

4.2 AIR QUALITY

4.2.1 INTRODUCTION

This section provides a discussion of the existing air quality environment and analysis of potential air quality impacts from construction and operation of the proposed project. The project site is in the City of Rolling Hills Estates, which is part of the South Coast Air Basin (Basin) and is under the jurisdiction of the South Coast Air Quality Management District (SCAQMD). The air quality assessment for the proposed Peninsula Village Overlay District project estimated emissions associated with short-term construction and long-term operation of the proposed project.

A number of air quality modeling tools are available to assess the air quality impacts of projects. In addition, certain air districts such as the SCAQMD have created guidelines and requirements to conduct air quality analyses. The SCAQMD's current guidelines, included in its *CEQA Air Quality Handbook* (April 1993), were adhered to in the assessment of air quality impacts for the proposed project.

4.2.2 EXISTING ENVIRONMENTAL SETTING

Regional Air Quality

Both the State of California (State) and the federal government have established health-based ambient air quality standards (AAQS) for criteria air pollutants. As shown in Table 4.2.A, these pollutants include ozone (O₃), carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), particulate matter with a diameter of 10 microns or less (PM₁₀), fine particulate matter less than 2.5 microns in diameter (PM_{2.5}), and lead (Pb). In addition, the State has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are designed to protect public health and welfare with a reasonable margin of safety.

In addition to setting out primary and secondary AAQS, the State has established a set of episode criteria for O₃, CO, NO₂, SO₂, and PM₁₀. These criteria refer to episode levels representing periods of short-term exposure to air pollutants that threaten public health. Health effects are progressively more severe as pollutant levels increase from Stage One to Stage Three. Table 4.2.B lists the primary health effects and sources of common air pollutants. Because the concentration standards were set at a level that protects public health with an adequate margin of safety (United States Environmental Protection Agency [EPA]), these health effects will not occur unless the standards are exceeded by a large margin or for a prolonged period of time. The State AAQS are more stringent than the federal AAQS. Among the pollutants, O₃, PM_{2.5}, and PM₁₀ are considered regional pollutants, while the others have more localized effects.

The California Clean Air Act (CCAA) provides air districts such as the SCAQMD the authority to manage transportation activities at indirect sources. Indirect sources of pollution are generated when

Table 4.2.A: Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards ¹		Federal Standards ²		
		Concentration ³	Method ⁴	Primary ^{3,5}	Secondary ^{3,6}	Method ⁷
Ozone (O ₃)	1-Hour	0.09 ppm (180 µg/m ³)	Ultraviolet Photometry	--	Same as Primary Standard	Ultraviolet Photometry
	8-Hour	0.07 ppm (137 µg/m ³)		0.08 ppm (157 µg/m ³) ⁸		
Respirable Particulate Matter (PM ₁₀)	24-Hour	50 µg/m ³	Gravimetric or Beta Attenuation	150 µg/m ³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m ³		50 µg/m ³		
Fine Particulate Matter (PM _{2.5})	24-Hour	No Separate State Standard		65 µg/m ³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m ³	Gravimetric or Beta Attenuation	15 µg/m ³		
Carbon Monoxide (CO)	8-Hour	9.0 ppm (10 mg/m ³)	Non-Dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m ³)	None	Non-Dispersive Infrared Photometry (NDIR)
	1-Hour	20 ppm (23 mg/m ³)		35 ppm (40 mg/m ³)		
	8-Hour (Lake Tahoe)	6 ppm (7 mg/m ³)		--		
Nitrogen Dioxide (NO ₂)	Annual Arithmetic Mean	--	Gas Phase Chemiluminesc e	0.053 ppm (100 µg/m ³)	Same as Primary Standard	Gas Phase Chemiluminesc e
	1-Hour	0.25 ppm (470 µg/m ³)		--		
Sulfur Dioxide (SO ₂)	Annual Arithmetic Mean	--	Ultraviolet Fluorescence	0.030 ppm (80 µg/m ³)	--	Spectrophotometry (Pararosaniline Method)
	24-Hour	0.04 ppm (105 µg/m ³)		0.14 ppm (365 µg/m ³)	--	
	3-Hour	--		--	0.5 ppm (1300 µg/m ³)	
	1-Hour	0.25 ppm (655 µg/m ³)		--	--	
Lead ⁹ (Pb)	30-Day Average	1.5 µg/m ³	Atomic Absorption	--	--	High-Volume Sampler and Atomic Absorption
	Calendar Quarter	--		1.5 µg/m ³	Same as Primary Standard	
Visibility- Reducing Particles	8-Hour	Extinction coefficient of 0.23 per kilometer; visibility of 10 miles or more (0.07–30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent. Method: Beta Attenuation and Transmittance through Filter Tape.		No Federal Standards		
Sulfates	24-Hour	25 µg/m ³	Ion Chromatography			
Hydrogen Sulfide	1-Hour	0.03 ppm (42 µg/m ³)	Ultraviolet Fluorescence			
Vinyl Chloride ⁹	24-Hour	0.01 ppm (26 µg/m ³)	Gas Chromatography			

Source: ARB (May 17, 2006).

Footnotes:

- ¹ The California standards for ozone; carbon monoxide (except Lake Tahoe); sulfur dioxide (1- and 24-hour); nitrogen dioxide; suspended particulate matter - PM₁₀, PM_{2.5}, and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
- ² National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth-highest eight-hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM₁₀, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m³ is equal to or less than one. For PM_{2.5}, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the EPA for further clarification and current federal policies.
- ³ Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
- ⁴ Any equivalent procedure that can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.
- ⁵ National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
- ⁶ National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
- ⁷ Reference method as described by the EPA. An “equivalent method” of measurement may be used but must have a “consistent relationship to the reference method” and must be approved by the EPA.
- ⁸ New federal eight-hour ozone and fine particulate matter standards were promulgated by the EPA on July 18, 1997. Contact the EPA for further clarification and current federal policies.
- ⁹ The ARB has identified lead and vinyl chloride as “toxic air contaminants” with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

Table 4.2.B: Potential Health Effects Some Common Air Pollutants

Pollutant	Health Effects	Examples of Sources
Particulate Matter (PM ₁₀ : less than or equal to 10 microns)	Increased respiratory disease Lung damage Premature death	Cars and trucks, especially diesels Fireplaces, wood stoves Windblown dust from roadways, agriculture, and construction
Ozone (O ₃)	Breathing difficulties Lung damage	Formed by chemical reactions of air pollutants in the presence of sunlight; common sources are motor vehicles, industries, and consumer products
Carbon Monoxide (CO)	Chest pain in heart patients Headaches, nausea Reduced mental alertness Death at very high levels	Any source that burns fuel such as cars, trucks, construction and farming equipment, and residential heaters and stoves
Nitrogen Dioxide (NO ₂)	Lung damage	See carbon monoxide sources
Toxic Air Contaminants	Cancer Chronic eye, lung, or skin irritation Neurological and reproductive disorders	Cars and trucks, especially diesels Industrial sources such as chrome platers Neighborhood businesses such as dry cleaners and service stations Building materials and products

Source: ARB 2005.

minor sources collectively emit a substantial amount of pollution. The SCAQMD also regulates stationary sources of pollution throughout its jurisdiction. Direct emissions from motor vehicles are regulated by the California Air Resources Board (ARB).

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

Climate in the Basin is determined by its terrain and geographical location. The Basin is a coastal plain with connecting broad valleys and low hills. The Pacific Ocean forms the southwestern border, and high mountains surround the rest of the Basin. The Basin lies in the semipermanent high-pressure zone of the eastern Pacific. The resulting climate is mild and tempered by cool ocean breezes. This climatological pattern is rarely interrupted. However, periods of extremely hot weather, winter storms, and Santa Ana wind conditions do occur.

The annual average temperature varies little throughout the Basin, ranging from the low to middle 60s, measured in degrees Fahrenheit (° F). With a more pronounced oceanic influence, coastal areas show less variability in annual minimum and maximum temperatures than inland areas. The climatological station closest to the project site is the Torrance Air Station.¹ The monthly average maximum temperature recorded at that station for the past 56 years ranged from 66.1° F in January to 79.1° F in August, with an annual average maximum of 72.3° F. The monthly average minimum temperature recorded at this station ranged from 45.0° F in January to 61.4° F in August, with an annual average minimum of 52.8° F. January is typically the coldest month, and August is typically the warmest month in this area of the Basin.

The majority of annual rainfall in the Basin occurs between November and April. Summer rainfall is minimal and is generally limited to scattered thundershowers in coastal regions and slightly heavier showers in the east part of the Basin and along the coastal side of the mountains. The Torrance Air Station also monitors precipitation. Average monthly rainfall measured at that station for the past 56 years varied from 3.36 inches (in) in January to 0.37 in or less between May and October, with an annual total of 13.74 in. Patterns in monthly and yearly rainfall totals are unpredictable due to fluctuations in the weather.

