4.4 AIR QUALITY

1. SUMMARY

*The Vista Canyon project site is located within the South Coast Air Basin (SoCAB) (see **Figure 4.4-1, South Coast Air Basin**), which is bound by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. The proposed Vista Canyon project is a mixed-use, transit-oriented development on approximately 185 acres of land located south of and adjacent to State Route 14 (SR-14 or Antelope Valley Freeway). The proposed project includes a mixture of residential and commercial development, parks and recreational facilities, trails, open space, water reclamation plant, and a multi-modal transit center.*

Construction of the proposed project would result in the emission of volatile organic compounds (VOCs), nitrogen oxides (NO_X), carbon monoxide (CO), sulfur oxides (SO_X), particulate matter 10 microns or less in diameter (PM_{10}), and particulate matter 2.5 microns or less in diameter ($PM_{2.5}$) from heavy-duty construction equipment exhaust, fugitive dust (PM_{10} and $PM_{2.5}$) from earth-moving activities, and VOCs from asphalt paving and architectural coating. Off-site emissions during construction normally consist of exhaust emissions and entrained paved road dust (PM_{10} and $PM_{2.5}$) from construction equipment delivery, material delivery, and construction worker commute trips. Construction of the proposed project is expected to begin in 2012 and last until 2015.

Operational emissions would be generated by both stationary and mobile sources as a result of normal day-to-day activity on the project site. Stationary emissions would be generated by the consumption of natural gas for space and water heating devices, the operation of landscape maintenance equipment, and from the use of consumer products. Mobile emissions would be generated by motor vehicles (e.g., passenger vehicles, trucks, buses, motorcycles, etc.) traveling to and from the project site, including motor vehicles traveling to the Metrolink and Bus Transfer Station. Emissions from the new water reclamation plant would be generated from the periodic operation of standby generators, fugitive emissions from treatment process, worker commutes, and natural gas combustion for building and water heating.

Construction emissions would exceed the South Coast Air Quality Management District's (SCAQMD) significance thresholds for VOCs and NO_X, and would exceed localized significance thresholds for nitrogen dioxide (NO_2), $PM_{2.5}$ and PM_{10}. Operational emissions would exceed SCAQMD significance thresholds for VOC, NO_X, CO, and PM_{10}. The project also would result in regional emission levels that are cumulatively considerable for VOCs, NO_X, CO, $PM_{2.5}$, and PM_{10}. Mitigation measures are provided to reduce the level of emissions and associated potential impacts. Nonetheless, impacts would be significant and unavoidable.

2. INTRODUCTION

This section describes the ambient air quality in the Vista Canyon project area and provides a comparison of existing air quality to applicable federal, state, and local air pollutant standards. In addition, sources of air emissions in the vicinity of the project site are identified and discussed. This section also identifies the plans and policies developed in efforts to improve air quality. Finally, this section evaluates potential air quality impacts associated with the project and identifies mitigation measures to reduce potential impacts. Sources utilized in this discussion include the SCAQMD's *California Environmental Quality Act (CEQA) Air Quality Handbook* and air quality data from the SCAQMD. Emission calculations and air quality modeling conducted for the project are provided in **Appendix 4.4** of this Draft EIR.

3. EXISTING CONDITIONS

(a) Climate

The air quality of a region is directly affected by the climate including temperature, wind, humidity, and cloud cover. The following describes the ways in which climate affects air quality:

- Temperature is important to the creation of inversion layers that can temporarily trap pollutants near the ground surface and prevent vertical mixing and dispersion of air pollutants.
- The importance of wind to air pollution is considerable. The direction and speed of the wind determines the horizontal dispersion and transport of air pollutants. Low mixing heights and light winds are conducive to the accumulation of air pollutants.
- High relative humidity not only restricts visibility, it contributes to the conversion of sulfur dioxide (SO_2) to sulfate (SO_4), which increases the acidity of the atmosphere, forming acid rain.
- The degree of cloud cover in reducing the amount of sunlight on the earth's surface is also important because sunlight affects photochemical reactions in the atmosphere that contribute to the production of ozone (O_3). The higher the temperature and the more direct the sunlight, the more ozone is produced.

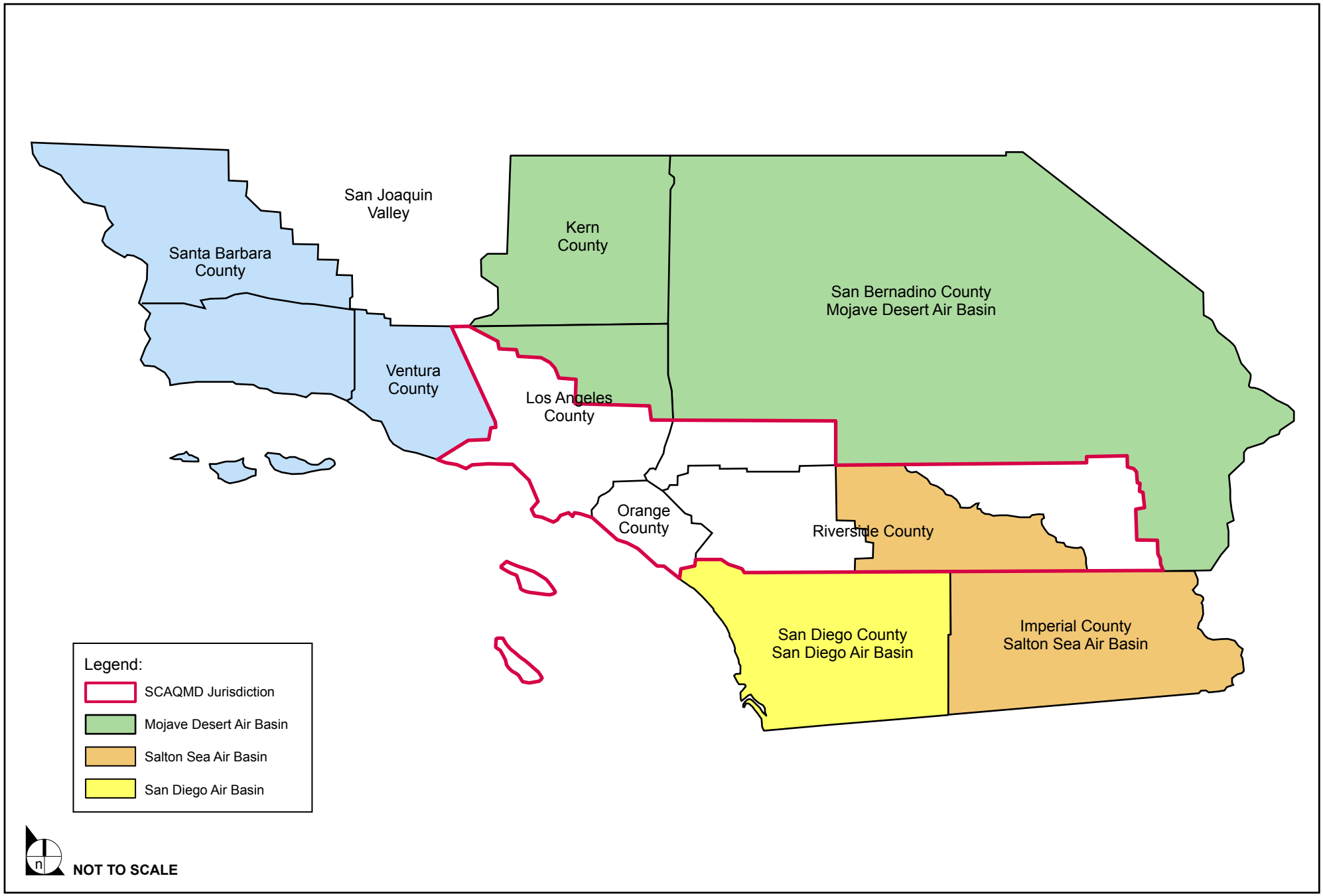


FIGURE **4.4-1**

South Coast Air Basin

112-024•10/09

(1) Regional Climate

Southern California lies in a semi-permanent high-pressure zone of the Eastern Pacific region. Summertime weather is dominated by the movement and intensity of a semi-permanent high-pressure system that is normally centered several hundred miles southwest of California. In the spring, summer, and fall, the climate is heavily influenced by marine air; light winds in the region allow marine air to regulate temperatures and airflow during these periods. In the winter, low-pressure weather systems originating in the northern Pacific Ocean bring clouds, wind, and rain into Southern California. Santa Ana winds, caused by high pressure in the high plateau region located northeast of California, intermittently occur during winter and fall.

The climate of Southern California is semi-arid, and characterized by warm summers, mild winters, infrequent seasonal rainfall, moderate daytime onshore breezes, and moderate humidity. Annual average temperatures throughout the region vary from the low to middle 60 degrees Fahrenheit (°F). However, due to decreased marine influence, the inland areas show greater variability in average annual minimum and maximum temperatures. January is the coldest month, with average minimum temperatures of 47°F in downtown Los Angeles and 36°F in San Bernardino. Virtually all portions of the region have recorded maximum temperatures above 100°F.

In general, more than 90 percent of the region's rainfall occurs from November through April (see **Table 4.4-1**, **Average Monthly Temperatures and Precipitation for Dry Canyon Reservoir, California, 1921-1990**). Annual average rainfall varies from approximately 9 inches in Riverside to 14 inches in downtown Los Angeles. Monthly and yearly rainfall totals are extremely variable. Summer rainfall usually consists of widely scattered thundershowers near the coast and slightly heavier shower activity in the eastern portion of the region and near the mountains. Rainy days comprise 5 to 10 percent of all days, with the frequency being higher near the coast. The influence of rainfall on the air pollutant levels in the region is minimal. Although some washout of pollution would be expected with winter rains, air masses that bring precipitation of consequence are very unstable and provide dispersion that masks washout effects. Summer thunderstorm activity affects pollution only to a limited degree. However, heavy clouds associated with summer storms minimize O_3 production because of reduced sunshine and cooler temperatures.

Table 4.4-1
Average Monthly Temperatures and Precipitation for Dry Canyon Reservoir, California, 1921–1990

Month	Mean Daily Temperatures (°F)		Mean Monthly Precipitation
	Maximum	Minimum	
January	63	36	2.54
February	65	38	2.66
March	68	39	2.34
April	72	43	1.27
May	78	47	0.32
June	85	51	0.03
July	94	56	0.02
August	94	56	0.13
September	90	53	0.28
October	81	47	0.42
November	71	42	1.46
December	65	38	2.27
Annual	77	46	13.74 (total)

Source: California Climate Data Archive, National Weather Service Cooperative Network, Dry Canyon Reservoir, California, Station 042516. The data may be viewed from the following website: http://www.calclim.dri.edu/scaall.html.

Due to the generally clear weather, about 75 percent of available sunshine is received in the SoCAB. Clouds absorb the remaining 25 percent. The ultraviolet portion of this abundant radiation is a key factor in photochemical reactions. On the shortest day of the year there are approximately 10 hours of possible sunshine, and approximately 14 hours on the longest day of the year. The percentage of cloud cover during daylight hours varies from 47 percent at Los Angeles International Airport (LAX) to 35 percent at Sanberg, a mountain location. The number of clear days also increases with distance from the coast: 145 days at LAX and 186 days at Burbank.[1] The SoCAB typically receives much less sunshine during the first six months of the year than the last six months. This difference is attributed to the greater frequency of deep marine layers and the subsequent increase in stratus clouds during the spring and to the fact that the rainy season begins late in the year (November) and continues through early spring.

The vertical dispersion of air pollutants in the region is frequently restricted by the presence of a persistent temperature inversion in the atmospheric layers near the earth's surface. Normally, the

1 National Oceanic and Atmospheric Administration, "1999 Local Climatological Data: Annual Summary with Comparative Data, Los Angeles, California, International Airport."

temperature of the atmosphere decreases with altitude. However, when the temperature of the atmosphere increases with altitude, the phenomenon is termed an inversion. An inversion condition can exist at the surface or at any height above the ground. The bottom of the inversion, known as the mixing height, is the height of the base of the inversion.

Two distinct temperature inversion structures control the vertical mixing of air pollution in the region. During the summer, warm, high-pressure descending (subsiding) air is undercut by a shallow layer of cool marine air. The boundary between these two layers of air is a persistent marine subsidence/inversion. This boundary prevents vertical mixing that effectively acts as an impervious lid to pollutants over the entire region. The mixing height for this inversion structure is normally situated 1,000 to 1,500 feet above mean sea level.

A second inversion-type forms in conjunction with the drainage of cool air off the surrounding mountains at night followed by the seaward drift of this pool of cool air. The top of this layer forms a sharp boundary with the warmer air aloft and creates nocturnal radiation inversions. These inversions occur primarily in the winter when nights are longer and onshore flow is weakest. They are typically only a few hundred feet above mean sea level. These inversions effectively trap pollutants, such as oxides of NO_x and CO from vehicles, as the pool of cool air drifts seaward. Winter is, therefore, a period of high levels of primary pollutants along the coastline.

In general, inversions in the region are lower before sunrise than during the daylight hours. As the day progresses, the mixing height normally increases as the warming of the ground heats the surface air layer. As this heating continues, the temperature of the surface layer approaches the temperature of the base of the inversion layer. When these temperatures become equal, the inversion layer's lower edge begins to erode and, if enough warming occurs, the layer breaks up. The surface layers are gradually mixed upward, diluting the previously trapped pollutants. The breakup of inversion layers frequently occurs during mid to late afternoon on hot summer days. Winter inversions usually break up by mid morning.

(2) Local Climate

The Vista Canyon project site, with the Sierra Pelona Mountains on the north, and the Santa Susana and San Gabriel Mountains to the south, east, and west, is in a transitional microclimatic zone located between two climatic types, termed "valley marginal" and "high desert." The project site is situated far enough from the ocean to escape coastal damp air and fog, and also far enough from the high desert to escape extremely hot summers and harsh winters. As a result, summers are dry and warm, with daytime temperatures ranging from 70 to 100°F. Winters are temperate, semi-moist, and sunny, with daytime

temperatures ranging from 40 to 65°F. Rainfall averages 13 to 24 inches a year, with the rainy season running primarily from October to April.

The topography surrounding the project site has resulted in two separate wind flow patterns through the southern and northern parts of the Santa Clarita Valley. Diurnal winds in the southern part of the Valley flow northerly from the San Fernando Valley through the Newhall Pass. These daytime wind flows are oftentimes enhanced by localized up-valley or mountain pass winds, and are most dominant during summer, which is the peak smog season. Diurnal winds in the northern part of the Valley flow easterly from Ventura County through the Santa Clara River Valley. During the night, mountain, desert, and valley air cools and flows southerly and westerly back towards the ocean, producing a gentle "drainage wind." On most days, these two flow patterns meet and form a convergence zone, usually in the northern half of the Valley, during which wind speeds accelerate.

During the spring and the early part of summer, the diurnal wind patterns disperse air pollutants through and out of the Santa Clarita Valley. However, this dispersion is less pronounced during the late summer and winter months because of lighter wind speeds, except during an occasional winter storm or during strong Santa Ana wind conditions when winds flow southerly and southwesterly from the desert of the Great Basin through canyons to the northeast and Tejon Pass to the north. The Santa Ana winds are usually warm, always very dry, and often carry great amounts of dust. The winds are particularly strong in mountain passes and at the mouths of canyons. On the average, Santa Ana winds occur 5 to 10 times per year and can last up to several days per occurrence.

In 2004, the SCAQMD provided an expanded air quality analysis of the Santa Clarita Valley subregion. The *Santa Clarita Subregional Analysis* indicated that the Santa Clarita Valley "is a relatively small contributor to the total emissions of the key pollutants" in both Los Angeles County and the SoCAB. Emissions occurring in the Santa Clarita Valley typically comprise less than 3 percent of the County and 2 percent of the SoCAB, based on 2002 emissions inventory data.[2] While the Santa Clarita Valley contributes a small amount of pollutants to the region, it experiences disproportionately high concentrations of ozone and particulate matter. The subregional analysis stated that "the overwhelming contribution of pollution transport to the Santa Clarita Valley comes from the San Fernando Valley and metropolitan Los Angeles."[3] This is evidenced by meteorological monitoring data for the Santa Clarita Valley that show the primary daytime wind vectors are from the southern and upwind emission source areas. The subregional analysis also indicated that, "in general, average transport, which is characterized by a moderate-to-strong sea breeze through the Newhall Pass, occurs two-thirds of all days" and that "in

2 South Coast Air Quality Management District, *Santa Clarita Valley Subregional Analysis*, (2004) 3-1.

3 Ibid., 2-3.

contrast, Santa Clarita is mostly impacted from local emissions under calm winds and weak offshore flow which occurs less than 10 percent of all days."[4] Therefore, the disproportionate impact of air pollutants in the Santa Clarita Valley is caused by the regional and local climate, as described above. The SCAQMD's *Santa Clarita Subregional Analysis* is provided in **Appendix 4.4**.

(b) South Coast Air Basin

As a branch of the California Environmental Protection Agency (CalEPA), the California Air Resources Board (CARB) oversees air quality monitoring, planning, and control throughout California. In order to effectively do this, CARB has divided the state into regional air basins according to topographic features. The Vista Canyon project site is located within the SoCAB (see **Figure 4.4-1, South Coast Air Basin**).

