneys; weakness, lethargy, nausea, vomiting, or memory loss.

Based on CARB emission inventory data, the following were the TAC emissions that occurred in Kern County during 2005:

- Acetaldehyde (305 tons per year)
- Benzene (829 tons per year)
- 1,3-butadiene (91 tons per year)
- Carbon tetrachloride (0.02 ton per year)
- Hexavalent chromium (0.29 ton per year)
- Para-dichlorobenzene (54 tons per year)
- Formaldehyde (1,525 tons per year)
- Methylene chloride (84 tons per year)
- Perchloroethylene (110 tons per year)
- Diesel particulate matter (871 tons per year)

Coccidioides immitis (Valley Fever)

The *Coccidioides immitis* fungal spores are often found in the soil around rodent burrows, Indian ruins, and burial grounds. The spores become airborne when the soil is disturbed by winds, construction, farming, or other activities. This type of fungus is common in the southwestern United States and even more endemic in Kern County. The ecologic factors that appear to be most conducive to the survival and replication of the fungal spores are high summer temperatures, mild winters, sparse rainfall, and alkaline, sandy soils. Inhalation of *Coccidioides immitis* can cause Coccidioidomycosis, more commonly known as “Valley Fever.” Valley Fever symptoms generally occur within 2 to 3 weeks of exposure. Approximately 60% of Valley Fever cases are mild and display flu-like symptoms or no symptoms at all. Of those who are exposed and seek medical treatment, the most common symptoms are fatigue, cough, chest pain, fever, rash, headache, and joint aches. In some case, painful red bumps may develop. It should be noted that these symptoms are not unique to Valley Fever and may be caused by other illnesses as well.

3.3.2 Regulatory Setting

Air quality in California is regulated by several agencies, including the U.S. Environmental Protection Agency (EPA), CARB, and local air districts such as SJVAPCD, Eastern Kern Air Pollution Control District[2] (EKAPCD), and South Coast Air Quality Management District (SCAQMD), as described in this section.

Each of these agencies develops rules and/or regulations to attain compliance with applicable Federal and state air quality goals and other statutory requirements. Generally, EPA regulations establish minimum requirements, and state and local regulations may be more stringent. In California, mobile sources of air pollutants (e.g., cars and trucks) are largely controlled through EPA and CARB, while most stationary sources are regulated by local air districts (i.e., SJVAPCD and EKAPCD). The Covered Lands are subject to air quality regulations developed and implemented at the Federal, state, and local levels. Plans, policies, and regulations that are relevant to the alternatives evaluated in this Supplemental Draft EIS are discussed below.

3.3.2.1 Federal Laws, Regulations, and Standards

Federal Clean Air Act

The Federal Clean Air Act establishes national ambient air quality standards (NAAQS) for six criteria pollutants: ozone, CO, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and lead. Some portions of the Federal Clean Air Act (e.g., certain mobile source requirements) are implemented directly by EPA, while other portions of the act (e.g., stationary source requirements) are delegated by EPA to state and local agencies. In addition to establishing air quality standards, the Federal Clean Air Act specifies dates for achieving compliance with these standards and regulates various categories of HAPs. Applicable air quality standards are presented in Table 3.3-1.

Areas that do not meet the standards shown in Table 3.3-1 are classified as nonattainment areas. Air quality standard attainment for the study area is shown in Table 3.3-2. The determination for attainment is based on air quality monitoring data collected and maintained by the air districts. Some areas are unclassified, which means no monitoring data are available. Unclassified areas are typically treated as being in attainment. Because the attainment/nonattainment designation is pollutant specific, an area may be classified as nonattainment for one pollutant and attainment for another. Similarly, because the state and Federal standards differ, an area could be classified as attainment for the Federal standard and as nonattainment for the state standard for the same pollutant. The attainment status for each air basin is discussed in Section 3.3.3, Ambient Air Monitoring Data.