Although the Basin has a semiarid climate, air near the surface is generally moist due to the presence of a shallow marine layer. With very low average wind speeds, there is a limited capacity to disperse air contaminants horizontally. The dominant daily wind pattern is an onshore 8 to 12 miles per hour (mph) daytime breeze and an offshore 3 to 5 mph nighttime breeze. The typical wind-flow pattern fluctuates only with occasional winter storms or strong northeasterly (Santa Ana) winds from the mountains and deserts northeast of the Basin. Summer wind-flow patterns represent worst-case conditions, because this is the period of higher temperatures and more sunlight, which result in O₃ formation.

¹ Western Regional Climate Center Web site: www.wrcc.dri.edu.

Winds in the project area are almost always driven by the dominant land/sea breeze circulation system. Regional wind patterns are dominated by daytime onshore sea breezes. At night, the wind generally slows and reverses direction, traveling toward the sea. Wind direction is altered by local canyons, with wind tending to flow parallel to the canyons. During the transition period from one wind pattern to another, the dominant wind direction rotates to the south and causes a minor wind direction maximum from the south. The frequency of calm winds (i.e., less than 2 mph) is less than 10 percent. Therefore, there is little stagnation in the vicinity of the project site, especially during busy daytime traffic hours.

During spring and early summer, pollution produced during any one day is typically blown out of the Basin through mountain passes or lifted by warm, vertical currents adjacent to mountain slopes. Air contaminants can be transported 60 or more miles from the Basin by ocean air during the afternoons. From early fall to winter, the transport is less pronounced due to slower average wind speed and the appearance of drainage winds earlier in the day. During stagnant wind conditions, offshore drainage winds may begin by late afternoon. Pollutants remaining in the Basin are trapped and begin to accumulate during the night and the following morning. A low morning wind speed in pollutant source areas is an important indicator of air stagnation and the potential for buildup of primary air contaminants.

Temperature normally decreases with altitude, and a reversal of this atmospheric state, where temperature increases with altitude, is called an inversion. The height from ground surface to the inversion base is known as the mixing height. Persistent low inversions and cool coastal air tend to create morning fog and low stratus clouds. Cloudy days are less likely in the east parts of the Basin and are about 25 percent more likely along the coast. The vertical dispersion of air pollutants in the Basin is limited by temperature inversions in the atmosphere close to the ground surface.

Inversions are generally lower in the nighttime when the ground is cool than during daylight hours when the sun warms the ground and, in turn, the surface air layer. As this heating process continues, the temperature of the surface air layer approaches the temperature of the inversion base, causing heating along its lower edge. If enough warming takes place, the inversion layer becomes weak and opens up to allow the surface air layers to mix upward. This can be seen in the middle to late afternoon on a hot summer day, when the smog appears to clear up suddenly. Winter inversions typically break earlier in the day, preventing excessive contaminant buildup.

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

Air Pollution Constituents and Attainment Status. The ARB coordinates and oversees the State and federal air pollution control programs, oversees activities of local air quality management agencies, and maintains air quality monitoring stations throughout the State in conjunction with the EPA and local air districts. The State is divided into 15 air basins based on meteorological and

topographical factors of air pollution. The ARB and EPA classify air basins as attainment, nonattainment, nonattainment-transitional, or unclassified, based on air quality data collected at these stations for the most recent three calendar years compared with the AAQS. Nonattainment areas are imposed with additional restrictions as required by the EPA. The air quality data are also used to monitor progress in attaining the AAQS.

The ARB provided the EPA with State recommendations for eight-hour O₃ area designations in July 2003. The recommendations and supporting data were an update to a report submitted to the EPA in July 2000. On December 3, 2003, the EPA published its proposed designations. The EPA's proposal differs from the State's recommendations primarily on the appropriate boundaries for several nonattainment areas. The ARB responded to the EPA's proposal on February 4, 2004. The EPA issued final designations on April 15, 2004. Table 4.2.C lists the current attainment status for the criteria pollutants in the Basin.

Table 4.2.C: Attainment Status of Criteria Pollutants in the South Coast Air Basin

Pollutant	State	Federal
O ₃ 1-hour	Nonattainment	Standard Revoked (06/05)
O ₃ 8-hour	Not Established	Severe-17 Nonattainment
PM ₁₀	Nonattainment	Serious Nonattainment
PM _{2.5}	Nonattainment	Nonattainment
CO	Nonattainment (Los Angeles County only)	Serious Nonattainment
NO ₂	Attainment	Attainment/Maintenance
SO ₂	Attainment	Attainment
Pb	Attainment	Attainment
All others	Attainment/Unclassified	Attainment/Unclassified

Source: ARB 2006 (<http://www.arb.ca.gov/desig/desig.htm>).

Ozone. O₃ is formed by photochemical reactions between NO_x and reactive organic gases (ROG) rather than being directly emitted. O₃ is a pungent, colorless gas typical of Southern California smog. Elevated O₃ concentrations result in reduced lung function, particularly during vigorous physical activity. This health problem is particularly acute in sensitive receptors such as the sick, elderly, and young children. O₃ levels peak during summer and early fall. The Basin is designated a nonattainment area for the State one-hour O₃ AAQS. The Basin is designated as Severe-17 nonattainment for the eight-hour O₃ AAQS, meaning that by 2021, the Basin must be in attainment for this criteria pollutant.

Carbon Monoxide. CO is formed by the incomplete combustion of fossil fuels, almost entirely from automobiles. It is a colorless, odorless gas that can cause dizziness, fatigue, and impairment to central nervous system functions. The Basin is designated as a serious nonattainment area for the federal CO AAQS. However, the Basin has not violated the federal CO AAQS in the past three years and is expected to be classified as attainment in the future. The Los Angeles County part of the Basin is designated a nonattainment area for the State CO AAQS.

Nitrogen Oxides. NO₂, a reddish-brown gas, and nitric oxide (NO), a colorless, odorless gas, are formed from fuel combustion under high temperature or pressure. These compounds are referred to as NO_x. NO_x is a primary component of the photochemical smog reaction. It also contributes to other pollution problems, including a high concentration of fine particulate matter, poor visibility, and acid deposition (i.e., acid rain). NO₂ decreases lung function and may reduce resistance to infection. The Basin has not exceeded either the federal or State AAQS for NO₂ in the past five years with published monitoring data. It is designated as a maintenance area under the federal AAQS and an attainment area under the State AAQS.

Sulfur Dioxide. SO₂ is a colorless, irritating gas formed primarily from incomplete combustion of fuels containing sulfur. Industrial facilities also contribute to gaseous SO₂ levels. SO₂ irritates the respiratory tract, can injure lung tissue when combined with fine particulate matter, and reduces visibility and the level of sunlight. The Basin is in attainment with the federal and State SO₂ AAQS.

Lead. Pb is found in old paints and coatings, plumbing, and a variety of other materials. Once in the blood stream, Pb can cause damage to the brain, nervous system, and other body systems. Children are highly susceptible to the effects of Pb. The Basin is in attainment for the federal and State AAQS for Pb.

Particulate Matter. Particulate matter is a mixture of solid particles and liquid droplets found in the air. Coarse particles, PM₁₀, derive from a variety of sources, including windblown dust and grinding operations. Fuel combustion and resultant exhaust from power plants and diesel buses and trucks are primarily responsible for fine particle, PM_{2.5}, levels. Fine particles can also be formed in the atmosphere through chemical reactions. PM₁₀ can accumulate in the respiratory system and aggravate health problems such as asthma. The EPA's scientific review concluded that PM_{2.5}, which penetrates deeply into the lungs, is more likely than PM₁₀ to contribute to the health effects listed in a number of recently published community epidemiological studies at concentrations that are well below those allowed by the current PM₁₀ AAQS. These effects include premature death and increased hospital admissions and emergency room visits (primarily the elderly and individuals with cardiopulmonary disease); increased respiratory symptoms and disease (children and individuals with cardiopulmonary disease such as asthma); decreased lung functions (particularly in children and individuals with asthma); and alterations in lung tissue and structure and in respiratory tract defense mechanisms. The Basin is a nonattainment area for the federal and State PM₁₀ and PM_{2.5} AAQS.

Local Air Quality

The SCAQMD, together with the ARB, maintains ambient air quality monitoring stations in the Basin. The air quality monitoring station closest to the project site is the North Long Beach station. The air quality trends measured at this station are representative of the ambient air quality in the project area. The pollutant concentrations measured at this station for the last three years are shown in Table 4.2.D.