The SoCAB is under the jurisdiction of the SCAQMD[5], and is bound by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. The SoCAB consistently generates the highest levels of smog in the United States. Smog is a general term based on the words smoke and fog, and is used to describe dense, visible air pollution. The brownish haze in the air that is characteristic of smog is formed when O_3 mixes with particulates, such as dust and vehicle exhaust particulates, NO_2, and other compounds. Ozone, itself, is formed when combustion emissions and gaseous emissions, such as VOCs and NO_X, undergo photochemical reactions in sunlight. In the upper atmosphere, O_3 helps to shield the earth from harmful radiation; however, in the lower atmosphere where people live, it poses health risks and damages crops, rubber, and other materials. Because of these hazards, SCAQMD monitors and regulates the emissions of VOCs and NO_X, which are referred to as "ozone precursors."

The topography and climate of the SoCAB make it vulnerable to smog formation. During the summer months, a warm air mass frequently descends over the lower, cool, moist marine air layer in the basin. The warm upper layer forms a cap over the marine layer and inhibits the air pollutants generated near the ground from dispersing upward. Light summer winds and the surrounding mountains further limit the horizontal disbursement of the pollutants. Therefore, the summertime concentration of pollutants in the basin allows the summer sunlight to generate high levels of O_3 and, therefore, smog. "Smog episode" warnings are issued when an occurrence of high concentrations of O_3 is predicted that could endanger or

4 Ibid., 2-3.

5 Overall, the SCAQMD has jurisdiction over Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties), the Riverside County portions of the Salton Sea Air Basin (SSAB), and Mojave Desert Air Basin (MDAB), totaling approximately 10,743 square miles.

cause harm to the public.[6] During the winter months, however, cool ground temperatures and very light winds cause extremely low inversions, allowing pollutants to disperse upwards during the late night and early morning hours. On days when no inversions occur, or when winds average 25 miles per hour or more, there are no important smog effects.

(c) Pollutants of Concern

Air pollutants of concern within the SoCAB are primarily generated by stationary and mobile sources.

(1) Stationary Source Emissions

Stationary sources can be grouped under the following categories: fuel combustion; waste disposal; cleaning and surface coatings; petroleum production and marketing; industrial processes; solvent evaporation; and other miscellaneous processes. Stationary sources are the major contributors of PM_{10} and $PM_{2.5}$ emissions in the SoCAB.

Stationary sources also are known as "point sources," which have one or more distinct emission sources at a facility, or "area sources," which are widely distributed emission sources. Point sources are usually associated with manufacturing and industrial uses and include sources (such as refinery boilers or combustion equipment) that produce electricity or process heat. Commercial establishments also contain point sources such as gasoline stations and charbroilers in restaurants. Examples of "area sources" include residential water heaters, painting operations, lawn mowers, agricultural fields, landfills, and consumer products, such as barbecue lighter fluid or hair spray. Construction activities, such as excavation and grading, also contribute to area source emissions.

(2) Mobile Source Emissions

Mobile sources refer to operational and evaporative emissions from on- and off-road motor vehicles, including tailpipe and evaporative emissions. On-road mobile sources include light-duty passenger vehicles; light-, medium-, and heavy-duty trucks; motorcycles; urban buses; school buses; and motor homes, all of which may be legally operated on roadways and highways. Off-road mobile sources include mobile gasoline, diesel, and "other" commercial and industrial equipment; off-road utility vehicles; construction equipment; lawn and garden equipment; farm and logging equipment; aircraft, and airport service equipment and vehicles; locomotives and railway maintenance equipment; and all motorized

---

6 Various levels of smog episodes are reported for the pollutant ozone. The declaration of a first, second or third stage smog alert is based on the degree of health risk. When the levels of ozone exceed a certain standard, a first-stage smog alert is made indicating that the air is unhealthy for everyone. A second-stage smog alert indicates the air is hazardous and exercise should be avoided entirely.

marine vessels. Mobile sources account for the majority of VOC, NO_x, CO, and SO_x emissions within the SoCAB.

(d) Criteria Pollutants and Toxic Air Contaminants

Pollutants that impact air quality are generally divided into two categories: criteria pollutants and toxic air contaminants. Criteria pollutants are defined as air pollutants for which acceptable levels of exposure can be determined and for which an ambient air quality standard has been set.[7] Criteria pollutants are commonly found air pollutants that harm human health and the environment, and cause property damage.[8] Toxic air contaminants are defined 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."[9]

(1) Criteria Pollutants

Both the federal and state governments have established ambient air quality standards for outdoor concentrations of pollutants in order to protect the public health and welfare with an adequate margin of safety. The federal standards are referred to as the National Ambient Air Quality Standards (NAAQS), while the state standards are referred to as the California Ambient Air Quality Standards (CAAQS). At a minimum, the state standards must as protective as the federal standards.

The federal Clean Air Act (CAA) requires the U.S. Environmental Protection Agency (U.S. EPA) to set ambient (outdoor) air quality standards for the nation for pollutants that are considered harmful to the public health and welfare. These pollutants are referred to by the U.S. EPA as "criteria pollutants" and include: O3, NO_2, CO, SO_2, PM_{10}, $PM_{2.5}$, and lead.[10]

The U.S. EPA Office of Air Quality Planning and Standards has set primary and secondary NAAQS for these pollutants. The primary standards are considered the maximum concentrations of ambient air pollutants considered safe, with an adequate margin of safety, to protect the public health and welfare. Secondary standards protect against decreased visibility, damage to animals, crops, vegetation, and buildings. The secondary standards are the same as the primary standards, with the exception of CO and

---

7 California Air Resources Board, "Glossary of Air Pollution Terms," http://www.arb.ca.gov/html/gloss.htm. 2009.

8 U.S. Environmental Protection Agency, "Six Common Air Pollutants," http://www.epa.gov/air/urbanair/. 2009.

9 California Health and Safety Code, Section 39655.

10 The term "criteria air pollutant" derives from the requirement that the US EPA must describe the characteristics and potential health and welfare effects of these pollutants. This term is used by both the US EPA and CARB.

SO_2. There is no secondary standard for CO and the secondary standard for SO_2 is less restrictive than the primary standard.

California Health and Safety Code section 39606 authorizes CARB to set state ambient air quality standards to protect public health, safety, and welfare. The CAAQS apply to the same federal criteria pollutants and also include sulfates, visibility-reducing particles, hydrogen sulfide, and vinyl chloride. The state standards are more stringent than the federal standards and, in the case of PM_{10} and SO_2, far more stringent. Generally, the sources for hydrogen sulfide emissions include decomposition of human and animal wastes and industrial activities, such as food processing, coke ovens, kraft paper mills, tanneries, and petroleum refineries. Sources for vinyl chloride emissions include manufacturing of plastic products, hazardous waste sites, and landfills. There are no such uses or sources generated by the proposed project. As a result, there is no need for any further evaluation of the hydrogen sulfide or vinyl chloride emissions. In addition, according to the SCAQMD *Final 2007 Air Quality Management Plan*, the lead, sulfate, and visibility reducing particle standards have not been exceeded anywhere in the Basin.[11] Therefore, due to the proposed project's size and associated types of air pollution sources, the proposed project is not expected to have any direct impact on those pollutants. Accordingly, this air quality analysis will focus primarily on the six criteria air pollutants identified above, excluding lead.

The SoCAB is currently designated as nonattainment for O_3, PM_{10}, and $PM_{2.5}$. These violations are largely due to automotive vehicle emissions in the region. Once designated as nonattainment, the federal Clean Air Act and the California Clean Air Act require the particular air basin to develop a plan that will reach attainment status. This usually involves the local air quality district (e.g., the SCAQMD), along with CARB, and the U.S. EPA adopting emission control measures to cumulatively reduce a particular pollutant emission. Those criteria pollutants currently in attainment within the Basin are expected to continue to decrease as control measures and strategies are developed to improve air quality.

The state and national ambient air quality standards for each of the "criteria" pollutants and their effects on health are summarized in **Table 4.4-2**, **Ambient Air Quality Standards**. **Table 4.4-2** also sets forth the state ambient air quality standards and health effects applicable to sulfates, visibility reducing particles, hydrogen sulfide, and vinyl chloride, even though such pollutants are generally not applicable to the proposed uses on the project site.

11 South Coast Air Quality Management District, *Final 2007 Air Quality Management Plan*, (2008) ES-4 and 5-25.

Table 4.4-2
Ambient Air Quality Standards

Air Pollutant	Concentration/Averaging Time		Most Relevant Health Effects
	State Standard	Federal Primary Standard	
Ozone[1]	0.070 ppm, 8-hr avg. 0.09 ppm, 1-hr. avg.	0.075 ppm, 8-hr avg. (3-year average of annual 4th highest daily maximum)	(a) Pulmonary function decrements and localized lung edema in humans and animals; (b) Risk to public health implied by alterations in pulmonary morphology and host defense in animals; (c) Increased mortality risk; (d) Risk to public health implied by altered connective tissue metabolism and altered pulmonary morphology in animals after long-term exposures and pulmonary function decrements in chronically exposed humans; (e) Vegetation damage; and (f) Property damage
Carbon Monoxide	9.0 ppm, 8-hr avg. 20 ppm, 1-hr avg.	9 ppm, 8-hr avg. 35 ppm, 1-hr avg.	(a) Aggravation of angina pectoris and other aspects of coronary heart disease; (b) Decreased exercise tolerance in persons with peripheral vascular disease and lung disease; (c) Impairment of central nervous system functions; and (d) Possible increased risk to fetuses
Nitrogen Dioxide[2]	0.18 ppm, 1-hr avg. 0.030 ppm, annual arithmetic mean	0.100 ppm, 1-hr avg. 0.053 ppm, annual arithmetic mean	(a) Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; (b) Risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; and (c) Contribution to atmospheric discoloration
Sulfur Dioxide	0.04 ppm, 24-hr avg. 0.25 ppm, 1-hr. avg.	0.14 ppm, 24-hr avg. 0.030 ppm, annual arithmetic mean	Bronchoconstriction accompanied by symptoms that may include wheezing, shortness of breath and chest tightness, during exercise or physical activity in person with asthma
Respirable Particulate Matter (PM_{10})	50 $\mu g/m^3$, 24-hr avg. 20 $\mu g/m^3$, annual arithmetic mean	150 $\mu g/m^3$, 24-hr avg.	(a) Exacerbation of symptoms in sensitive patients with respiratory or cardiovascular disease; (b) Declines in pulmonary function growth in children; and (c) Increased risk of premature death from heart or lung diseases in the elderly
Fine Particulate Matter ($PM_{2.5}$)	12 $\mu g/m^3$, annual arithmetic mean	15 $\mu g/m^3$, annual arithmetic mean (3-year average) 35 $\mu g/m^3$, 24-hr avg. (3-year average of 98th percentile)	(a) Exacerbation of symptoms in sensitive patients with respiratory or cardiovascular disease; (b) Declines in pulmonary function growth in children; and (c) Increased risk of premature death from heart or lung diseases in the elderly

Air Pollutant	Concentration/Averaging Time: State Standard	Concentration/Averaging Time: Federal Primary Standard	Most Relevant Health Effects
Lead[3,4]	1.5 μg/m^3, 30-day avg.	1.5 μg/m^3, calendar quarterly average 0.15 μg/m^3, rolling 3-month average	(a) Increased body burden; and (b) Impairment of blood formation and nerve conduction
Sulfates	25 μg/m^3, 24-hr avg.	None	(a) Decrease in ventilatory function; (b) Aggravation of asthmatic symptoms; (c) Aggravation of cardio-pulmonary disease; (d) Vegetation damage; (e) Degradation of visibility; and (f) Property damage
Visibility-Reducing Particles	Reduction of visual range to less than 10 miles at relative humidity less than 70%, 8-hour avg. (10:00 AM – 6:00 PM)	None	Visibility impairment on days when relative humidity is less than 70 percent
Hydrogen Sulfide	0.03 ppm, 1-hr avg.	None	Odor annoyance
Vinyl Chloride[3]	0.01 ppm, 24-hr avg.	None	Known carcinogen

μg/m^3 = micrograms per cubic meter.
ppm = parts per million by volume.
Source: South Coast Air Quality Management District, Final Program Environmental Impact Report for the 2007 Air Quality Management Plan, (2007) Table 3.1-1, p. 3.1-3.

1 *On March 12, 2008, the U.S. EPA revised the federal ozone standard from 0.08 ppm to 0.075 ppm. The standard became effective on May 27, 2008.*

2 *On January 25, 2010, the U.S. EPA promulgated a new 1-hour NO_2 standard. The new 1-hour standard is 0.100 parts per million (188 micrograms per cubic meter) and became effective on April 12, 2010.*

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

4 *On October 15, 2008, the U.S. EPA revised the federal lead standard to include a concentration of 0.15 μg/m^3 based on a 3-month rolling average.*

(2) Toxic Air Contaminants

Toxic air contaminants (TACs) are airborne substances that are capable of causing chronic (i.e., of long duration) and acute (i.e., severe, but of short duration) adverse effects on human health. They include both organic and inorganic chemical substances that may be emitted from a variety of common sources, including gasoline stations, motor vehicles, dry cleaners, industrial operations, painting operations, and research and teaching facilities. Toxic air contaminants are different from the "criteria" pollutants previously discussed in that no ambient air quality standards have been established for them (with the exception of lead and vinyl chloride, for which there are state standards). This is largely due to the fact that there are hundreds of air toxics and their effects on health tend to be local rather than regional.

The following information has been obtained primarily from the SCAQMD's Multiple Air Toxics Exposure Study III (MATES III), described below. TACs typically emitted in the SoCAB include the contaminants listed in **Table 4.4-3, 2005 Annual Average Day Toxic Emissions for the South Coast Air Basin**. The data in **Table 4.4-3** are the most current data available.

Table 4.4-3
2005 Annual Average Day Toxic Emissions for the South Coast Air Basin[1]

Pollutant	Emissions (pounds per day)				
	On-Road	Off-Road	Point	Area	Total
Acetaldehyde[2]	4,857.0	8,622.4	125.8	505.1	14,110.3
Acetone[3]	4,020.5	7,189.1	552.4	28,904.9	40,666.9
Benzene	13,244.8	7,808.3	906.5	609.3	22,568.9
Butadiene [1,3]	2,723.1	1,755.6	537.1	108.7	5,124.5
Carbon tetrachloride	0.0	0.0	11.2	0.0	11.2
Chloroform	0.0	0.0	206.9	0.0	206.9
Dichloromethane [1,1]	0.0	0.0	0.5	0.0	0.5
Dioxane [1,4]	0.0	0.0	0.8	0.7	1.5
Ethylene dibromide	0.0	0.0	2.2	0.0	2.2
Ethylene dichloride	0.0	0.0	67.2	0.0	67.2
Ethylene oxide	0.0	0.0	16.1	52.6	68.7
Formaldehyde[2]	12,596.6	19,889.0	1,488.8	1,302.0	35,276.4
Methyl Ethyl Ketone[2]	745.6	1,366.0	1,244.3	6,466.7	9,822.6
Methylene chloride	0.0	0.0	325.1	13,548.3	13,873.4
Methyl tertiary butyl ether (MTBE)	0.0	4.4	89.6	0.0	93.9
Naphthalene	573.4	376.8	16.6	568.1	1,534.9
p-Dichlorobenzene	0.0	0.0	115.4	5,553.9	5,669.3
Perchloroethylene	0.0	0.0	940.4	9,685.3	10,625.7
Propylene oxide	0.0	0.0	2.2	0.1	2.3
Styrene	681.7	326.3	1,332.5	76.5	2,417.0
Toluene	37,707.9	15,369.2	8,724.3	21,029.4	82,830.8
Trichloroethylene	0.0	0.0	587.1	633.0	1,220.1
Vinyl chloride	0.0	0.0	51.1	0.0	51.1
Arsenic	0.2	3.9	13.4	24.8	42.3
Cadmium	1.5	2.1	3.2	7.2	14.0
Chromium	21.1	9.2	49.2	77.3	156.8
Diesel particulate	22,164.5	37,406.2	489.5	618.3	60,678.5
Elemental carbon[4]	10,498.2	9,337.4	4,850.4	14,197.3	38,883.3
Hexavalent chromium	1.1	0.6	0.6	0.5	2.8
Lead	2.4	4.8	13.7	180.9	201.8

Pollutant	Emissions (pounds per day)				
	On-Road	Off-Road	Point	Area	Total
Nickel	15.3	5.8	44.2	23.4	88.7
Organic carbon	19,972.7	18,073.3	371.0	69,230.1	107,647.1
Selenium	0.5	0.5	41.4	2.2	44.6
Silicon[3,4]	838.7	136.5	1,211.9	218,527.2	220,714.3

Source: South Coast Air Quality Management District, Multiple Air Toxics Exposure Study III*, (2008) 3-8. This document is available for review at http://www.aqmd.gov/prdas/matesIII/matesIII.html.*

1 *Please refer to Chapter 3, Development of the Toxics Emissions Inventory, of MATES III for a discussion on how each portion of the inventory was developed.*

2 *Primarily emitted emissions. These materials are also formed in the atmosphere as a result of photochemical reactions.*

3 *Acetone and silicon are not toxic compounds. Their emissions are included in this table because they were measured in the sampling program and were subsequently modeled for the purpose of model evaluation.*

4 *Includes elemental carbon from all sources (including diesel particulate).*

(a) Cancer Risk

One of the primary health risks of concern due to exposure to TACs is the risk of contracting cancer. The carcinogenic potential of TACs is a particular public health concern because it is currently believed by many scientists that there is no "safe" level of exposure to carcinogens. In other words, any exposure to a carcinogen poses some risk of causing cancer. Health statistics show that one in four people will contract cancer over their lifetime, or 250,000 in 1 million, from all causes, including diet, genetic factors, and lifestyle choices. Approximately 2 percent of cancer deaths in the United States may be due to TACs.[12]

As part of the SCAQMD's environmental justice initiatives adopted in late 1997, the SCAQMD conducted MATES III between April 2004 and March 2006, which was a follow up to previous MATES I and II air toxics studies conducted in the SoCAB. The MATES III Final Report was issued in September 2008.

