
3.3 AIR QUALITY

3.3.1 Introduction

This section evaluates the potential impacts on air quality resulting from implementation of the Proposed Project within the Project Area. This includes the potential for the Proposed Project to conflict with or obstruct implementation of the applicable air quality plan, violate an air quality standard or contribute substantially to an existing or projected air quality violation, result in a cumulatively considerable net increase of any criteria pollutant for which the project region is not in attainment, expose sensitive receptors to substantial pollutant concentrations, or the creation of objectionable odors affecting a substantial number of people.

Data used to prepare this section were taken from various sources, including the South Coast Air Quality Management District (SCAQMD) *CEQA Air Quality Handbook* and the 2003 Air Quality Management Plan (AQMP), the City of Lake Forest CEQA Significance Threshold Guide (2001), the City of Lake Forest General Plan Recreation and Resources Element, and the City of Lake Forest General Plan Final Master EIR. Full bibliographic entries for all reference materials are provided in Section 3.3.10 (References) of this section.

A comment letter on the NOP was received from SCAQMD that consisted of recommendations regarding the analysis of potential air quality impacts resulting from implementation the Proposed Project for the Project Area that should be included in the EIR. In particular, SCAQMD recommended the use of its 1993 California Environmental Quality Act (CEQA) Air Quality Handbook for guidance in preparing the air quality analysis, the identification of potential adverse air quality impacts from all phases of the Proposed Project (including both project construction and operation), and the use of its Rule 403—Fugitive Dust and Implementation Handbook to identify any necessary mitigation measures required for the Proposed Project.

3.3.2 Environmental Setting

■ Regional Characteristics

Climate

The City of Lake Forest is located within the South Coast Air Basin (Basin), named so because its geographical formation is that of a basin, with the surrounding mountains trapping the air and its pollutants in the valleys or basins below. This area includes all of Orange County and the non-desert portions of Los Angeles, San Bernardino, and Riverside Counties. The regional climate within the Basin is considered semi-arid and is characterized by warm summers, mild winters, infrequent seasonal rainfall, moderate daytime onshore breezes, and moderate humidity. The air quality within the Basin is primarily influenced by a wide range of emissions sources—such as dense population centers, heavy vehicular traffic, and industry—and meteorology.

The annual average temperature varies little throughout the Basin, ranging from the low to middle 60s, measured in degrees Fahrenheit (°F). However, high and low temperatures are variable depending on the particular microclimate within the Basin, with inland areas generally experiencing greater temperature fluctuations. With a more pronounced oceanic influence, coastal areas show less variability in annual minimum and maximum temperatures than inland areas.

The Basin experiences a persistent temperature inversion, which is characterized by increasing temperature with increasing altitude. This inversion limits the vertical dispersion of air contaminants, holding them relatively near the ground. As the sun warms the ground and the lower air layer, the temperature of the lower air layer approaches the temperature of the base of the inversion (upper) layer until the inversion layer finally breaks, allowing vertical mixing with the lower layer. Aside from a persistent temperature inversion, the vertical dispersion of air contaminants in the Basin is also affected by wind conditions. Areas within the Basin typically experience daily wind pattern that is a daytime onshore sea breeze (from the west) and a nighttime land breeze. This regime is broken only by occasional winter storms and infrequent strong northeasterly (from the northeast) Santa Ana winds from the mountains and deserts north of the Basin. 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 the lowest. On practically all spring and early summer days, the daily wind patterns flush much of the Basin of high levels of air pollutants. From late summer through the winter months, the flushing is less pronounced because of lighter wind speeds.

Air Quality Background

Air pollutant emissions within the Basin are generated by stationary and mobile sources. Stationary sources can be divided into two major subcategories: point and area sources. Point sources are usually subject to a permit to operate from the SCAQMD, occur at specific identified locations, and are usually associated with manufacturing and industry. Examples of point sources are boilers or combustion equipment that produce electricity or generate heat, such as heating, ventilation, and air conditioning (HVAC) units. Area sources are widely distributed and produce many small emissions, and they do not require permits to operate from the SCAQMD. Examples of area sources include residential and commercial water heaters, painting operations, portable generators, lawn mowers, agricultural fields, landfills, and consumer products, such as barbeque lighter fluid and hairspray, the area-wide use of which contributes to regional air pollution. Mobile sources refer to emissions from motor vehicles, including tailpipe and evaporative emissions, and are classified as either on-road or off-road. On-road sources are those that are legally operated on roadways and highways. Off-road sources include aircraft, ships, trains, raccars, and construction vehicles. Mobile sources account for the majority of the air pollutant emissions within the Basin. Air pollutants can also be generated by the natural environment, such as when fine dust particles are pulled off the ground surface and suspended in the air during high winds.

Both the federal and state governments have established ambient air quality standards for outdoor concentrations of specific pollutants, referred to as “criteria pollutants,” in order to protect public health. The national and state ambient air quality standards have been set at concentration levels to protect the most sensitive persons from illness or discomfort with a margin of safety. Applicable ambient air quality

standards are identified later in this EIR section. The SCAQMD is responsible for bringing air quality within the Basin into attainment with the national and state ambient air quality standards.

The criteria pollutants for which federal and state standards have been promulgated and that are most relevant to air quality planning and regulation in the Basin are ozone, carbon monoxide, fine suspended particulate matter, sulfur dioxide, and lead. In addition, toxic air contaminants are of concern in the Basin. Each of these is briefly described below.

- *Ozone* is a gas that is formed when volatile organic compounds (VOCs) and nitrogen oxides (NO_x), both byproducts of internal combustion engine exhaust, undergo slow photochemical reactions in the presence of sunlight. Ozone concentrations are generally highest during the summer months when direct sunlight, light wind, and warm temperature conditions are favorable to the formation of this pollutant.
- *Carbon Monoxide (CO)* is a colorless, odorless gas produced by the incomplete combustion of fuels. CO concentrations tend to be the highest during the winter morning, with little to no wind, when surface-based inversions trap the pollutant at ground levels. Because CO is emitted directly from internal combustion engines, unlike ozone, motor vehicles operating at slow speeds are the primary source of CO in the Basin. The highest ambient CO concentrations are generally found near congested transportation corridors and intersections.
- *Respirable Particulate Matter (PM₁₀)* and *Fine Particulate Matter (PM_{2.5})* consists of extremely small, suspended particles or droplets 10 microns and 2.5 microns or smaller in diameter, respectively. Some sources of particulate matter, like pollen and windstorms, are naturally occurring. However, in populated areas, most particulate matter is caused by road dust, diesel soot, combustion products, abrasion of tires and brakes, and construction activities.
- *Nitrogen dioxide (NO₂)* is a nitrogen oxide compound that is produced by the combustion of fossil fuels, such as in internal combustion engines (both gasoline and diesel powered) as well as point sources, especially power plants. Of the seven types of nitrogen oxide compounds, NO₂ is the most abundant in the atmosphere. As ambient concentrations of NO₂ are related to traffic density, commuters in heavy traffic may be exposed to higher concentrations of NO₂ than those indicated by regional monitors.
- *Sulfur dioxide (SO₂)* is a colorless, extremely irritating gas or liquid. It enters the atmosphere as a pollutant mainly as a result of burning high sulfur-content fuel oils and coal and from chemical processes occurring at chemical plants and refineries. When sulfur dioxide oxidizes in the atmosphere, it forms sulfates (SO₄). Together, these pollutants are referred to as sulfur oxides (SO_x).
- *Lead (Pb)* occurs in the atmosphere as particulate matter. The combustion of leaded gasoline is the primary source of airborne lead in the Basin. The use of leaded gasoline is no longer permitted for on-road motor vehicles so the majority of such combustion emissions are associated with off-road vehicles such as race cars. Other sources of lead include the manufacturing and recycling of batteries, paint, ink, ceramics, ammunition, and secondary lead smelters.
- *Toxic Air Contaminants* refer to a diverse group of air pollutants 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 than “criteria” pollutants in that ambient air quality standards have not been established for them, largely because there are hundreds of air toxics and their effects on health tend to be local rather than regional.

Existing Air Pollution Sources

Air pollution sources can be grouped into three categories: mobile sources, area-wide sources, and stationary sources. Mobile sources include all on-road vehicles as well as off-road mobile equipment, watercraft, and trains. Area-wide sources are stationary, but typically occur throughout developed areas. These sources include use of products such as fertilizers, paints, and sprays, and fuel combustion at residences. Additionally, area-wide sources also include processes such as farming operations, construction and demolition activities, and paved/unpaved road dust sent airborne by traveling vehicles. Stationary sources include industrial sources and facilities. Additional emissions are also generated by natural sources such as wildfires. The inventory of emissions for each of the state’s air basins is maintained by the California Air Resources Board (ARB) and the local air district (in the Basin, it is the SCAQMD). The emission inventory for Orange County and the entire Basin is summarized in Table 3.3-1.

Table 3.3-1 Estimated Annual Average Emissions in Year 2004 (Tons Per Day—Annual Average)						
	CO	NOx	VOC	SOx	PM₁₀	PM_{2.5}
ORANGE COUNTY						
Stationary Source Emissions	8.15	7.80	31.73	0.54	1.51	1.22
Area-Wide Source Emissions	14.57	5.84	31.17	0.07	44.31	11.25
On-Road Motor Vehicle Emissions	517.64	89.73	55.07	0.71	3.26	2.08
Other Mobile Source Emissions	272.68	64.27	34.43	5.72	5.05	4.49
Total Emissions (All Sources)	813.04	167.64	152.40	7.04	54.13	19.04
SOUTH COAST AIR BASIN						
Stationary Source Emissions	73.10	71.80	150.90	24.90	15.50	12.80
Area-Wide Source Emissions	156.10	31.80	173.80	0.40	235.10	61.20
On-Road Motor Vehicle Emissions	3,160.0	641.80	318.1	4.50	18.80	12.90
Other Mobile Source Emissions	1057.9	299.50	161.50	33.20	21.10	18.70
Total Emissions (All Sources)	4,447.0	1,044.8	804.30	62.9	290.40	105.60
<small>SOURCES: ARB, Emissions Inventory Branch, Emissions by Category, 2003, 2004 Emissions from natural vegetation are excluded for all source categories.</small>						

Within the Basin, exhaust emissions from on-road motor vehicles are the primary source of VOCs, NOx, and CO, while paved road dust sent airborne by traveling vehicles is the primary source of particulate matter. Area-wide and stationary sources make up the remainder of the emission inventory in the region.