Table 4.2.D: Ambient Air Quality at the North Long Beach Air Monitoring Station

Pollutant	Standard	2003	2004	2005
Carbon Monoxide				
Max 1-hr concentration (ppm)		5.5	4.2	4.0
No. days exceed: State standard	> 20 ppm/1-hr	0	0	0
Federal standard	> 35 ppm/1-hr	0	0	0
Max 8-hr concentration (ppm)		4.66	3.36	3.51
No. days exceed: State standard	9.0 ppm/8-hr	0	0	0
Federal standard	9 ppm/8-hr	0	0	0
Ozone				
Max 1-hr concentration (ppm)		0.099	0.090	0.091
No. days exceed: State standard	> 0.09 ppm/1-hr	1	0	0
Max 8-hr concentration (ppm)		0.068	0.074	0.069
No. days exceed: State standard	> 0.07 ppm/1-hr	0	2	0
No. days exceed: Federal standard	> 0.08 ppm/8-hr	0	0	0
Particulates (PM₁₀)				
Max 24-hr concentration (µg/m ³)		63.0	72.0	61.0
No. days exceed: State standard	> 50 µg/m ³ /24-hr	4	4	NA
Federal standard	> 150 µg/m ³ /24-hr	0	0	0
Annual arithmetic average (µg/m ³)		32.8	33.1	NA
Exceed: State standard	> 20 µg/m ³ ann. arth. avg.	Yes	Yes	NA
Federal standard	> 50 µg/m ³ ann. arth. avg.	No	No	NA
Particulates (PM_{2.5})				
Max 24-hr concentration (µg/m ³)		115.2	66.6	53.8
No. days exceed: Federal standard	> 65 µg/m ³ /24-hr	3	1	0
Annual arithmetic average (µg/m ³)		18.0	17.8	16.0
Exceed: State standard	> 12 µg/m ³ ann. arth. avg.	Yes	Yes	Yes
Federal standard	> 15 µg/m ³ ann. arth. avg.	Yes	Yes	Yes
Nitrogen Dioxide				
Max 1-hr concentration (ppm)		0.135	0.121	0.136
No. days exceed: State standard	> 0.25 ppm/1-hr	0	0	0
Annual arithmetic average concentration (ppm)		0.029	0.028	0.024
Exceed: Federal standard	> 0.053 ppm ann. arth. avg.	No	No	No
Sulfur Dioxide				
Max 1-hr concentration (ppm)		0.041	0.042	0.033
No. days exceed: State standard	> 0.25 ppm/1-hr	0	0	0
Max 24-hr concentration (ppm)		0.008	0.013	0.010
No. days exceed: State standard	> 0.04 ppm/24-hr	0	0	0
Federal standard	> 0.14 ppm/24-hr	0	0	0
Annual arithmetic average concentration (ppm)		0.002	0.005	0.002
Exceed: Federal standard	> 0.030 ppm ann. arth. avg.	No	No	No

Source: Air Quality Analysis (Appendix _)

ppm = parts per million

µg/m³ = microgram of pollutant per cubic meter of air

ann. arth. avg = annual arithmetic average

NA = Not Available

The ambient air quality data in Table 4.2.D show that NO₂, SO₂, and CO levels are below the relevant State and federal AAQS at the North Long Beach station. The State one-hour O₃ AAQS was exceeded on one day in the last three years. The federal eight-hour O₃ AAQS has not been exceeded in the last three years, and the State eight-hour AAQS was exceeded on two days in 2004. The State 24-hour PM₁₀ AAQS was exceeded on up to four days per year during the last three years but did not exceed the federal 24-hour AAQS. The federal 24-hour PM_{2.5} AAQS was exceeded on up to three days per year during the last three years. Both the State and federal annual average PM_{2.5} AAQS have been exceeded in each of the last three years.

Regulatory Setting

Federal Regulations and Standards. Pursuant to the federal Clean Air Act (CAA) of 1970, the EPA established national ambient air quality standards (NAAQS) for the six major pollutants (criteria pollutants) described earlier. Criteria pollutants are defined as those pollutants for which the federal and State governments have established AAQS, or criteria, for outdoor concentrations in order to protect public health. These standards were listed in Table 4.2.A.

The EPA established new NAAQS for ground-level O₃ and PM_{2.5} matter in 1997. On May 14, 1999, the Court of Appeals for the District of Columbia Circuit issued a decision ruling that the CAA, as applied in setting the new public health standards for O₃ and particulate matter, was unconstitutional as an improper delegation of legislative authority to the EPA. On February 27, 2001, the United States Supreme Court upheld the way the government sets air quality standards under the CAA. The court unanimously rejected industry arguments that the EPA must consider financial cost as well as health benefits in writing standards. The justices also rejected arguments that the EPA took too much lawmaking power from Congress when it set tougher standards for O₃ and soot in 1997. Nevertheless, the court threw out the EPA's policy for implementing new O₃ rules, saying that the agency ignored a section of the law that restricts its authority to enforce such rules.

In April 2003, the EPA was cleared by the White House Office of Management and Budget (OMB) to implement the eight-hour ground-level O₃ AAQS. The EPA issued the proposed rule implementing the eight-hour O₃ AAQS in April 2003. The EPA completed final eight-hour nonattainment status on April 15, 2004. The EPA revoked the one-hour O₃ AAQS on June 15, 2005.

The EPA issued the final PM_{2.5} implementation rule in fall 2004 and made final designations in December 2004.

State Regulations and Standards. The State began to set California ambient air quality standards (CAAQS) in 1969 under the mandate of the Mulford-Carrell Act. The CAAQS are generally more stringent than the NAAQS. In addition to the criteria pollutants covered by the NAAQS, there are CAAQS for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards were listed earlier in Table 4.2.A.

Originally, there were no attainment deadlines for the CAAQS. However, the CCAA of 1988 provided a time frame and planning structure to promote their attainment. The CCAA required nonattainment areas in the State to prepare attainment plans and proposed to classify each such area on the basis of the submitted plan, as follows:

- Moderate: if CAAQS attainment could not occur before December 31, 1994
- Serious: if CAAQS attainment could not occur before December 31, 1997
- Severe: if CAAQS attainment could not be conclusively demonstrated

The attainment plans are required to achieve a minimum 5 percent annual reduction in the emissions of nonattainment pollutants unless all feasible measures have been implemented.

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

Regional Air Quality Planning Framework. The 1976 Lewis Air Quality Management Act established the SCAQMD and other air districts throughout the State. The federal CAA Amendments of 1977 required that each state adopt an implementation plan outlining pollution-control measures to attain the federal AAQS in nonattainment areas of the State. The ARB is responsible for incorporating Air Quality Management Plans (AQMPs) for local air basins into a State Implementation Plan (SIP) for EPA approval. Significant authority for air quality control within the basins has been given to local air districts that regulate stationary source emissions and develop local nonattainment plans.

2003 Air Quality Management Plan. The SCAQMD and SCAG are responsible for formulating and implementing the AQMP for the Basin. Every three years, SCAQMD prepares a new AQMP, updating the previous plan and having a 20-year horizon. SCAQMD adopted the 2003 AQMP in August 2003 and forwarded it to the ARB for review and approval. The ARB approved a modified version of the 2003 AQMP and forwarded it to the EPA in October 2003 for review and approval.

The 2003 AQMP updates the attainment demonstration for the federal AAQS for O₃ and PM₁₀, replaces the 1997 attainment demonstration for the federal CO AAQS and provides a basis for a maintenance plan for CO for the future, and updates the maintenance plan for the federal NO₂ AAQS that the Basin has met since 1992.

This revision to the AQMP also addresses several State and federal planning requirements and incorporates significant new scientific data, primarily in the form of updated emissions inventories, ambient measurements, new meteorological episodes, and new air quality modeling tools. The 2003 AQMP is consistent with and builds on the approaches taken in the 1997 AQMP and the 1999 Amendments to the Ozone SIP for the Basin for the attainment of the federal O₃ AAQS. However, this revision points to the urgent need for additional emission reductions (beyond those incorporated in the 1997/1999 Plan) from all sources, specifically those under the jurisdiction of the ARB and the EPA, which account for approximately 80 percent of the O₃ precursor emissions in the Basin.

4.2.3 METHODOLOGY

Evaluation of the potential air quality impacts associated with the proposed Peninsula Village Overlay District project included the following:

- Determine the short-term construction air quality impacts
- Determine the long-term air quality impacts, including vehicular traffic
- Determine the required mitigation to reduce short- and long-term adverse project air quality impacts

Localized air quality in the project area would be affected by both heavy-duty construction equipment used on site as well as local traffic, due to equipment delivery, construction worker commutes, and material removal. The SCAQMD *CEQA Air Quality Handbook* methodology was used to analyze the criteria pollutant emissions from these activities.

Air quality in the project area would be affected by long-term air emissions from stationary sources and mobile sources related to the proposed project. The URBEMIS 2002 model was used to predict these project-related long-term impacts. Localized air quality impacts (i.e., CO concentrations [CO hot spots]) in the project area would potentially be affected if traffic increases due to the proposed project. The California Department of Transportation (Caltrans) CALINE4 model was used to assess the project's impact on the local CO concentrations.

