

4.8 AIR QUALITY

Information presented in this section is based on the *Air Quality Assessment for Mountain Park, City of Anaheim*, prepared by Mestre Greve Associates (February 2005) which contains an analysis of existing air quality in the vicinity of the Mountain Park project site and analyzes the proposed project's potential air quality impacts. The *Air Quality Assessment* is included in its entirety in Appendix H, and is available for review as noted in Section 2.5, Review of the Draft EIR.

4.8.1 EXISTING CONDITIONS

Air Quality Management Framework

The proposed project is located in the South Coast Air Basin (SCAB) which is within the jurisdiction of the South Coast Air Quality Management District (SCAQMD) and the California Air Resources Board (CARB). The SCAQMD adopts and enforces regulations for stationary sources in the basin and, together with the Southern California Association of Governments (SCAG), local governments, and the private sector, develops the Air Quality Management Plan (AQMP) for the air basin. CARB establishes legal emission rates for new vehicles to be operated in California and is responsible for the vehicle inspection program. The U.S. Environmental Protection Agency (EPA) is also an important agency in the air quality management of the SCAB. The EPA implements the provisions of the Federal Clean Air Act, which establishes national ambient air quality standards. EPA requires air basins to prepare plans for achieving the federal air quality standards and monitors their progress toward that goal.

The AQMP is the most important air quality management document for the SCAB because it provides the blueprint for meeting State and federal ambient air quality standards¹. The 2003 AQMP was adopted locally on August 1, 2003, by the governing board of the SCAQMD. CARB adopted the AQMP as part of the California State Implementation Plan on October 23, 2003. The 2003 AQMP was adopted by the EPA on April 9, 2004. State law mandates the revision of the AQMP at least every three years, and federal law specifies dates certain for developing attainment plans for criteria pollutants.

Monitored Air Pollutants in the SCAB

Carbon Monoxide

Carbon monoxide (CO) is a colorless, odorless gas resulting from the incomplete combustion of fossil fuels. Over 80 percent of the CO emitted in urban areas is contributed by motor vehicles. High levels of CO commonly occur near major roadways and freeways. CO interferes with the blood's ability to carry oxygen to the body's tissues and results in numerous adverse health effects. CO is a criteria air pollutant. The federal and State standards for CO are presented in Table 4.8-1, Federal and State CO Standards.

Nitrogen Dioxide

Nitrogen dioxide (NO₂) is a criteria air pollutant and may result in numerous adverse health effects. It absorbs blue light, resulting in a brownish-red cast to the atmosphere and reduced visibility.

¹ State and federal air quality standards are set forth in the California Clean Air Act (CCAA) and the 1990 amendments to the Federal Clean Air Act (CAA), respectively.

**TABLE 4.8-1
FEDERAL AND STATE CO STANDARDS**

	Averaging Time	Standard
Federal	1 hour	35 ppm
	8 hours	9 ppm
State	1 hour	20 ppm
	8 hours	9 ppm
ppm parts per million		

Nitrogen Oxides

Nitrogen oxides is a general term pertaining to compounds of nitric acid (NO_x), nitrogen dioxide (NO₂), and other oxides of nitrogen. Nitrogen oxides are typically created during combustion processes and are major contributors to smog formation and acid deposition.

Ozone

Ozone is a strong smelling, pale blue, reactive toxic chemical gas consisting of three oxygen atoms. Ozone is a product of the photochemical process involving the sun's energy. Ozone exists in the upper atmosphere ozone layer as well as at the earth's surface. Ozone at the earth's surface causes numerous adverse health effects and is a criteria air pollutant. It is a major component of smog.

Ozone is a secondary pollutant; it is not directly emitted. Ozone is the result of chemical reactions between other pollutants, most importantly hydrocarbons and NO₂, which occur only in the presence of bright sunlight. Pollutants emitted from upwind cities react during transport downwind to produce the oxidant concentrations experienced in the area. Many areas of the SCAQMD contribute to the ozone levels experienced at the monitoring stations, with the more significant areas being those directly upwind.

Particulate Matter

Particulate matter (PM₁₀ and PM_{2.5}) is a major air pollutant consisting of tiny solid or liquid particles of soot, dust, smoke, fumes, and aerosols. The size of the particles allows them to easily enter the air sacs in the lungs where they may be deposited, resulting in adverse health effects. Particulate matter also causes visibility reduction. PM_{2.5} and PM₁₀ are criteria air pollutants.