The MATES III study, based on actual monitored data throughout the SoCAB, consisted of several elements. These included a monitoring program, an updated emissions inventory of toxic air contaminants, and a modeling effort to characterize carcinogenic risk across the SoCAB from exposure to toxic air contaminants. The MATES III study applied a 2-kilometer (1.24-mile) grid over the SoCAB and reported carcinogenic risk within each grid space (covering an area of 4 square kilometers or 1.54 square miles). The study concluded that the average of the modeled air toxics concentrations measured at each of the monitoring stations in the SoCAB equates to a background cancer risk of approximately 1,200 in 1,000,000 primarily due to diesel exhaust. The MATES III study also found lower ambient concentrations of most of the measured air toxics, as compared to the levels measured in the previous MATES II study

12 Doll and Peto. Journal of the National Cancer Institute. "The Causes of Cancer: Qualitative Estimates of Avoidance of Risks of Cancer in the United States Today." (1981).

conducted during 1998 and 1999. Specifically, benzene and 1,3-butadiene, pollutants generated mainly from vehicles, were down 50 percent and 73 percent, respectively.[13] The reductions were attributed to air quality control regulations and improved emission control technologies.

(b) Non-Cancer Health Risks

For exposures to compounds that do pose a health risk, but not a cancer risk, it is believed that there is a threshold level of exposure to the compound below which it will not pose a health risk. The CalEPA and California Office of Environmental Health Hazard Assessment (OEHHA) have developed reference exposure levels (REL) for non-carcinogenic toxic air contaminants that are health-conservative estimates of the levels of exposure at or below which health effects are not expected. Comparing the estimated level of exposure to the REL assesses the non-cancer health risk due to exposure to a toxic air contaminant. The comparison is expressed as the ratio of the estimated exposure level to the REL, referred to as the hazard index.[14] OEHHA develops RELs for acute (i.e., short-term) and chronic (i.e., long-term) exposures. Compounds may have an acute REL, a chronic REL, or both.

(e) Ambient Air Quality

In conjunction with local air pollution control districts and air quality management districts, private contractors, and the National Park Service, CARB has established and maintains a network of air quality monitoring stations referred to as the State and Local Air Monitoring Stations (SLAMS) network. The stations are strategically placed in locations called source receptor areas (SRAs), and provide air quality monitoring data, including real time meteorological data and ambient pollutant levels, as well as historical data.

The proposed project is located within SRA 13, which encompasses the Santa Clarita Valley west to the Ventura County line.[15] The air quality monitoring station for SRA 13 is located at 12th Street and Placerita Canyon Road in the City of Santa Clarita (CARB Station No. 70090)[16] and presently monitors pollutant concentrations of O_3, CO, NO_2, and PM_{10}.[17] The nearest station in the SoCAB that monitors $PM_{2.5}$ is

---

13 South Coast Air Quality Management District, *Multiple Air Toxics Exposure Study in the South Coast Air Basin*, (2008) 2-7.

14 Office of Environmental Health Hazard Assessment, *Air Toxic Hot Spots Program Risk Assessment Guidelines, Part III, Technical Support Document for the Determination of Noncancer Chronic Reference Exposure Levels*, (2000) 9.

15 The proposed project is located on the border of SRA 13 and SRA 15, which covers the San Gabriel Mountains area. However, ambient air quality conditions are not monitored in SRA 15. Therefore, the air pollutant concentrations identified at the Santa Clarita/Placerita Monitoring Station are considered representative of the project area.

16 The specific address is 22224 Placerita Canyon Road in Santa Clarita.

17 Prior to 1992, this station also monitored SO_2 pollutant concentrations for the Santa Clarita Valley.

located at 18330 Gault Street in Reseda (SRA 6, CARB Station No. 70074), while the nearest station in the SoCAB that monitors SO_2 is located at 228 West Palm Avenue in Burbank (SRA 7, CARB Station No. 70069).

Table 4.4-4, Ambient Pollutant Concentrations, Santa Clarita/Placerita Monitoring Station and Nearest Monitoring Stations, lists the measured ambient pollutant concentrations and the violations of state and federal standards that have occurred at the monitoring station from 2004 through 2008. As shown, the monitoring station registered values above state and federal standards for O_3 and $PM_{2.5}$, and values above the state standard for PM_{10}. Concentrations of CO, NO_2, SO_x, lead, and sulfate have not been exceeded anywhere within the SoCAB for several years. Values for lead and sulfate are not presented in the table below since ambient concentrations are well below the state standards.

Table 4.4-4
Ambient Pollutant Concentrations, Santa Clarita/Placerita Monitoring Station and Nearest Monitoring Stations

Pollutant	Standards[1, 2]	Year		
		2006	2007	2008
OZONE (O_3)				
Maximum 1-hour concentration monitored (ppm)		0.16	0.135	0.160
Maximum 8-hour concentration monitored (ppm)		0.120	0.110	0.131
Number of days exceeding state 1-hour standard	0.090 ppm	62	31	54
Number of days exceeding state 8-hour standard	0.070 ppm	64	64	81
Number of days exceeding federal 8-hour standard[3]	0.075 ppm	40	16	60
CARBON MONOXIDE (CO)				
Maximum 1-hour concentration monitored (ppm)		2	2	2
Maximum 8-hour concentration monitored (ppm)		1.3	1.2	1.1
Number of days exceeding state 8-hour standard	9.0 ppm	0	0	0
Number of days exceeding federal 8-hour standard	9 ppm	0	0	0
NITROGEN DIOXIDE (NO2)				
Maximum 1-hour concentration monitored (ppm)		0.08	0.08	0.07
Annual average concentration monitored (ppm)		0.018	0.020	0.016
Number of days exceeding state 1-hour standard[4]	0.18 ppm	0	0	0
PARTICULATE MATTER (PM_{10})				
Maximum 24-hour concentration monitored ($\mu g/m^3$)		53	131	91
Annual average concentration monitored ($\mu g/m^3$)		23.4	29.9	25.8
Number of samples exceeding state standard	50 $\mu g/m^3$	1	5	2
Number of samples exceeding federal standard	150 $\mu g/m^3$	0	0	0
PARTICULATE MATTER ($PM_{2.5}$)				
Maximum 24-hour concentration monitored ($\mu g/m^3$)		44.1	43.3	50.5

Pollutant	Standards[1, 2]	Year 2006	2007	2008
Annual average concentration monitored (μg/m³)		12.9	13.1	11.9
Number of samples exceeding federal standard[5]	35 μg/m³	1	1	2
SULFUR DIOXIDE (SO2)				
Maximum 24-hour concentration monitored (ppm)		0.004	0.003	0.003
Number of samples exceeding 24-hour state standard	0.04 ppm	0	0	0
Number of samples exceeding federal 24-hour standard	0.14 ppm	0	0	0

Sources: California Air Resource Board, "Air Quality Data Statistics," http://www.arb.ca.gov/adam/welcome.html.
South Coast Air Quality Management District, "Historical Data By Year," http://www.aqmd.gov/smog/historicaldata.htm.

1 Parts by volume per million of air (ppm), micrograms per cubic meter of air (μg/m³), or annual arithmetic mean (aam).

2 Federal and state standards are for the same period as the maximum concentration measurement unless otherwise indicated.

3 The U.S. EPA revised the federal 8-hour O_3 standard from 0.08 ppm to 0.075 ppm, effective May 27, 2008. The statistics are based on the standard in effect at the time.

4 CARB revised the state 1-hour NO_2 standard from 0.25 ppm to 0.18 ppm, effective March 20, 2008. The statistics are based on the standard in effect at the time.

5 The U.S. EPA revised the federal 24-hour $PM_{2.5}$ standard from 65 μg/m³ to 35 μg/m³ in 2006. The statistics are based on the standard in effect at the time.

(f) Air Quality Attainment Designations

The U.S. EPA is responsible for enforcing the federal CAA, and NAAQS. CARB is the state agency charged with coordinating efforts to attain and maintain the NAAQS and CAAQS. Both agencies designate air basins as being in "attainment" or "nonattainment" for each of the criteria pollutants. The determination of whether an area meets the state and federal standards is based on long-term air quality monitoring data.

(1) Attainment Areas

Attainment areas are those with air quality that is better than the standards shown in **Table 4.4-2**. The NAAQS (other than O_3, PM_{10}, $PM_{2.5}$, and those based on annual averages or arithmetic mean) are not to be exceeded more than once per year. Under the CAA, an area is in attainment for a particular pollutant if the area meets the national primary or secondary ambient air quality standard for that pollutant.[18] The NAAQS for O_3, PM_{10}, and $PM_{2.5}$ are based on statistical calculations over one- to three-year periods, depending on the pollutant. The CAAQS are not to be exceeded during a three-year period. Under the

18 U.S. Environmental Protection Agency, "Green Book Designations," http://www.epa.gov/airprogm/oar/oaqps/greenbk/define.html. 2008.

California CAA, an area is in attainment for a particular pollutant if the CAAQS for that pollutant was not violated at any site in the area during a three-year period.[19]

(2) Nonattainment Areas

Under the federal CAA, a nonattainment area for a pollutant is any area that does not meet (or that contributes to ambient air quality in a nearby area that does not meet) the primary or secondary NAAQS for that pollutant.[20] Air basins designated as nonattainment for the ozone-8 hour NAAQS are ranked as marginal, moderate, serious, severe, or extreme depending on the area's 8-hour design value calculated using the most recent three years of data. Air basins designated as nonattainment for the CO NAAQS are ranked as not classified, moderate, or serious.[21] Under the California CAA, an area is in nonattainment for a particular pollutant if there was at least one violation of the CAAQS for that pollutant in the area.[22] CARB has another subcategory referred to as nonattainment/transitional. This designation refers to nonattainment areas that are close to attaining the CAAQS for the pollutant in nonattainment.[23]

(3) Unclassified Areas

Some areas are unclassified, which means there is insufficient monitoring data for supporting an attainment or nonattainment designation. Unclassified areas are typically treated as being in attainment. Under the CAA, an unclassifiable area is any area that cannot be classified on the basis of available information as meeting or not meeting the national primary or secondary ambient air quality standard for the pollutant.[24] Under the CCAA, a pollutant is designated unclassified if the data are incomplete and do not support a designation of attainment or nonattainment.

(4) South Coast Air Basin Attainment Status

The status of the SoCAB with respect to NAAQS and CAAQS attainment is summarized in **Table 4.4-5, NAAQS Designations – South Coast Air Basin (Los Angeles County)** and **Table 4.4-6, CAAQS Designations – South Coast Air Basin (Los Angeles County).** Because the attainment/nonattainment designation is pollutant-specific, an area may be classified as nonattainment for one pollutant and

---

19 California Air Resources Board, "Area Designations," http://www.arb.ca.gov/desig/adm/Define.htm. 2003.

20 U.S. Environmental Protection Agency, "Green Book Designations," http://www.epa.gov/airprogm/oar/oaqps/greenbk/define.html. 2008.

21 Ibid.

22 California Air Resources Board, "Area Designations," http://www.arb.ca.gov/desig/adm/Define.htm. 2003.

23 Ibid.

24 U.S. Environmental Protection Agency, "Green Book Designations," http://www.epa.gov/airprogm/oar/oaqps/greenbk/define.html. 2008.

attainment for another. Similarly, because the state and federal ambient air quality standards differ, an area could be classified as attainment under the federal standards and as nonattainment under the state standards for the same pollutant. As shown in **Table 4.4-5**, the SoCAB is in nonattainment with the federal standards for ozone (8 hour), PM_{10}, and $PM_{2.5}$. As shown in **Table 4.4-6**, the air basin is in nonattainment with the state standards of ozone (1 hour and 8 hour), PM_{10}, and $PM_{2.5}$. States with regions that are not in attainment with the NAAQS are required to submit a State Implementation Plan (SIP) that describes how the air basin will achieve the federal standards by specified dates. The stringency of emission control measures in a given SIP depends on the severity of the air quality exceedances within the specific air basin.

Table 4.4-5
NAAQS Designations – South Coast Air Basin (Los Angeles County)

Pollutant	Averaging Time	Designation
Ozone (O_3)	8 Hour	Nonattainment/Extreme**
Carbon Monoxide (CO)	1 Hour, 8 Hour	Attainment
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean*	Attainment/Unclassifiable
Sulfur Dioxide (SO_2)	24 Hour, Annual Arithmetic Mean	Attainment
Respirable Particulate Matter (PM_{10})	24 Hour	Nonattainment/Serious
Fine Particulate Matter ($PM_{2.5}$)	24 Hour, Annual Arithmetic Mean	Nonattainment***
Lead (Pb)	Calendar Quarter	Attainment

Source: United States Environmental Protection Agency, "Region 9: Air Programs, Air Quality Maps," http://www.epa.gov/region9/air/maps/maps_top.html. 2008.

* *The U.S. EPA has promulgated a new 1-hour NAAQS for NO_2. The new 1-hour standard is 0.100 parts per million (188 micrograms per cubic meter) and became effective on April 12, 2010. The U.S. EPA will make nonattainment area designations by 2012.*

** *The U.S. EPA will formally grant CARB's request to reclassify the SoCAB as extreme nonattainment, with a deadline of 2024,.*

*** *The U.S. EPA has not made classifications for $PM_{2.5}$.*

Table 4.4-6
CAAQS Designations – South Coast Air Basin (Los Angeles County)

Pollutant	Averaging Time	Designation/Classification
Ozone (O_3)	1 Hour, 8 Hour	Nonattainment*
Carbon Monoxide (CO)	1 Hour, 8 Hour	Attainment
Nitrogen Dioxide (NO_2)	1 Hour	Non-attainment
Sulfur Dioxide (SO_2)	1 Hour, 24 Hour	Attainment
Respirable Particulate Matter (PM_{10})	24 Hour, Annual Arithmetic Mean	Nonattainment
Fine Particulate Matter ($PM_{2.5}$)	Annual Arithmetic Mean	Nonattainment
Lead (Pb)**	30 Day Average	Non-attainment
Sulfates (SO_4)	24 Hour	Attainment
Hydrogen Sulfide (H_2S)	1 Hour	Unclassified
Vinyl Chloride**	24 Hour	Unclassified
Visibility-Reducing Particles	8 Hour (10:00 AM–6:00 PM)	Unclassified

Source: California Air Resources Board, "Area Designations Maps/State and National," http://www.arb.ca.gov/desig/adm/adm.htm. 2007.
* *CARB has not issued area classifications based on the new state 8-hour standard. The previous classification for the 1-hour ozone standard was extreme.*
** *CARB has identified lead and vinyl chloride as "toxic air contaminants" with no threshold level of exposure for adverse health effects determined.*

(g) Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. Any facilities that house these sensitive receptors are considered sensitive land uses. The SCAQMD's *Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning* identifies the following as sensitive land uses:[25]

- schools, playgrounds, and childcare centers
- long-term health care facilities
- rehabilitation centers
- convalescent centers
- hospitals
- retirement homes
- residences

25 South Coast Air Quality Management District, *Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning*, (2005) 2-1.

The SCAQMD's *Final Localized Significance Threshold Methodology* defines sensitive receptors to be a receptor, such as residence, hospital, convalescent facility, where it is possible that an individual could remain for 24 hours. Commercial and industrial facilities and other land uses may be considered sensitive receptors for criteria pollutants with shorter averaging times (e.g., the 1-hour NO_2 or the 1- and 8-hour CO standards) if it is possible that an individual could remain in a particular location for the aforementioned lengths of time.[26]

4. REGULATORY FRAMEWORK

Air quality within the SoCAB is addressed through the efforts of various federal, state, regional, and local government agencies. These agencies work jointly, as well as individually, to improve air quality through legislation, regulations, planning, policymaking, education, and a variety of programs. The agencies primarily responsible for improving the air quality within the SoCAB are discussed below along with their individual responsibilities.

(a) Regulations Governing Criteria Pollutants, Hazardous Air Pollutants, and Toxic Air Contaminants

The CAA is a federal law that requires the U.S. EPA to develop and enforce regulations to protect the public health and welfare. The U.S. EPA has regulatory and enforcement jurisdiction over emission sources beyond state waters (outer continental shelf), and those that are under the exclusive authority of the federal government, such as aircraft, locomotives, and interstate trucking.

The CAA was originally adopted in 1970, but was amended most recently in 1990 with regulations that better protect the public's health and create more efficient methods of lowering pollutant emissions. The major areas of improvement resulting from the amendments include air basin designations (discussed previously), automobile/heavy-duty engine emission standards, and hazardous air pollutant standards. The amendments established more stringent standards for hydrocarbons, NO_X, and CO emissions in order to reduce O_3 and CO levels in heavily populated areas. Fuels became more strictly regulated, requiring new fuels to be less volatile, contain less sulfur (regarding diesel fuels), and have higher levels of oxygenates (oxygen-containing substances to improve fuel combustion). The 1990 amendments also require the U.S. EPA to regulate 188 hazardous air pollutants, which are carcinogenic, mutagenic, and/or reproductive toxicants. The air toxics program under the CAA involves identifying all major sources (greater than 10 tons/year [tpy] for a single hazardous air pollutant or 25 tpy of combined hazardous air

26 South Coast Air Quality Management District, *Final Localized Significance Threshold Methodology*, (2008) 3-2.

pollutants) in order to implement Maximum Achievable Control Technology (MACT) to reduce hazardous air pollutant emissions and their associated health impacts.