The Federal Clean Air Act also mandates that states submit and implement a state implementation plan (SIP) for local nonattainment areas. These plans must include pollution control measures that demonstrate how the standards will be met. In 1990, amendments to the Federal Clean Air Act identified specific emission-reduction goals for basins not meeting the NAAQS. These amendments require both a demonstration of reasonable progress toward attainment of emission-reduction goals and incorporation of additional sanctions for failure to attain or to meet interim milestones.

[2] Formerly the Kern County Air Pollution Control District.

Table 3.3-1. State and Federal Ambient Air Quality Standards

Pollutant	Averaging Time	Federal Standard	California Standard
Ozone (O_3)	8 Hour	0.075 part per million (147 micrograms/cubic meter) (2008-Present)	0.070 part per million (137 micrograms/cubic meter) (2006-Present)
	1 Hour	—	0.09 part per million (180 micrograms/cubic meter)
Carbon monoxide (CO)	8 Hour	9 parts per million (10 milligrams/cubic meter)	9.0 parts per million (10 milligrams/cubic meter)
	1 Hour	35 parts per million (40 milligrams/cubic meter)	20 parts per million (23 milligrams/cubic meter)
Nitrogen dioxide (NO_2)	Annual Average	0.053 part per million (100 micrograms/cubic meter)	0.030 part per million (56 micrograms/cubic meter)
	1 Hour	0.100 part per million (188 micrograms/cubic meter)	0.18 part per million (338 micrograms/cubic meter)
Sulfur dioxide (SO_2)	24 Hour	—	0.04 part per million (105 micrograms/cubic meter)
	3 Hour	0.5 part per million (1,300 micrograms/cubic meter)	—
	1 Hour	—	0.25 parts per million (655 micrograms/cubic meter)
Respirable particulate matter (PM_{10})	Annual Arithmetic Mean	—	20 micrograms/cubic meter
	24 Hour	150 micrograms/cubic meter	50 micrograms/cubic meter
Fine particulate matter ($PM_{2.5}$)	Annual Arithmetic Mean	15.0 micrograms/cubic meter	12 micrograms/cubic meter
	24 Hour	35 micrograms/cubic meter	—
Sulfates (SO_4)	24 Hour	—	25 micrograms/cubic meter
Lead (Pb)	30 Day Average	—	1.5 micrograms/cubic meter
	Calendar Quarter	1.5 micrograms/cubic meter	—
Hydrogen sulfide (H_2S)	1 Hour	—	0.03 part per million (42 micrograms/cubic meter)
Vinyl chloride (chloroethene)	24 Hour	—	0.010 part per million (26 micrograms/cubic meter)
Visibility-reducing particulates	1 Observation (8 hour)	—	Insufficient amount to produce an extinction coefficient of 0.23 per kilometer due to particles when the relative humidity is less than 70%.

Source: California Air Resources Board 2010a

Table 3.3-2. Basin Air Quality Attainment Status

Pollutant	San Joaquin Valley Air Basin (Kern County Portion)		Mojave Desert Air Basin (Kern County Portion)		South Coast Air Basin (Los Angeles County Portion)	
	Federal Standard	State Standard	Federal Standard	State Standard	Federal Standard	State Standard
Ozone (O_3) (1-hour standard)	No Federal standard[1]	Nonattainment	No Federal standard[1]	Nonattainment	No Federal standard[1]	Nonattainment
Ozone (O_3) (8-hour standard)	Nonattainment: extreme		Subpart 1, nonattainment		Nonattainment: extreme	
Respirable particulate matter (PM_{10})	Attainment (maintenance)	Nonattainment	Nonattainment: serious	Nonattainment	Nonattainment: serious	Nonattainment
Fine particulate matter ($PM_{2.5}$)	Nonattainment	Nonattainment	Unclassifiable/ attainment	Unclassified	Nonattainment	Nonattainment
Carbon monoxide (CO)	Unclassifiable/ attainment	Attainment	Unclassifiable/ attainment	Unclassified	Attainment	Attainment
Nitrogen dioxide (NO_2)	Unclassifiable/ attainment	Attainment	Unclassifiable/ attainment	Attainment	Attainment (maintenance)	Nonattainment
Sulfur dioxide (SO_2)	Attainment	Attainment	Unclassifiable	Attainment	Attainment	Attainment
Lead (Pb)	Attainment	Attainment	Attainment	Attainment	Attainment	Nonattainment
Hydrogen sulfide (H_2S)	No Federal standard	Unclassified	No Federal standard	Unclassified	No Federal standard	Unclassified
Sulfates (SO_4)	No Federal standard	Attainment	No Federal standard	Attainment	No Federal standard	Attainment
Visibility-reducing particles	No Federal standard	Unclassified	No Federal standard	Unclassified	No Federal standard	Unclassified