4.2.4 THRESHOLDS OF SIGNIFICANCE

The City of Rolling Hills Estates has adopted significance thresholds for use in evaluating the severity of impacts. These significance thresholds are consistent with, and expand upon, Appendix G of the State CEQA Guidelines. The proposed project would result in a significant adverse air quality impact if it would result in any of the following conditions:

- Fail to meet the applicable State and federal air quality plan (i) because the project may cause or contribute to emission of identified air pollutants in excess of levels stated in the plan or (ii) where it may fail to implement a remedial or mitigation measure required under the appropriate plan
- Result in emission of identified pollutants in excess of the pounds per day (lbs/day) or tons per quarter standards established by the SCAQMD
- Cause a cumulatively considerable net increase of any criteria pollutants for which the project region is non-attainment under an applicable federal or State AAQS regulations (including releasing emissions which exceed quantitative thresholds for O₃ precursors) where the incremental effect of the project emissions, considered together with past, present, and reasonably anticipated future project emissions, increases the level of any criteria pollutant above the existing ambient levels
- Create objectionable odors affecting a substantial number of people because the project may cause an odiferous emission, including emissions resulting from vehicles, that is noxious, putrid, having an appreciable chemical smell, or having an appreciable smell of human or animal waste, rendering, or by-products

SCAQMD CEQA Thresholds

Air quality management in the Basin, in which the project site is located, is administered by the SCAQMD, and the guidelines and emissions thresholds established by the SCAQMD in its *CEQA Air Quality Handbook* were used in this analysis. Specific criteria for determining whether the potential air quality impacts of a project are significant are set forth in the *CEQA Air Quality Handbook*. The criteria include daily emissions thresholds, compliance with the State and federal AAQS, and consistency with the current AQMP. In addition to the federal and State AAQS, there are daily and quarterly emissions thresholds for construction and operation of a proposed project in the Basin. A summary of these thresholds, which were used in this analysis to determine whether or not a significant adverse project impact will occur, is provided below.

The emission thresholds were established based on the attainment status of the Basin in regard to the AAQS for specific criteria pollutants. Because the concentration standards were set at a level that protects public health with adequate margin of safety (EPA), these emission thresholds are regarded as conservative, and their exceedance would overstate an individual project's contribution to health risks.

Thresholds for Construction Emissions. The SCAQMD established the following significance thresholds for construction emissions in the Basin:

- 75 lbs/day or 2.5 tons per quarter of reactive organic compounds (ROC)
- 100 lbs/day or 2.5 tons per quarter of NO_x
- 550 lbs/day or 24.75 tons per quarter of CO
- 150 lbs/day or 6.75 tons per quarter of PM₁₀
- 150 lbs/day or 6.75 tons per quarter of sulfur oxides (SO_x)

Projects in the Basin with construction-related emissions that exceed any of these emissions thresholds should be considered to result in a significant and adverse air quality impact under CEQA.

Thresholds for Operational Emissions. The daily operational emissions significance thresholds for the Basin are for pollutants with regional effects, local microscale CO concentrations, and odors.

Thresholds for Pollutants with Regional Effects. Projects with operation-related emissions that exceed any of the emissions thresholds listed below are considered to result in a significant and adverse air quality impact under the SCAQMD guidelines:

- 55 lbs/day of ROC
- 55 lbs/day of NO_x
- 550 lbs/day of CO

- 150 lbs/day of PM₁₀
- 150 pounds per day of SO_x

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

- State one-hour CO standard of 20.0 ppm
- State eight-hour CO standard of 9.0 ppm

Thresholds for Odor Impacts. Any project with the potential to frequently expose members of the public to objectionable odors will be deemed to have a significant adverse impact. Because offensive odors rarely cause any physical harm, and no requirements for their control are included in State or federal air quality regulations, the SCAQMD has no rules or standards related to odor emissions other than its nuisance rule (Rule 402 of the SCAQMD Rules and Regulations and the California Health and Safety Codes Section 41700). Any actions related to odors are based on citizen complaints to local governments and the SCAQMD. Significant adverse odor problems are defined as:

- More than one confirmed complaint per year averaged over a three-year period
- Three unconfirmed complaints per year averaged over a three-year period

4.2.5 IMPACTS AND MITIGATION MEASURES

Less Than Significant Impacts

Air Quality Management Plan Consistency. A consistency determination plays an essential role in local agency project review by linking local planning and individual projects to the relevant AQMPs. It fulfills the CEQA goal of fully informing Lead Agency decision makers of the environmental effects of a project under consideration at a stage early enough to ensure that air quality concerns are addressed. New or amended General Plan elements, Specific Plans, and significantly unique projects need to undergo a consistency review, because the applicable air quality plan strategy is based on projections from adopted local General Plans.

The proposed project is a General Plan Amendment, which would change the standards for the existing Mixed-Use Overlay designated in the current General Plan. The proposed overlay district would result in fewer residential units and less commercial square footage than allowed under the current General Plan. Additionally, the proposed overlay promotes use of alternative modes of travel to the automobile by locating residences in close proximity to commercial/office uses. This provides

the opportunity for reductions in vehicle trips through increased pedestrian movement as well as through transit use. The net reduction in residential and commercial development and the potential for decreasing vehicle trips would result in a net positive beneficial impact on regional air quality and would further the trip reduction goals of the AQMP.

Odors. Specific activities allowed within each of the major land use categories in the Peninsula Village Overlay District could potentially raise odor concerns on the part of nearby neighbors. Major potential sources of odors include restaurants, manufacturing plants, and agricultural operations. While sources that generate objectionable odors must comply with applicable air quality regulations, the public can be more sensitive to locally produced odors, even if standards are not exceeded.

Offensive odors from stationary sources rarely cause any physical harm; the occurrence and severity of odor impacts depend on the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of receptors. The proposed project would allow residential development in the area and increased commercial square footage compared to the existing condition. This would increase the number of sensitive receptors in the area as well as the number of potential odor-producing land uses. However, the potential odor-producing land uses would be similar to existing uses such as restaurants and grocery stores; manufacturing plants and agricultural operations would not be allowed under the proposed overlay district. Because odor-producing sources are regulated by AQMD and the proposed project includes similar odor sources as what is existing, odors associated with operation of the proposed project would be less than significant.

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

An assessment of project-related impacts on localized ambient air quality requires that future ambient air quality levels be projected. Existing CO concentrations in the immediate project vicinity are not available. Ambient CO levels monitored at the North Long Beach station, the closest station with monitored CO data, showed a highest recorded one-hour CO concentration of 5.5 ppm (the State AAQS is 20 ppm) and a highest eight-hour concentration of 4.66 ppm (the State AAQS is 9 ppm) during the past three years as shown earlier in Table 4.2.D. The highest CO concentrations would occur during peak traffic hours; hence, CO impacts calculated under peak traffic conditions represent a worst-case analysis. Based on the traffic analysis, CO hot spot analyses were conducted for existing and future cumulative conditions. The impact on local CO levels was assessed with the ARB-approved CALINE4 air quality model, which allows microscale CO concentrations to be estimated

along roads or near intersections. This model is designed to identify localized concentrations of CO, often termed CO hot spots. Modeling inputs are provided in Appendix C.

The proposed project would contribute to increased CO concentrations at intersections in the project vicinity. As shown in Tables 4.2.E and 4.2.F, under the existing conditions on weekdays and Saturdays both without and with the proposed overlay, all 11 intersections analyzed would experience one-hour and eight-hour CO concentrations below the federal and State AAQS. The existing CO concentrations are calculated from current traffic in the vicinity of these intersections.

Four future-year scenarios were evaluated for traffic impacts from the proposed project: the cumulative year (2025) without and with the Mixed-Use overlay and the cumulative year (2025) without and with the proposed overlay. It is anticipated that emissions in future years, including CO, will decrease with technological advancement. For these scenarios, traffic volumes projected for 2025 were used, with the 2025 emissions factors for CO obtained from EMFAC2002. As a worst-case scenario, the existing 2005 background CO concentrations at the North Long Beach station were used. Tables 4.2.G and 4.2.H show that none of the 11 intersections analyzed would exceed the federal and State AAQS for either the one-hour or the eight-hour CO concentrations. Also shown in these tables is that compared to the Mixed-Use overlay, the proposed overlay would not increase the one-hour and eight-hour CO concentrations at any of these intersections; CO concentrations would be reduced at most of them under the with proposed overlay scenario. No CO hot spots would occur; therefore, the proposed project would not have a significant impact on local air quality from CO, and no mitigation is required.

Potentially Significant Adverse Impacts

Short-Term Construction Impacts. Air quality impacts, including fugitive dust and gaseous emissions, could occur during construction-related activities associated with individual projects permitted under the proposed overlay. Impacts from fugitive dust and emissions generated by construction vehicles and equipment traveling over exposed surfaces, as well as by disturbances from grading and filling, have the potential to affect air quality. The impacts of build out of the proposed overlay would be a summary of individual actions undertaken throughout this area as part of the proposed overlay implementation, as opposed to an individual project with project-specific construction information occurring in a single location. Therefore, it is not feasible to accurately quantify the proposed project-related fugitive dust caused by construction that may occur at any given time. Construction impacts would actually result from a number of different development projects occurring at any given time at different locations in the study area.