The California CAA was signed into law in 1988 and, for the first time, clearly spelled out in statute California's air quality goals, planning mechanisms, regulatory strategies, and standards of progress. Health and Safety Code section 39606(b) specified the CAAQS as the maximum level and time of exposure in the outdoor air for a given air pollutant that is protective of human health and public welfare. The California CAA also established a legal mandate for air basins to achieve the CAAQS by the earliest practical date.

As a branch of the CalEPA, CARB oversees air quality monitoring, planning, and control throughout California. It is primarily responsible for implementing the California CAA, ensuring conformance with federal CAA requirements, and for regulating emissions from motor vehicles and consumer products within the state. In addition, CARB sets the CAAQS and control measures for toxic air contaminants. CARB approves the regional air quality management/attainment plans for incorporation into the SIP and is responsible for preparing those portions of the SIP related to mobile source emissions. CARB establishes new standards for vehicles sold in California and for various types of equipment available commercially. It also sets fuel specifications to further reduce vehicular emissions.

CARB also makes area designations for O_3, CO, NO_2, SO_2, PM_{10}, $PM_{2.5}$, sulfates, lead, hydrogen sulfide, and visibility-reducing particles. Health and Safety Code section 39607(e) requires CARB to establish and periodically review area designation criteria. These designation criteria provide the basis for CARB to designate areas of the state as "attainment," "nonattainment," or "unclassified" according to state standards. In addition, Health and Safety Code section 39608 requires CARB to use the designation criteria to classify areas of the state and to annually review those area designations.

The NAAQS and CAAQS are required to be periodically revised based on the latest health-based research, and several revisions to the NAAQS have occurred over the past several years, with the most recent being revisions to the ozone, $PM_{2.5}$, and lead standards. In 2002, CARB adopted recommendations for revisions to the PM_{10} standard and established a new $PM_{2.5}$ annual standard. CARB also reviewed and recommended revisions to the ozone and NO_2 standards, which were adopted and went into effect on May 17, 2006 and March 20, 2008, respectively.

(b) Regulations Governing Non-Attainment Areas

States with basins that are not in attainment with the NAAQS are required to submit a SIP that describes how the air basin will achieve the federal standards by specified dates. The SIP includes strategies and control measures to attain the NAAQS by deadlines established by the federal CAA. SIPs are not single

documents, but are a compilation of state regulations, air quality management/attainment plans, programs, and air district rules that are continuously revised to meet CAA amendment requirements.

The air quality management/attainment plans for areas that are not in attainment with the NAAQS are authored by CARB, the local air districts, and other agencies. In general, the plans describe ambient air data and trends; provide a baseline emissions inventory; and project future year air emissions, which account for growth projections and already adopted control measures. The plans also include a comprehensive control strategy of measures needed to reach attainment, which may include interim milestones for progress toward attainment.

Upon completion, the plans are submitted to CARB for final review and approval. Once the plans are approved, CARB forwards them to the U.S. EPA as a SIP revision. The U.S. EPA reviews the plans to determine if they conform to the 1990 amendments and if would achieve the air quality goals of the nonattainment area. After the U.S. EPA approves the plans, they are published in the Federal Register. The preparation of attainment plans, review, and approval are an ongoing process within the state of California, as well as in other states with nonattainment areas.

(c) Regional Regulations Governing Air Emissions

(1) South Coast Air Quality Management District

The management of air quality in the SoCAB is the responsibility of the SCAQMD. This responsibility was given to SCAQMD by the Legislature's adoption of the 1977 Lewis-Presley Air Quality Management Act, which merged four county air pollution control bodies into one regional district. Under the Lewis-Presley Air Quality Act, SCAQMD is responsible for bringing air quality in the areas under its jurisdiction into conformity with federal and state air quality standards. Specifically, SCAQMD is responsible for monitoring ambient air pollutant levels throughout the SoCAB and for developing and implementing attainment strategies to ensure that future emissions will be within federal and state standards. The SCAQMD primarily regulates emissions from stationary sources, such as manufacturing and power generation. Mobile sources, such as buses, automotive vehicles, trains, and airplanes, are largely out of the SCAQMD's jurisdiction and are up to CARB and the U.S. EPA to regulate. In order to achieve air quality standards, the SCAQMD adopts an Air Quality Management Plan (AQMP) that serves as a guideline to bring pollutant concentrations into attainment with federal and state standards. The SCAQMD determines if certain rules and control measures are appropriate for their specific region according to technical feasibility, cost effectiveness, and the severity of nonattainment. Once the SCAQMD has adopted the proper rules, control measures, and permit programs, it is responsible for ensuring compliance with those rules, control measures, and programs.

(2) SCAQMD CEQA Guidance Documents

In 1993, the SCAQMD prepared its *CEQA Air Quality Handbook* to assist local government agencies and consultants in preparing environmental documents for projects subject to CEQA. Minor revisions to the document were made in November 1993. The SCAQMD is in the process of developing an *Air Quality Analysis Guidance Handbook* to replace the *CEQA Air Quality Handbook*.[27] The existing document describes the criteria that SCAQMD uses when reviewing and commenting on the adequacy of environmental documents. The SCAQMD recommends thresholds of significance in order to determine if a project will have a significant adverse environmental impact. Other important contents are methodologies for predicting project emissions and mitigation measures that can avoid or reduce air quality impacts. Although the Governing Board of the SCAQMD has adopted the *CEQA Air Quality Handbook*, it does not, nor does it intend to, supersede a local jurisdiction's CEQA procedures.[28]

SCAQMD offers further guidance to jurisdictions in its *Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning* (May 6, 2005). This guidance document provides suggested policies that local governments can use to prevent or reduce potential air pollution impacts and protect public health in their general plans or through local planning. The objective of the document is to facilitate collaboration between the local governments and the SCAQMD.

While the *Air Quality Analysis Guidance Handbook* is being developed, supplemental information has been adopted by the SCAQMD. These include revisions to the air quality significance thresholds and a new procedure referred to as "localized significance thresholds," which has been added as a significance threshold under the *Final Localized Significance Threshold Methodology*.[29] Additional changes include the SCAQMD recommendation that lead agencies not use the screening tables in the *CEQA Air Quality Handbook's* Chapter 6 because the tables were derived using an obsolete version of CARB's mobile source emission factor inventory and are also based on outdated trip generation rates from a prior edition of the Institute of Transportation Engineer's Trip Generation Handbook.[30] The SCAQMD has also recommended that lead agencies not use the on-road mobile source emission factors in Table A9-5-J1 through A9-5-L as they are obsolete, and instead recommends using on-road mobile source emission

---

27 South Coast Air Quality Management District, "Air Quality Analysis Guidance Handbook," http://www.aqmd.gov/CEQA/hdbk.html. 2009.

28 South Coast Air Quality Management District, "Frequently Asked CEQA Questions," http://www.aqmd.gov/ceqa/faq.html. 2007.

29 South Coast Air Quality Management District, *Final Localized Significance Threshold Methodology*, (Revised 2008).

30 South Coast Air Quality Management District, "CEQA Air Quality Handbook (1993)," http://www.aqmd.gov/ceqa/oldhdbk.html. 2007.

factors approved by the CARB.[31] The outdated and obsolete information were not used in this analysis. The applicable portions of the *CEQA Air Quality Handbook*, the *Air Quality Analysis Guidance Handbook* supplemental information, and other adopted and revised methodologies were used in preparing the air quality analysis in this section.

(3) SCAQMD Air Quality Management Plan

The SCAQMD is required to prepare Air Quality Management Plans describing how air quality will be improved in the SoCAB. The California CAA requires that these plans be updated triennially in order to incorporate the most recent available technical information. In addition, the U.S. EPA requires that transportation conformity budgets be established based on the most recent planning assumptions (i.e., within the last five years). Plan updates are necessary to ensure continued progress toward attainment of the NAAQS and to avoid a transportation conformity lapse and associated federal funding losses. A multi-level partnership of governmental agencies at the federal, state, regional, and local levels implement the programs contained in these plans. Agencies involved include the U.S. EPA, CARB, local governments, Southern California Association of Governments (SCAG), and the SCAQMD.

The SCAQMD is the agency responsible for preparing the AQMP for the SoCAB. Since 1979, a number of AQMPs have been prepared. The SCAQMD adopted the currently applicable *Final 2007 Air Quality Management Plan*[32] (2007 AQMP) on June 1, 2007. CARB approved the 2007 AQMP as the comprehensive State Implementation Plan component for the SoCAB on September 27, 2007. The purpose of the 2007 AQMP for the SoCAB (and those portions of the Salton Sea Air Basin under the SCAQMD's jurisdiction) is to set forth a comprehensive program that will lead these areas into compliance with federal and state air quality planning requirements for ozone and $PM_{2.5}$. In addition, as part of the 2007 AQMP, the SCAQMD requested U.S. EPA's approval of a "bump-up" to the "extreme" nonattainment classification of ozone for the SoCAB, which would extend the attainment date from 2021 to 2024 and allow for the attainment demonstration to rely on emission reductions from measures that anticipate the development of new technologies or improvement of existing control technologies. CARB transmitted the request to the U.S. EPA, which was formally approved in 2010.

The AQMP was based on assumptions provided by both CARB and SCAG in the new EMFAC2007 motor vehicle emissions factor model and the most recent demographics information, respectively. The 2007 AQMP focuses on attainment strategies for the ozone and $PM_{2.5}$ standards through stricter control of

---

31 South Coast Air Quality Management District, "EMFAC 2007 (v2.3) Emission Factors (On-Road)," http://www.aqmd.gov/CEQA/handbook/onroad/onroad.html. 2008.

32 South Coast Air Quality Management District, *Final 2007 Air Quality Management Plan*, (2007).

sulfur oxides and directly emitted $PM_{2.5}$, NO_X, and VOCs. Although $PM_{2.5}$ plans for nonattainment areas were due in April 2008, the SCAQMD has integrated $PM_{2.5}$ and ozone reduction control measures and strategies in the 2007 AQMP. The need to commence $PM_{2.5}$ control strategies before April 2008 was due to the attainment date for $PM_{2.5}$ (2015) being much earlier than that for ozone (2021 for the current designation of severe-17 or 2024 for the extreme designation). Control measures and strategies for $PM_{2.5}$ will also help control ozone generation in the region because $PM_{2.5}$ and ozone share similar precursors (e.g., NO_X). In addition, the AQMP focuses on reducing VOC emissions, which have not been reduced at the same rate as NO_X emissions in the past. Hence, the SoCAB has not achieved the reductions in O_3 as were expected in previous plans.

(4) SCAQMD Rules and Regulations

The SCAQMD is responsible for limiting the amount of emissions that can be generated throughout the SoCAB by various stationary, area, and mobile sources. Specific rules and regulations have been adopted by the SCAQMD Governing Board that limit the emissions that can be generated by various uses/activities and identify specific pollution reduction measures that must be implemented in association with various uses and activities. These rules not only regulate the emissions of the federal and state criteria pollutants but also TACs and acutely hazardous materials. The rules are also subject to ongoing refinement by SCAQMD.

Among the SCAQMD rules most applicable to the project are Rule 403 (Fugitive Dust), Rule 1113 (Architectural Coatings), and Rule 1403 (Asbestos Emissions from Demolition/Renovation Activities). Rule 403 requires the use of stringent best available control measures (BACM) to minimize PM_{10} emissions during grading and construction activities. Rule 1113 requires reductions in the VOC content of coatings, with a substantial reduction in the VOC content limit for flat coatings in July 2008. Rule 1403 requires that the owner or operator of any demolition or renovation activity have an asbestos survey performed prior to demolition and provide notification to the SCAQMD prior to commencing demolition activities. Other rules apply on a case-by-case basis; however, Rules 403 and 1113 typically apply to all development projects. Rule 1403 typically applies to redevelopment projects where demolition of pre-1978 structures is involved. Additional details regarding these rules and other potentially applicable rules are presented below.

- **Rule 403 (Fugitive Dust)** – This rule requires fugitive dust sources to implement BACM for all sources and all forms of visible particulate matter are prohibited from crossing any property line. SCAQMD Rule 403 is intended to reduce PM_{10} emissions from any transportation, handling, construction, or storage activity that has the potential to generate fugitive dust (see also Rule 1186).

- **Rule 1113 (Architectural Coatings)** – This rule requires manufacturers, distributors, and end users of architectural and industrial maintenance coatings to reduce VOC emissions from the use of these coatings, primarily by placing limits on the VOC content of various coating categories.

- **Rule 1121 (Control of Nitrogen Oxides from Residential Type, Natural Gas-Fired Water Heaters)** – This rule prescribes NO_X emission limits for natural gas-fired water heaters with heat input rates less than 75,000 Btu per hour. It applies to manufacturers, distributors, retailers, and installers of natural gas-fired water heaters. In lieu of meeting these NO_X limits, this rule allows emission mitigation fees to be collected from water heater manufacturers to fund stationary and mobile source emission reduction projects targeted at offsetting NO_X emissions from water heaters that do not meet Rule 1121 emission standards.

- **Rule 1146.2 (Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters)** – This rule requires manufacturers, distributors, retailers, refurbishers, installers and operators of new and existing units to reduce NO_X emissions from natural gas-fired water heaters, boilers, and process heaters as defined in this rule.

- **Rule 1186 (PM_{10} Emissions from Paved and Unpaved Roads, and Livestock Operations)** – This rule applies to owners and operators of paved and unpaved roads and livestock operations. The rule is intended to reduce PM_{10} emissions by requiring the cleanup of material deposited onto paved roads, use of certified street sweeping equipment, and treatment of high-use unpaved roads (see also Rule 403).

- **Rule 1403 (Asbestos Emissions from Demolition/Renovation Activities)** – This rule requires owners and operators of any demolition or renovation activity and the associated disturbance of asbestos-containing materials (ACM), any asbestos storage facility, or any active waste disposal site to implement work practice requirements to limit asbestos emissions from building demolition and renovation activities, including the removal and associated disturbance of ACM.

Stationary emissions sources subject to these rules are regulated through the SCAQMD permitting process. Through this permitting process, SCAQMD also monitors the amount of stationary emissions being generated and uses this information in developing AQMPs. The project would be subject to SCAQMD rules and regulations to reduce specific emissions and to mitigate potential air quality impacts.

(5) Southern California Association of Governments

The Southern California Association of Governments (SCAG) is a council of governments for the counties of Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura. As a regional planning agency, SCAG serves as a forum for regional issues relating to transportation, the economy, community development, and the environment. SCAG also serves as the regional clearinghouse for projects requiring environmental documentation under federal and state law. In this role, SCAG reviews projects to analyze their impacts on SCAG's regional planning efforts.

Although SCAG is not an air quality management agency, it is responsible for several air quality planning issues. Specifically, as the designated Metropolitan Planning Organization for the Southern California region, it is responsible, pursuant to Section 176(c) of the 1990 amendments to the federal CAA, for providing current population, employment, travel, and congestion projections for regional air quality planning efforts. With respect to air quality, SCAG has prepared the *2004 Regional Transportation Plan*[33] and *2006 Regional Transportation Improvement Program*[34], which form the basis for the transportation components of the AQMP and are utilized in the preparation of air quality forecasts and consistency analysis that is included in the AQMP.

(d) Local Level Control of Air Emissions

Local governments, such as the City of Santa Clarita, share the responsibility to implement or facilitate some of the control measures of the AQMP. These governments have the authority to reduce air pollution through local policies and land use decision-making authority. Specifically, local governments are responsible for the mitigation of emissions resulting from land use decisions and for the implementation of transportation control measures as outlined in the AQMP.[35] The AQMP assigns local governments certain responsibilities to assist the SoCAB in meeting air quality goals and policies. In general, the first step towards assigning a local government's responsibility is accomplished by identifying the air quality goals, policies, and implementation measures in its general plan. The City of Santa Clarita has done this through the Conservation and Open Space Element in its proposed One Valley One Vision General Plan.

Through capital improvement programs, local governments can fund infrastructure that contributes to improved air quality by requiring such improvements as bus turnouts, energy-efficient streetlights and synchronized traffic signals.[36] In accordance with the CEQA requirements and the CEQA review process, local governments assess air quality impacts, require mitigation of potential air quality impacts by conditioning discretionary permits, and monitor and enforce implementation of such mitigation.[37]

---

33 Southern California Association of Governments, "Regional Transportation Plan," http://www.scag.ca.gov/rtp2004/2004/FinalPlan.htm. 2004.

34 Southern California Association of Governments, "Regional Transportation Improvement Program," http://www.scag.ca.gov/RTIP/rtip2006/adopted.htm. 2006.

35 South Coast Air Quality Management District, *CEQA Air Quality Handbook*, (1993) 2-2.

36 Ibid.

37 Ibid.

5. PROJECT IMPACTS

(a) Significance Threshold Criteria

Based on the thresholds of significance identified in Appendix G of the *State CEQA Guidelines* and the City of Santa Clarita Environmental Guidelines, a project would have a significant effect on air quality if it would:

(a) Conflict with or obstruct implementation of the applicable air quality plan;

(b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation;

(c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);

(d) Expose sensitive receptors to substantial pollutant concentrations; and/or

(e) Create objectionable odors affecting a substantial number of people.