Source: 17 CCR 60201–60210 (state standards); 40 CFR 81.305 (Federal standards)

[1] On December 30, 2011, EPA issued a final rule determining that the SJVAB, MDAB and SCAB failed to attain the now-revoked 1-hour ozone NAAQS. 76 Fed.Reg. 82133. This determination has consequences with respect to the anti-backsliding provisions of the Federal Clean Air Act. 76 *Federal Register* . 82146; *see also* 40 CFR 52.282(d).

General Conformity Requirements

The EPA requires that Federal actions conform to the appropriate SIP for attaining clean air (*general conformity*) when the total direct and indirect emissions that will result from the Federal action would exceed certain de minimis thresholds. *Direct emissions* are "emissions of a criteria pollutant or its precursors that are caused or initiated by the Federal action and originate in a nonattainment or maintenance area and occur at the same time and place as the action and are reasonably foreseeable" (40 Code of Federal Regulations [CFR] 93.152). *Indirect emissions* are defined as "emissions of a criteria pollutant or its precursors (1) that are caused or initiated by the Federal action and originate in the same nonattainment or maintenance area but occur at a different time or place as the action; (2) that are reasonably foreseeable; (3) that the agency can practically control; and (4) for which the agency has continuing program responsibility." *Id.*

The conformity regulations further state that: "For purposes of this definition [of indirect emissions], even if a Federal licensing, rulemaking or other approving action is a required initial step for a subsequent activity that causes emissions, such initial steps do not mean that a Federal agency can practically control any resulting emissions." *Id.*

Conformity only applies to nonattainment and maintenance areas. In such areas, conformity requirements only apply to the pollutants for which the areas were designated nonattainment or maintenance.

The Federal action addressed in this EIS is issuance of an incidental take permit (ITP) in accordance with Section 10(a)(1)(B) of the Federal Endangered Species Act (ESA). This Federal action would not directly result in emissions of criteria pollutants. Nor would the Federal action result in indirect emissions because the Service does not exercise continuing control over any development activities that would result in emissions of criteria pollutants after issuance of the ITP. As the regulatory definition of indirect emissions states, a Federal approval that is a necessary first step for a later activity that will result in emissions does not mean that the Federal agency can practically control any of these emissions. In this case, the Federal action is a necessary first step to any development activity that will ultimately occur on the Covered Lands. However, the Service does not practically control any of this development activity[3]. Thus, a conformity determination is not required for this Federal action.

3.3.2.2 State Laws, Regulations, and Standards

California Clean Air Act of 1988

The California Clean Air Act of 1988, amended in 1992, requires all air districts in the state to endeavor to achieve and maintain state ambient air quality standards for criteria pollutants by the earliest practicable date. CARB is the state agency responsible for the coordination and administration of both state and Federal air pollution control programs in California. CARB sets the CAAQS and coordinates and guides regional and local air quality planning efforts required by the California Clean Air Act and to prepare and submit the SIP to the EPA. State and Federal standards are presented in Table 3.3-1 and attainment status for the study area is presented in Table 3.3-2.

[3] That a conformity analysis is not required is also supported by EPA's guidance document, *General Conformity Guidance: Questions and Answers*, which states: "Direct and indirect emissions must be reasonably foreseeable and the Federal agency must be able to practically control them as part of its *continuing* program responsibility." Question 6 (emphasis added) (U.S. Environmental Protection Agency 1994).