Construction-related air quality impacts potentially include:

- Particulate emissions in the form of fugitive dust from demolition, clearing, and grading activities
- Exhaust emissions and odors from construction equipment used on site, as well as from vehicles used to transport materials to and from the site
- Emissions associated with the application of architectural coatings on buildings
- Emissions associated with paving operations
- Exhaust emissions of motor vehicles of the construction crew

Table 4.2.E: Existing (2005) Weekday CO Concentrations¹ without and with Project

Intersection	Without/with Project 1-Hour CO Concentration (ppm)	Without/with Project 8-Hour CO Concentration (ppm)	Project Related Increase 1-hr/8-hr (ppm)	Exceeds State Standards ²	
				1-Hr	8-Hr
Silver Spur Rd. and Palos Verde Drive N.	7.5 / 8.0	5.6 / 5.9	0.5 / 0.3	No	No
	7.5 / 7.9	5.6 / 5.9	0.4 / 0.3	No	No
	7.5 / 7.7	5.6 / 5.7	0.2 / 0.1	No	No
	7.3 / 7.6	5.4 / 5.6	0.3 / 0.2	No	No
Palos Verde Drive N. and Hawthorne Blvd.	9.2 / 9.4	6.8 / 6.9	0.2 / 0.1	No	No
	9.1 / 9.4	6.7 / 6.9	0.3 / 0.2	No	No
	9.0 / 9.3	6.6 / 6.8	0.3 / 0.2	No	No
Silver Spur Rd. and Hawthorne Blvd.	8.9 / 9.2	6.6 / 6.8	0.3 / 0.2	No	No
	8.1 / 9.6	6.0 / 7.0	1.5 / 1.0	No	No
	7.8 / 9.5	5.8 / 7.0	1.7 / 1.2	No	No
Indian Peak Rd. and Hawthorne Blvd.	7.8 / 9.3	5.8 / 6.8	1.5 / 1.0	No	No
	7.7 / 9.2	5.7 / 6.8	1.5 / 1.1	No	No
	9.2 / 9.9	6.8 / 7.3	0.7 / 0.5	No	No
	8.9 / 9.6	6.6 / 7.0	0.7 / 0.4	No	No
Crenshaw Blvd. and Palos Verde Drive N.	8.8 / 9.4	6.5 / 6.9	0.6 / 0.4	No	No
	8.3 / 9.8	6.1 / 7.2	1.5 / 1.1	No	No
	8.2 / 9.8	6.1 / 7.2	1.6 / 1.1	No	No
	8.0 / 9.5	5.9 / 7.0	1.5 / 1.1	No	No
Crenshaw Blvd. and Silver Spur Rd.	8.0 / 9.2	5.9 / 6.8	1.2 / 0.9	No	No
	9.5 / 11.4	7.0 / 8.3	1.9 / 1.3	No	No
	9.4 / 11.1	6.9 / 8.1	1.7 / 1.2	No	No
	8.5 / 10.1	6.3 / 7.4	1.6 / 1.1	No	No
Indian Peak Rd. and Crenshaw Blvd.	8.4 / 9.8	6.2 / 7.2	1.4 / 1.0	No	No
	7.6 / 7.9	5.6 / 5.9	0.3 / 0.3	No	No
	7.3 / 7.5	5.4 / 5.6	0.2 / 0.2	No	No
	7.2 / 7.4	5.4 / 5.5	0.2 / 0.1	No	No
Crossfield Dr. and Silver Spur Rd.	7.0 / 7.3	5.2 / 5.4	0.3 / 0.2	No	No
	7.1 / 8.6	5.3 / 6.3	1.5 / 1.0	No	No
	7.1 / 8.5	5.3 / 6.3	1.4 / 1.0	No	No
	7.0 / 8.5	5.2 / 6.3	1.5 / 1.1	No	No
Crossfield Dr. and Indian Peak Rd.	7.0 / 8.4	5.2 / 6.2	1.4 / 1.0	No	No
	6.3 / 6.6	4.7 / 4.9	0.3 / 0.2	No	No
	6.3 / 6.5	4.7 / 4.9	0.2 / 0.2	No	No
	6.2 / 6.5	4.7 / 4.9	0.3 / 0.2	No	No
Dry Bank Dr. and Silver Spur Rd.	6.2 / 6.4	4.7 / 4.8	0.2 / 0.1	No	No
	7.4 / 8.8	5.5 / 6.5	1.4 / 1.0	No	No
	7.2 / 8.6	5.4 / 6.3	1.4 / 0.9	No	No
	7.0 / 8.3	5.2 / 6.1	1.3 / 0.9	No	No
Deep Valley Dr. and Silver Spur Rd.	7.0 / 8.1	5.2 / 6.0	1.1 / 0.8	No	No
	7.2 / 8.7	5.4 / 6.4	1.5 / 1.0	No	No
	7.0 / 8.4	5.2 / 6.2	1.4 / 1.0	No	No
	7.0 / 8.1	5.2 / 6.0	1.1 / 0.8	No	No
	6.9 / 8.1	5.2 / 6.0	1.2 / 0.8	No	No

Source: Air Quality Analysis, Appendix C.

¹ Includes ambient one-hour concentration of 5.4 ppm and ambient eight-hour concentration of 4.1 ppm. Measured at North Long Beach monitoring station at 3648 North Long Beach Boulevard, Long Beach.

² The State one-hour AAQS is 20 ppm and the eight-hour AAQS is 9 ppm.

Table 4.2.F: Existing (2005) Weekend CO Concentrations¹ without and with Project

Intersection	Without/with Project 1-Hour CO Concentration (ppm)	Without/with Project 8-Hour CO Concentration (ppm)	Project Related Increase 1-hr/8-hr (ppm)	Exceeds State Standards ²	
				1-Hr	8-Hr
Silver Spur Rd. and Palos Verde Drive N.	7.4 / 7.7	5.5 / 5.7	0.3 / 0.2	No	No
	7.3 / 7.7	5.4 / 5.7	0.4 / 0.3	No	No
	7.3 / 7.6	5.4 / 5.6	0.3 / 0.2	No	No
	7.3 / 7.5	5.4 / 5.6	0.2 / 0.2	No	No
Palos Verde Drive N. and Hawthorne Blvd.	9.6 / 9.8	7.0 / 7.2	0.2 / 0.2	No	No
	9.5 / 9.7	7.0 / 7.1	0.2 / 0.1	No	No
	9.5 / 9.6	7.0 / 7.0	0.1 / 0.0	No	No
	9.4 / 9.6	6.9 / 7.0	0.2 / 0.1	No	No
Silver Spur Rd. and Hawthorne Blvd.	8.2 / 9.8	6.1 / 7.2	1.6 / 1.1	No	No
	7.9 / 9.7	5.9 / 7.1	1.8 / 1.2	No	No
	7.7 / 9.5	5.7 / 7.0	1.8 / 1.3	No	No
	7.7 / 9.2	5.7 / 6.8	1.5 / 1.1	No	No
Indian Peak Rd. and Hawthorne Blvd.	8.6 / 9.7	6.3 / 7.1	1.1 / 0.8	No	No
	8.2 / 9.2	6.1 / 6.8	1.0 / 0.7	No	No
	8.2 / 9.2	6.1 / 6.8	1.0 / 0.7	No	No
	8.1 / 9.1	6.0 / 6.7	1.0 / 0.7	No	No
Crenshaw Blvd. and Palos Verde Drive N.	8.1 / 9.5	6.0 / 7.0	1.4 / 1.0	No	No
	7.8 / 9.1	5.8 / 6.7	1.3 / 0.9	No	No
	7.7 / 9.0	5.7 / 6.6	1.3 / 0.9	No	No
	7.6 / 8.9	5.6 / 6.6	1.3 / 1.0	No	No
Crenshaw Blvd. and Silver Spur Rd.	8.3 / 10.3	6.1 / 7.5	2.0 / 1.4	No	No
	8.0 / 9.6	5.9 / 7.0	1.6 / 1.1	No	No
	7.7 / 9.4	5.7 / 6.9	1.7 / 1.2	No	No
	7.6 / 9.1	5.6 / 6.7	1.5 / 1.1	No	No
Indian Peak Rd. and Crenshaw Blvd.	7.2 / 7.5	5.4 / 5.6	0.3 / 0.2	No	No
	7.0 / 7.4	5.2 / 5.5	0.4 / 0.3	No	No
	7.0 / 7.3	5.2 / 5.4	0.3 / 0.2	No	No
	6.9 / 7.2	5.2 / 5.4	0.3 / 0.2	No	No
Crossfield Dr. and Silver Spur Rd.	7.1 / 8.7	5.3 / 6.4	1.6 / 1.1	No	No
	7.0 / 8.5	5.2 / 6.3	1.5 / 1.1	No	No
	6.9 / 8.4	5.2 / 6.2	1.5 / 1.0	No	No
	6.9 / 8.3	5.2 / 6.1	1.4 / 0.9	No	No
Crossfield Dr. and Indian Peak Rd.	6.5 / 6.9	4.9 / 5.2	0.4 / 0.3	No	No
	6.5 / 6.8	4.9 / 5.1	0.3 / 0.2	No	No
	6.4 / 6.8	4.8 / 5.1	0.4 / 0.3	No	No
	6.4 / 6.7	4.8 / 5.0	0.3 / 0.2	No	No
Dry Bank Dr. and Silver Spur Rd.	7.0 / 8.5	5.2 / 6.3	1.5 / 1.1	No	No
	6.9 / 8.4	5.2 / 6.2	1.5 / 1.0	No	No
	6.8 / 8.2	5.1 / 6.1	1.4 / 1.0	No	No
	6.7 / 7.9	5.0 / 5.9	1.2 / 0.9	No	No
Deep Valley Dr. and Silver Spur Rd.	7.0 / 8.2	5.2 / 6.1	1.2 / 0.9	No	No
	6.9 / 8.0	5.2 / 5.9	1.1 / 0.7	No	No
	6.8 / 8.0	5.1 / 5.9	1.2 / 0.8	No	No
	6.7 / 7.9	5.0 / 5.9	1.2 / 0.9	No	No

Source: Air Quality Analysis, Appendix C.