Over the past few decades, air pollution levels in the state have improved significantly due to aggressive controls on vehicles and industry. However, despite this significant success in reducing overall pollution levels, air pollution continues to be an important public health problem. California’s climate and geography are conducive to the formation and accumulation of air pollution (especially in Los Angeles and the Central Valley). These factors, combined with increasing population and economic growth, the dramatically increasing number of vehicle miles traveled, and other various factors render it difficult to reduce pollution levels.

The criteria pollutants that are most relevant in the Basin are linked to human health effects. As discussed previously, particulate matter is regulated in coarse and fine fractions, with PM_{2.5} constituting the fine fraction and PM₁₀ constituting the coarse fraction. The health effects from long-term exposure to high concentrations of particulate matter are increased risk of chronic respiratory disease like asthma and decreased lung function in children. Short-term exposure to high levels of particulate matter has been shown to increase the number of people seeking medical treatment for respiratory distress, and to increase mortality among those with severe respiratory problems. Particulate matter also results in reduced visibility. Ozone in sufficient doses increases the permeability of lung cells, rendering them more susceptible to toxins and microorganisms. Exposure to levels of ozone above the current ambient air quality standard leads to lung inflammation and lung tissue damage, and a reduction in the amount of air inhaled into the lungs. The health effects resulting from exposure to CO include chest pain, headaches, and reduced mental alertness, while exposure to NO_x primarily results in lung damage. The health effects associated with each of the criteria air pollutants as well as toxic air contaminants in the Basin are shown in Table 3.3-2.

Table 3.3-2 Health Effects Summary of the Major Criteria Air Pollutants in the Basin

<i>Air Pollutant</i>	<i>Adverse Effects</i>
Ozone	<ul style="list-style-type: none"> ▪ Breathing difficulties ▪ Lung Tissue Damage ▪ Eye irritation
Carbon Monoxide	<ul style="list-style-type: none"> ▪ Reduced mental alertness ▪ Impairment of oxygen transport in the blood stream ▪ Aggravation of cardiovascular disease ▪ Impairment of central nervous system function ▪ Fatigue, headache, confusion, dizziness ▪ Fatal in the case of very high concentrations in enclosed places
Nitrogen Dioxide	<ul style="list-style-type: none"> ▪ Lung irritation and damage ▪ Risk of acute and chronic respiratory illness
Sulfur Dioxide	<ul style="list-style-type: none"> ▪ Increases lung disease and breathing problems for asthmatics ▪ Aggravation of chronic obstruction lung disease ▪ Increased risk of acute and chronic respiratory illness
Lead	<ul style="list-style-type: none"> ▪ Learning disabilities ▪ Brain and kidney damage ▪ Impairment of blood functions and nerve constriction
Particulate Matter (PM ₁₀) and Fine Particulate Matter (PM _{2.5})	<ul style="list-style-type: none"> ▪ Increased respiratory disease ▪ Lung damage ▪ Cancer ▪ Premature death ▪ Reduced visibility
Toxic Air Contaminants	<ul style="list-style-type: none"> ▪ Cancer ▪ Chronic eye, lung, or skin irritation ▪ Neurological and reproductive disorders

SOURCES: ARB: <http://www.arb.ca.gov/research/health/fs/fs2/fs2.htm>, accessed June 28, 2005;
Bay Area Air Quality Management District (BAAQMD) 1999.

Existing Air Quality

Measurements of ambient concentrations of the criteria pollutants are used by the United States Environmental Protection Agency (U.S. EPA) and the ARB to assess and classify the air quality of each air basin, county, or, in some cases, a specific urbanized area. The classification is determined by comparing actual monitoring data with national and state and federal standards. If a pollutant concentration in an area is lower than the standard, the area is classified as being in “attainment” in that area. If the pollutant exceeds the standard, the area is classified as a “non attainment” area. If there are not enough data available to determine whether the standard is exceeded in an area, the area is designated “unclassified.”

The entire Basin is designated as a national-level extreme nonattainment area for ozone, meaning that national ambient air quality standards are not expected to be met for more than 17 years, and a nonattainment area for CO and PM₁₀. The Basin has recently improved from nonattainment to attainment status with respect to the national standard for nitrogen dioxide (NO₂), a pure form of NO_x. The Basin is a state-level nonattainment area for ozone, CO (Los Angeles County only), and PM₁₀. It is in attainment of both the national and state ambient air quality standards for SO₂ and lead.

The SCAQMD divides the Basin into 38 source receptor areas (SRAs) in which 32 monitoring stations operate to monitor the various concentrations of air pollutants in the region. The City of Lake Forest is located within SRA 19, which covers the Saddleback Valley area. The ARB also collects ambient air quality data through a network of air monitoring stations throughout the state. This data is summarized annually and is published in the ARB’s California Air Quality Data Summaries. One of the monitoring stations, the Mission Viejo Station located at 26081 Via Perio, provides the data most relevant to the project because it is the station in closest proximity to City of Lake Forest and monitors several criteria pollutants along with hourly ozone measurements for 2004. Table 3.3-3 (Summary of Ambient Air Quality in the Project Vicinity) identifies the national and state ambient air quality standards for relevant air pollutants along with the ambient pollutant concentrations that have been measured at the Mission Viejo Monitoring Station through the period of 2002 to 2004.

According to air quality data shown in Table 3.3-3, the national and state 1-hour ozone standards were exceeded a total of 6 and 36 days, respectively, over the last three years within SRA 19, while the national 8-hour ozone standards was exceeded a total of 13 days during this period. The national 24-hour PM₁₀ standard was not exceeded in any days over the last three years, but the state 24-hour standard for PM₁₀ was exceeded a total of seven days over the last three years. In addition, the national 24-hour PM_{2.5} standard was not exceeded in any days over the last three years, and no national or state standards for one-hour or eight-hour CO concentrations have been exceeded within SRA 19 during this time.

Table 3.3-3 Summary of Ambient Air Quality in the Project Vicinity			
<i>Air Pollutants Monitored Within SRA 19—Saddleback Valley Area</i>	<i>Year</i>		
	<i>2002</i>	<i>2003</i>	<i>2004</i>
Ozone			
Maximum 1-hour concentration measured	0.136 ppm	0.153 ppm	0.116 ppm
Number of days exceeding national 0.12 ppm 1-hour standard	2	4	0
Number of days exceeding state 0.09 ppm 1-hour standard	9	16	11
Maximum 8-hour concentration measured	0.093 ppm	0.105 ppm	0.090 ppm
Number of days exceeding national 0.08 ppm 8-hour standard	1	8	4
Respirable Particulate Matter (PM₁₀)			
Maximum 24-hour concentration measured	80.0 µg/m ³	64.0 µg/m ³	47.0 µg/m ³
Number of days exceeding national 150 µg/m ³ 24-hour standard	0	0	0
Number of days exceeding state 50 µg/m ³ 24-hour standard	5	2	0
Fine Particulate Matter (PM_{2.5})			
Maximum 24-hour concentration measured	58.5 µg/m ³	50.6 µg/m ³	49.4 µg/m ³
Number of days exceeding national 65.0 µg/m ³ 24-hour standard	0	0	0
Carbon Monoxide (CO)			
Maximum 1-hour concentration measured	3	3	2
Number of days exceeding national 35.0 ppm 1-hour standard	0	0	0
Number of days exceeding State 20.0 ppm 1-hour standard	0	0	0
Maximum 8-hour concentration measured	1.88 ppm	1.64 ppm	1.49 ppm
Number of days exceeding national 9.5 ppm 8-hour standard	0	0	0
Number of days exceeding state 9.0 ppm 8-hour standard	0	0	0
SOURCES: ARB 2002-2004; SCAQMD 2002			
ppm = parts by volume per million of air µg/m ³ = micrograms per cubic meter			

■ Project Area Characteristics

Climate

The City of Lake Forest is located generally in the center of South Orange County and the Saddleback Valley. The annual average temperature in the City is approximately 63 degrees Fahrenheit (°F), and ranges from a low of 54 °F to a high of 72 °F. January and December are typically the coldest months in this area of the Basin. Precipitation occurs on approximately 31 days out of the year, with most of the rain events typically occurring in the month of January. Overall, wind speeds in the City range from a low of approximately five miles per hour (mph) in December to a high of approximately 7.4 mph in April.

Existing Site Emissions

The Project Area currently consists of 7 vacant properties that range from 13 acres to 387 acres. Site 3 (IRWD), which is located south of SR-241 between existing residential and light industrial development, and is adjacent to Serrano Creek, is primarily undeveloped but does contain agricultural row crops and support structures as well as numerous IRWD facilities including small office buildings, underground

water tanks, and buried pipelines. Although emissions may be generated at the small office buildings from space and water heating equipment, the emission levels are not considered to be substantial. Site 1 (Shea/Baker), which is located south of SR-241 and north of Commercentre Drive, also contains agricultural uses consisting of a nursery, avocado grove, and composting area. In addition, emissions associated with space and water heating equipment may also be generated from the recreational vehicle (RV) storage facility located at Site 1. No emissions other than those from the few single-family dwellings located on Site 1, and from the existing nursery and associated support structures on Site 7, are generated at the other sites in the Project Area by any space and water heating or landscape maintenance equipment. Due to the seasonal turnover activities associated with the agricultural crops located on Site 3, dust emissions are generated within the Project Area, although the level of these emissions are not considered to be substantial due to the infrequent nature of these activities. Although it is only conducted on a portion of Site 1, the green waste recycling facility does generate daily air emissions as the vegetation is composted and moved around the site daily. In addition to PM 10, as the vegetative waste decomposes, there is a high probability of methane emissions on Site 1. Site 4 is used for sand and gravel mining and generates emissions through operation of equipment and creates dust from mining operations. Although emissions are generated by these stationary sources within the Project Area, motor vehicles are the primary source of air pollutant emissions associated with the Project Area.

Existing Localized Carbon Monoxide Concentrations

As motor vehicles are the primary source of pollutants in the Project Area vicinity, traffic-congested roadways and intersections have the potential to generate localized high levels of CO. Localized areas where ambient concentrations exceed national and/or state standards for CO are termed CO “hotspots.” Section 9.14 of the SCAQMD’s *CEQA Air Quality Handbook* identifies CO as a localized problem requiring additional analysis when a project is likely to subject sensitive receptors to CO hotspots. The SCAQMD defines typical sensitive receptors as residences, schools, playgrounds, childcare centers, athletic facilities, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes.