CARB also undertakes research, compiles emission inventories, develops suggested control measures, and provides oversight of local programs. CARB also establishes emission standards for motor vehicles. The Federal Clean Air Act allows California to adopt more stringent vehicle emission standards than the rest of the nation due to the state's severe ozone nonattainment status. CARB has also set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles.

The California Clean Air Act directs CARB to assess the contribution of ozone and ozone precursors in upwind basins or regions on ozone concentrations that violate the state ozone standard in downwind basins or regions. The movement of ozone and ozone precursors between basins or regions is referred to as "transport." In addition, the California Clean Air Act directs CARB to establish mitigation requirements for upwind districts commensurate with their contributions to the air quality problems in downwind basins or regions. The most recent requirements were established in 2003 in Title 17, California Code of Regulations (CCR), Sections 70600 and 70601. These regulations require that upwind regions include sufficient emission control measures in their ozone attainment plans to mitigate the effects of pollution sources in their jurisdictions on ozone concentrations in downwind areas commensurate with the level of contribution. Specifically, both the SJVAB and the SCAB must:

- require the adoption and implementation of all feasible measures as expeditiously as practicable,
- require the adoption and implementation of best available retrofit control technology on all existing stationary sources of ozone precursor emissions as expeditiously as practicable, and
- include measures sufficient to attain the state ambient air quality standard for ozone by the earliest practicable date in specified downwind air basins, including the MDAB, for violations caused by transport from the SJVAB or the SCAB.

Legislation Relevant to Toxic Air Contaminants

California's air toxics control program began in 1983 with the passage of the Toxic Air Contaminant Identification and Control Act, better known as Assembly Bill (AB) 1807 or the Tanner Bill. The Tanner Bill established a regulatory process for the scientific and public review of individual toxic compounds. When a compound becomes listed as a TAC under the Tanner process, CARB normally establishes minimum statewide emission control measures to be adopted and enforced by CARB or the local air pollution control districts. By 1992, 18 of the 189 Federal HAPs had been listed by CARB as state TACs. Later legislative amendments (AB 2728) required CARB to incorporate all 189 Federal HAPs into the state list of TACs.

The second major component of California's air toxics program that supplements the Tanner process was provided by the passage of AB 2588, the Air Toxics "Hot Spots" Information and Assessment Act of 1987. AB 2588 currently requires evaluation of over 600 air compounds, including all of the Tanner-designated TACs. Under AB 2588, specified facilities must quantify emissions of regulated air toxics and report them to the local air district. If the air district determines that a potentially significant public health risk is posed by a given facility, the facility is required to perform a health risk assessment and may be required to notify the public in the affected area if the calculated risks exceed specified criteria.

On August 27, 1998, CARB formally identified particulate matter emitted by diesel-fueled engines, or diesel particulate matter as a TAC. Diesel engines emit TACs in both gaseous and particulate forms. The particles emitted by diesel engines include toxic compounds, many of which have been identified as HAPs by EPA and as TACs by CARB. Since by weight, the vast majority of diesel exhaust particles are very small (94% of their combined mass consists of particles less than 2.5 microns in diameter), both the particles and the associated TACs are inhaled into the lungs. While the gaseous portion of diesel exhaust also contains TACs, CARB's August 1998 action was specific to diesel

particulate emissions, which, according to supporting CARB studies, represent 50 to 90% of the mutagenicity (ability to cause mutations) of diesel exhaust.

Under AB 1807, this designation prompted CARB to adopt measures to reduce diesel particulate matter emissions. In September 2000, CARB approved the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles (Diesel Risk Reduction Plan, California Air Resources Board 2000). The Diesel Risk Reduction Plan outlines a comprehensive and ambitious program that includes the development of numerous new control measures over the next several years aimed at substantially reducing emissions from new and existing on-road vehicles (e.g., heavy-duty trucks and buses), off-road equipment (e.g., graders, tractors, forklifts, sweepers, and boats), portable equipment (e.g., pumps), and stationary engines (e.g., stand-by power generators). TACs do not have ambient air quality standards. Instead, TAC effects are evaluated by calculating the health risks associated with a given exposure.