The City of Santa Clarita refers to the thresholds recommended by the SCAQMD in its *CEQA Air Quality Handbook*. The following analysis discusses the SCAQMD thresholds utilized for both construction and operational emissions.

(1) Construction Emission Thresholds

Impacts related to construction emissions associated with the proposed project would be considered significant if the proposed project exceeds the limits specified in **Table 4.4-7, SCAQMD Daily Construction Emission Thresholds**:

Table 4.4-7
SCAQMD Daily Construction Emission Thresholds

Significance Threshold	Pollutant (pounds per day)					
	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Construction	75	100	550	150	150	55

Source: South Coast Air Quality Management District, Air Quality Significance Thresholds, (2006).

(2) Localized Significance Thresholds

The SCAQMD recommends the evaluation of localized air quality impacts to sensitive receptors in the immediate vicinity of the project site. The thresholds are based on the difference between the maximum monitored ambient pollutant concentrations and the CAAQS or NAAQS. Therefore, the thresholds depend upon the concentrations of pollutants monitored locally with respect to a project site. For pollutants that already exceed the CAAQS or NAAQS (e.g., PM_{10} and $PM_{2.5}$), the thresholds are based on standards established by the SCAQMD in the *Final Localized Significance Threshold Methodology*. This evaluation requires that anticipated ambient air concentrations, determined using a computer-based air quality dispersion model, be compared to localized significance thresholds for PM_{10}, $PM_{2.5}$, NO_2, and CO.[38] The significance threshold for PM_{10} represents compliance with Rule 403 (Fugitive Dust) and Rule 1303 (New Source Review Requirements), while the thresholds for NO_2 and CO represent the allowable increase in concentrations above background levels in the vicinity of the project that would not cause or contribute to an exceedance of the relevant ambient air quality standards. The significance thresholds for $PM_{2.5}$ are intended to constrain emissions so as to aid in the progress toward attainment of the ambient air quality standards.[39] The applicable thresholds are shown below in **Table 4.4-8**, **Localized Significance Thresholds for Proposed Project in Source Receptor Area 13.**

Table 4.4-8
Localized Significance Thresholds for Proposed Project in Source Receptor Area 13

	Pollutant (concentration)							
	NO_2 1-hour		CO 1-hour		CO 8-hours		PM_{10} 24-hours	$PM_{2.5}$ 24-hours
	µg/m³	ppm	µg/m³	ppm	µg/m³	ppm	µg/m³	µg/m³
CAAQS/NAAQS1	188	0.100	23,000	20	10,000	9.0	10.4	10.4
Peak Background2	115	0.061	2,300	2	1,444	1.3	NA	NA
LSTs3	73	0.039	20,700	18	8,556	7.7	10.4	10.4

NA = not applicable

Source: South Coast Air Quality Management District, Final Localized Significance Threshold Methodology, (2008), Appendix C.

1 *California has not adopted a 24-hour standard for $PM_{2.5}$; the 24-hour $PM_{2.5}$ standard shown is the national standard. The U.S. EPA adopted a 1-hour standard for NO_2 that is lower than the California standard; therefore, the national standard is used for NO_2. All other standards are the California standards*

2 *The peak background concentration for NO_2 is based on the 3-year average of the 98th-percentile of the annual distribution of daily maximum 1-hour concentrations for 2006 through 2008. All other peak background concentrations are based on the maximum 1-hour concentrations between 2006 and 2008.*

2 *LSTs for NO_2 and CO are the differences between the more stringent of the CAAQS or NAAQS and the peak background concentration.*

38 South Coast Air Quality Management District, *Final Localized Significance Threshold Methodology*, (2008).

39 South Coast Air Quality Management District, *Final Methodology to Calculate Particulate Matter $(PM)_{2.5}$ and $PM_{2.5}$ Significance Thresholds*, (2006).

(3) Operational Emission Thresholds

The SCAQMD has recommended two sets of air pollution thresholds to assist lead agencies in determining whether or not the operational phase of a project's development would be significant. These thresholds are identified in the following discussion. The SCAQMD recommends that a project's impacts be considered significant if thresholds are exceeded for either primary or secondary effects.[40]

(a) Primary Thresholds

Impacts related to operational emissions associated with the proposed project would be considered significant if the project's operational emissions exceed the limits specified in **Table 4.4-9, SCAQMD Daily Operation Emission Thresholds**. The SCAQMD established the operational emission thresholds, in part, based on Section 182(e) of the federal CAA, which identifies 10 tons per year of VOCs and NO_X as the significance level for stationary sources of emissions in extreme nonattainment areas for O_3. As discussed earlier, VOC and NO_X undergo photochemical reactions in sunlight to form O_3, and, at the time these thresholds were established, the SoCAB was the only extreme nonattainment area for O_3 in the United States. This emission threshold has been converted to a pound per day threshold for the operational phase of a project. Thresholds for other emissions have been identified based on regulatory limits adopted by the SCAQMD. Because the thresholds are converted from a federal CAA threshold, the SCAQMD has determined that these thresholds are based on scientific and factual data.[41]

Table 4.4-9
SCAQMD Daily Operation Emission Thresholds

	Pollutant (pounds per day)					
Significance Threshold	**VOC**	**NO_X**	**CO**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Operation	55	55	550	150	150	55

Source: South Coast Air Quality Management District, Air Quality Significance Thresholds, (2006).

(b) Secondary Operational Thresholds

The SCAQMD recommends that projects meeting any of the following criteria also be considered to result in significant air quality impacts:

40 South Coast Air Quality Management District, *Air Quality Significance Thresholds*, (2006).

41 South Coast Air Quality Management District, *CEQA Air Quality Handbook*, (1993) 6-1.

- The project could interfere with the attainment of the federal or state ambient air quality standards by either violating or contributing to an existing or projected air quality violation;
- The project could result in population increases within an area, which would be in excess of that projected by SCAG in the AQMP, or increase the population in an area where SCAG has not projected that growth for the project's buildout year;
- The project could generate vehicle trips that cause a CO hotspot or project could be occupied by sensitive receptors that are exposed to a CO hotspot;
- The project will have the potential to create, or be subjected to, an objectionable odor that could impact sensitive receptors;
- The project will have hazardous materials on site and could result in an accidental release of toxic air emissions or acutely hazardous materials posing a threat to public health and safety; [42]

(c) Toxic Air Contaminants

The SCAQMD recommends that projects meeting any of the following criteria also be considered to result in significant air quality impacts:

- The project could emit a toxic air contaminant regulated by SCAQMD rules or that is on a federal or state air toxic list;
- The project could be occupied by sensitive receptors within one-quarter mile of an existing facility that emits air toxics identified in SCAQMD Rule 1401; or
- The project could emit carcinogenic or toxic air contaminants with a maximum incremental cancer risk greater than or equal to 10 in 1 million or a Hazard Index greater than or equal to 1.0.[43]

(4) Cumulative Thresholds

In large part, the SCAQMD 2007 AQMP was prepared to accommodate growth, to meet state and federal air quality standards, and to minimize the fiscal impact that pollution control measures have on the local economy. According to the SCAQMD's *CEQA Air Quality Handbook*, projects that are within the emission thresholds identified above should be considered less than significant on a cumulative basis unless there is other pertinent information to the contrary.[44]

---

42 South Coast Air Quality Management District, *Air Quality Significance Thresholds*, (2006).

43 Ibid.

44 South Coast Air Quality Management District, *CEQA Air Quality Handbook*, (1993) 9–12.

If a project is not within the emission thresholds above, the SCAQMD's *CEQA Air Quality Handbook* identifies three possible methods to determine the cumulative significance of land use projects.[45] The SCAQMD's methods are based on performance standards and emission reduction targets necessary to attain the federal and state air quality standards identified in the 2007 AQMP. However, one method is no longer recommended or supported by the SCAQMD, and another method is not applicable as the SCAQMD repealed the underlying regulation (Regulation XV) after the *CEQA Air Quality Handbook* was published.[46] Therefore, the only viable SCAQMD method for determining cumulative impacts is based on whether the rate of growth in average daily trips exceeds the rate of growth in population.

(b) Project-Related Impacts

(1) Construction-Related Impacts

Construction emissions include all emissions associated with the construction equipment, grading and demolition activities, worker trips, on-road diesel trucks, and architectural coating. Construction would result in emissions of VOCs, NO_X, CO, SO_X, PM_{10}, and $PM_{2.5}$ from heavy-duty construction equipment exhaust, fugitive dust (PM_{10} and $PM_{2.5}$) from earth-moving activities, and VOCs from asphalt paving and architectural coating. Off-site emissions during construction normally consist of exhaust emissions and entrained paved road dust (PM_{10} and $PM_{2.5}$) from construction equipment delivery, material delivery, and construction worker commute trips. Construction of the proposed project is expected to begin in 2012 and last until 2015. Construction of the proposed project would occur in four phases, and each phase would involve several subphases including grading and excavation, sub-grade construction, building construction, asphalt paving, and architectural coating.

The total amount of soil to be cut from the project site is estimated at 590,000 cubic yards (cy). The total amount of fill is estimated at 830,000 cy, requiring a minimum import of approximately 240,000 cy. This cut and fill grading would be in addition to 1.7 million cubic yards of remedial grading. Estimated shrinkage associated with the remedial grading would require the import of an additional 260,000 cy, resulting in a total project import of 500,000 cy.[47] Grading and excavation of the project site is assumed to occur during the first construction phase.

---

45 Ibid. Personal communication with Steve Smith, South Coast Air Quality Management District, November 20, 2003.

46 The two methods that are no longer recommended and supported by the SCAQMD are: (1) demonstrating a 1 percent per year reduction in project emissions of VOC, NO_X, CO, SO_X, and PM_{10} and (2) demonstrating a 1.5 average vehicle ridership, or average vehicle occupancy for a transportation project.

47 Cut and fill amounts are based on data provided by the project applicant, contractor, and/or architect.

Construction emissions for each phase are based on the amount of activity of each subphase. The URBEMIS2007 Environmental Management Software was used to estimate the emissions associated with construction of the proposed project. URBEMIS2007 is a land use and transportation based computer model designed to estimate regional air emissions from new land use development projects. The model accounts for certain meteorological conditions that characterize specific air basins in California. The model was developed by CARB and is approved for use by the SCAQMD.

A number of variables are input into the model, including the construction schedule, the type of construction equipment required to build the project, emission factors for each piece of equipment, grading amounts, soil hauling amounts, and asphalt paving amounts. The analysis is based on the most accurate and reasonable data that is available. In cases where specific information is not available, the SCAQMD and CARB have recommended that default variables and assumptions be used in the URBEMIS2007 model.

Default values in the URBEMIS2007 model are provided by the SCAQMD and/or CARB. The emission factors for each type of construction equipment were obtained from CARB's EMFAC2007 model and OFFROAD2007 model, both of which are incorporated as part of the URBEMIS2007 model. The EMFAC2007 model generates emissions factors for on-road mobile sources (e.g., passenger vehicles and on-road trucks) and the OFFROAD2007 model generates emission factors for off-road sources (e.g., construction equipment). Other emission factors, such as for fugitive dust emissions, are based on SCAQMD-approved factors, which are also incorporated into the URBEMIS2007 model. The majority of the construction equipment and activities are assumed to operate during the workday between 6 and 8 hours per day. The numbers of worker and vendor trips are based on URBEMIS2007 default values.

The emission calculations assume the use of standard construction practices, such as compliance with SCAQMD Rule 403 (Fugitive Dust), to minimize the generation of fugitive dust. Compliance with Rule 403 is mandatory for all construction projects. In the URBEMIS2007 model, the emission calculations take into account compliance with Rule 403 by incorporating the following measures:

- Watering of exposed surfaces and unpaved roads three times daily, which is estimated to reduce fugitive dust emissions from this source (both PM_{10} and $PM_{2.5}$) by 61 percent, per guidance from the SCAQMD;

- Use of soil stabilization measures during equipment loading and unloading, which is estimated to reduce fugitive dust emissions from this source (both PM_{10} and $PM_{2.5}$) by 69 percent, per guidance from the SCAQMD;

- Limiting the speed of travel on unpaved roads to 15 miles per hour, which is estimated to reduce fugitive dust emissions from this source (both PM_{10} and $PM_{2.5}$) by 44 percent, per guidance from the SCAQMD; and

- Use of soil stabilization measures on inactive areas, which is estimated to reduce fugitive dust emissions from this source (both PM_{10} and $PM_{2.5}$) by 84 percent, per guidance from the SCAQMD.

The last two measures listed above are generally required for projects of this size. Rule 403 contains other best available control measures to minimize fugitive dust emissions; however, they are not accounted for in the URBEMIS2007 model. The following presents additional details for each of the four project construction phases. The information provided below in **Table 4.4-10, Construction Phase Detail**, describes the activity amounts for excavation, building construction, grading, and asphalt paving for each phase of construction.

Table 4.4-10
Construction Phase Detail

Phase/Subphase	Level of Activity
Phase 1	
Grading	1.7 million cy remedial; 590,000 cy cut; 830,000 cy fill; 500,000 cy import; 185.3 total acres disturbed; 46.3 daily acres disturbed; equipment mix based on a similar sized project.
Utilities Trenching	URBEMIS2007 default equipment mix.
Building Construction	680 multi-family dwelling units; 25,000 square feet retail commercial space; 0.79 acre of park space; water reclamation facility; URBEMIS2007 default equipment mix.
Asphalt Paving	2.13 acres paved; URBEMIS2007 equipment mix.
Architectural Coating	Emissions based on compliance with SCAQMD coating rules.
Phase 2	
Utilities Trenching	URBEMIS2007 default equipment mix.
Building Construction	341 multi-family dwelling units; 96 single-family dwelling units; Oak Park; Vista Canyon Road Bridge; URBEMIS2007 default equipment mix with an additional 2 cranes and 4 general construction equipment for bridge construction.
Asphalt Paving	6.4 acres paved; URBEMIS2007 default equipment mix.
Architectural Coating	Emissions based on compliance with SCAQMD coating rules.
Phase 3	
Utilities Trenching	URBEMIS2007 default equipment mix.
Building Construction	56,000 square feet of retail commercial space; 150,000 square feet of office space; 91,476 square feet of parking structure; Metrolink station and associated parking; URBEMIS2007 default equipment mix.
Asphalt Paving	3.13 acres paved; URBEMIS2007 default equipment mix.
Architectural Coating	Emissions based on compliance with SCAQMD coating rules.
Phase 4	
Utilities Trenching	URBEMIS2007 default equipment mix.

Phase/Subphase	Level of Activity
Building Construction	200-room hotel (140,000 square feet); 490,000 square feet of office space; 83,000 square feet of commercial space (including retail, restaurant and theater); 2,500 square feet for the River Education Center; 91,476 square feet of parking structure; URBEMIS2007 default equipment mix.
Asphalt Paving	2.13 acres paved; URBEMIS2007 default paving area and equipment mix.
Architectural Coating	Emissions based on compliance with SCAQMD coating rules.

Source: Impact Sciences, Inc., (2010).

Based on the above information, the estimated construction emissions are provided below in **Table 4.4-11, Estimated Unmitigated Construction Emissions**.

Table 4.4-11
Estimated Unmitigated Construction Emissions

Construction Year	Emissions in Pounds per Day					
	VOC	**NOX**	**CO**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
2012	151.87	816.95	445.32	0.18	150.95	56.95
2013	46.81	67.69	76.36	0.09	3.93	3.38
2014	64.57	31.44	39.34	0.04	2.39	2.10
2015	157.18	32.82	75.04	0.11	2.71	2.21
Maximum Emissions in Any Year	157.18	816.95	445.32	0.18	150.95	56.95
SCAQMD Threshold	75	100	550	150	150	55
Exceeds Threshold?	**YES**	**YES**	NO	NO	**YES**	**YES**

*Source: Impact Sciences, Inc., (2010). Emissions calculations are provided in **Appendix 4.4**.*
Totals in the table may not appear to add exactly due to rounding in the computer model calculations.

The emissions presented above are considered to be conservative; that is, the emissions presented in **Table 4.4-11** likely over-predict the actual emissions that would occur during project construction. As previously noted, it was assumed that construction equipment would operate 6 to 8 hours per work day. These operating hours were based on high-end sampling data obtained by the SCAQMD from surveys at construction sites. In reality, construction equipment often operates cyclically for only a fraction of each workday. CARB has also promulgated an anti-idling regulation that limits non-work related idling of

diesel equipment to no more than 5 minutes.[48] CARB also passed a regulation banning the addition of the oldest and dirtiest vehicles, called Tier 0 vehicle, to fleets operating in California.[49]

In addition, CARB has adopted an in-use off-road diesel vehicle control measure that would reduce fleet-average emissions of NO_X and diesel particulate matter.[50] The measures would apply to small, medium, and large fleet operators, as defined by the measure. This measure takes effect between 2010 and 2015, with operators of large fleets subject to the earliest compliance date. Under the measure, fleet operators are required to retrofit existing engines with emission control technologies, repower existing equipment with newer, less-polluting engines, or accelerate fleet turnover by a specified percentage. The requirements for retrofits, repower, and accelerated fleet turnover would become more stringent until the year 2021, which is the year fleet operators are required to meet the final emission reduction targets for NO_X and PM_{10}. Contractors with medium or large fleets would be subject to the measure at the time construction activity is estimated to occur for the project. However, the measure is based on fleet averages; as such, individual construction equipment used at the project site would not be mandated to be installed with retrofits or newer engines as per this measure. Nonetheless, the contractor performing the work would have to ensure that their fleet of construction equipment complies with the measure and it is reasonable to assume that some of the equipment used on the project site would meet the more stringent NO_X and PM_{10} emission standards.