Particulate levels in the area are generally due to natural sources, grading operations, and motor vehicles. According to the EPA, some people are much more sensitive than others to breathing fine particles (PM₁₀ and PM_{2.5}). People with influenza, chronic respiratory and cardiovascular diseases, and the elderly may suffer worsening illness and premature death due to breathing these fine particles. People with bronchitis can expect aggravated symptoms from breathing in fine particles. Children may experience decline in lung function due to breathing in PM₁₀ and PM_{2.5}. Other groups considered sensitive are smokers and people who cannot breathe well through their noses. Exercising athletes are also considered sensitive, because many breathe through their mouths.

Reactive Organic Gas

Reactive organic gas (ROG) is a reactive chemical gas, composed of hydrocarbons that may contribute to the formation of smog. ROG sources include fuel combustion, solvents, petroleum processing and storage, and some pesticides. (Also see VOC.)

Volatile Organic Compounds

Volatile organic compounds (VOCs) are hydrocarbon compounds that exist in the ambient air. VOCs contribute to the formation of smog and/or may themselves be toxic. VOCs often have an odor. VOC sources include fuel combustion, solvents, petroleum processing and storage, and some pesticides. (Also see ROG.)

SCAB Attainment Status

EPA has designated SCAB as extreme non-attainment for 1-hour ozone and serious non-attainment for suspended particulates (PM₁₀) and carbon monoxide (CO). EPA announced air quality designations for the new 8-hour ozone standard on April 15, 2004.

The SCAB was designated by EPA as severe non-attainment for the new 8-hour ozone standard. The SCAQMD now has until 2007 to submit a plan showing measures that would reduce ozone levels to below the federal 8-hour standard by June 15, 2021. As a part of the designation the EPA announced that the 1-hour ozone standard would be revoked in June of 2005. To avoid backsliding from attaining the ozone standards, EPA is requiring that specific control measures for the 1-hour ozone standard remain in the state implementation plan until the area achieves compliance with the 8-hour ozone standard.

Attainment of federal PM₁₀ health standards is to be achieved by December 31, 2006. EPA is scheduled to promulgate final air quality designations for the new PM_{2.5} standard by the spring of 2005. After the final designation is made, the SCAQMD will have three years to submit a plan showing measures to meet the federal PM_{2.5} standard. However, CARB has already adopted an annual average standard for PM_{2.5}² and, pursuant to State law³, every air district in California will be required to adopt and implement PM_{2.5} control measures by July 31, 2005. Until such time as the SCAQMD adopts recommended significance thresholds and analysis techniques for PM_{2.5}, PM₁₀ emissions will be used as an indicator of potential PM_{2.5} impacts in air quality analyses.

The compliance deadline for CO was to be December 31, 2000; however, the basin was granted an extension to December 31, 2006.

Formerly a non-attainment area for nitrogen dioxide (NO₂), the SCAB is qualified for redesignation to attainment because it has met federal standards for several years in a row. Until the SCAB is re-designated, NO₂ monitoring will continue to be required.

Air Quality Mitigation Approaches in the SCAB

Consistent with its overall goal to meet applicable State and federal requirements and to demonstrate attainment with ambient air quality standards, the 1997 AQMP, as amended in 1999, uses two tiers of emission reduction measures; (1) short- and intermediate-term measures, and (2) long-term measures.

² Approved by the California Office of Administrative Law in June of 2003.

³ Assembly Bill 656 (Sher), 2003.

Short- and intermediate-term measures propose the application of available technologies and management practices between 1994 and the year 2005. These measures rely on known technologies and proposed actions to be taken by several agencies that currently have statutory authority to implement such measures. Short- and intermediate-term measures in the 1997 AQMP include 35 stationary source, seven on-road, six off-road, one transportation control and indirect source, five advanced transportation technology, and one further study measures. All of these measures are proposed to be implemented between 1995 and 2005. These measures rely on both traditional command and control and alternative approaches for implementation.

To ultimately achieve ambient air quality standards, additional emission reductions will be necessary. Long-term measures rely on the advancement of technologies and control methods that can reasonably be expected to occur between 1997 and 2010. These long-term measures rely on further development and refinement of known low- and zero-emission control technologies for both mobile and stationary sources, along with technological breakthroughs.