¹ Includes ambient one-hour concentration of 5.4 ppm and ambient eight-hour concentration of 4.1 ppm. Measured at the North Long Beach monitoring station, at 3648 North Long Beach Boulevard, Long Beach.

² The State one-hour AAQS is 20 ppm and the eight-hour AAQS is 9 ppm.

Table 4.2.G: 2025 Weekday CO Concentrations¹ Comparing the Mixed-Use Overlay to the Project

Intersection	Mixed Use Overlay/Project 1-Hour CO Concentration (ppm)	Mixed Use Overlay/Project 8-Hour CO Concentration (ppm)	Project Comparison to Mixed Use Overlay 1-hr/8-hr (ppm)	Exceeds State Standards ²	
				1-Hr	8-Hr
Silver Spur Rd. and Palos Verde Drive N.	6.1 / 5.9	4.6 / 4.5	-0.2 / -0.1	No	No
	6.0 / 5.9	4.5 / 4.5	-0.1 / 0.0	No	No
	6.0 / 5.9	4.5 / 4.5	-0.1 / 0.0	No	No
	5.9 / 5.9	4.5 / 4.5	0.0 / 0.0	No	No
Palos Verde Drive N. and Hawthorne Blvd.	6.4 / 6.2	4.8 / 4.7	-0.2 / -0.1	No	No
	6.3 / 6.2	4.7 / 4.7	-0.1 / 0.0	No	No
	6.3 / 6.2	4.7 / 4.7	-0.1 / 0.0	No	No
	6.3 / 6.2	4.7 / 4.7	-0.1 / 0.0	No	No
Silver Spur Rd. and Hawthorne Blvd.	6.6 / 6.1	4.9 / 4.6	-0.5 / -0.3	No	No
	6.6 / 6.1	4.9 / 4.6	-0.5 / -0.3	No	No
	6.6 / 6.1	4.9 / 4.6	-0.5 / -0.3	No	No
	6.5 / 6.0	4.9 / 4.5	-0.5 / -0.4	No	No
Indian Peak Rd. and Hawthorne Blvd.	6.5 / 6.3	4.9 / 4.7	-0.2 / -0.2	No	No
	6.4 / 6.2	4.8 / 4.7	-0.2 / -0.1	No	No
	6.4 / 6.2	4.8 / 4.7	-0.2 / -0.1	No	No
	6.3 / 6.2	4.7 / 4.7	-0.1 / 0.0	No	No
Crenshaw Blvd. and Palos Verde Drive N.	6.6 / 6.2	4.9 / 4.7	-0.4 / -0.2	No	No
	6.5 / 6.2	4.9 / 4.7	-0.3 / -0.2	No	No
	6.4 / 6.2	4.8 / 4.7	-0.2 / -0.1	No	No
	6.4 / 6.1	4.8 / 4.6	-0.3 / -0.2	No	No
Crenshaw Blvd. and Silver Spur Rd.	6.8 / 6.4	5.1 / 4.8	-0.4 / -0.3	No	No
	6.7 / 6.3	5.0 / 4.7	-0.4 / -0.3	No	No
	6.5 / 6.1	4.9 / 4.6	-0.4 / -0.3	No	No
	6.4 / 6.1	4.8 / 4.6	-0.3 / -0.2	No	No
Indian Peak Rd. and Crenshaw Blvd.	6.0 / 5.9	4.5 / 4.5	-0.1 / 0.0	No	No
	6.0 / 5.9	4.5 / 4.5	-0.1 / 0.0	No	No
	5.9 / 5.8	4.5 / 4.4	-0.1 / -0.1	No	No
	5.9 / 5.8	4.5 / 4.4	-0.1 / -0.1	No	No
Crossfield Dr. and Silver Spur Rd.	6.3 / 5.9	4.7 / 4.5	-0.4 / -0.2	No	No
	6.3 / 5.9	4.7 / 4.5	-0.4 / -0.2	No	No
	6.2 / 5.8	4.7 / 4.4	-0.4 / -0.3	No	No
	6.2 / 5.8	4.7 / 4.4	-0.4 / -0.3	No	No
Crossfield Dr. and Indian Peak Rd.	5.7 / 5.7	4.3 / 4.3	0.0 / 0.0	No	No
	5.7 / 5.6	4.3 / 4.2	-0.1 / -0.1	No	No
	5.7 / 5.6	4.3 / 4.2	-0.1 / -0.1	No	No
	5.7 / 5.6	4.3 / 4.2	-0.1 / -0.1	No	No
Dry Bank Dr. and Silver Spur Rd.	6.2 / 5.9	4.7 / 4.5	-0.3 / -0.2	No	No
	6.2 / 5.8	4.7 / 4.4	-0.4 / -0.3	No	No
	6.2 / 5.8	4.7 / 4.4	-0.4 / -0.3	No	No
	6.2 / 5.8	4.7 / 4.4	-0.4 / -0.3	No	No
Deep Valley Dr. and Silver Spur Rd.	6.3 / 5.8	4.7 / 4.4	-0.5 / -0.3	No	No
	6.2 / 5.8	4.7 / 4.4	-0.4 / -0.3	No	No
	6.2 / 5.8	4.7 / 4.4	-0.4 / -0.3	No	No
	6.2 / 5.8	4.7 / 4.4	-0.4 / -0.3	No	No

Source: Air Quality Analysis, Appendix C.

¹ Includes ambient one-hour concentration of 5.4 ppm and ambient eight-hour concentration of 4.1 ppm. Measured at the North Long Beach monitoring station at 3648 North Long Beach Boulevard, Long Beach.

² The State one-hour AAQS is 20 ppm and the eight-hour AAQS is 9 ppm.

Table 4.2.H: 2025 Weekend CO Concentrations¹ Comparing the Mixed-Use Overlay to the Project

Intersection	Mixed-Use Overlay/Project 1-Hour CO Concentration (ppm)	Mixed-Use Overlay/Project 8-Hour CO Concentration (ppm)	Project Comparison to Mixed-Use Overlay 1-hr/8-hr (ppm)	Exceeds State Standards ²	
				1-Hr	8-Hr
Silver Spur Rd. and Palos Verde Drive N.	6.2 / 6.1	4.7 / 4.6	-0.1 / -0.1	No	No
	6.1 / 6.0	4.6 / 4.5	-0.1 / -0.1	No	No
	6.1 / 6.0	4.6 / 4.5	-0.1 / -0.1	No	No
	6.1 / 6.0	4.6 / 4.5	-0.1 / -0.1	No	No
Palos Verde Drive N. and Hawthorne Blvd.	6.5 / 6.4	4.9 / 4.8	-0.1 / -0.1	No	No
	6.4 / 6.3	4.8 / 4.7	-0.1 / -0.1	No	No
	6.4 / 6.3	4.8 / 4.7	-0.1 / -0.1	No	No
	6.4 / 6.3	4.8 / 4.7	-0.1 / -0.1	No	No
Silver Spur Rd. and Hawthorne Blvd.	6.7 / 6.2	5.0 / 4.7	-0.5 / -0.3	No	No
	6.7 / 6.2	5.0 / 4.7	-0.5 / -0.3	No	No
	6.7 / 6.2	5.0 / 4.7	-0.5 / -0.3	No	No
	6.6 / 6.2	4.9 / 4.7	-0.4 / -0.2	No	No
Indian Peak Rd. and Hawthorne Blvd.	6.5 / 6.3	4.9 / 4.7	-0.2 / -0.2	No	No
	6.4 / 6.2	4.8 / 4.7	-0.2 / -0.1	No	No
	6.4 / 6.2	4.8 / 4.7	-0.2 / -0.1	No	No
	6.3 / 6.1	4.7 / 4.6	-0.2 / -0.1	No	No
Crenshaw Blvd. and Palos Verde Drive N.	6.6 / 6.2	4.9 / 4.7	-0.4 / -0.2	No	No
	6.6 / 6.1	4.9 / 4.6	-0.5 / -0.3	No	No
	6.5 / 6.1	4.9 / 4.6	-0.4 / -0.3	No	No
	6.4 / 6.1	4.8 / 4.6	-0.3 / -0.2	No	No
Crenshaw Blvd. and Silver Spur Rd.	6.8 / 6.3	5.1 / 4.7	-0.5 / -0.4	No	No
	6.6 / 6.2	4.9 / 4.7	-0.4 / -0.2	No	No
	6.4 / 6.1	4.8 / 4.6	-0.3 / -0.2	No	No
	6.3 / 6.0	4.7 / 4.5	-0.3 / -0.2	No	No
Indian Peak Rd. and Crenshaw Blvd.	6.1 / 6.0	4.6 / 4.5	-0.1 / -0.1	No	No
	6.0 / 6.0	4.5 / 4.5	0.0 / 0.0	No	No
	6.0 / 6.0	4.5 / 4.5	0.0 / 0.0	No	No
	6.0 / 5.9	4.5 / 4.5	-0.1 / 0.0	No	No
Crossfield Dr. and Silver Spur Rd.	6.3 / 5.8	4.7 / 4.4	-0.5 / -0.3	No	No
	6.3 / 5.8	4.7 / 4.4	-0.5 / -0.3	No	No
	6.2 / 5.8	4.7 / 4.4	-0.4 / -0.3	No	No
	6.2 / 5.7	4.7 / 4.3	-0.5 / -0.4	No	No
Crossfield Dr. and Indian Peak Rd.	5.7 / 5.6	4.3 / 4.2	-0.1 / -0.1	No	No
	5.7 / 5.6	4.3 / 4.2	-0.1 / -0.1	No	No
	5.7 / 5.6	4.3 / 4.2	-0.1 / -0.1	No	No
	5.7 / 5.6	4.3 / 4.2	-0.1 / -0.1	No	No
Dry Bank Dr. and Silver Spur Rd.	6.2 / 5.7	4.7 / 4.3	-0.5 / -0.4	No	No
	6.1 / 5.7	4.6 / 4.3	-0.4 / -0.3	No	No
	6.1 / 5.7	4.6 / 4.3	-0.4 / -0.3	No	No
	6.1 / 5.7	4.6 / 4.3	-0.4 / -0.3	No	No
Deep Valley Dr. and Silver Spur Rd.	6.2 / 5.8	4.7 / 4.4	-0.4 / -0.3	No	No
	6.2 / 5.8	4.7 / 4.4	-0.4 / -0.3	No	No
	6.2 / 5.8	4.7 / 4.4	-0.4 / -0.3	No	No
	6.2 / 5.8	4.7 / 4.4	-0.4 / -0.3	No	No