In February 2010, CARB issued a regulatory advisory that because of the economic effects on industries that use off-road diesel vehicles and because CARB lacks authorization from the U.S. EPA to enforce certain aspects of the in-use off-road diesel vehicle control measure, no enforcement action will be taken for noncompliance with certain provisions. The enforcement delay will remain in place until U.S. EPA grants authorization to CARB to enforce all provisions of the regulation. Specifically, CARB will not enforce the following provisions: (1) fleet average or Best Available Control Technology requirements (vehicle retrofit and replacement); (2) limitations on adding higher emitting Tier 0 and Tier 1 vehicles; and (3) requirements for new fleets to meet fleet average targets in order to enter California.

While some off-road diesel vehicle fleets in California have complied with all or a portion of the measure, due to lack of enforcement, emission reductions associated with the in-use off-road diesel vehicle control measure are not accounted for in the emissions calculations. Furthermore, emissions reductions associated with the anti-idling measure are not included. For these reasons, the emissions presented in **Table 4.4-11** represent a conservative estimate.

---

48 Cal. Code Regs., tit. 13, §2449(d)(3).

49 Cal. Code Regs., tit. 13, §2449(d)(7).

50 For additional information, refer to the CARB website: http://www.arb.ca.gov/msprog/ordiesel/knowcenter.htm.

As shown in **Table 4.4-11**, the maximum construction emissions for buildout of the proposed project would be less than SCAQMD's thresholds for CO and SO_X, but would exceed the SCAQMD's thresholds for VOC, NO_X, PM_{10}, and $PM_{2.5}$. Therefore, construction-related air quality impacts would be significant.

(2) Localized Significance Threshold Impacts

The SCAQMD recommends the evaluation of localized PM_{10}, $PM_{2.5}$, NO_2 and CO impacts as a result of on-site construction activities to sensitive receptors in the immediate vicinity of the Project site. This analysis determined the ambient air quality impacts due to construction activities on the day with the highest estimated on-site daily mass emissions.

Per the recommendation of the SCAQMD, ambient NO_2, CO, PM_{10}, and $PM_{2.5}$ concentrations due to the construction of the project were analyzed using methods described in its *Final LST Methodology*.[51] The U.S. EPA and SCAQMD-approved dispersion model, AERMOD[52] was used for the analysis to model the dispersion of the pollutants of concern. **Table 4.4-12, Localized Significance Threshold Analysis – Maximum Unmitigated Impacts**, show the maximum PM_{10}, $PM_{2.5}$, NO_2, and CO concentrations associated with construction of the project at the maximally impacted sensitive receptors. For this analysis, school receptors were assessed in addition to residential receptors. The estimates below are fairly conservative. As stated earlier, construction emissions were based on conservative assumptions and do not fully take into account emissions reductions that would occur from CARB regulations that are scheduled to be implemented over the coming years. For additional details regarding the localized significance thresholds analysis, refer to **Appendix 4.4**.

As shown in **Table 4.4-12,** construction of the project would not generate on-site emissions in excess of the site-specific localized significance thresholds for CO. Construction of the project would generate on-site emissions in excess of the threshold for NO_2, PM_{10}, and $PM_{2.5}$ at residential receptors adjacent to the project site. Based on this assessment, the localized impacts for NO_2, PM_{10}, and $PM_{2.5}$ would be potentially significant during construction when construction activity is taking place near off-site sensitive receptors. Mitigation measures that reduce the level of significant impacts are presented later in this section.

---

51 South Coast Air Quality Management District, *Final Localized Significance Threshold Methodology*, (2008).

52 Lakes Environmental Software, *ISC-AERMOD View* (Version 6.2.0).

Table 4.4-12
Localized Significance Threshold Analysis – Maximum Unmitigated Impacts

	Pollutant (concentration)							
	NO_2 1-hour		CO 1-hour		CO 8-hour		PM_{10} 24-hour	$PM_{2.5}$ 24-hour
	µg/m³	ppm	µg/m³	ppm	µg/m³	ppm	µg/m³	µg/m³
LSTs[1]	73	0.039	20,700	18	8,556	7.7	10.4	10.4
Modeling Results	320	0.170	677	0.6	173	0.2	43.79	12.76
Exceeds Threshold?	**YES**		NO		NO		**YES**	**YES**

Source: Impact Sciences, Inc., (2010). Emissions calculations are provided in ***Appendix 4.4****.*
[1] *South Coast Air Quality Management District, Final Localized Significance Threshold Methodology, (2008).*

(3) Operational-Related Impacts

Project implementation would involve the operation of 1,117 dwelling units (96 single-family residential lots, 579 apartment units, and 442 attached for-sale units) and up to 950,000 square feet of commercial and medical office, retail, theater, restaurant, and hotel uses within four Planning Areas (PA). A residential overlay within PA-2 would allow for a conversion of up to 250,000 square feet of office floor area to 233 attached residential units. If implemented, this conversion would permit a maximum of 1,350 residential units and 700,000 square feet of commercial floor area. The project would also include the construction and operation of a water reclamation plant (WRP) that would treat all of the project's wastewater, a portion of which would be utilized on site for irrigation purposes with the remaining recycled water potentially utilized by the Castaic Lake Water Agency for off-site use. The project also includes the relocation of the temporary Metrolink Station at Via Princessa to the project site.

Operational emissions would be generated by both stationary and mobile sources as a result of normal day-to-day activity on the project site. Stationary emissions would be generated by the consumption of natural gas for space and water heating devices, the operation of landscape maintenance equipment, and from the use of consumer products. Mobile emissions would be generated by motor vehicles (e.g., passenger vehicles, trucks, buses, motorcycles, etc.) traveling to and from the project site, including motor vehicles traveling to the Metrolink and Bus Transfer Stations. Emissions from the buses and trains serving the relocated Metrolink and Bus Transfer Stations would not constitute net new emissions since the buses and trains already operate and are considered existing emissions.

Operational emissions, with the exception of emissions from the WRP, were estimated using URBEMIS2007. Average daily trip (ADT) generation rates used in URBEMIS2007 were obtained from

data contained in the traffic impact study for the proposed project.[53] The net increase in motor vehicle ADTs associated with the relocation of the Metrolink and Bus Transfer Stations was also included in the analysis. URBEMIS2007 allows for an adjustment of internal trips for projects that include residential and non-residential land uses. The adjustment is designed to reduce the double counting of internal trips between the residential and nonresidential land uses and is only applicable when both residential and non-residential land uses are entered into URBEMIS2007. Data provided in the traffic impact study for the proposed project were used to estimate the adjustment for internal trips.

URBEMIS2007 estimates slight mobile source emission reductions for projects that locate mixed land uses in close proximity. The required inputs are the number of residential units and estimated employment numbers within a half mile of the project's center or within the entire project, whichever is larger. For the proposed project, the total number of residential units and the estimated employment numbers from the project's nonresidential land uses were used in URBEMIS2007.[54]

The proposed project is designed as a "Transit Oriented Community." URBEMIS2007 allows for an adjustment of trips based on transit enhancing infrastructure measures, such as the number of daily buses and rail or rapid transit buses stopping within a 0.25 or 0.5 mile from the project site. The Bus Transfer Station would operate similarly to the station currently operated by the City at McBean Parkway and Valencia Boulevard. According to data obtained from the City of Santa Clarita Transit Services, approximately 54 daily buses serve the McBean Regional Transit Center.[55] According to data obtained from Metrolink, approximately 22 daily trains serve the Via Princessa Metrolink Station.[56] The number of daily buses and daily trains were included as transit enhancing infrastructure measures in URBEMIS2007 and were included in the analysis.

The emissions from the WRP would be generated from the periodic operation of standby generators, fugitive emissions from the treatment process, and minor amounts of emissions from worker commutes and natural gas combustion for building and water heating. The emissions from the generators were estimated using factors from the U.S. EPA's *Compilation of Air Pollutant Emission Factors*[57] as well as the SCAQMD standards for Best Available Control Technology (BACT). Treatment process emissions were estimated using emission factors from the Tri-TAC *Guidance Document on Control Technology for VOC Air*

---

53 Fehr and Peers, *Transportation Impact Study for Vista Canyon Transit-Oriented Development*, (2009).

54 The estimate of employment numbers are provided in **Section 4.17, Population, Housing, and Employment**, of the Draft EIR.

55 Telephone communication with City of Santa Clarita Transit, (661) 294-1287, June 22, 2009.

56 Telephone communication with Metrolink, 1-800-371-5465, June 22, 2009.

57 U.S. Environmental Protection Agency, Office of Mobile Sources, *Technical Highlights: Emission Factors for Locomotives (EPA420-F-97-051)*, (1997).

Emissions from POTWs.[58, 59] Worker commute and natural gas combustion emissions were estimated using a representative industrial land use type in URBEMIS2007.

The operational emissions are based upon buildout of all land uses associated with the project in 2015 and are reflected in **Table 4.4-13, Estimated Unmitigated Operational Emissions**. As shown in **Table 4.4-13**, the project at buildout and in full operation would generate net emissions that exceed the SCAQMD threshold for VOCs, NO_X, CO, and PM_{10} during summer and winter. Therefore, operational emissions of VOCs, NO_X, CO, and PM_{10} would result in a significant impact on air quality in the region.

Table 4.4-13
Estimated Unmitigated Operational Emissions

Emissions Source	Emissions in Pounds per Day					
	VOC	**NO_X**	**CO**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Summertime Emissions[1]						
Operational (Mobile) Sources	101.58	120.87	1,103.97	1.64	266.86	52.04
Area/Stationary Sources	69.29	20.47	24.89	0.00	0.08	0.08
Metrolink Buses (Idling)	0.07	0.59	0.52	0.00	0.01	0.01
Metrolink Locomotives (Idling)	1.78	31.48	5.72	0.00	1.08	1.08
WRP Operational (Mobile) Sources	0.32	0.29	2.74	0.00	0.68	0.13
WRP Area Sources	0.30	0.83	2.23	0.00	0.01	0.01
WRP Emergency Generator	0.16	2.95	2.69	0.01	0.16	0.16
WRP Wastewater Treatment Operations	0.37	0.00	0.00	0.00	0.00	0.00
Summertime Emissions Total	173.87	177.48	1,142.76	1.65	268.88	53.51
SCAQMD Threshold	55	55	550	150	150	55
Exceeds Threshold?	**YES**	**YES**	**YES**	NO	**YES**	NO
Wintertime Emissions[2]						
Operational (Mobile) Sources	109.28	145.15	1,057.85	1.35	266.86	52.04
Area/Stationary Sources	68.16	26.74	14.07	0.04	0.56	0.56
Metrolink Buses (Idling)	0.07	0.59	0.52	0.00	0.01	0.01
Metrolink Locomotives (Idling)	1.78	31.48	5.72	0.00	1.08	1.08
WRP Operational (Mobile) Sources	0.28	0.35	2.55	0.00	0.68	0.13

58 "POTWs" stands for Publicly Owned Treatment Works.

59 Tri-TAC, Air Committee, *Guidance Document on Control Technology for VOC Air Emissions from POTWs*, (1994).

Emissions Source	Emissions in Pounds per Day					
	VOC	**NO_X**	**CO**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
WRP Area Sources	0.18	0.81	0.68	0.00	0.00	0.00
WRP Emergency Generator	0.16	2.95	2.69	0.01	0.16	0.16
WRP Wastewater Treatment Operations	0.37	0.00	0.00	0.00	0.00	0.00
Wintertime Emissions Total	180.28	208.07	1,084.08	1.40	269.35	53.98
SCAQMD Threshold	55	55	550	150	150	55
Exceeds Threshold?	**YES**	**YES**	**YES**	NO	**YES**	NO

Source: Impact Sciences, Inc. Emissions calculations are provided in ***Appendix 4.4****.*
Totals in table may not appear to add exactly due to rounding in the computer model calculations.
[1] *"Summertime Emissions" are representative of the conditions that may occur during the ozone season (May 1 to October 31).*
[2] *"Wintertime Emissions" are representative of the conditions that may occur during the balance of the year (November 1 to April 30).*

(a) Secondary Operational Thresholds

The following section discusses the secondary impact thresholds of significance applicable to operation of the proposed project. The section is organized by first restating the threshold followed by an analysis of the impacts.

- *The project could interfere with the attainment of the federal or state ambient air quality standards by either violating or contributing to an existing or projected air quality violation.*

As previously discussed, operational emissions for the Vista Canyon project would be generated by both stationary and mobile sources as a result of normal day-to-day activities. Stationary emissions would be generated by the consumption of natural gas for space and water heating devices, as well as from the WRP operations. Mobile emissions would be generated by the motor vehicles traveling to, from, and within the project site and from the operation of the Metrolink and Bus Transfer Stations.

SCAQMD's *CEQA Air Quality Handbook* indicates that an air quality modeling analysis that identifies the proposed project's impact on ambient air quality would need to be performed.[60] In order for a project to be found consistent, the analysis would have to demonstrate that the project's emissions would not increase the frequency or the severity of existing air quality violations, or contribute to a new violation.[61] The CO analysis for traffic emissions described below assesses the potential ambient air quality impacts with respect to this pollutant. With respect to the other criteria pollutants (NO_2, SO_2, PM_{10}, and $PM_{2.5}$), URBEMIS2007 is used to calculate project emissions for comparison with the SCAQMD significance thresholds addressing regional significance. Emissions of NO_X and VOCs contribute to ozone; however,

60 South Coast Air Quality Management District, *CEQA Air Quality Handbook*, (1993) 12-3.
61 Ibid.

the effect of the proposed project's NO_X and VOC emissions on regional ozone concentrations cannot be determined because no model exists to estimate impacts from a single project. While the project's operational emissions exceed the significance thresholds for VOCs, NO_X, and PM_{10}, the project would not violate ambient air quality standards or contribute considerably to an existing or projected air quality violation if it is consistent with regional growth projections and the applicable AQMP, which is discussed under the next secondary impact criteria.

- *The project could result in population increases within an area, which would be in excess of that projected by SCAG in the AQMP, or increase the population in an area where SCAG has not projected that growth for the project's buildout year.*

The 2007 AQMP is designed to accommodate growth, to reduce the high levels of pollutants within the areas under the jurisdiction of SCAQMD, to achieve the federal 8-hour ozone standard by 2024 (if granted the bump-up to "extreme" nonattainment) and to minimize the impact on the economy. Projects that are consistent with the AQMP do not interfere with attainment and do not contribute to the exceedance of an existing air quality violation because the growth is included in the projections utilized in the formulation of the AQMP. Therefore, projects, uses, and activities that are consistent with the applicable assumptions used in the development of the AQMP would not jeopardize attainment of the air quality levels identified in the AQMP, even if they exceed the SCAQMD's recommended thresholds. The following analysis discusses the proposed project's consistency with the AQMP.

Projects that are consistent with growth forecasts identified by SCAG are considered consistent with the AQMP growth projections. This is because the growth projections by SCAG form the basis of the land use and transportation control portions of the AQMP. The proposed project is consistent with the future residential figures projected for the region. The Vista Canyon project would have estimated population and employment levels of 3,452 and 2,568 people, respectively. Under the overlay scenario, the project would have estimated population and employment levels of 4,172 and 1,783 people, respectively. The 2004 SCAG projections, which are incorporated into the 2007 AQMP, anticipate the City of Santa Clarita would have population and employment levels of 200,104 and 60,691 people in 2015. The project's increase in population and employment accounts for maximum of 2.1 and 4.2 percent of the projected population and employment increase within the City in 2015. Therefore, the proposed project would not increase population figures over those that have been planned for the area, would be consistent with the AQMP forecasts for this area, and would be considered consistent with the air quality-related regional plans. The project is not expected to jeopardize attainment of state and federal ambient air quality standards in the SoCAB and would result in a less than significant impact with respect to this criterion.

Another measurement tool in determining AQMP consistency is to determine how a project accommodates the expected increase in population and employment. Generally, if a project is planned in

a way that minimizes vehicle miles traveled both within the project and in the community in which it is located, and consequently air pollutant emissions, that project is consistent with the AQMP.[62] The project site is located in close proximity to several modes of public transportation and would result in the operation of on-site Metrolink and Bus Transfer Stations. Therefore, it is reasonably expected that some portion of the project's population would utilize public transportation. As a result, vehicle miles traveled and, consequently, air pollutant emissions from mobile sources, would be further reduced.

- *The project could generate vehicle trips that cause a CO hotspot or project could be occupied by sensitive receptors that are exposed to a CO hotspot.*

Motor vehicles are a primary source of pollutants within the project vicinity. Traffic congested roadways and intersections have the potential to generate localized high levels of CO. Localized areas where ambient concentrations exceed state and/or federal standards are termed CO "hotspots." Such hot spots are defined as locations where the ambient CO concentrations exceed the state or federal ambient air quality standards. CO is produced in greatest quantities from vehicle combustion and is usually concentrated at or near ground level because it does not readily disperse into the atmosphere. As a result, potential air quality impacts to sensitive receptors are assessed through an analysis of localized CO concentrations. Areas of vehicle congestion have the potential to create CO hotspots that exceed the state ambient air quality 1-hour standard of 20 ppm or the 8-hour standard of 9.0 ppm. The federal levels are less stringent than the state standards and are based on 1- and 8-hour standards of 35 and 9 ppm, respectively. Thus, an exceedance condition would occur based on the state standards prior to exceedance of the federal standard.