The SCAQMD recommends the use of CALINE4, a dispersion model for predicting CO concentrations, as the preferred method of estimating pollutant concentrations at sensitive receptors near congested roadways and intersections. For each intersection analyzed, CALINE4 adds roadway-specific CO emissions calculated from peak hour turning volumes to ambient CO air concentrations. For this analysis, localized CO concentrations were calculated based on a simplified CALINE4 screening procedure developed by the Bay Area Air Quality Management District and utilized by the SCAQMD. The simplified model is intended as a screening analysis, which identifies a potential CO hotspot. This methodology assumes worst-case conditions and provides a screening of maximum, worst-case CO concentrations.

Maximum one-hour and eight-hour CO concentrations were calculated for the 39 existing intersections evaluated in the traffic report for the Project Area. The results of these calculations are presented in Table 3.3-4 (Existing Localized Carbon Monoxide Concentrations in the Project Area) for representative receptors located 25, 50, and 100 feet from each roadway. These distances were selected because they

Table 3.3-4 Existing Localized Carbon Monoxide Concentrations in the Project Area

Intersection	CO Concentrations in Parts per Million ^{a,b}					
	25 Feet		50 Feet		100 Feet	
	1-Hour	8-Hour	1-Hour	8-Hour	1-Hour	8-Hour
1. Alton and Portola	3.6	1.9	3.5	1.8	3.4	1.8
2. Bake and Portola	4.7	2.7	4.4	2.5	4.1	2.2
3. Lake Forest and Portola	4.6	2.6	4.3	2.4	4.0	2.2
4. Glenn Ranch and Portola	5.1	2.9	4.7	2.7	4.3	2.4
5. Portola and SR-241 Ramps	5.1	3.0	4.7	2.7	4.3	2.4
6. Alton and SR-241 Ramps	3.6	1.9	3.5	1.8	3.4	1.7
7. Lake Forest and SR-241 NB	4.1	2.3	3.9	2.1	3.7	2.0
8. Lake Forest and SR-241 SB	4.3	2.4	4.0	2.2	3.7	2.0
9. Bake and Rancho North	4.6	2.6	4.3	2.4	4.0	2.2
10. Lake Forest and Rancho	4.2	2.3	4.0	2.2	3.7	2.0
11. Bake and Rancho South	4.5	2.6	4.2	2.4	3.9	2.1
12. El Toro and Portola/Santa Margarita	4.9	2.8	4.5	2.6	4.2	2.3
13. Bake and Commercentre	4.8	2.7	4.5	2.5	4.1	2.3
14. Bake and Irvine/Trabuco	6.5	3.9	5.9	3.5	5.2	3.0
15. Lake Forest and Trabuco	5.0	2.9	4.7	2.7	4.3	2.4
16. Ridge Route and Trabuco	4.5	2.5	4.2	2.3	3.9	2.1
17. El Toro and Trabuco	4.9	2.8	4.5	2.6	4.2	2.3
18. Bake and Toledo	5.6	3.3	5.1	3.0	4.6	2.6
19. Lake Forest and Toledo	4.2	2.3	4.0	2.2	3.7	2.0
20. Ridge Route and Toledo	3.6	1.9	3.5	1.8	3.4	1.7
21. El Toro and Toledo	4.6	2.6	4.3	2.4	4.0	2.2
22. Bake and Jeronimo	5.7	3.4	5.2	3.0	4.7	2.6
23. Lake Forest and Jeronimo	4.6	2.6	4.3	2.4	4.0	2.2
24. Ridge Route and Jeronimo	4.0	2.2	3.8	2.0	3.6	1.9
25. El Toro and Jeronimo	4.9	2.8	4.5	2.6	4.2	2.3
26. Los Alisos and Jeronimo	4.7	2.7	4.4	2.4	4.0	2.2
27. Lake Forest and Muirlands	4.7	2.7	4.4	2.5	4.1	2.2
28. Ridge Route and Muirlands	4.2	2.3	3.9	2.2	3.7	2.0
29. El Toro and Muirlands	4.9	2.8	4.6	2.6	4.2	2.3
30. Los Alisos and Muirlands	5.1	2.9	4.7	2.7	4.3	2.4
31. Lake Forest and Rockfield	5.2	3.0	4.8	2.7	4.3	2.4
32. Ridge Route and Rockfield	4.1	2.3	3.9	2.1	3.7	2.0
33. El Toro and Rockfield	4.8	2.8	4.5	2.5	4.1	2.3
34. Los Alisos and Rockfield	4.7	2.7	4.4	2.5	4.0	2.2
35. Lake Forest and I-5 NB	5.4	3.2	4.9	2.8	4.4	2.5
36. Lake Forest and I-5/Carlota	5.6	3.3	5.1	3.0	4.6	2.6
37. Paseo De Valencia and Carlota	4.5	2.6	4.2	2.4	4.0	2.2
38. El Toro and Bridger/I-5 NB	5.7	3.4	5.2	3.0	4.6	2.6
39. El Toro and Avd. Carlota	6.2	3.7	5.6	3.3	5.0	2.9

SOURCE: EIP Associates 2005 (calculation sheets are provided in Appendix D)

^a National 1-hour standard is 35.0 parts per million. State 1-hour standard is 20.0 parts per million.

^b National 8-hour standard is 9.0 parts per million. State 8-hour standard is 9.0 parts per million.

represent locations where a person may be living or working for more than one or eight hours at a time. The national 1-hour standard is 35.0 parts per million (ppm), and the state 1-hour standard is 20.0 ppm. The 8-hour national and state standards are 9.0 ppm.

As shown, under worst-case conditions, existing 1-hour and 8-hour CO concentrations near these intersections do not exceed national or state ambient air quality standards. Therefore, CO hotspots do not exist near these intersections.

3.3.3 Planning and Regulatory Framework

Air quality within the Basin 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, policy-making, education, and a variety of programs. The agencies responsible for improving the air quality within the Basin are discussed below.

■ Federal

United States Environmental Protection Agency

The U.S. Environmental Protection Agency (EPA) is responsible for setting and enforcing the National Ambient Air Quality Standards for atmospheric pollutants. It regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, and certain locomotives.

As part of its enforcement responsibilities, the EPA requires each state with federal nonattainment areas to prepare and submit a State Implementation Plan (SIP) that demonstrates the means to attain the national standards. The SIP must integrate federal, state, and local plan components and regulations to identify specific measures to reduce pollution, using a combination of performance standards and market-based programs within the timeframe identified in the SIP.

■ State

California Air Resources Board

The California Air Resources Board (ARB), a part of the California Environmental Protection Agency, is responsible for the coordination and administration of both federal and state air pollution control programs within California. In this capacity, the ARB conducts research, sets California Ambient Air Quality Standards, compiles emission inventories, develops suggested control measures, provides oversight of local programs, and prepares the SIP. The ARB establishes emissions standards for motor vehicles sold in California, consumer products (e.g., hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions.

In 1998, following a 10-year scientific assessment process, the ARB identified particulate matter from diesel-fueled engines as a toxic air contaminant. The ARB has since addressed this issue by preparing and

approving the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles (approved on September 28, 2000). This plan represents the state's comprehensive plan to substantially reduce diesel particulate emissions throughout the state. The plan contains the following three components:

- New regulatory standards for all new on-road, off-road, and stationary diesel-fueled engines and vehicles to reduce diesel PM emissions by about 90 percent overall from current levels
- New retrofit requirements for existing on-road, off-road, and stationary diesel-fueled engines and vehicles where determined to be technically feasible and cost effective
- New phase 2 diesel fuel regulations to reduce the sulfur content levels of diesel fuel to no more than 15 parts per million to provide the quality of diesel fuel needed by the advanced diesel PM emission controls.

■ Regional

South Coast Air Quality Management District

The SCAQMD is the agency principally responsible for comprehensive air pollution control in the Basin. To that end, the SCAQMD, a regional agency, works directly with the Southern California Association of Governments (SCAG), county transportation commissions, and local governments and cooperates actively with all federal and state government agencies. The SCAQMD develops rules and regulations, establishes permitting requirements for stationary sources, inspects emissions sources, and enforces such measures through educational programs or fines, when necessary.

The SCAQMD is directly responsible for reducing emissions from stationary (area and point), mobile, and indirect sources. It has responded to this requirement by preparing a sequence of AQMPs. The most recent of these was adopted by the Governing Board of the SCAQMD on August 1, 2003, which updates and revises the previous 1997 AQMP. This AQMP, referred to as the 2003 AQMP, was prepared to comply with the federal and state Clean Air Acts and amendments, to accommodate growth, to reduce the high pollutant levels in the Basin, to meet federal and state ambient air quality standards, and to minimize the fiscal impact that pollution control measures have on the local economy. The purpose of the 2003 AQMP for the Basin is to set forth a comprehensive program that will lead this area into compliance with all federal and state air quality planning requirements. Compared with the 1997 AQMP, the 2003 AQMP utilizes revised emissions inventory projections that use 1997 as the base year, the ARB on-road motor vehicle emissions model EMFAC2002, and SCAG 2001 Regional Transportation Plan (RTP) forecast assumptions; updates the attainment demonstration for the federal standards for ozone and PM₁₀; replaces the 1997 attainment demonstration for the federal CO standard and provides a basis for a maintenance plan for CO for the future; and updates the maintenance plan for the federal NO₂ standard that the Basin has met since 1992. In terms of working towards ozone attainment, the 2003 AQMP builds upon the 1997 AQMP and 1999 Amendments to the Ozone SIP. In terms of PM₁₀ attainment, the PM₁₀ control strategy in the 1997 AQMP has been augmented by a number of additional PM₁₀ control measures.

The new Plan 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. Specifically, the 2003 AQMP is designed to satisfy the California Clean Air Act (CCAA) tri-annual update requirements and fulfill the District's commitment to update transportation emission budgets based on the latest approved motor vehicle emissions model and planning assumptions.

The 2003 AQMP control measures consist of (1) the District's Stationary and Mobile Source Control Measures; (2) State Control Measures proposed by the ARB; and (3) Transportation Control Measures provided by SCAG. Overall, there are 28 stationary and 21 mobile source measures that are defined under the 2003 AQMP. These measures primarily rely on the traditional command-and-control approach facilitated by market incentive programs as well as advanced technologies expected to be implemented by 2010. The proposed control measures in the 2003 AQMP are based on implementation of all feasible control measures through the application of available technologies and management practices as well as advanced technologies and control methods. The basic principles used in designing the District's control strategy were to (1) meet at least the same overall remaining emissions target committed to in the 1997/1999 SIP; (2) replace long-term measures with more specific near-term measures, where feasible, and (3) develop new short-term control measures and long-term strategies to achieve the needed reductions for attainment demonstration. Principle control measures of the 2003 AQMP focus on adoption of new regulations or enhancement of existing 1997 AQMP regulations for stationary sources and implementation/facilitation of advanced transportation technologies (i.e., zero emission and alternative-fueled vehicles and infrastructure, fuel cell vehicles, heavy-duty electric and hybrid-electric vehicles, and both capital and non-capital transportation improvements). Capital improvements consist of high-occupancy vehicle (HOV) lanes; transit improvements; traffic flow improvements; park-and-ride and intermodal facilities; and urban freeway, bicycle, and pedestrian facilities. Non-capital improvements consist of rideshare matching and transportation demand management activities derived from the congestion management program.