Source: Air Quality Analysis, Appendix C.

¹ Includes ambient one-hour concentration of 5.4 ppm and ambient eight-hour concentration of 4.1 ppm. Measured at the North Long Beach monitoring station at 3648 North Long Beach Boulevard, Long Beach.

² The State one-hour AAQS is 20 ppm and the eight-hour AAQS is 9 ppm.

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

The SCAQMD estimates that each acre of graded surface creates approximately 26.4 pounds per day (lbs/day; workday) of PM₁₀ during the construction phase of a project and 21.8 pounds of PM₁₀ per hour from dirt/debris pushing per bulldozer. Therefore, the per-acre emission factor for uncontrolled construction-related fugitive PM₁₀ emissions is 201 lbs/day per bulldozer. The SCAQMD threshold for PM₁₀ emissions is 150 lbs/day; therefore, the potential unmitigated fugitive PM₁₀ emissions under the proposed project would exceed the threshold.

Individual development projects within the project area would be required to comply with SCAQMD regulations, which would assist in reducing short-term air pollutant emissions. Fugitive dust from a construction site must be controlled with best available control measures so that the presence of such dust does not remain visible in the atmosphere beyond the property line of the emission source. Implementation of recommended dust suppression techniques can reduce the fugitive dust generation (and thus the PM₁₀ component) by 50 percent or more. The applicable SCAQMD regulations for control of fugitive dust are presented in Mitigation Measures 4.2-1 and 4.2-2. Compliance with in Mitigation Measures 4.2-1 and 4.2-2 would reduce impacts on sensitive receptors in the project vicinity. However, construction emissions can vary greatly depending on the level of activity, the specific operations taking place, the equipment being operated, local soils, weather conditions, and other factors, making quantification difficult. Despite this variability in emissions, experience has shown that there are a number of feasible control measures that can be reasonably implemented to substantially reduce PM₁₀ emissions from construction. Under CEQA, each future project within the Palos Verdes Overlay Zone (PVOZ) would be required to evaluate fugitive dust emissions. Because fugitive dust emissions are based on daily thresholds, it is anticipated that compliance with Mitigation Measures 4.2-1 and 4.2-2 would reduce potential fugitive dust emissions associated with construction of individual projects within the PVOZ to less than significant levels given the limited area under construction at any given time.

Vehicle Emissions. Construction activities cause combustion emissions from utility engines, heavy-duty construction vehicles, equipment hauling materials to and from construction sites, and motor vehicles transporting construction crews. Exhaust emissions from construction activities vary daily as construction activity levels change. The use of construction equipment results in localized exhaust emissions.

In addition to emissions from construction equipment on site during construction, there would be some project-related increase in vehicular traffic on adjacent roads from construction workers commuting to and from job sites. The incremental increase above the existing traffic and predicted future traffic levels will be very small, perhaps 20 to 30 vehicles per day.

In order to reduce emissions from construction-related vehicles, each future project within the PVOZ would be required to implement source reduction measures, including use of low-emission, high-efficiency equipment (Mitigation Measure 4.2-3) and equipment use restrictions (Mitigation Measure 4.2-4). Under CEQA, each future project within the PVOZ would be

required to evaluate vehicle emissions. Because vehicle emissions are based on daily thresholds, it is anticipated that compliance with Mitigation Measures 4.2-3 and 4.2-4 would reduce potential construction-related vehicle emissions associated with individual projects within the PVOZ to less than significant levels given the limited area under construction at any given time.

Architectural Coatings Emissions. Architectural coatings contain volatile organic compounds (VOCs) similar to ROC and which are part of O₃ precursors. Emissions associated with architectural coatings could be reduced by using precoated/natural-colored building materials, using water-based or low-VOC coating, and using coating transfer or spray equipment with high transfer efficiency. For example, a high-volume, low-pressure (HVLP) spray method is a coating application system operated at air pressure between 0.1 and 10 pounds per square inch gauge (psig), with 65 percent transfer efficiency. Manual applications such as paintbrush, hand roller, trowel, spatula, dauber, rag, or sponge have 100 percent transfer efficiency. Application of architectural coatings is subject to SCAQMD Rule 1113 (Mitigation Measure 4.2-5). Compliance with Mitigation Measure 4.2-5 would reduce potential impacts related to application of architectural coatings to less than significant levels.

Long-Term Regional Air Quality Impacts. Development associated with implementation of the proposed PVOZ would result in an overall increase in stationary and mobile source emissions in the City that would exceed the SCAQMD daily thresholds for the project area because it would result in more emissions from building equipment as well as vehicle trips associated with people living in and visiting the area. Long-term air emission impacts are those associated with stationary sources and mobile sources related to any new development project. The stationary-source emissions would come from the consumption of natural gas and electricity. Based on the Traffic Impact Analysis (Appendix I), there are existing land uses that result in 47,622 daily trips on weekdays and 55,278 daily trips on weekends. The land uses under the Mixed-Use Overlay would generate 113,394 daily trips on weekdays and 131,186 daily trips on weekends in 2025. The proposed overlay would generate 64,042 daily trips on weekdays and 76,435 daily trips on weekends in 2025. Using the ARB model URBEMIS2002 (Appendix C), emissions associated with the existing land uses were calculated and are shown in Table 4.2.I. Note that these emissions rates exceed the SCAQMD thresholds for all criteria pollutants except SO_x. The emissions associated with project-related vehicular trips were calculated as shown in Table 4.2.J. It should be noted that Tables 4.2.I and 4.2.J list the higher emissions for each criteria pollutant during either summer or winter. As shown in Table 4.2.J, the increase in emissions for land uses in both the Mixed-Use and the proposed overlays would exceed the SCAQMD daily emissions thresholds for all the criteria pollutants except SO_x. Both the weekday and weekend emissions for the Mixed-Use overlay are much higher than for the proposed overlay. Therefore, the long-term project air quality impacts would be significant. In order to reduce energy demand associated with developments within the PVOZ, compliance with Title 24 of the California Code of Regulations (Mitigation Measure 4.2-6) is required.

Because of the conservative nature of the thresholds and the Basinwide context of an individual project's emissions, there is no direct correlation of a single project to localized health effects. One individual project having emissions exceeding a threshold does not necessarily result in adverse health effects for residents in the project vicinity. This is especially true when the criteria pollutants exceeding thresholds are those with regional effects, such as O₃ precursors like NO_x and ROC.

Table 4.2.I: Existing Operational Emissions (2005)

Source	Pollutant Emissions, lbs/day				
	ROG	NO _x	CO	SO _x	PM ₁₀
Weekday					
Stationary Sources	19.9	18.8	20.5	0.0	0.1
Commercial/Retail/Office Mobile Sources	428.6	751.6	5,523.5	4.8	436.6
Total Weekday	449	770	5,544	4.8	437
Weekend					
Stationary Sources	19.9	18.8	20.4	0.0	0.1
Commercial/Retail/Office Mobile Sources	495.4	868.0	6,377.1	5.6	503.7
Total Weekend	515	887	6,398	5.6	504
SCAQMD thresholds	55	55	550	150	150

Source: LSA Associates, Inc., October 2006.