The proposed project was evaluated to determine if it would cause a CO hotspot utilizing a simplified CALINE4 screening model developed by the Bay Area Air Quality Management District (BAAQMD). The simplified model is intended as a screening analysis that identifies a potential CO hotspot. If a hotspot is identified, the complete CALINE4 model is then utilized to determine precisely the CO concentrations predicted at the intersections in question. This methodology assumes worst-case conditions (i.e., wind direction is parallel to the primary roadway and 90 degrees to the secondary road, wind speed of less than 1 meter per second, and extreme atmospheric stability) and provides a screening of maximum, worst-case, CO concentrations. This method is acceptable to the SCAQMD as long as it is used consistently with the BAAQMD Guidelines.[63]

---

62 South Coast Air Quality Management District, *CEQA Air Quality Handbook*, (1993) 12-5.

63 Personal communication with Steve Smith, Program Supervisor, South Coast Air Quality Management District, Diamond Bar, California, 12 May 2004.

This model is utilized to predict future CO concentrations at zero and 25 feet from the intersections in the study area based on projected traffic volumes from intersections contained in the project traffic study. Intersections operating at a Level of Service (LOS) of D, E, or F are considered to have the potential to create a CO hotspot. For purposes of this analysis, all intersections operating at a LOS D or below were analyzed. Phase 1 project and post-project maximum future CO concentrations were calculated for peak hour traffic volumes. The results of these CO concentration calculations are presented in **Table 4.4-14, Carbon Monoxide Concentrations – 2012 with Phase 1**, and **Table 4.4-15, Carbon Monoxide Concentrations – 2015 with Project**, for representative receptors located at zero and 25 feet from the intersections.

Table 4.4-14
Carbon Monoxide Concentrations – 2012 with Phase 1

Intersection	0 Feet		25 Feet	
	1-Hour[1]	8-Hour[2]	1-Hour[1]	8-Hour[2]
2. Sand Canyon Road/Soledad Canyon Road	4.2	2.8	3.3	2.2
3. SR 14 Southbound Ramps/Soledad Canyon Road	3.8	2.5	3.0	2.0
5. Sand Canyon Road/Lost Canyon Road	3.5	2.3	2.8	1.9
7. Lost Canyon Road/Soledad Canyon Road	2.0	1.3	2.0	1.3
8. Sierra Highway/Soledad Canyon Road	5.4	3.7	4.1	2.8
13. Sierra Highway/Via Princessa	3.8	2.5	3.2	2.1
14. Via Princessa/SR 14 Southbound Ramps	3.9	2.6	3.1	2.1
15. Via Princessa/SR 14 Northbound Ramps	3.5	2.4	2.9	1.9
16. Via Princessa/Lost Canyon Road	3.3	2.2	2.8	1.8
19. Whites Canyon Road/Soledad Canyon Road	4.7	3.2	3.8	2.6
20. Soledad Canyon Road/Bouquet Canyon Road	6.0	4.1	4.7	3.2
21. Sierra Highway/Placerita Canyon Road	3.9	2.7	3.2	2.1
22. Sierra Highway/SR 14 Southbound Ramps	4.1	2.7	3.2	2.1
Exceeds state 1-hour standard of 20 ppm?	NO	—	NO	—
Exceeds federal 1-hour standard of 35 ppm?	NO	—	NO	—
Exceeds state 8-hour standard of 9.0 ppm?	—	NO	—	NO
Exceeds federal 8-hour standard of 9 ppm?	—	NO	—	NO

*Source: Impact Sciences, Inc., (2009). Emissions calculations are provided in **Appendix 4.4**.*
[1] *State standard is 20 parts per million. Federal standard is 35 parts per million.*
[2] *State standard is 9.0 parts per million. Federal standard is 9 parts per million.*

Table 4.4-15
Carbon Monoxide Concentrations – 2015 with Project

Intersection	0 Feet		25 Feet	
	1-Hour[1]	8-Hour[2]	1-Hour[1]	8-Hour[2]
2. Sand Canyon Road/Soledad Canyon Road	3.9	2.6	3.2	2.1
3. SR 14 Southbound Ramps/Soledad Canyon Road	3.6	2.4	2.9	2.0
4. Sand Canyon Road/SR 14 Northbound Ramps	3.2	2.2	2.7	1.8
5. Sand Canyon Road/Lost Canyon Road	3.3	2.2	2.7	1.8
7. Lost Canyon Road/Soledad Canyon Road	3.4	2.2	2.9	1.9
8. Sierra Highway/Soledad Canyon Road	4.4	3.0	3.6	2.5
12. Canyon Park Boulevard/Jakes Way	2.5	1.6	2.3	1.5
13. Sierra Highway/Via Princessa	3.9	2.6	3.3	2.2
14. Via Princessa/SR 14 Southbound Ramps	3.6	2.4	2.9	1.9
15. Via Princessa/SR 14 Northbound Ramps	3.3	2.2	2.8	1.9
16. Via Princessa/Lost Canyon Road	3.4	2.3	2.9	1.9
19. Whites Canyon Road/Soledad Canyon Road	4.3	2.9	3.5	2.4
20. Soledad Canyon Road/Bouquet Canyon Road	5.1	3.5	4.1	2.8
21. Sierra Highway/Placerita Canyon Road	3.7	2.5	3.1	2.1
22. Sierra Highway/SR 14 Southbound Ramps	3.6	2.4	3.0	2.0
23. SR 14 Northbound Ramps/Placerita Canyon Road	2.6	1.8	2.4	1.6
Exceeds state 1-hour standard of 20 ppm?	NO	—	NO	—
Exceeds federal 1-hour standard of 35 ppm?	NO	—	NO	—
Exceeds state 8-hour standard of 9.0 ppm?	—	NO	—	NO
Exceeds federal 8-hour standard of 9 ppm?	—	NO	—	NO

Source: Impact Sciences, Inc., (2009). Emissions calculations are provided in ***Appendix 4.4****.*

[1] *State standard is 20 parts per million. Federal standard is 35 parts per million.*

[2] *State standard is 9.0 parts per million. Federal standard is 9 parts per million.*

As shown, the CALINE4 screening procedure predicts that, under worst-case conditions, future CO concentrations at each intersection would not exceed state or federal 1-hour and 8-hour standards with development of the proposed project. No significant CO hotspot impacts would occur to sensitive receptors in the vicinity of these intersections. As a result, no significant project-related impacts would occur relative to future carbon monoxide concentrations.

- *The project will have the potential to create, or be subjected to, an objectionable odor that could impact sensitive receptors.*

The residential and commercial land uses associated with the proposed project are not expected to be a source of persistent odors. Construction of the project is temporary and is not expected to cause an odor nuisance. Refuse associated with operation of the proposed project would be disposed of in accordance with applicable regulations. Consequently, no significant impacts from odors are anticipated from residential and commercial land uses.

The Vista Canyon project proposes the construction and operation of an on-site WRP, which could emit persistent odors. However, the proposed WRP would be a scalping plant and would not treat solids, which would remain in the existing sewer system and would be treated at Los Angeles County Sanitation District's Valencia WRP. Additionally, the WRP would be completely covered to reduce odor emissions and would employ a mechanical odor control system, which would collect odorous emissions from the treatment equipment and process tanks and direct it to a biological or chemical air treatment unit prior to exhausting to the atmosphere. The odor control and ventilation systems would be designed and constructed to comply with County and state air quality emission requirements and any permitting requirements imposed by the SCAQMD. Therefore, no significant impacts from odors are anticipated from the on-site WRP.

Any unforeseen odors generated by the project would be controlled in accordance with SCAQMD Rule 402 (Nuisance). Rule 402 prohibits the discharge of air contaminants that 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." Failure to comply with Rule 402 could subject the offending facility to possible fines and/or operational limitations in an approved odor control or odor abatement plan.

- *The project will have hazardous materials on site and could result in an accidental release of toxic air emissions or acutely hazardous materials posing a threat to public health and safety.*

The residential and commercial land uses associated with the proposed project are not anticipated to use hazardous or acutely hazardous materials in appreciable quantities. Hazardous substances currently are regulated under the California Accidental Release Prevention (CalARP) Program. The CalARP Program satisfies the requirements of the Federal Risk Management Plan Program, and contains additional requirements. The CalARP Program applies to regulated substances in excess of specific quantity thresholds. The majority of the substances have thresholds in the range of 100 to 10,000 pounds. Land uses associated with the project may contain small, if any, amounts of these hazardous substances in household and commercial cleaners and other products. However, typical use of these products would not result in quantities that exceed the thresholds. Moreover, significant amounts of hazardous

substances would typically be expected at industrial, manufacturing, and complex water or wastewater treatment land uses. As noted earlier, the project includes a WRP, which would be subject to the CalARP Program. Compliance with CalARP would be required for the WRP if it has more than a threshold quantity of a regulated substance,[64] unless specifically exempted in the regulation. Accordingly, no significant impacts with respect to the criteria listed above are expected to occur.

(b) Toxic Air Contaminants

The following section discusses the thresholds of significance related to toxic air contaminants during operation of the proposed Vista Canyon project. The section is organized by first restating the threshold followed by an analysis of the impacts.

- *The project could emit a toxic air contaminant regulated by SCAQMD rules or that is on a federal or state air toxic list.*

The proposed residential and commercial land uses may potentially emit trace amounts of toxic air contaminants but would not exceed the thresholds contained in SCAQMD Rule 1401 (New Source Review of Toxic Air Contaminants). Diesel-fueled delivery and waste-hauling trucks would drive to and from the project site resulting in emissions of diesel particulate matter. However, the number of trucks would be equal to that occurring in other similarly developed residential and commercial neighborhoods throughout the region.

The WRP could potentially result in toxic air contaminant emissions during the wastewater treatment process. However, as noted above, the proposed WRP would be completely covered to reduce fugitive emissions. Furthermore, the facility would employ a mechanical system that would collect emissions from the treatment equipment and process tanks and direct it to a biological or chemical air treatment unit prior to exhausting to the atmosphere. The ventilation systems would be designed and constructed to comply with County and state air quality emission requirements and any permitting requirements imposed by the SCAQMD and would employ Best Available Control Technology, as required. Consequently, no significant impacts from such emissions are anticipated.

- *The project could be occupied by sensitive receptors within one-quarter mile of an existing facility that emits air toxics identified in SCAQMD Rule 1401.*

The project is adjacent to residential land uses to the west; residential and commercial developments to the north; residential developments and two elementary schools to the east; and commercial horse breeding facility property and residential units to the south, all of which do not generate significant

64 Tables 1-3 of Title 19 California Code of Regulations, § 2770.5.

quantities of toxic air contaminants as a result of their day-to-day activities. Based on a survey of data obtained from the SCAQMD's Facility Information Detail (FIND) system, there are no facilities that emit toxic air contaminants above the SCAQMD reporting threshold as required by Rule 1401 (New Source Review of Toxic Air Contaminants) within a 0.25 mile of the project site.

The proposed project is located south of State Route 14, a north-south route traveled by heavy-duty diesel-fueled vehicles, as well as other motor vehicles, and north of the Metrolink rail line. While heavy-duty diesel-fueled vehicles are not included in Rule 1401, CARB has determined that health effects are generally elevated near heavily traveled roadways. The CARB guidance document, *Air Quality and Land Use Handbook*, recommends that lead agencies, where possible, avoid citing new sensitive land uses within 500 feet of a freeway,[65] urban roads with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day. This recommendation is not mandated by state law, but only serves as a general guidance to lead agencies when considering land use projects. The *Air Quality and Land Use Handbook* states that it is up to lead agencies to balance other considerations, including housing and transportation needs, economic development priorities, and other quality of life issues.[66] The proposed project is not located within 500 feet of a freeway. In addition, an analysis of the traffic impact study for the proposed Project did not identify any urban roads with 100,000 vehicles or more per day in the vicinity of the project site.

Based on the previously discussed MATES III study, the Vista Canyon project is located in two grids with an estimated background cancer risk of 367 and 372 in 1,000,000. The estimated background cancer risk for nearby surrounding grids ranges from 250 to 403 in 1,000,000. **Figure 4.4-2, SCAQMD MATES III Grid for the Vista Canyon Project**, illustrates the background cancer risk for the project and immediate vicinity. As previously noted, the SoCAB has an average cancer risk of approximately 1,200 in 1,000,000. Therefore, based on the MATES III data, it is not anticipated that the proposed project would expose sensitive receptors to substantial increases in health risks and pollutant concentrations relative to the general population. Based on the above information, no significant impacts with respect to this criterion are expected to occur.

- *The project could emit carcinogenic or toxic air contaminants that individually or cumulatively exceed the maximum individual cancer risk of 10 in 1 million.*

---

65 The 2002 study of impacts along the San Diego (I-405) Freeway and the Long Beach (I-710) Freeway cited by CARB in its *Air Quality and Land Use Handbook* found a substantial reduction in pollutant concentrations, relative exposure, and health risk beyond 300 feet. California Air Resources Board, *Air Quality and Land Use Handbook*, (2005) 8-9.

66 California Air Resources Board, *Air Quality and Land Use Handbook*, (2005) 4.

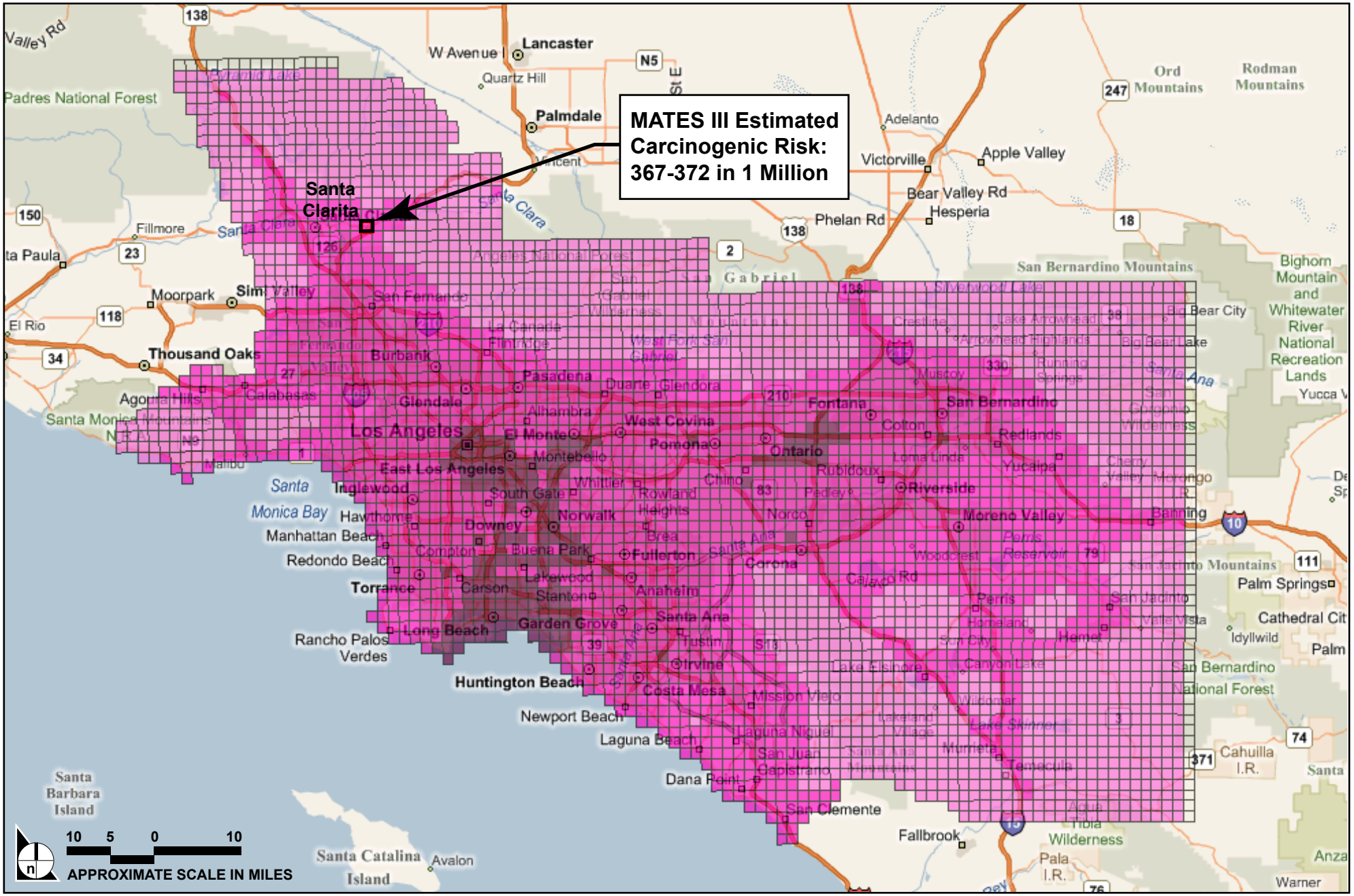
The proposed project would not be expected to emit individual or cumulative toxic air contaminants in appreciable quantities. As noted above, trace amounts of toxic air contaminants may be emitted during operation of the project; however, the levels would be small and would be well below the SCAQMD's reporting threshold.

The WRP could potentially result in toxic air contaminant emissions during the wastewater treatment process; however, the facility would comply with any permitting requirements imposed by the SCAQMD, as well as Best Available Control Technology, as required. Estimated emissions of toxic air contaminants from the WRP are presented below in **Table 4.4-16, Estimated WRP Toxic Air Contaminant Emissions**. The emissions presented below do not include the use of BACT. As shown, maximum total emissions are anticipated to be 30.21 pounds per year (0.08 pounds per day) for toxic air contaminants.