Programs set forth in the 2003 AQMP require the cooperation of all levels of government: local, regional, state, and federal. Each level is represented in the Plan by the appropriate agency or jurisdiction that has the authority over specific emissions sources. Accordingly, each agency or jurisdiction is associated with specific planning and implementation responsibilities.

Although the SCAQMD is responsible for regional air quality planning efforts, it does not have the authority to directly regulate the air quality issues associated with plans and new development projects throughout the Basin. Instead, the SCAQMD has used its expertise and prepared the *CEQA Air Quality Handbook* to indirectly address these issues in accordance with the projections and programs of the AQMP. The purpose of the *CEQA Air Quality Handbook* is to assist Lead Agencies, as well as consultants, project proponents, and other interested parties, in evaluating potential air quality impacts of projects and plans proposed in the Basin. Specifically, the *CEQA Air Quality Handbook* explains the procedures that the SCAQMD recommends be followed during environmental review processes required by CEQA. The *CEQA Air Quality Handbook* provides direction on how to evaluate potential air quality impacts, how to determine whether these impacts are significant, and how to mitigate these impacts. The SCAQMD intends that by providing this guidance, the air quality impacts of plans and development proposals will be analyzed accurately and consistently throughout the Basin, and adverse impacts will be minimized.

■ Local

City of Lake Forest

Local jurisdictions, such as the City of Lake Forest, have the authority and responsibility to reduce air pollution through their police powers and decision-making authority. Specifically, the City is responsible for the assessment and mitigation of air emissions resulting from its land use decisions. The City is also responsible for the implementation of transportation control measures as outlined in the AQMP. Examples of such measures include bus turnouts, energy-efficient streetlights, and synchronized traffic signals. In accordance with CEQA requirements and the CEQA review process, the City assesses the air quality impacts of new development projects, requires mitigation of potentially significant air quality impacts by conditioning discretionary permits, and monitors and enforces implementation of such mitigation.

In accordance with CEQA requirements, the City does not, however, have the expertise to develop plans, programs, procedures, and methodologies to ensure that air quality within the City and region will meet federal and state standards. Instead, the City relies on the expertise of the SCAQMD and utilizes the *CEQA Air Quality Handbook* as the guidance document for the environmental review of plans and development proposals within its jurisdiction.

City of Lake Forest General Plan

The City of Lake Forest General Plan contains goals, policies, and plans that are intended to guide land use and development decisions. The General Plan consists of a Land Use Policy Map and the following six elements, or chapters, which together fulfill the state requirements for a General Plan:

- Land Use Element
- Housing Element
- Circulation Element
- Recreation and Resources Element
- Safety and Noise Element
- Public Facilities/Growth Management Element

The AQMP requires air quality to be addressed in General Plans. Air quality is included as a sub-element of the Lake Forest Recreation and Resources Element to fulfill AQMP requirements. The purpose of the air quality sub-element is to reduce pollutant levels through stationary source, mobile source, transportation and land use control measures, and energy conservation measures. The City of Lake Forest General Plan Recreation and Resources Element contains goals and policies applicable to the area of air quality relative to the Proposed Project, as follows:

- | | |
|-------------------|---|
| Goal 7.0 | Improvement of air quality. |
| Policy 7.1 | Cooperate with the South Coast Air Quality Management District and Southern California Association of Governments in their efforts to implement the regional Air Quality Management Plan. |

Policy 7.5 Implement land use policy aimed at achieving a greater balance between jobs and housing in Lake Forest.

To achieve the goal of improving air quality in Lake Forest, approaches to protect air quality have been identified as part of the Recreation and Resources Plan within the Recreation and Resources Element. Among the approaches identified are reduction in vehicle trips through improvement of the local balance between jobs and housing, and the minimization of air quality impacts of new development through the implementation of land use and planning techniques to reduce trips and promote alternative transportation modes. One of the techniques to reduce air quality impacts include the provision of pedestrian and bicycle linkage to commercial centers, employment centers, schools, and parks.

3.3.4 Methodology

The analysis in this section focuses on the nature and magnitude of the change in the air quality environment due to implementation of the Proposed Project. The Proposed Project may cause air pollutant emissions through operation of project-related land uses and their associated traffic volumes. Construction activities associated with the development of new land uses under the Proposed Project would also generate emissions in the Project Area. The potential issues associated with construction- and operation-related emissions generated in the Project Area are identified and compared to the thresholds of significance recommended by the SCAQMD to determine whether these activities would contribute substantially to an existing or projected air quality violation, result in a cumulatively considerable net increase of any criteria pollutant for which the project region is not in attainment, expose sensitive receptors to substantial pollutant concentrations, or create objectionable odors affecting a substantial number of people. While a programmatic level analysis is provided in this EIR to evaluate the Proposed Project's potential air quality impacts, a detailed project-level analysis and evaluation of all construction and operation-related activities associated with each new development occurring in the Project Area as a result of the implementation of the Proposed Project would also need to be conducted to evaluate whether air quality thresholds may be violated.

■ Construction Emissions

Construction emissions from the Proposed Project are analyzed according to the thresholds established by the SCAQMD and published in the *CEQA Air Quality Handbook*. The construction activities associated with the individual projects under the Proposed Project would cause diesel emissions and generate dust. Construction equipment used for development of the new land uses in the Project Area would also generate VOC, CO, NO_x, and SO_x pollutants. Because the total amount of construction emissions that could be generated as a result of individual project buildout would be difficult, if not impossible, to quantify due to the variables associated with daily construction activity (e.g., construction schedule, number and types of equipment, etc.), the URBEMIS 2002 computer model developed for the ARB to model project emissions is not required or feasible for use in determining impacts associated with such potential construction emissions.

■ Operational Emissions

Implementation of the Proposed Project would result in generation of new emissions from the operation of new land uses on the sites within the Project Area. Operational emissions would be comprised of mobile source emissions and area source emissions. Mobile source emissions are generated by the increase in motor vehicle trips to and from the Project Area associated with operation of the new land uses that are proposed under the Proposed Project. Area source emissions are primarily generated by natural gas consumption for space and water heating, and landscape maintenance equipment. To provide a programmatic level of analysis, the increase in emissions that could be generated from the new land uses under each project alternative were estimated using the URBEMIS 2002 computer model and trip generation rates from the project traffic study, included as Appendix I of this EIR. To determine if an air quality impact would occur, the increase in emissions was compared with analyzed according to SCAQMD's recommended thresholds that are published in the *CEQA Air Quality Handbook*.

■ Localized CO Concentrations

The increase in motor vehicle trips to and from the sites within the Project Area associated with the operation of the new land uses that are proposed under the Proposed Project, which are analyzed separately in this EIR section, could result in traffic congestion on the roadways and intersections. This, in turn, could result in localized CO hotspots at certain locations within the sites of the Project Area. As discussed previously, the SCAQMD recommends the use of the CALINE4 model to estimate pollutant concentrations at sensitive receptors near congested roadways and intersections. CALINE4 is a Gaussian dispersion model specifically designed to evaluate air quality impacts of roadway projects. For each intersection analyzed, CALINE4 adds roadway-specific CO emissions calculated from peak hour turning volumes to ambient CO air concentrations. For the analysis in this EIR, localized CO concentrations are calculated based on a simplified CALINE4 screening procedure developed by the Bay Area Air Quality Management District and utilized by the SCAQMD. The simplified model is intended as a screening analysis, which identifies a potential CO hotspot. This methodology assumes worst-case conditions and provides a screening of maximum, worst-case CO concentrations. The resulting emissions are compared with adopted national and state ambient air quality standards.

3.3.5 Thresholds of Significance

The City of Lake Forest has developed thresholds of significance related to air quality. Based on the City's thresholds, the Proposed Project would result in significant impacts related to air quality if they would:

- Conflict with or obstruct implementation of the applicable air quality plan by causing or contributing to the emission of identified air pollutants in excess of levels stated in the plan or by failing to implement a remedial or mitigation measure required under the plan
- Violate any state or federal air quality standard or contribute substantially to an existing or projected air quality violation
- 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) where the

incremental effect of the project emissions, considered together with past, present, and reasonably anticipated further project emissions, increase the level of any criteria pollutant above the existing ambient level.

- Expose sensitive receptors to substantial pollutant concentrations by causing the emission of identified pollutants in excess of the pounds per day or tons per quarter standards established by SCAQMD.
- Create objectionable odors affecting a substantial number of people by causing an odiferous emission that is noxious, putrid, having an appreciable chemical smell, or having an appreciable smell of human or animal waste, renderings, or by-products, which will affect an area occupied by 100 or more people.

As the agency principally responsible for comprehensive air pollution control in the Basin, the SCAQMD recommends that projects should be evaluated in terms of air pollution control thresholds established by the SCAQMD and published in the *CEQA Air Quality Handbook*. These thresholds were developed by the SCAQMD to provide quantifiable levels to which projects can be compared. The City utilizes the SCAQMD thresholds recommended at the time that development projects are proposed to assess the significance of quantifiable impacts. The following quantifiable thresholds are currently recommended by the SCAQMD and are used to determine the significance of air quality impacts associated with the Proposed Project in the Project Area.