Table 4.2.J: Proposed Operational Emissions in 2025

Source	Pollutant Emissions, lbs/day				
	ROG	NO _x	CO	SO _x	PM ₁₀
Existing Land Uses – Emissions in 2025					
Weekday					
Stationary Sources	20	19	20	0.0	0.0
Commercial/Retail/Office Mobile Sources	101	141	1,126	2.5	434
Total Weekday Emissions from Existing	120	160	1,146	2.5	434
Weekend					
Stationary Sources	20	19	20	0.0	0.0
Commercial/Retail/Office Mobile Sources	114	163	1,300	2.9	501
Total Weekend Emissions from Existing	134	182	1,320	2.9	501
Existing Overlay - Emissions in 2025					
Weekday					
Stationary Sources	161	65	46	0.0	0.6
Residential Mobile Sources	31	27	231	0.5	85
Commercial/Retail/Office Mobile Sources	226	314	2,510	5.6	966
Total Weekday Emissions from Overlay	418	406	2,787	6.1	1,052
Net Weekday Emissions Change from Existing	298	246	1,641	3.6	617
Weekend					
Stationary Sources	161	65	46	0.0	0.6
Residential Mobile Sources	32	28	238	0.5	88
Commercial/Retail/Office Mobile Sources	257	366	2,922	6.5	1,126
Total Weekend Emissions from Overlay	450	459	3,206	7.1	1,215
Net Weekend Emissions Change from Existing	316	277	1,886	4.2	713
Significant impact? (Weekday/Weekend)	Yes/Yes	Yes/Yes	Yes/Yes	No/No	Yes/Yes
Proposed Overlay - Emissions in 2025					
Weekday					
Stationary Sources	72	29	22	0.0	0.3
Residential Mobile Sources	14	13	103	0.2	38
Commercial/Retail/Office Mobile Sources	127	181	1,453	3.3	560
Total Weekday Emissions from Overlay	213	223	1,578	3.5	598
Net Weekday Emissions Change from Existing	93	63	432	1.0	164
Weekend					
Stationary Sources	72	29	22	0.0	0.3
Residential Mobile Sources	14	14	106	0.2	39
Commercial/Retail/Office Mobile Sources	149	217	1,745	3.9	672
Total Weekend Emissions from Overlay	235	260	1,873	4.2	711
Net Weekend Emissions Change from Existing	101	78	553	1.3	210
Significant impact? (Weekday/Weekend)	Yes/Yes	Yes/Yes	No/Yes	No/No	Yes/Yes
SCAQMD thresholds	55	55	550	150	150

Source: LSA Associates, Inc., October 2006.

The potential for an individual project to substantially deteriorate regional air quality or contribute to a substantial health risk is small, even if the emission thresholds are exceeded by the project. Because of the overall improvement trend in air quality in the Basin, it is unlikely the regional air quality or health risk would worsen from the current condition due to emissions from an individual project.

The Mixed-Use Overlay, which is included in the current General Plan, allows a greater number of residential units and commercial square footage than the proposed PVOZ. Table 4.2.I shows the substantial difference in emissions associated with the two overlays. Therefore, implementation of the PVOZ would reduce the air quality impacts in 2025 when compared to what is currently allowed.

Mitigation Measures

4.2-1 Prior to issuance of a grading permit for any development within the PVOZ, the project applicant shall submit grading plans and contractor agreements that list SCAQMD Rules 402 and 403 requirements for review and approval by the City Building Official. Rule 403 requires that fugitive dust be controlled with best available control measures so that the presence of such dust does not remain visible in the atmosphere beyond the property line of the emission source. Rule 402 requires implementation of dust suppression techniques to prevent fugitive dust from creating a nuisance off site. Applicable dust suppression techniques from Rule 403 are summarized below.

The applicable Rule 403 measures are as follows:

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

4.2-2 Prior to issuance of a grading permit for any development within the PVOZ, the project applicant shall submit grading plans and contractor agreements that list dust suppression measures in the SCAQMD *CEQA Air Quality Handbook* during project grading and construction. The applicant shall be responsible for the implementation of the following dust suppression measures:

- Revegetate disturbed areas as quickly as possible.
- Suspend excavating and grading operations when wind speeds (as instantaneous gusts) exceed 25 mph.

- Sweep streets once per day if visible soil materials are carried to adjacent streets (water sweepers with reclaimed water are recommended).
- Install wheel washers where vehicles enter and exit unpaved roads onto paved roads, or wash trucks and any equipment leaving the site each trip.
- Minimize the area disturbed by clearing, grading, earthmoving, or excavation operations at all times.
- During clearing, grading, earthmoving, excavation, or transportation of cut-and-fill materials, water trucks or sprinkler systems shall be used to prevent dust from leaving the site and to create a crust after each day's activities cease.
- During construction, water trucks or sprinkler systems shall be used to keep all areas subject to vehicle movement damp enough to prevent dust from leaving the site. At a minimum, this would include wetting down such areas in the late morning, after work is completed for the day, and whenever winds exceed 15 mph.
- Immediately after clearing, grading, earthmoving, or excavation is completed, the entire area of disturbed soil shall be treated until the area is paved or otherwise developed so that dust generation will not occur.
- Soil stockpiled for more than two days shall be covered, kept moist, or treated with soil binders to prevent dust generation.
- Trucks transporting soil, sand, cut-and-fill materials, and/or construction debris to or from the site shall be tarped or maintain 6 inches of freeboard from the point of origin.

4.2-3 Prior to issuance of a grading permit for any development within the PVOZ, the project applicant shall submit grading plans and contractor agreements to the City Building Official for review and approval that indicate that construction equipment used on site have low-emission factors and high energy efficiency and that all construction equipment will be tuned and maintained in accordance with the manufacturer's specifications.

4.2-4 Prior to issuance of a grading permit for any development within the PVOZ, the project applicant shall submit grading plans and contractor agreements to the City Building Official for review and approval that include statements that: (1) work crews will shut off equipment when not in use; (2) during smog season (May through October), the overall length of the construction period will be extended to minimize the occurrence of vehicles and equipment operating at the same time and thereby decreasing the size of the area prepared each day; and (3) the construction contractors will time construction activities so as to not interfere with peak-hour traffic and minimize obstruction of through-traffic lanes adjacent to the site. If necessary, a flagperson shall be retained to maintain safety adjacent to existing roads. The construction contractors shall also support and encourage ridesharing and transit incentives for their construction crews.

4.2-5 Prior to issuance of a grading permit for any development within the PVOZ, the project applicant shall submit grading plans and contractor agreements to the City Building Official for review and approval that include a statement that the project will comply with SCAQMD rules and regulations regarding the use of architectural coatings.

4.2-6 Prior to issuance of a grading permit for any development within the PVOZ, the project applicant shall submit construction plans and contractor agreements to the City Building Official for review and approval that include a statement that buildings will comply with Title 24 of the California Code of Regulations regarding energy conservation standards. The following measures shall be incorporated into project building plans, where feasible:

- Trees will be planted to provide shade and shadow to buildings.
- Solar or low-emission water heaters shall be used with combined space/water heater units.
- Double-paned glass or window treatment for energy conservation shall be used in all exterior windows.
- Buildings shall be oriented north/south where feasible.

4.2.6 CUMULATIVE IMPACTS

The study area for cumulative air quality analysis is the South Coast Air Basin. The proposed project would contribute criteria pollutants temporarily to the area during project construction. A number of individual projects in the vicinity may be under construction simultaneously with a project within the PVOZ. Depending on construction schedules and actual implementation of projects in the area, generation of fugitive dust and pollutant emissions during construction may result in substantial short-term increases in air pollutants. The proposed overlay emissions, when considered in light of other projects under construction, would contribute to a significant short-term cumulative air quality impact.

The project would also result in increases in long-term operational emissions. The project would contribute cumulatively to local and regional air quality degradation because it would add stationary and mobile emission sources.

The South Coast Air Basin is in nonattainment for PM₁₀, PM_{2.5}, and O₃ at the present time. Although the proposed PVOZ would result in reduced impacts when compared to the Mixed-Use Overlay District, in conjunction with other planned developments in the area, the PVOZ would contribute to the existing nonattainment status in the South Coast Air Basin. Therefore, the proposed project would exacerbate nonattainment of AAQS in the Basin and contribute to adverse cumulative long-term air quality impacts.

4.2.7 LEVEL OF SIGNIFICANCE AFTER MITIGATION

When compared to development that separates residential development from commercial development by some distance, the proposed project would encourage pedestrian use, reducing the number of vehicle trips for residents in the PVOZ. This is consistent with the AQMP's long-term trip reduction goals. Nevertheless, implementation of the PVOZ would result in the following significant unavoidable impacts:

- Cumulative short-term construction air quality impacts
- Long-term air quality impacts due to vehicle emissions

- Cumulative long-term air quality impacts because the Basin is presently in nonattainment for CO, PM₁₀, and O₃, and the project, in conjunction with other planned projects, would contribute to the existing nonattainment status.