3.3.2.3 Local Laws, Regulations, and Standards

Air quality is regulated in the study area at the local level by SJVAPCD (SJVAB), EKAPCD (MDAB), and SCAQMD (SCAB). Each of these districts has adopted attainment plans to achieve state and Federal air quality standards to comply with regulatory requirements. Applicable plans and policies are discussed below.

San Joaquin Valley Air Pollution Control District

The SJVAPCD has adopted attainment plans to achieve state and Federal air quality standards to comply with regulatory requirements. SJVAPCD must monitor its progress in implementing attainment plans and must periodically report to CARB and EPA. SJVAPCD's primary means of implementing air quality plans and policies is through adoption and enforcement of rules and regulations. During the local approval process for individual projects, the SJVAPCD considers whether a proposed project is consistent with applicable attainment plans and rules and regulations. The most recently adopted plans and rules applicable to potential development within the study area are listed below.

In addition to SJVAPCD rules, and based in part on its extreme nonattainment status for the Federal 8-hour ozone standards, the SJVAPCD continues to employ three strategies for reducing emissions generated by indirect sources as identified in the 1991 air quality attainment plan. These strategies include enhanced use of the California Environmental Quality Act (CEQA) to encourage project-specific air quality mitigation measures, the encouragement of all cities and counties in the SJVAB to adopt an air quality element or air quality policies as part of their general plans, and implementation of an "indirect source" review and mitigation program.

Attainment Plans

- **Extreme 1-Hour Ozone Attainment Demonstration Plan.** This plan sets forth measures and emission reduction strategies designed to attain the Federal 1-hour ozone standard by November 15, 2010, and an emissions inventory, outreach, and Rate of Progress demonstration. (San Joaquin Valley Air Pollution Control District 2004).
- **2007 8-Hour Ozone Plan**. This plan sets forth measures and a "dual path" strategy to attain the Federal 8-hour ozone standard for the SJVAB by reducing emissions on ozone and particulate matter precursors. The plan also includes provisions for improved pollution control technologies for mobile and stationary sources, as well as an increase in state and Federal funding for incentive-based measures to reduce emissions. All local measures would be adopted by SJVAPCD before 2012 (San Joaquin Valley Air Pollution Control District 2007a). This plan was approved by EPA on December 15, 2011.

- **2007 PM_{10} Maintenance Plan**. On October 25, 2007, CARB approved SJVAPCD's 2007 PM_{10} Maintenance Plan and Request for Redesignation with modifications to the transportation conformity budgets. On September 25, 2008, the EPA redesignated the SJVAB to attainment for the PM_{10} NAAQS and approved the PM_{10} maintenance plan.
- **2008 $PM_{2.5}$ Plan.** The SJVAPCD Governing Board adopted the 2008 $PM_{2.5}$ plan on April 30, 2008. This plan is designed to assist the San Joaquin Valley Air Basin in attaining all $PM_{2.5}$ standards including the 1997 Federal standards, the 2006 Federal standards, and the state standard as soon as possible**.** On July 13, 2011, EPA issued a proposed rule partially approving the 2008 $PM_{2.5}$ plan. Subsequently, on November 9, 2011, EPA issued a final rule approving most of the plan with an effective date of January 9, 2012. However, the EPA disapproved the plan's contingency measures because they would not provide sufficient emission reductions.