■ Construction Emissions Thresholds

The SCAQMD currently recommends that projects with construction-related emissions that exceed any of the following emissions thresholds should be considered significant. The SCAQMD also recommends that any construction-related emissions from individual development projects that exceed these thresholds be considered cumulatively considerable. These thresholds apply to individual development projects only; they do not apply to the emissions collectively generated by related projects:

- 550 pounds per day of CO
- 75 pounds per day of VOC
- 100 pounds per day of NO_x
- 150 pounds per day of SO_x
- 150 pounds per day of PM₁₀

■ Operation Emissions Thresholds

The SCAQMD currently recommends that projects with operational emissions that exceed any of the following emissions thresholds should be considered significant. The SCAQMD also recommends that any operational emissions from individual projects that exceed these thresholds be considered cumulatively considerable. These thresholds apply to individual development projects only; they do not apply to the emissions collectively generated by related projects:

- 550 pounds per day of CO
- 55 pounds per day of VOC
- 55 pounds per day of NO_x
- 150 pounds per day of SO_x
- 150 pounds per day of PM₁₀

3.3.6 Impacts

CEQA requires that the Proposed Project's potential environmental impacts be compared to on-the-ground conditions in the Project Area at the time the Notice of Preparation is issued or at the time the analysis of such impacts is commenced. Such on-the-ground conditions are considered, and often referred to as, the environmental or CEQA "baseline." Thus, the following section analyzes the Proposed Project's potential environmental impacts on baseline conditions. However, it should be noted that the land under consideration for the Proposed Project, while currently undeveloped, would not necessarily remain undeveloped. Most sites within the Project Area are subject to existing development agreements or entitlements and, in the absence of the Proposed Project, would in the future likely be developed with approximately 9.8 million square feet of industrial and commercial space under the existing General Plan. Given this, the analysis of alternatives to the Proposed Project in Chapter 4 of this EIR, under the "No Project/Reasonably Foreseeable Development" alternative, analyzes the potential environmental impacts associated with buildout of the existing General Plan. That analysis includes a comparison of the impacts of buildout of the existing General Plan with the potential environmental impacts of the Proposed Project.

Impact 3.3-1 Development under the Proposed Project would provide new sources of regional air emissions, but would not impair implementation of the Air Quality Management Plan.

Significance Level: Less than significant

The 2003 AQMP, discussed previously, was prepared to accommodate growth, to reduce the high levels of pollutants within the areas under the jurisdiction of SCAQMD, and to return clean air to the region. Projects that are considered to be consistent with the AQMP would not interfere with attainment, because this growth is included in the projections used to formulate 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 daily emissions thresholds.

Projects that are consistent with the projections of employment and population forecasts identified in the Growth Management Chapter of SCAG's Regional Comprehensive Plan and Guide (RCPG) are considered consistent with the AQMP growth projections. This is because the Growth Management Chapter forms the basis of the land use and transportation control portions of the AQMP. Since SCAG's regional growth forecasts are based upon, among other things, land uses specified in city general plans, the development proposed under the City's existing General Plan would also be consistent with the SCAG's regional forecast projections. In turn, this development would also be consistent with the AQMP growth projections. As such, the potential impact the Proposed Project would have on the implementation of the AQMP can be assessed by comparing the overall emissions generated from the land uses proposed under the Proposed Project to those generated by the land uses proposed under the City's existing General Plan.

Implementation of the Proposed Project would result in a General Plan Amendment (GPA) and Zone Change that would introduce new land uses on Sites 1 through 6 in the Project Area. In addition, the Proposed Project would also result in one public facilities overlay occurring on 45 acres of Site 7 in the

Project Area, which would allow development of all three community facilities (i.e., sports park, Community Center, and Civic Center) on this parcel. The GPA would change the allowed land uses on Sites 1 through 6 under the City's existing General Plan from industrial and commercial land uses to residential and mixed-uses. While the business park land use designation under the existing General Plan for the 121-acre Site 7 would remain under the Proposed Project, a public facilities overlay would be added that would occur on 45 acres of that parcel. Overall, the Proposed Project would include development of 5,415 residential units, over 50 acres of neighborhood parks, and up to 648,720 square feet of commercial development on Sites 1 through 6, and 45 acres of sports park and Community/Civic Center on Site 7. In general, the Proposed Project is a mixed-use plan with a large residential component. Because the proposed development on Sites 1 through 7 in the Project Area under the City's existing General Plan is consistent with the AQMP growth projections, implementation of the Proposed Project, which consists of a GPA and Zone Change on Sites 1 through 6 as well as the addition of a public facilities overlay on Site 7, could potentially conflict with implementation of the AQMP.

Although implementation of the Proposed Project would alter the types of land uses that would be introduced on Sites 1 through 6, and would add a public facilities overlay on Site 7 that would allow development of the three community facilities, these new land uses would result in a reduction in overall emissions when compared with the land use designations for these parcels under the existing General Plan. Compared with the existing General Plan, the Proposed Project would introduce residential uses, mixed-use development, public facilities, and additional parkland acreages on Sites 1 through 6 and a small portion of Site 7 while eliminating the development of light industrial uses. The residential uses that would be developed under the Proposed Project are not considered to be significant stationary sources of emissions, as they generally emit less emission than other land uses such as commercial or industrial uses. In addition, the introduction of mixed-use development,³ which is not a land use option under the existing General Plan, by the Proposed Project into Sites 1, 2 and 4 of the Project Area would also serve to reduce motor vehicle emissions, as mixed uses generally serve to reduce the use of automobiles. Furthermore, as discussed in Section 2.7 of Chapter 2 (Project Description) of this EIR, development under the Proposed Project would result in an approximately 52 percent reduction in average daily trips when compared with development proposed under the City's existing General Plan (please refer to Table 4-2 in Chapter 4.0, Alternatives to the Proposed Project). Thus, given that the overall traffic generation would be reduced and that no significant stationary sources of emissions would be introduced into the Project Area, implementation of the Proposed Project would result in a reduction in overall emissions than the existing General Plan. Since development within Sites 1 through 7 under the existing General Plan would not impair implementation of the AQMP, development on these sites under the Proposed Project, which would result in a further reduction in overall emissions, would also not impair implementation of the AQMP.

According to SCAG's regional forecasts, the population level in the City of Lake Forest is projected to increase from 79,077 persons in 2005 to 82,645 persons in 2025, while the population level for Orange County is projected to increase from 3,103,377 persons in 2005 to 3,494,394 persons in 2025. As part of the GPA, a total of 5,415 residential units would be introduced by the Proposed Project on Sites 1

³ The mixed-use component of the Proposed Project is envisioned to include either office or commercial uses at street level with residences located above these uses, or residential and commercial uses on the same site.

through 6 of the Project Area that was not accounted for in the City's existing General Plan. Because SCAG's regional forecast projections are based upon, among other things, land uses specified in city general plans, the increase in population in the City resulting from the addition of 5,415 residential units under the Proposed Project would not have been accounted for by SCAG's projections. In turn, this increase in residential uses in the City would not have been accounted for by AQMP's forecasts. However, although the population growth resulting from development under the Proposed Project would not be consistent with the SCAG's population forecasts for the City and Orange County, the overall reduction in emissions that would result from implementation of the Proposed Project when compared with the existing General Plan would nonetheless render it consistent with the AQMP, and would not jeopardize attainment of state and federal ambient air quality standards in the Basin.

Another measurement tool in determining consistency with the AQMP is to determine how a project accommodates the expected increase in population or employment. Generally, if a project is planned in a way that results in the minimization of vehicle miles traveled (VMT) both within the project and the community in which it is located, and consequently the minimization of air pollutant emissions, that aspect of the project is consistent with the AQMP. As discussed earlier, implementation of the Proposed Project would include mixed-use development on Sites 2 and 4, which would serve to decrease the use of automobiles in these areas. Further, the Proposed Project allows for Site 1 to be developed as a planned mixed-use community, with parks and a possible school, which would also serve to decrease the use of automobiles within the Project Area. Thus, development in the Project Area under the Proposed Project is consistent with the goals of the AQMP for reducing the emissions associated with new development.

Based on this information, development under the Proposed Project would not impair implementation of the AQMP, and this impact would be less than significant.

Impact 3.3-2 ~~Development under the Proposed Project would violate an air quality standard or contribute substantially to an existing or projected air quality violation.~~ Development under the Proposed Project would not expose sensitive receptors to substantial pollutant concentrations in violation of an air quality standard (CO) or contribute substantially to an existing or projected air quality violation (CO).

Significance Level: Less than significant

As was done to assess existing localized CO concentrations, the simplified CALINE4 screening procedure was used to predict future CO concentrations at the Project Area study intersections in 2030 when the new developments proposed under the Proposed Project are expected to be completed and in operation. This CO analysis is based on the projected future traffic volumes from the study intersections contained in the traffic study,⁴ and takes into account emissions generated from full buildout of the Project Area as proposed under the Proposed Project. The results of these calculations are presented in Table 3.3-5.

⁴ In addition to the 39 existing study intersections in the Project Area, the traffic study also analyzed three additional intersections for the year 2030 due to new roadways planned under the County of Orange Master Plan of Arterial Highways (MPAH).

Table 3.3-5 Future (2030) With Proposed Project Localized Carbon Monoxide Concentrations within the Project Area

Intersection	CO Concentrations in Parts per Million ^{4b}					
	25 Feet		50 Feet		100 Feet	
	1-Hour	8-Hour	1-Hour	8-Hour	1-Hour	8-Hour
1. Alton and Portola	3.2	1.7	3.2	1.6	3.1	1.6
2. Bake and Portola	3.5	1.9	3.4	1.8	3.3	1.7
3. Lake Forest and Portola	3.4	1.8	3.3	1.8	3.2	1.7
4. Glenn Ranch and Portola	3.4	1.8	3.3	1.7	3.2	1.7
5. Portola and SR-241 Ramps	3.3	1.8	3.3	1.7	3.2	1.7
6. Alton and SR-241 Ramps	3.3	1.7	3.2	1.7	3.2	1.6
7. Lake Forest and SR-241 NB	3.2	1.6	3.1	1.6	3.1	1.6
8. Lake Forest and SR-241 SB	3.2	1.7	3.2	1.6	3.1	1.6
9. Bake and Rancho North	3.4	1.8	3.3	1.7	3.2	1.7
10. Lake Forest and Rancho	3.5	1.9	3.4	1.8	3.3	1.7
11. Bake and Rancho South	3.3	1.8	3.3	1.7	3.2	1.6
12. El Toro and Portola/Santa Margarita	3.5	1.9	3.4	1.9	3.3	1.8
13. Bake and Commercentre	3.3	1.7	3.2	1.7	3.2	1.6
14. Bake and Irvine/Trabuco	3.6	2.0	3.5	1.9	3.4	1.8
15. Lake Forest and Trabuco	3.4	1.8	3.3	1.7	3.2	1.7
16. Ridge Route and Trabuco	3.3	1.7	3.2	1.7	3.2	1.6
17. El Toro and Trabuco	3.5	1.9	3.4	1.8	3.3	1.7
18. Bake and Toledo	3.4	1.8	3.3	1.7	3.2	1.7
19. Lake Forest and Toledo	3.2	1.7	3.2	1.6	3.1	1.6
20. Ridge Route and Toledo	3.1	1.6	3.1	1.6	3.1	1.5
21. El Toro and Toledo	3.3	1.7	3.3	1.7	3.2	1.6
22. Bake and Jeronimo	3.5	1.9	3.4	1.8	3.3	1.8
23. Lake Forest and Jeronimo	3.3	1.7	3.3	1.7	3.2	1.7
24. Ridge Route and Jeronimo	3.2	1.6	3.1	1.6	3.1	1.6
25. El Toro and Jeronimo	3.4	1.8	3.4	1.8	3.3	1.7
26. Los Alisos and Jeronimo	3.4	1.8	3.3	1.7	3.2	1.7
27. Lake Forest and Muirlands	3.3	1.8	3.3	1.7	3.2	1.7
28. Ridge Route and Muirlands	3.2	1.7	3.2	1.7	3.2	1.6
29. El Toro and Muirlands	3.4	1.8	3.3	1.7	3.2	1.7
30. Los Alisos and Muirlands	3.5	1.9	3.4	1.8	3.3	1.7
31. Lake Forest and Rockfield	3.4	1.8	3.3	1.8	3.3	1.7
32. Ridge Route and Rockfield	3.4	1.8	3.3	1.7	3.2	1.7
33. El Toro and Rockfield	3.3	1.8	3.3	1.7	3.2	1.7
34. Los Alisos and Rockfield	3.3	1.8	3.3	1.7	3.2	1.7
35. Lake Forest and I-5 NB	3.4	1.8	3.3	1.8	3.2	1.7
36. Lake Forest and I-5/Carlota	3.6	2.0	3.5	1.9	3.4	1.8
37. Paseo De Valencia and Carlota	3.4	1.8	3.3	1.8	3.3	1.7
38. El Toro and Bridger/I-5 NB	3.4	1.8	3.3	1.8	3.2	1.7