Air Quality Monitoring Results

Air quality at any site is affected by regional air quality and local pollutant sources. Regional air quality is determined by the release of pollutants throughout the air basin. Estimates for existing emissions in the SCAB are included in the *1997 Air Quality Management Plan*, October 1996). The data indicate that mobile sources (i.e., on-road motor vehicles) are the major contributor to regional emissions, accounting for approximately 51 percent of volatile organic compounds (VOC), 63 percent of nitrogen oxide (NO_x) emissions, and approximately 78 percent of carbon monoxide (CO) emissions.

The Mountain Park project site is located near the convergence of three air quality monitoring stations: La Habra, Anaheim, and Mission Viejo. Hence, the data collected at these stations is considered representative of the air quality experienced in the vicinity of the project. The air pollutants measured at these stations include ozone, PM₁₀, CO, and NO₂. Recently monitored air quality data at each of these stations are shown in Tables 4.8-2, 4.8-3, and 4.8-4, Air Quality Levels Measured at the La Habra, Anaheim and Mission Viejo Monitoring Stations, respectively. Table 4.8-2 presents the federal and State air quality standards as well as the monitored pollutant levels from the La Habra monitoring station which measures ozone, carbon monoxide and nitrogen dioxide. Table 4.8-3 presents the monitored pollutant levels from the Anaheim monitoring station where ozone, carbon monoxide, nitrogen dioxide, and particulates (both PM₁₀ and PM_{2.5}) are measured. Table 4.8-4 presents the monitored pollutant levels from the Mission Viejo monitoring station which measures ozone, carbon monoxide, nitrogen dioxide, and particulates (both PM₁₀ and PM_{2.5}). The data were obtained from the CARB air quality data website (www.arb.ca.gov/adam/).

The monitoring data presented in Tables 4.8-2, 4.8-3, and 4.8-4 show that ozone and particulate matter (both PM₁₀ and PM_{2.5}) are the air pollutants of primary concern in the Mountain Park project area.

**TABLE 4.8-2
AIR QUALITY LEVELS MEASURED AT THE LA HABRA MONITORING
STATION**

Pollutant	California Standard	National Standard	Year	% Msrd. ¹	Max. Level	Days State Standard Exceeded	Days National Standard Exceeded ²
Ozone	0.09 ppm for 1 hr.	0.12 ppm for 1 hr.	2003	99	0.165	7	1
			2002	99	0.121	3	0
			2001	100	0.114	4	0
			2000	100	0.137	8	1
Ozone	No Standard	0.08 ppm for 8 hr.	2003	99	0.087	n/a	2
			2002	99	0.079	n/a	0
			2001	100	0.089	n/a	2
			2000	100	0.099	n/a	2
CO	20 ppm for 1 hour	35 ppm for 1 hour	2003	100	8.4	0	0
			2002	100	10.2	0	0
			2001	100	10.7	0	0
			2000	100	13.8	0	0
CO	9.0 ppm for 8 hour	9 ppm for 8 hour	2003	98	4.29	0	0
			2002	97	4.49	0	0
			2001	99	4.67	0	0
			2000	99	6.16	0	0
NO ₂ (1-Hour)	0.25 PPM for 1 hour	None	2003	99	0.158	0	n/a
			2002	89	0.116	0	n/a
			2001	100	0.130	0	n/a
			2000	53	0.118	0	n/a
NO ₂ (AAM ³)	None	0.053 ppm AAM ²	2003	99	0.028	n/a	no
			2002	89	0.025	n/a	no
			2001	100	0.027	n/a	no
			2000	53	–	n/a	no
¹ Percent of year where high pollutant levels were expected and measurements were made. ² For annual averaging times, a yes or no response is given if the annual average concentration exceeded the applicable standard. ³ Annual Arithmetic Mean							
Source: CARB Air Quality Data Statistics web site www.arb.ca.gov/adam/ accessed July 2, 2004.							