SB 656 Particulate Matter Control Measure Implementation Schedule

SB 656 was enacted in 2003 and codified as Health and Safety Code Section 39614. SB 656 seeks to reduce exposure to PM_{10} and $PM_{2.5}$ and to make further progress toward attainment of the NAAQS and CAAQS for PM_{10} and $PM_{2.5}$. SB 656 required CARB, in consultation with local air districts, to develop and adopt lists of "the most readily available, feasible, and cost-effective" particulate matter control measures. Subsequently, the air districts were required to adopt implementation schedules for the relevant control measures in their district. In June 2005, SJVAPCD adopted its SB 656 Particulate Matter Control Measure Implementation Schedule (San Joaquin Valley Air Pollution Control District 2005). The SJVAPCD analysis of the CARB list concluded that all but one of the measures that apply to SJVAPCD sources had been implemented or were in one of SJVAPCD's attainment plans for adoption within the next 2 years. The remaining measure was related to a future amendment of a rule for gasoline transfer into stationary storage containers, delivery vessels, and bulk plants.

Rules

- **Rule 2201 (New and Modified Stationary Source Review)** requires review of new and modified stationary sources of air pollution and prohibits increases of emissions above specified thresholds from new and modified stationary sources of all nonattainment pollutants and their precursors.
- **Rule 4601 (Architectural Coatings)** limits VOC emissions from architectural coatings. This rule specifies architectural coating storage, cleanup, and labeling requirements.
- **Rule 4641 (Cutback, Slow Cure, and Emulsified Asphalt, Paving, and Maintenance Operations)** limits VOC emissions by restricting the application and manufacturing of cutback asphalt, slow cure asphalt, and emulsified asphalt for paving and maintenance operations.
- **Rule 4661 (Organic Solvents)** limits the emissions of VOCs from the use of organic solvents, and specifies reduction, monitoring, reporting, and disposal requirements.
- **Rule 4663 (Organic Solvent Cleaning, Storage, and Disposal)** includes restrictions on the types of solvents that may be used and restrictions on the organic content of solvents used for cleaning.
- **Rule 4901 (Wood Burning Fireplaces and Wood Burning Heaters)** limits emissions of CO and PM from wood-burning fireplaces and wood-burning heaters, and establishes a public education program to reduce wood burning emissions. The rule restricts sales and transfers of wood-burning heaters, limits wood-burning fireplaces or heaters in new residential developments, and prohibits certain fuel types.

- **Rule 4902 (Residential Water Heaters)** limits NO_X emissions from residential water heaters, restricts natural-gas-fired water heaters emissions, and requires certification and identification of water heaters.
- **Rule 8011 (General Requirements)** reduces ambient concentrations of PM_{10} by requiring actions to prevent, reduce, or mitigate anthropogenic fugitive dust emissions. Rule 8011 prohibits use of certain materials as soil stabilizers or dust suppressants.
- **Rule 8021 (Construction, Demolition, Excavation, Extraction and Other Earthmoving Activities)** requires fugitive dust emissions throughout construction activities (from preactivity to active operations and during periods of inactivity) to comply with the conditions of a stabilized unpaved road surface and to not exceed an opacity limit of 20%, by means of water application, chemical dust suppressants, or constructing and maintaining wind barriers. A dust control plan is also required and must be submitted to the air pollution control officer at least 30 days prior to the start of any construction activities on any residential development site that include 10 acres or more of disturbed surface area, or will include moving more than 2,500 cubic yards per day of bulk materials on at least 3 days.
- **Rule 8031 (Bulk Materials)** limits fugitive dust emissions from the outdoor handling, storage, and transport of bulk materials by prohibiting activities unless appropriate control measures are implemented to limit visible dust emissions to 20% opacity or to comply with the conditions for a stabilized surface as defined in Rule 8011 (General Requirements).
- **Rule 8041 (Carryout and Trackout)** limits carryout and trackout during construction, demolition, excavation, extraction, and other earthmoving activities (Rule 8021), from bulk materials handling (Rule 8031), from paved and unpaved roads (Rule 8061), and from unpaved vehicle and equipment traffic areas (Rule 8071) where carryout has occurred or may occur.
- **Rule 8051 (Open Areas)** requires fugitive dust emissions from any open area having 3.0 acres or more of disturbed surface area that has remained undeveloped, unoccupied, unused, or vacant for more than 7 days to comply with the conditions of a stabilized unpaved road surface and to not exceed an opacity limit of 20%, by means of water application, chemical dust suppressants, paving, applying and maintaining gravel, or planting vegetation.
- **Rule 8061 (Paved and Unpaved Roads)** specifies the width of paved shoulders on paved roads and guidelines for medians. The rule requires gravel, roadmix, paving, landscaping, watering, and/or the use of chemical dust suppressants on unpaved roadways to prevent exceeding an opacity limit of 20%. Exemptions to this rule include "any unpaved road segment with less than 26 annual average daily trips."
- **Rule 8071 (Unpaved Vehicle/Equipment Traffic Areas)** limits fugitive dust from unpaved vehicle and equipment traffic areas by using gravel, roadmix, paving, landscaping, watering, and/or the use of chemical dust suppressants to prevent exceeding an opacity limit of 20%. Exemptions to this rule include "unpaved vehicle and equipment traffic areas with less than 50 annual average daily trips."
- **Rule 9510 (Indirect Source Review)** is intended to reduce emissions of NO_X and PM_{10} from new development projects. The rule applies to development projects that seek to gain a discretionary approval for projects that, upon full buildout, would include any one of the following: 50 residential units; 2,000 square feet of commercial spaces; 25,000 square feet of industrial space; 100,000 square feet of heavy industrial space; 20,000 square feet of medical office space; 39,000 square feet of general office space; 9,000 square feet of educational space; 10,000 square feet of government space; 20,000 square feet of recreational space; or 9,000 square feet of uncategorized space. Under Rule 9510, new development projects are required to mitigate a portion of their emissions by mitigating on-site emissions or contributing to a mitigation fund that would be used to pay for the most cost-effective projects to reduce