Table 3.3-5 Future (2030) With Proposed Project Localized Carbon Monoxide Concentrations within the Project Area

Intersection	CO Concentrations in Parts per Million ^{ab}					
	25 Feet		50 Feet		100 Feet	
	1-Hour	8-Hour	1-Hour	8-Hour	1-Hour	8-Hour
39. El Toro and Avd. Carlota	3.5	1.9	3.4	1.9	3.3	1.8
40. Portola and Rancho	3.4	1.8	3.3	1.7	3.2	1.7
41. Alton and Towne Center Drive	3.4	1.8	3.3	1.7	3.2	1.7
42. Alton and Commercentre	3.3	1.8	3.3	1.7	3.2	1.7

SOURCE: EIP Associates 2005 (calculation sheets are provided in Appendix D)

The localized CO concentrations calculated in this table are based on the estimated traffic volumes generated at the study intersections in the Project Area by development under the Proposed Project without the traffic mitigation measures proposed by the traffic report, as the feasibility of implementing these mitigation measures has not been determined at this time.

^a National 1-hour standard is 35.0 parts per million. State 1-hour standard is 20.0 parts per million.

^b National 8-hour standard is 9.0 parts per million. State 8-hour standard is 9.0 parts per million.

As shown, future 1-hour and 8-hour CO concentrations near these intersections would not exceed national or state ambient air quality standards. Therefore, CO hotspots would not occur near these intersections in the future, and the contribution of the traffic-related CO associated with implementation of the Proposed Project at these intersections would be less than significant.

In addition to the 42 study intersections analyzed in the traffic study for the Project Area, the traffic study also analyzed the traffic conditions at additional intersections located outside of the Project Area (referred to in the traffic study as the traffic study area). These intersections in the traffic study area that were chosen for analysis includes all major intersections where the Proposed Project would increase traffic by more than one percent, which is the significance criteria used by the City and the surrounding jurisdictions in defining the area of impact for such studies.⁵ The future CO concentrations at these additional study intersections in 2030 are presented in Table 3.3-6.

As shown, future CO concentrations near these intersections would not exceed national or state ambient air quality standards. Therefore, CO hotspots would not occur near these intersections in the future, and the contribution of the traffic-related CO associated with implementation of the Proposed Project at these intersections would be less than significant.

Table 3.3-6 Future (2030) With Proposed Project Localized Carbon Monoxide Concentrations within the “Extended Project Area”

Intersection	CO Concentrations in Parts per Million					
	25 Feet		50 Feet		100 Feet	
	1-Hour	8-Hour	1-Hour	8-Hour	1-Hour	8-Hour
100. Portola Pkwy. at SR-241 NB Ramps	3.2	1.7	3.2	1.6	3.1	1.6
101. Portola Pkwy. at SR-241 SB Ramps	3.2	1.7	3.2	1.6	3.1	1.6
102. Ridge Vly. at Portola Pkwy.	3.3	1.8	3.3	1.7	3.2	1.7
103. Sand Cyn. Ave. at Portola Pkwy.	3.3	1.7	3.2	1.7	3.2	1.6
104. Jeffrey Rd. at Portola Pkwy.	3.3	1.7	3.2	1.7	3.2	1.6

⁵ The “traffic study area” analyzed in the traffic report also includes Irvine in response to the City of Irvine’s request.

Table 3.3-6 Future (2030) With Proposed Project Localized Carbon Monoxide Concentrations within the “Extended Project Area”

<i>Intersection</i>	<i>CO Concentrations in Parts per Million</i>					
	<i>25 Feet</i>		<i>50 Feet</i>		<i>100 Feet</i>	
	<i>1-Hour</i>	<i>8-Hour</i>	<i>1-Hour</i>	<i>8-Hour</i>	<i>1-Hour</i>	<i>8-Hour</i>
105. Alton Pkwy. At Irvine Bl.	3.7	2.1	3.6	2.0	3.4	1.9
106. B Dr. at Irvine Bl.	3.4	1.8	3.3	1.8	3.3	1.7
107. A Dr. at Irvine Bl.	3.4	1.9	3.4	1.8	3.3	1.7
108. Ridge Vly. at Irvine Bl.	3.4	1.8	3.4	1.8	3.3	1.7
109. College Dr. at Irvine Bl.	3.4	1.8	3.3	1.7	3.2	1.7
110. ETC E. Leg NB Ramps at Irvine Bl.	3.4	1.8	3.3	1.8	3.2	1.7
111. ETC E. Leg SB Ramps at Irvine Bl.	3.3	1.8	3.3	1.7	3.2	1.7
112. Sand Cyn. Ave. at Irvine Bl.	3.4	1.9	3.4	1.8	3.3	1.7
113. Jeffrey Rd. at Irvine Bl.	3.5	1.9	3.4	1.8	3.3	1.7
114. SR-133 NB Ramps at Trabuco Rd.	3.2	1.7	3.2	1.7	3.1	1.6
115. SR-133 SB Ramps at Trabuco Rd.	3.2	1.7	3.2	1.7	3.1	1.6
116. Sand Cyn. Ave. at Trabuco Rd.	3.4	1.8	3.3	1.8	3.2	1.7
117. Alton Pkwy. at Toledo Wy.	3.4	1.8	3.3	1.7	3.2	1.7
118. Alton Pkwy. at Jeronimo Rd.	3.4	1.8	3.3	1.7	3.2	1.7
119. Alton Pkwy. at Muirlands Bl.	3.5	1.9	3.4	1.8	3.3	1.7
120. Marine Wy. at Alton Pkwy.	3.3	1.7	3.2	1.7	3.2	1.6
121. Alton Pkwy. at Technology Dr.	3.5	1.9	3.4	1.8	3.3	1.7
122. Alton Pkwy. at I-5 NB Ramps	3.6	2.0	3.5	1.9	3.4	1.8
123. Marine Wy. at Rockfield Bl.	3.2	1.7	3.2	1.6	3.1	1.6
124. Bake Pkwy. at Muirlands Bl.	3.5	1.9	3.4	1.8	3.3	1.7
125. Bake Pkwy. at Rockfield Bl.	3.6	2.0	3.5	1.9	3.4	1.8
126. Bake Pkwy. at I-5 NB Ramps	3.6	2.0	3.5	1.9	3.4	1.8
127. Bake Pkwy. at I-5 SB Ramps	3.7	2.1	3.6	2.0	3.4	1.8
128. Bake Pkwy. at Irvine Center Dr.	3.3	1.7	3.2	1.7	3.2	1.6
129. Lake Forest Dr. at Irvine Center Dr.	3.4	1.8	3.3	1.8	3.2	1.7
130. Ridge Route at Moulton Pkwy.	3.6	2.0	3.5	1.9	3.4	1.8
131. Santa Maria Ave. at Moulton Pkwy.	3.5	1.9	3.4	1.9	3.3	1.8
132. El Toro Rd. at Moulton Pkwy.	3.7	2.1	3.6	2.0	3.4	1.8
137. Los Alisos Bl. at Trabuco Rd.	3.3	1.7	3.3	1.7	3.2	1.7
138. Trabuco Rd. at Alicia Pkwy.	3.4	1.8	3.3	1.7	3.2	1.7
139. Jeronimo Rd. at Alicia Pkwy.	3.3	1.8	3.3	1.7	3.2	1.7
140. Alicia Pkwy. at Muirlands Bl.	3.6	2.0	3.5	1.9	3.3	1.8
141. I-5 NB Ramps at Alicia Pkwy.	3.5	1.9	3.4	1.8	3.3	1.7
142. I-5 SB Ramps at Alicia Pkwy.	3.4	1.8	3.4	1.8	3.3	1.7
143. Los Alisos Bl. at Avd. De la Carlota	3.3	1.7	3.2	1.7	3.2	1.6
144. El Toro Rd. at Paseo de Valencia	3.2	1.7	3.2	1.6	3.1	1.6
145. Los Alisos Bl. at Paseo de Valencia	3.3	1.8	3.3	1.7	3.2	1.7

Table 3.3-6 Future (2030) With Proposed Project Localized Carbon Monoxide Concentrations within the “Extended Project Area”

Intersection	CO Concentrations in Parts per Million					
	25 Feet		50 Feet		100 Feet	
	1-Hour	8-Hour	1-Hour	8-Hour	1-Hour	8-Hour

SOURCE: EIP Associates 2005 (calculation sheets are provided in Appendix D)

1. National 1-hour standard is 35.0 parts per million. State 1-hour standard is 20.0 parts per million.
2. National 8-hour standard is 9.0 parts per million. State 8-hour standard is 9.0 parts per million.

The localized CO concentrations calculated in this table are based on the estimated traffic volumes generated at the study intersections in the “extended Project Area” by development under the Proposed Project without the traffic mitigation measures proposed by the traffic report, as the feasibility of implementing these mitigation measures has not been determined at this time.

Impact 3.3-3 Development under the Proposed Project would not expose sensitive receptors to substantial pollutant concentrations by causing the emission of identified pollutants in excess of the pounds per day or tons per quarter standards established by SCAQMD.