**TABLE 4.8-3
AIR QUALITY LEVELS MEASURED AT THE ANAHEIM MONITORING
STATION**

Pollutant	California Standard	National Standard	Year	% Meas. ¹	Max. Level	Days State Standard Exceeded ²	Days National Standard Exceeded ²
Ozone	0.09 ppm for 1 hr.	0.12 ppm for 1 hr.	2003	99	0.136	11	2
			2002	100	0.103	3	0
			2001	27	0.107	2	0
			2000	100	0.132	9	1
Ozone	No Standard	0.08 ppm for 8 hr.	2003	97	0.087	n/a	1
			2002	97	0.780	n/a	0
			2001	27	0.070	n/a	0
			2000	100	0.097	n/a	1
CO	20 ppm for 1 hour	35 ppm for 1 hour	2003	100	6.1	0	0
			2002	100	7.4	0	0
			2001	100	7.5	0	0
			2000	100	7.9	0	0
CO	9.0 ppm for 8 hour	9 ppm for 8 hour	2003	94	3.89	0	0
			2002	100	5.26	0	0
			2001	62	3.76	0	0
			2000	99	6.73	0	0
NO ₂ (1-Hour)	0.25 PPM for 1 hour	None	2003	98	0.127	0	n/a
			2002	100	0.100	0	n/a
			2001	60	0.120	0	n/a
			2000	100	0.139	0	n/a
NO ₂ (AAM ³)	None	0.053 ppm AAM ³	2003	98	0.024	n/a	no
			2002	100	0.024	n/a	no
			2001	60	—	n/a	no
			2000	100	0.29	n/a	no
Particulates PM ₁₀ (24 Hour)	50 ug/m3 for 24 hr.	150 ug/m3 for 24 hr.	2003	57	96	2/12	0/0
			2002	99	69	5/30	0/0
			2001	53	62	3/18	0/0
			2000	91	126	8/33	0/0
Particulates PM ₁₀ (Annual)	20 ug/m3 AAM ³	50 ug/m3 AAM ³	2003	57	34	yes	no
			2002	99	34	yes	no
			2001	53	—	—	—
			2000	91	29	yes	no

¹ Percent of year where high pollutant levels were expected that measurements were made.
² For annual averaging times a yes or no response is given if the annual average concentration exceeded the applicable standard. For the PM₁₀ 24 hour standard, daily monitoring is not performed. The first number shown in Days State Standard Exceeded column is the actual number of days measured that State standard was exceeded. The second number shows the number of days the standard would be expected to be exceeded if measurements were taken every day.
³ Annual Arithmetic Mean
— Data not reported

Source: CARB Air Quality Data Statistics web site www.arb.ca.gov/adam/ accessed July 2, 2004.

**TABLE 4.8-4
AIR QUALITY LEVELS MEASURED AT THE MISSION VIEJO MONITORING
STATION**

Pollutant	California Standard	National Standard	Year	% Meas. ¹	Max. Level	Days State Standard Exceeded ²	Days National Standard Exceeded ²
Ozone	0.09 ppm for 1 hr.	0.12 ppm for 1 hr.	2003	99	0.153	16	4
			2002	100	0.136	9	2
			2001	100	0.125	10	1
			2000	32	0.119	5	0
Ozone	No Standard	0.08 ppm for 8 hr.	2003	99	0.105	n/a	8
			2002	100	0.093	n/a	1
			2001	100	0.097	n/a	2
			2000	32	0.087	n/a	2
CO	20 ppm for 1 hour	35 ppm for 1 hour	2003	99	2.5	0	0
			2002	100	3.4	0	0
			2001	100	3.2	0	0
			2000	33	4.3	0	0
CO	9.0 ppm for 8 hour	9 ppm for 8 hour	2003	97	1.6	0	0
			2002	97	1.9	0	0
			2001	99	2.4	0	0
			2000	59	3.1	0	0
Particulates	50 ug/m3 for 24 hr.	150 ug/m3 for 24 hr.	2003	93	64	2/13	0/0
PM ₁₀			2002	94	80	5/31	0/0
(24 Hour)			2001	94	60	3/18	0/0
			2000	97	98	2/12	0/0
Particulates	20 ug/m3	50 ug/m3	2003	93	27	yes	no
PM ₁₀ ⁵	AAM ³	AAM ³	2002	94	31	yes	no
(Annual)			2001	94	26	yes	no
			2000	97	28	yes	no
Particulates	No	65 ug/m3	2003	--	51	n/a	0
PM _{2.5}	Standard	for 24 hr.	2002	100	59	n/a	0
(24 Hour)			2001	99	53	n/a	0
			2000	100	95	n/a	1
Particulates	12 ug/m3	15 ug/m3	2003	--	--	--	--
PM _{2.5}	AAM ³	AAM ³	2002	100	16	yes	yes
(Annual)			2001	99	16	yes	yes
			2000	100	15	yes	yes
¹ Percent of year where high pollutant levels were expected that measurements were made							
² For annual averaging times a yes or no response is given if the annual average concentration exceeded the applicable standard. For the PM ₁₀ 24 hour standard, daily monitoring is not performed. The first number shown in Days State Standard Exceeded column is the actual number of days measured that State standard was exceeded. The second number shows the number of days the standard would be expected to be exceeded if measurements were taken every day.							
³ Annual Arithmetic Mean							
Source: CARB Air Quality Data Statistics web site www.arb.ca.gov/adam/ accessed July 2, 2004.							