emissions. Specifically, development projects are required to reduce 20% of NO_X and 45% of PM_{10} emissions from construction equipment relative to the statewide average and reduce 33.3% of NO_X and 50% of PM_{10} operational baseline emissions over a 10-year period. Examples of such projects include retirement and crushing of gross-polluting cars, replacement of older diesel engines and diesel-powered vehicles, and programs that would encourage the replacement of gas-powered lawn mowers with electric lawn mowers.

Eastern Kern Air Pollution Control District

Attainment Plans

Similar to the plans developed by the SJVAPCD for the SJVAB, the EKAPCD has adopted attainment plans to achieve state and Federal air quality standards to comply with regulatory requirements within the MDAB. The most recently adopted plans applicable to the study are described below.

- **2002 Ozone Attainment Demonstration, Maintenance Plan, and Redesignation Request** – Ozone data collected from 1999 through 2002 at Eastern Kern County's three ozone monitoring stations indicated attainment of the NAAQS has been achieved, and therefore the EKAPCD requested redesignation of the ozone attainment status. The 2002 plan further demonstrates:
  - how improvements to ozone levels in Eastern Kern County are due to implementation of ozone control strategies contained in the region's SIP,
  - the significant ozone precursor (VOC and NO_X) emission reductions generated in the region are permanent and enforceable, and
  - how the maintenance plan will ensure the region will not experience any exceedances through the year 2015 (Eastern Kern Air Pollution District 2003).

As described above, CARB, in consultation with local air districts, developed a list of "the most readily available, feasible, and cost-effective" PM control measures. In September 2007, the EKAPCD adopted its "SB 656 Rule Development Schedule" (Eastern Kern Air Pollution District 2007). After review of the CARB control measures, the rule development schedule included new or modified rules related to agricultural operations, windblown dust, and fugitive dust (inactive disturbed land and trackout and carryout).

Rules

The following EKAPCD rules would apply to typical residential development in the study area. All commercial development is assumed to occur in the SJVAB.