Significance Level: Significant and unavoidable

As described in Section 3.3.2 (Environmental Setting) under Project Area Characteristics, existing stationary sources of emissions on Sites 1 through 7 in the Project Area include the RV storage facility and green waste recycling facility located at Site 1, the small IRWD office buildings and agricultural support structures located on Site 3, and the facilities used for sand and gravel mining on Site 4. The remaining portions of Sites 1 through 7 do not contain any stationary sources of emissions other than those generated by space and water heating or landscape maintenance equipment at the few single-family dwellings located on Site 1, and at the existing nursery and associated support structures on Site 7. Other than these stationary sources of emissions, motor vehicles are the primary source of air pollutant emissions associated with Sites 1 through 7 in the Project Area.

The new residential and commercial developments that would occur on Sites 1 through 6 along with the new community facilities on Site 7 would create more intensive land uses than what currently exists on these sites. As such, compared to existing conditions, implementation of the Proposed Project would introduce a greater amount of emissions sources into Sites 1 through 7 of the Project Area. Implementation of the Proposed Project would result in the generation of emissions from construction activities and operation of new land uses on these sites within the Project Area. During construction, emissions would be generated by construction vehicles and equipment during clearance of a site, grading and/or excavation of a site, the construction of new structures, the installation of pipes and equipment, the application of finishes (e.g., paints), and the installation of landscaping. The clearance and grading of sites could also result in the generation of dust and particulate emissions, due to the disturbance of soil surfaces. During operation of the new land uses on Sites 1 through 7 in the Project Area, the primary source of emissions would relate to the use of equipment and vehicles, which typically are fueled with diesel or gasoline. The construction and operation of new land uses under the Proposed Project would be subject to the rules and regulations of the SCAQMD, which requires that equipment be in good operating condition and places restrictions on construction activities to reduce dust emissions, among other requirements, to minimize the emission of air pollutants.

The thresholds of significance that have been recommended by the SCAQMD for these new emissions were developed for individual development projects and are based on the SCAQMD's New Source Review emissions standards for individual sources of new emissions such as boilers and generators. They are applicable to the daily emissions that would result from construction and operational activities associated with an individual development project, and do not apply to cumulative development or multiple projects, such as those proposed on Sites 1 through 7 by the Proposed Project. Future individual development projects within the Project Area may require further tiered CEQA air quality review.

Many of the individual projects that are proposed for development under the Proposed Project may be small and thus would not generate construction and/or operational emissions that exceed the SCAQMD's recommended thresholds of significance. To the extent that construction of these individual projects overlaps, then the combined emissions from these small, individual projects could exceed the recommended SCAQMD thresholds, particularly for CO, NO_x, and PM₁₀, for which the Basin is currently in nonattainment. In addition to the smaller-scale projects, some of the individual development projects could also be large enough to generate construction and/or operational emissions that exceed the SCAQMD thresholds. As the specific size, location, and construction techniques and scheduling that will be utilized for each individual development project occurring within the Project Area from implementation of the Proposed Project is not currently known, the provision of precise emission estimates for each individual development project, or a combination of these projects, is not currently feasible and would require the City to speculate regarding such potential future projects' potential environmental impacts. The City is not required to engage in such speculation. (CEQA Guidelines, Section 15145.) Through the environmental review process, the City will consider these future projects on a case-by-case basis to ascertain whether an individual project would generate potentially significant air quality impacts and where it is necessary, will require the implementation of mitigation measures to minimize emissions and reduce potentially significant impacts.

In terms of construction emissions, if site-specific review of the future development projects occurring on Sites 1 through 7 in the Project Area identifies potentially significant air quality impacts associated with construction activities, MM 3.3-1 through MM 3.3-7 would be implemented to reduce these emissions. While implementation of MM 3.3-1 through MM 3.3-7 would reduce construction-related emissions, they may not reduce these emissions to levels below the SCAQMD thresholds for each individual development project, as the amount of emissions generated for each project would vary depending on its size, the land area that would need to be disturbed during construction, and the length of the construction schedule. Under these conditions, no further feasible mitigation measures are available and this impact would be considered significant and unavoidable. In addition, for the criteria pollutants that exceed the recommended SCAQMD thresholds, the health effects of these pollutants, which are shown in Table 3.3-2, would also need to be considered. The City will make site-specific determinations of significance during the review of these individual development projects to determine which projects for which construction emissions may exceed significance thresholds.

For the purpose of analysis in this EIR, a programmatic level of analysis is provided for the proposed development on Sites 1 through 7 under the Proposed Project. Under the Proposed Project, development of 5,415 residential units, over 50 acres of neighborhood parks, and up to 648,720 square feet of commercial development would occur on Sites 1 through 6, and 45 acres of sports park and

community/civic center would be developed on Site 7 of the Project Area by year 2030. Because construction emissions for an individual project typically exceeds the SCAQMD's recommended thresholds of significance and results in short-term air quality impacts, the impact of the Proposed Project, which takes into consideration the construction emissions generated from all of the development proposed on Sites 1 through 7 of the Project Area, is anticipated to be significant and unavoidable.

Operational emissions on Sites 1 through 7 in the Project Area resulting from implementation of the Proposed Project would be generated by both stationary and mobile sources. Stationary area source emissions would be generated by the consumption of natural gas for space and water heating devices, and the operation of landscape maintenance equipment at individual project sites. Mobile emissions, which are typically the primary source of operational emissions, would be generated by the motor vehicles traveling to and from the various individual parcels within Sites 1 through 7 in the Project Area. In terms of operation emissions, the City will need to provide site-specific review of each individual development project to identify potentially significant air quality impacts associated with operational emissions to determine whether the emissions would exceed the SCAQMD's recommended thresholds.

In order to assess the impact of operational emissions on a programmatic level, a screening-level analysis was performed using the URBEMIS 2002 computer model to approximately quantify the total amount of operational emissions that would occur under the Proposed Project. For the purpose of providing a conservative analysis, a worst-case scenario was provided in which the most intensive uses (in terms of operational emissions generation) were selected under each land use category designated under the Proposed Project for Sites 1 through 7 in the Project Area. Table 3.3-7 shows the estimated daily operational emissions generated from both stationary and mobile sources on these seven sites resulting from implementation of the Proposed Project.

Table 3.3-7 Estimated Daily Operational Emissions from Implementation of the Proposed Project					
<i>Emissions Source</i>	<i>Emissions in Pounds per Day</i>				
	<i>CO</i>	<i>VOC</i>	<i>NOx</i>	<i>SOx</i>	<i>PM₁₀</i>
Site 1 (Shea/Baker)					
Water and Space Heating	11.92	2.16	28.16	—	0.05
Landscape Maintenance	13.18	1.58	0.17	0.34	0.03
Consumer Products	—	137.72	—	—	—
Motor Vehicles	476.47	47.76	44.48	1.41	268.68
<i>Net Emissions</i>	<i>501.57</i>	<i>189.22</i>	<i>72.81</i>	<i>1.75</i>	<i>268.76</i>
Site 2 (Portola Center)					
Water and Space Heating	5.44	0.99	12.88	—	0.02
Landscape Maintenance	8.16	0.99	0.10	0.20	0.02
Consumer Products	—	55.38	—	—	—
Motor Vehicles	276.46	30.32	29.45	0.80	140.74
<i>Net Emissions</i>	<i>290.06</i>	<i>87.68</i>	<i>42.43</i>	<i>1.00</i>	<i>140.78</i>

Table 3.3-7 Estimated Daily Operational Emissions from Implementation of the Proposed Project					
<i>Emissions Source</i>	<i>Emissions in Pounds per Day</i>				
	<i>CO</i>	<i>VOC</i>	<i>NO_x</i>	<i>SO_x</i>	<i>PM₁₀</i>
Site 3 (IRWD)					
Water and Space Heating	2.67	0.49	6.28	—	0.01
Landscape Maintenance	0.58	0.08	0.01	0.00	0.00
Consumer Products	—	40.75	—	—	—
Motor Vehicles	92.57	9.86	8.51	0.27	51.70
<i>Net Emissions</i>	<i>95.82</i>	<i>51.18</i>	<i>14.80</i>	<i>0.27</i>	<i>51.71</i>
Site 4 (Baker)					
Water and Space Heating	2.10	0.38	5.03	—	0.01
Landscape Maintenance	1.17	0.16	0.01	0.00	0.00
Motor Vehicles	191.28	17.77	18.63	0.57	109.70
<i>Net Emissions</i>	<i>194.55</i>	<i>18.31</i>	<i>23.67</i>	<i>0.57</i>	<i>109.71</i>
Site 5 (Whisler/Greystone)					
Water and Space Heating	0.40	0.07	0.94	—	0.00
Landscape Maintenance	0.91	0.11	0.01	0.03	0.00
Consumer Products	—	3.67	—	—	—
Motor Vehicles	14.41	1.40	1.31	0.04	8.02
<i>Net Emissions</i>	<i>15.72</i>	<i>5.25</i>	<i>2.26</i>	<i>0.07</i>	<i>8.02</i>
Site 6 (Pacific Heritage)					
Water and Space Heating	0.45	0.08	1.07	—	0.00
Landscape Maintenance	1.04	0.12	0.01	0.03	0.00
Consumer Products	—	4.16	—	—	—
Motor Vehicles	1.49	4.36	1.08	0.03	0.00
<i>Net Emissions</i>	<i>2.98</i>	<i>8.72</i>	<i>2.16</i>	<i>0.06</i>	<i>0.00</i>
Site 7 (Nakase)					
Water and Space Heating	3.33	0.60	8.31	—	0.01
Landscape Maintenance	1.17	0.16	0.01	0.00	0.00
Motor Vehicles	378.41	34.03	36.02	1.14	218.21
<i>Net Emissions</i>	<i>382.91</i>	<i>34.79</i>	<i>44.34</i>	<i>1.14</i>	<i>218.22</i>
Total Emissions	1,483.61	395.15	202.47	4.86	797.20
SCAQMD Thresholds (lb/day)	550.00	55.00	55.00	150.00	150.00
Significant Impact	Yes	Yes	Yes	No	Yes
SOURCE: EIP Associates 2005 (computer sheets are provided in Appendix D)					

As shown in Table 3.3-7, the estimated daily operational emissions resulting from buildout of Sites 1 through 6 and 45 acres of Site 7 under the Proposed Project would exceed the SCAQMD recommended thresholds of significance for CO, VOC, NO_x, and PM₁₀. The exceedance of the SCAQMD thresholds for these criteria pollutants is primarily due to the increase in motor vehicles traveling to and from the new land uses within these sites. As no feasible mitigation is available to reduce the amount of motor

vehicle trips generated by the new land uses on these sites under the Proposed Project to the extent that motor vehicle emissions would be below the SCAQMD's recommended thresholds, this impact would be significant and unavoidable.