Table 4.4-16
Estimated WRP Toxic Air Contaminant Emissions

Toxic Air Contaminant	Estimated Emissions	
	Pounds per Day	Pounds per Year
1,1,1-Trichloroethane	1.10E-02	4.00
Benzene	2.34E-03	0.85
Chloroform	1.00E-02	3.65
Ethyl Benzene	1.65E-03	0.60
Methyl Ethyl Ketone	6.23E-03	2.27
Methylene Chloride	1.35E-02	4.93
Methyl Isobutyl Ketone	5.67E-03	2.07
Tetrachloroethylene	1.57E-02	5.73
Toluene	8.64E-03	3.15
Xylene	8.08E-03	2.95
Total	**8.28E-02**	**30.21**

*Source: Impact Sciences, Inc., (2009). Emissions calculations are provided in **Appendix 4.4**.*
Note: Pounds per day written in scientific notation (e.g., 1.10E-02 = 0.0110).



SOURCE: Southern California Air Quality Mamagement District. – October 2009

FIGURE **4.4-2**

SCAQMD MATES III Grid for the Vista Canyon Project

A screening health risk assessment was conducted to evaluate the potential for cancer and noncancer health impacts related to the operation of the WRP. The screening HRA utilized the U.S. EPA-approved SCREEN3 model, which is a dispersion model that conservatively estimates pollutant concentrations at downwind receptors using worst-case meteorological conditions. The SCREEN3 model requires the input of source characterization parameters and an emission factor. The WRP facility was characterized using a volume source. This allows for the SCREEN3 model to be run using a unitary emission rate of 1 gram per second. This simplifies the modeling and allows calculations to be made on the ambient concentrations of the toxic air contaminants identified above by multiplying the actual emission rates (in grams per second) by the modeled concentration value. In addition, the SCREEN3 model requires the input of meteorological conditions and receptor distances. The full range of meteorological conditions was selected for the model, including stable conditions. The WRP is proposed to be located northeast of the proposed intersection of Jakes Way and Lost Canyon Road. The nearest sensitive receptor is located on the project site approximately 131 feet to the south relative the center of the WRP facility.

Based on these screening modeling, the screening cancer risk and acute and chronic health impacts are presented in **Table 4.4-17, Screening WRP Health Impacts**. (Refer to **Appendix 4.4** for detailed calculations.) As shown, the WRP would not exceed the maximum individual cancer risk of 10 in 1 million and would not exceed a hazard index of 1.0 for acute or chronic health impacts. Accordingly, no significant impacts with respect to the criteria listed above are expected to occur.

Table 4.4-17
Screening WRP Health Impacts

Health Risk Parameter	Maximum Modeled Risk/Health Impact	Threshold
Cancer	0.1 in 1 million	10 in 1 million
Noncancer Acute	0.00006	1.0
Noncancer Chronic	0.00040	1.0

*Source: Impact Sciences, Inc. Emissions calculations are provided in **Appendix 4.4**.*

6. MITIGATION MEASURES ALREADY INCORPORATED INTO THE PROJECT

(a) Construction Mitigation

- General contractors shall implement a fugitive dust control program pursuant to the provisions of SCAQMD Rule 403. The requirements of Rule 403 are as follows:

Source Category	Control Measure	Guidance
Backfilling	01-1 Stabilize backfill material when not actively handling; and 01-2 Stabilize backfill material during handling; and 01-3 Stabilize soil at completion of activity.	• Mix backfill soil with water prior to moving • Dedicate water truck or high capacity hose to backfilling equipment • Empty loader bucket slowly so that no dust plumes are generated • Minimize drop height from loader bucket
Clearing and Grubbing	02-1 Maintain stability of soil through pre-watering of site prior to clearing and grubbing; and 02-2 Stabilize soil during clearing and grubbing activities; and 02-3 Stabilize soil immediately after clearing and grubbing activities.	• Maintain live perennial vegetation where possible • Apply water in sufficient quantity to prevent generation of dust plumes
Clearing Forms	03-1 Use water spray to clear forms; or 03-2 Use sweeping and water spray to clear forms; or 03-3 Use vacuum system to clear forms.	• Use of high pressure air to clear forms may cause exceedance of Rule requirements
Crushing	04-1 Stabilize surface soils prior to operation of support equipment; and 04-2 Stabilize material after crushing.	• Follow permit conditions for crushing equipment • Pre-water material prior to loading into crusher • Monitor crusher emissions opacity • Apply water to crushed material to prevent dust plumes
Cut and Fill	05-1 Pre-water soils prior to cut and fill activities; and 05-2 Stabilize soil during and after cut and fill activities.	• For large sites, pre-water with sprinklers or water trucks and allow time for penetration • Use water trucks/pulls to water soils to depth of cut prior to subsequent cuts

Source Category	Control Measure	Guidance
Demolition – mechanical/manual	06-1 Stabilize wind erodible surfaces to reduce dust; and 06-2 Stabilize surface soil where support equipment and vehicles will operate; and 06-3 Stabilize loose soil and demolition debris; and 06-4 Comply with AQMD Rule 1403.	• Apply water in sufficient quantities to prevent the generation of visible dust plumes
Disturbed Soil	07-1 Stabilize disturbed soil throughout the construction site; and 07-2 Stabilize disturbed soil between structures	• Limit vehicular traffic and disturbances on soils where possible • If interior block walls are planned, install as early as possible • Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes
Earth-moving Activities	08-1 Pre-apply water to depth of proposed cuts; and 08-2 Re-apply water as necessary to maintain soils in a damp condition and to ensure that visible emissions do not exceed 100 feet in any direction; and 08-3 Stabilize soils once earth-moving activities are complete.	• Grade each project phase separately, timed to coincide with construction phase • Upwind fencing can prevent material movement on site • Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes
Importing/Exporting of Bulk Materials	09-1 Stabilize material while loading to reduce fugitive dust emissions; and 09-2 Maintain at least 6 inches of freeboard on haul vehicles; and 09-3 Stabilize material while transporting to reduce fugitive dust emissions; and 09-4 Stabilize material while unloading to reduce fugitive dust emissions; and 09-5 Comply with Vehicle Code Section 23114.	• Use tarps or other suitable enclosures on haul trucks • Check belly dump truck seals regularly and remove any trapped rocks to prevent spillage • Comply with track-out prevention/mitigation requirements • Provide water while loading and unloading to reduce visible dust plumes
Landscaping	10-1 Stabilize soils, materials, slopes	• Apply water to materials to stabilize • Maintain materials in a crusted condition • Maintain effective cover over materials • Stabilize sloping surfaces using soil binders until vegetation or ground cover can effectively stabilize the slopes • Hydroseed prior to rain season

Source Category	Control Measure	Guidance
Road Shoulder Maintenance	11-1 Apply water to unpaved shoulders prior to clearing; and 11-2 Apply chemical dust suppressants and/or washed gravel to maintain a stabilized surface after completing road shoulder maintenance.	• Installation of curbing and/or paving of road shoulders can reduce recurring maintenance costs • Use of chemical dust suppressants can inhibit vegetation growth and reduce future road shoulder maintenance costs
Screening	12-1 Pre-water material prior to screening; and 12-2 Limit fugitive dust emissions to opacity and plume length standards; and 12-3 Stabilize material immediately after screening.	• Dedicate water truck or high capacity hose to screening operation • Drop material through the screen slowly and minimize drop height • Install wind barrier with a porosity of no more than 50% upwind of screen to the height of the drop point
Staging Areas	13-1 Stabilize staging areas during use; and 13-2 Stabilize staging area soils at project completion.	• Limit size of staging area • Limit vehicle speeds to 15 miles per hour • Limit number and size of staging area entrances/exists
Stockpiles/Bulk Material Handling	14-1 Stabilize stockpiled materials. 14-2 Stockpiles within 100 yards of off-site occupied buildings must not be greater than 8 feet in height; or must have a road bladed to the top to allow water truck access or must have an operational water irrigation system that is capable of complete stockpile coverage.	• Add or remove material from the downwind portion of the storage pile • Maintain storage piles to avoid steep sides or faces
Traffic Areas for Construction Activities	15-1 Stabilize all off-road traffic and parking areas; and 15-2 Stabilize all haul routes; and 15-3 Direct construction traffic over established haul routes.	• Apply gravel/paving to all haul routes as soon as possible to all future roadway areas • Barriers can be used to ensure vehicles are only used on established parking areas/haul routes
Trenching	16-1 Stabilize surface soils where trencher or excavator and support equipment will operate; and 16-2 Stabilize soils at the completion of trenching activities.	• Pre-watering of soils prior to trenching is an effective preventive measure. For deep trenching activities, pre-trench to 18 inches soak soils via the pre-trench and resuming trenching • Washing mud and soils from equipment at the conclusion of trenching activities can prevent crusting and drying of soil on equipment
Truck Loading	17-1 Pre-water material prior to loading; and 17-2 Ensure that freeboard exceeds 6 inches (CVC 23114)	• Empty loader bucket such that no visible dust plumes are created • Ensure that the loader bucket is close to the truck to minimize drop height while loading

Source Category	Control Measure	Guidance
Turf Overseeding	18-1 Apply sufficient water immediately prior to conducting turf vacuuming activities to meet opacity and plume length standards; and 18-2 Cover haul vehicles prior to exiting the site.	• Haul waste material immediately off-site
Unpaved Roads/Parking Lots	19-1 Stabilize soils to meet the applicable performance standards; and 19-2 Limit vehicular travel to established unpaved roads (haul routes) and unpaved parking lots.	• Restricting vehicular access to established unpaved travel paths and parking lots can reduce stabilization requirements
Vacant Land	20-1 In instances where vacant lots are 0.10 acre or larger and have a cumulative area of 500 square feet or more that are driven over and/or used by motor vehicles and/or off-road vehicles, prevent motor vehicle and/or off-road vehicle trespassing, parking and/or access by installing barriers, curbs, fences, gates, posts, signs, shrubs, trees or other effective control measures.	

Source: SCAQMD, Rule 403.

Please see **Section 4.22**, **Global Climate Change**, for mitigation measures that reduce emissions associated with the proposed residential and non-residential structures, and already are incorporated into project design.

7. MITIGATION MEASURES PROPOSED BY THIS EIR

(a) Construction Mitigation

4.4-1 The project applicant shall prepare a Construction Traffic Emission Management Plan to minimize emissions from vehicles including, but not limited to, scheduling truck deliveries to avoid peak hour traffic conditions, consolidating truck deliveries, and prohibiting truck idling in excess of 5 minutes.

4.4-2 The project contractor shall use electric or alternative fueled mobile equipment for on-site uses instead of diesel equipment if suitable equipment is commercially available and the necessary power and refueling infrastructure can reasonably be installed on site.

4.4-3 The project contractor shall maintain construction equipment by conducting regular tune-ups according to the manufacturers' recommendations.

4.4-4 The project contractor shall use electric welders to avoid emissions from gas or diesel welders if suitable equipment is commercially available and the necessary power infrastructure can reasonably be installed on site.

4.4-5 The project contractor shall use on-site electricity or alternative fuels rather than diesel-powered or gasoline-powered generators if suitable equipment is commercially available and the necessary power and refueling infrastructure can reasonably be installed on site.

4.4-6 The project applicant shall require on-site off-road construction equipment to meet U.S. EPA Tier 2 emissions standards at a minimum. This requirement will apply to any piece of equipment that is expected to operate on-site more than 15 days.

4.4-7 For equipment not covered by mitigation measure **4.4-6** above, the project applicant shall evaluate the potential for reducing exhaust emissions from on-road and off-road construction equipment, and implement such measures. Control technologies to be considered may include particulate traps and filters, selective catalytic reduction, oxidation catalysts, air enhancement technologies, and the use of alternatively (non-diesel) fueled engines. Considerations will include commercial availability of appropriate CARB verified technologies.

8. CUMULATIVE IMPACTS

Project impacts have a cumulatively considerable contribution to cumulatively significant impacts when the average daily trips exceed the rate of growth in population defined in the SCAQMD's 2007 AQMP. The SCAQMD 2007 AQMP was prepared to accommodate growth, to meet state and federal air quality standards, and to minimize the fiscal impact that pollution control measures have on the local economy. According to the SCAQMD *CEQA Air Quality Handbook*, projects that are within the emission thresholds identified above should be considered less than significant unless there is other pertinent information to the contrary.[67]

The SCAQMD's *CEQA Air Quality Handbook* identifies methodologies to determine the cumulative significance of land use projects where the construction and/or operation emission generation thresholds have been exceeded. Specifically, the SCAQMD method employed for the proposed project determines whether the rate of growth in average daily trips exceeds the rate of growth in population. This method differs from the methodology used in other sections of this EIR in which all foreseeable future development within a given service boundary or geographical area is predicted and its impacts measured. The SCAQMD has not identified thresholds to which the total emissions of all cumulative development can be compared. Instead, the SCAQMD's methods are based on performance standards

67 South Coast Air Quality Management District, *CEQA Air Quality Handbook*, (1993) 9–12.

and emission reduction targets necessary to attain the federal and state air quality standards identified in the AQMP.

As discussed in **Section 4.17, Population, Housing, and Employment**, the proposed project would house approximately 3,452 residents and would employ approximately 2,568 people. Population data for Los Angeles County were based on SCAG projections.[68] These figures, along with the project ADT volume included in the traffic impact analysis prepared for the project and traffic data for Los Angeles County obtained from the EMFAC2007 on-road motor vehicle emissions model developed by CARB, were used to calculate and compare the ratio of project ADT to anticipated ADT and the ratio of the project population to the anticipated population in the County. As shown in **Table 4.4-18, Comparison of ADT to Population Growth at Project Buildout**, the ADT ratio is less than the population and employment ratio at project buildout in 2015. As such, cumulative impacts would be less than significant based on this criterion.

Table 4.4-18
Comparison of ADT to Population Growth at Project Buildout

Comparison	ADT	Population
Population and Employment:		
Project Population[1, 2]	23,241	6,020
Los Angeles County[3, 4]	45,385,556	11,113,772
Ratio of Project to Los Angeles County	0.000512	0.000542

Source: Impact Sciences, Inc.

1 *Estimated ADT is based on URBEMIS2007 and the traffic report for the Project.*

2 ***Section 4.17, Population, Housing, and Employment**.*

3 *Estimated ADT in Los Angeles County in 2015 (Project occupancy year) as determined by EMFAC2007.*

4 *Southern California Association of Governments, "City Projections," http://www.scag.ca.gov/forecast/downloads/2004GF.xls. 2008. Population was interpolated for 2015.*

In addition to the cumulative significance methodologies contained in SCAQMD's *CEQA Air Quality Handbook*, the SCAQMD staff has suggested that the emissions-based thresholds be used to determine if a project's contribution to regional cumulative emissions is cumulatively considerable.[69] Individual projects that exceed the SCAQMD-recommended daily thresholds for project-specific impacts would be considered to cause a cumulatively considerable increase in emissions for those pollutants for which the

68 Southern California Association of Governments, "City Projections," http://www.scag.ca.gov/forecast/downloads/2004GF.xls. 2008.

69 Personal communication with Steve Smith, Program Supervisor, South Coast Air Quality Management District, Diamond Bar, California, with David Deckman, Impact Sciences, April 19, 2006.

SoCAB is in nonattainment. As shown in **Table 4.4-11**, the project's construction emissions, prior to mitigation, would exceed the project-level significance threshold for VOCs, PM_{10}, $PM_{2.5}$, and NO_X. As shown in **Table 4.4-13**, the project's net operational emissions, prior to mitigation, would exceed the project-level significance thresholds for VOCs, NO_X, CO, and PM_{10} during the summer and winter months. Therefore, the project would result in regional cumulative emissions that are cumulatively considerable (i.e., significant) for VOCs, NO_X, CO, $PM_{2.5}$, and PM_{10}.

9. CUMULATIVE MITIGATION MEASURES

Cumulative air quality impacts during construction and operation of the project are considered significant. **Mitigation Measures 4.4-1** through **4.4-7** also would apply to assist in the reduction of cumulative air quality impacts.

10. SIGNIFICANT UNAVOIDABLE IMPACTS

Although the recommended mitigation measures would reduce the magnitude of project-level impacts, no feasible mitigation exists that would reduce the emissions to below the SCAQMD's recommended thresholds of significance. The project's construction-related emissions of VOCs, PM_{10}, $PM_{2.5}$, and NO_X are considered significant and unavoidable. The project would also exceed the localized significance thresholds for NO_2, PM_{10}, and $PM_{2.5}$; this is a significant unavoidable impact. The project's operational-related emissions of VOCs, NO_X, CO, and PM_{10} also are considered significant and unavoidable.

The proposed project is consistent with regional growth projections; therefore, the cumulative impacts during operation of the proposed project are less than significant based on this criterion. However, the mitigated construction-related VOCs, PM_{10}, $PM_{2.5}$, and NO_X emissions exceed the SCAQMD's recommended daily emission threshold of significance. Additionally, the project's operational-related VOCs, NO_X, CO, and PM_{10} emissions exceed the SCAQMD's recommended daily emission threshold of significance. As the SoCAB is already designated as nonattainment for ozone and PM_{10}, project emissions that exceed the SCAQMD thresholds during construction and operation are cumulatively considerable; thus, the project would result in significant and unavoidable cumulative air quality impacts.