- **Rule 402 (Fugitive Dust)** prescribes that emissions of fugitive dust from any active operation may not remain visible in the atmosphere beyond the property line of an emission source and that a construction project employ one or more reasonably available control measures to minimize fugitive dust emissions from each fugitive dust source type which is part of any active operation. Additional requirements are set forth for large operations (operation involving in excess of 100 contiguous acres of disturbed surface area or any earth-moving activity exceeding a daily volume of 10,000 cubic yards three times during the most recent 365-day period).
- **Rule 410.1A (Architectural Coating Controls)** limits VOC emissions from architectural coatings and establishes limits, storage, cleanup, and labeling requirements for architectural coatings.
- **Rule 410.5 (Cutback, Slow Cure & Emulsified Asphalt Paving and Maintenance Operations)** limits VOC emissions by restricting the application and manufacturing of cutback asphalt, slow cure asphalt, and emulsified asphalt for paving and maintenance operations.

- **Rule 416.1 (Wood-burning Heaters and Wood-Burning Fireplaces)** limits emissions of smoke (particulate matter), organic gases and CO from wood burning fireplaces in new housing subdivisions and wood burning heaters throughout Eastern Kern County.
- **Rule 424 (Residential Water Heaters)** limits NO_X emissions from natural gas-fired residential water heaters.

South Coast Air Quality Management District

Attainment Plans

SCAQMD has adopted attainment plans to achieve state and Federal air quality standards to comply with regulatory requirements. The most recently adopted plans are discussed below.

- **2003 Air Quality Management Plan.** The SCAQMD Governing Board adopted the 2003 Air Quality Management Plan (AQMP) on August 1, 2003. The 2003 AQMP updates the attainment demonstration for the Federal standards for ozone and PM_{10}, replaces the 1997 attainment demonstration for the Federal CO standard, provides a basis for a maintenance plan for CO for the future, and updates the maintenance plan for the Federal NO_2 standard that the SCAB has met since 1992. On March 10, 2009, the EPA issued a final rule partially approving and partially disapproving the 2003 AQMD (South Coast Air Quality Management District 2003). On February 2, 2011, the U.S. Court of Appeals for the Ninth Circuit ruled that EPA's partial approval was arbitrary and capricious. The Court further ruled that EPA should have ordered California to submit a revised attainment plan for the South Coast Air Basin after it disapproved the 2003 AQMP and that EPA should have required transportation control measures.
- **2007 Air Quality Management Plan.** The SCAQMD Governing Board adopted the 2007 AQMP on June 1, 2007. This AQMP focuses on ozone and $PM_{2.5}$. The 2007 AQMP includes the same updates as the 2003 AQMP and incorporates significant new scientific data, primarily in the form of updated emissions inventories, ambient measurements, new meteorological episodes, and new air quality modeling tools. As part of the 2007 AQMP, the SCAQMD requested that the EPA "bump up" the ozone nonattainment status from severe to extreme to allow additional time for the South Coast Air Basin to achieve attainment with the Federal standard. The additional time would provide for implementation of state and Federal measures that apply to sources over which the SCAQMD does not have control (South Coast Air Quality Management District 2007). The 2007 AQMP has been approved by CARB; however, on November 22, 2010, the EPA issued a proposed rule to approve in part and disapprove in part the portions related to attainment of the Federal $PM_{2.5}$ standard. The EPA, however, approved the redesignation of the South Coast Air Basin to an extreme ozone nonattainment area, effective as of June 4, 2010. On February 8, 2011, the U.S. District Court for the Central District of California approved a consent decree under which the EPA agreed to sign for publication in the Federal Register a notice of its final action on the portions of the 2007 State SIP and SCAQMD 2007 AQMP that relate to EPA's nonattainment designation of the SCAB with respect to the 1997 Federal $PM_{2.5}$ and ozone standards by September 30, 2011, and December 15, 2011, respectively. The ozone-related portion of this plan was approved by EPA on December 15, 2011. EPA issued a proposed rule partially approving the $PM_{2.5}$-related portion of the 2007 plan. Subsequently on November 9, 2011, EPA issued a final rule approving most of the $PM_{2.5}$ plan with an effective date of January 9, 2012. However, the EPA disapproved the $PM_{2.5}$ plan's contingency measures because they would not provide sufficient emission reductions.