Although the impacts from both construction and operation emissions associated with the Proposed Project would be significant and unavoidable on a programmatic level, it is expected that subsequent environmental review will occur for each individual project that would eventually occur within Sites 1 through 7 of the Project Area. For the purpose of future tiering from this document for the development of individual projects on these sites within the Project Area, the City will conduct individual air quality analyses for each project on a case-by-case basis to determine whether a project will exceed SCAQMD's recommended thresholds of significance for construction and operation emissions. Under the condition where it is determined that a project will not exceed SCAQMD's thresholds of significance for construction and/or operation emissions, these impacts would be less than significant.

Impact 3.3-4 Development under the Proposed Project would result in a cumulatively considerable net increase of criteria pollutants for which the project region is in nonattainment under an applicable federal or state ambient air quality standard where the incremental effect of the project emissions, considered together with past, present, and reasonably anticipated further project emissions, increase the level of any criteria pollutant above the existing ambient level.

Significance Level: Significant and unavoidable

A significant impact may occur if an individual project would add a considerable cumulative contribution to a federal or state non-attainment pollutant. Because the Basin is currently in nonattainment for ozone, CO, and PM₁₀, related projects could exceed an air quality standard or contribute to an existing or projected air quality exceedance. With regard to determining the significance of the contribution from a project, the SCAQMD neither recommends quantified analyses of cumulative construction or operational emissions nor provides methodologies or thresholds of significance to be used to assess cumulative construction or operational impacts. Instead, the SCAQMD recommends that a project's potential contribution to cumulative impacts should be assessed utilizing the same significance criteria as those for project-specific impacts. Therefore, this analysis assumes that individual development projects that generate construction or operational emissions that exceed the SCAQMD recommended daily thresholds for project-specific impacts would also cause a cumulatively considerable increase in emissions for those pollutants for which the Basin is in nonattainment.

As part of the environmental review process, the City must consider each of the projects that are planned to occur on Sites 1 through 7 of the Project Area under the Proposed Project on a case-by-case basis to determine whether an individual project would generate potentially significant air quality impacts. If the construction and/or operation related daily emissions associated with an individual project would exceed SCAQMD significance thresholds for any criteria pollutant for which the Basin is in nonattainment, then these emissions generated by the project would be cumulatively considerable with regard to a substantial contribution to an existing or projected air quality violation, and would result in a significant and unavoidable impact. For the purpose of analysis in this EIR, a programmatic level of analysis is provided

for the proposed development on Sites 1 through 7 of the Project Area from implementation of the Proposed Project. In the case of the Proposed Project, all of the new land uses that are planned to occur on Sites 1 through 7 are analyzed to determine whether the daily construction and/or operation emissions would exceed the SCAQMD's recommended thresholds of significance for the criteria pollutants. As discussed previously in Impact 3.3-2, both construction- and operation-related daily emissions associated with the development projects that are planned to occur on Sites 1 through 7 from implementation of the Proposed Project are anticipated to exceed SCAQMD significance thresholds for criteria pollutants for which the Basin is in nonattainment. Under this condition, the development proposed by the Proposed Project would also make a cumulatively considerable contribution to these criteria pollutants. Therefore, this impact is anticipated to be significant and unavoidable.

Impact 3.3-5 Development proposed within the Project Area under the Proposed Project would not create objectionable odors affecting an area occupied by 100 or more people.

Significance Level: Less than significant

Construction activities occurring on Sites 1 through 7 within the Project Area from implementation of the Proposed Project would generate airborne odors associated with the operation of construction vehicles (i.e., diesel exhaust) and the application of architectural coatings. These odors would occur during daytime hours only and would be isolated to the immediate vicinity of the construction sites. In addition, standard construction requirements would be imposed on the developers/applicants associated with these construction projects that would address odors from construction activities. As such, impacts associated with construction-generated odors would not affect a substantial number of people or result in harm to anyone located in the vicinity of the Proposed Project, and are expected to be less than significant.

Implementation of the Proposed Project would result in the development of 5,415 residential units, up to 648,720 square feet of commercial development, and over 50 acres of neighborhood parks on Sites 1 through 6, and 45 acres of sports park and Community/Civic Center on Site 7. These proposed land uses are not expected to create any objectionable odors. As the new commercial uses designated under the Proposed Project could include restaurants, potential operational airborne odors could result from cooking activities. These odors would be similar to existing housing and food services uses throughout the City and would be confined to the immediate vicinity of the new buildings. Restaurants are also typically required to have ventilation systems that avoid substantial adverse odor impacts. The other potential source of odors would be new trash receptacles associated with restaurants within Sites 1 through 6 of the Project Area. These receptacles would be stored in areas and in containers as required by City and Health Department regulations, and be emptied on a regular basis, before potentially substantial odors have a chance to develop. As such, odors from commercial uses would not affect a substantial number of people. In addition, the three community facilities that would be developed on Site 7, which consist of a sports park, Community Center, and Civic Center, are not considered to be sources of objectionable odors. Therefore, implementation of the Proposed Project would not create objectionable odors affecting a substantial number of people, and this potential impact would be less than significant.

3.3.7 Mitigation Measures

The following mitigation measures are designed to eliminate or reduce to a level of less than significant those significant impacts to Air Quality that are caused by the Proposed Project and that are capable of being feasibly eliminated or reduced to a level of less than significant.

- MM 3.3-1 The developer shall require by contract specifications that all diesel-powered equipment used would be retrofitted with after-treatment products (e.g., engine catalysts) to the extent that it is readily available in the South Coast Air Basin. Contract specifications language shall be reviewed by the City prior to issuance of a grading permit.*
- MM 3.3-2 The developer shall require by contract specifications that all heavy-duty diesel-powered equipment operating and refueling at a project site within the Project Area would use low-NO_x diesel fuel to the extent that it is readily available and cost effective (up to 125 percent of the cost of California ARB diesel) in the South Coast Air Basin (this does not apply to diesel-powered trucks traveling to and from the project sites within the Project Area). Contract specification language shall be reviewed by the City prior to issuance of a grading permit.*
- MM 3.3-3 The developer shall require by contract specifications that alternative fuel construction equipment (i.e., compressed natural gas, liquid petroleum gas, and unleaded gasoline) and low-emission diesel construction equipment would be utilized to the extent that the equipment is readily available and cost effective in the South Coast Air Basin. Contract specification language shall be reviewed by the City prior to issuance of a grading permit.*
- MM 3.3-4 The developer shall require by contract specifications that construction equipment engines will be maintained in good condition and in proper tune per manufacturer's specification for the duration of construction. Contract specification language shall be reviewed by the City prior to issuance of a grading permit.*
- MM 3.3-5 The developer shall require by contract specifications that construction-related equipment, including heavy-duty equipment, motor vehicles, and portable equipment, shall be turned off when not in use for more than five minutes. Contract specification language shall be reviewed by the City prior to issuance of a grading permit.*
- MM 3.3-6 The developer shall require by contract specifications that construction operations rely on the electricity infrastructure surrounding the construction site rather than electrical generators powered by internal combustion engines to the extent feasible. Contract specification language shall be reviewed by the City prior to issuance of a grading permit.*
- MM 3.3-7 The developer shall implement dust control measures consistent with SCAQMD Rule 403—Fugitive Dust during the construction phases of new project development. Contract specification language shall be reviewed for inclusion of this language by the City prior to issuance of a grading permit. The following actions are currently recommended to implement Rule 403 and have been quantified by the SCAQMD as being able to reduce dust generation between 30 and 85 percent depending on the source of the dust generation:*

- *Apply water and/or approved nontoxic chemical soil stabilizers according to manufacturer’s specification to all inactive construction areas (previously graded areas that have been inactive for 10 or more days)*
- *Replace ground cover in disturbed areas as quickly as possible*
- *Enclose, cover, water twice daily, or apply approved chemical soil binders to exposed piles with 5 percent or greater silt content*
- *Water trucks will be utilized on the site and shall be available to be used throughout the day during site grading to keep the soil damp enough to prevent dust being raised by the operations. Water active grading sites at least twice daily*
- *Suspend all excavating and grading operations when wind speeds (as instantaneous gusts) exceed 25 miles per hour over a 30-minute period*
- *All trucks hauling dirt, sand, soil, or other loose materials are to be covered or should maintain at least two feet of freeboard (i.e., minimum vertical distance between top of the load and the top of the trailer), in accordance with Section 23114 of the California Vehicle Code*
- *Sweep streets at the end of the day*
- *Install wheel washers where vehicles enter and exit unpaved roads onto paved roads, or wash off trucks and any equipment leaving the site each trip on a gravel surface to prevent dirt and dust from impacting the surrounding areas.*
- *Apply water three times daily or chemical soil stabilizers according to manufacturers’ specifications to all unpaved parking or staging areas or unpaved road surfaces*
- *Post and enforce traffic speed limits of 15 miles per hour or less on all unpaved roads*

3.3.8 Summary of Impacts

Table 3.3-8 summarizes the potential long-term adverse impacts of the Proposed Project to air quality in the Project Area, and identifies the significance of those impacts after any applicable mitigation measures.

Table 3.3-8 Summary of Impacts		
Impact	Threshold	Significance
3.3-1	Development under the Proposed Project would provide new sources of regional air emissions, but would not impair implementation of the Air Quality Management Plan.	Less than significant
3.3-2	Development under the Proposed Project would not violate an air quality standard or contribute substantially to an existing or projected air quality violation.	Less than significant
3.3-3	Development under the Proposed Project would expose sensitive receptors to substantial pollutant concentrations by causing the emission of identified pollutants in excess of the pounds per day or tons per quarter standards established by SCAQMD.	Significant and unavoidable
3.3-4	Development under the Proposed Project would result in a cumulatively considerable net increase of criteria pollutants for which the project region is in nonattainment under an applicable federal or state ambient air quality standard where the incremental effect of the project emissions, considered together with past, present, and reasonably anticipated further project emissions, increase the level of any criteria pollutant above the existing ambient level.	Significant and unavoidable
3.3-5	Development proposed within the Project Area under the Proposed Project would not create objectionable odors affecting an area occupied by 100 or more people.	Less than significant

3.3.9 References

- Bay Area Air Quality Management District (BAAQMD). 1999. *BAAQMD CEQA Guidelines, Assessing the Air Quality Impacts of Projects and Plans*, December.
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- Western Regional Climatic Center website: <http://www.wrcc.dri.edu>, accessed November 2004.