Ozone

Both the State and the federal 1-hour ozone standards were exceeded a few days during the past four years at each of the monitoring stations⁴. Likewise, the federal 8-hour ozone standard was exceeded a few days at each monitoring station⁵.

Particulate Matter

State PM₁₀ standards were exceeded on numerous occasions⁶ during the past four years at both the Anaheim and Mission Viejo stations. Federal PM_{2.5} standards were exceeded a few days⁷ at the Anaheim station and only once at the Mission Viejo station during the past four years. The annual average PM_{2.5} concentration has exceeded both the State and Federal standards for the past four years at both the Anaheim and Mission Viejo stations. There does not appear to be a noticeable trend in either maximum particulate concentrations or days of exceedances in the area.

Carbon Monoxide

Currently, CO levels in the project region are in compliance with the State and federal 1-hour and 8-hour standards.

Nitrogen Dioxide

NO₂ levels in the project region are in compliance with State and federal standards.

Local Air Quality

Existing Carbon Monoxide Modeling Results

Local air quality is a major concern along roadways and intersections where carbon monoxide (CO) is a primary pollutant. CO levels adjacent to roadways in the vicinity of the Mountain Park project site were assessed using traffic data prepared for the project (Austin-Foust Associates, Inc., 2004) and the CALINE4 computer model developed by the California Department of Transportation. Composite vehicular emission factors were derived from EMFAC2002⁸.

CALINE4 modeling was conducted for four intersections in the vicinity of the project:

- Weir Canyon Road at La Palma Avenue
- Weir Canyon Road at Santa Ana Canyon Road
- Weir Canyon Road at Serrano Avenue
- Serrano Avenue and Cannon

⁴ The State 1-hour ozone standard was exceeded between three and seven days per year at the La Habra Station, between two and 11 days at the Anaheim station, and between five and 16 days at the Mission Viejo station. The federal 1-hour ozone standard was exceeded two days in the last four years at La Habra, three days at Anaheim and seven days at Mission Viejo.

⁵ Between zero and two days each of the past four years at La Habra, between zero and one days at Anaheim, and between one and eight days at Mission Viejo.

⁶ The State PM₁₀ standard was exceeded between 30 and 53 days at Anaheim and between 12 and 31 days at Mission Viejo.

⁷ Six days in 2000, one day in 2001, one day in 2002, and three days in 2003. The increase in 2003 is attributable to the widespread brush fires in October of that year.

⁸ EMFAC2002 is a computer model published by CARB that calculates vehicular pollutant emission factors.

These intersections are shown in Exhibit 4.8-1 and were selected for modeling because they either (1) have the highest current traffic volumes or (2) are projected to have the greatest traffic increase due to the project. For each intersection, four receptors were located at each corner approximately 15 feet from edge of the road. The CO concentrations reported below are the modeled concentration at the receptor with the highest concentration at each intersection.

Existing background CO concentrations were obtained from the SCAQMD website (<http://www.aqmd.gov/ceqa/hdbk.html>). As discussed in the monitored air quality section above, the project site is located near the convergence of three areas represented by three different monitoring stations. Background levels representative of the La Habra station were used for this study because they are the highest of the three areas. The modeling results of the existing CO levels are presented in Table 4.8-5, Existing CO Concentrations.

**TABLE 4.8-5
EXISTING CO CONCENTRATIONS (PPM)**

Intersection	Existing CO Concentration	
	1-hour	8-hour
Weir Canyon at La Palma	13.2	6.8
Weir Canyon at Santa Ana Canyon	12.6	6.5
Weir Canyon at Serrano	11.1	5.6
Serrano at Cannon	11.6	5.9
State Standard	20	9
No. of Exceedances	0	0
Note: The CO concentrations include the ambient concentrations of 9.5 ppm for 1-hour levels, and 4.6 ppm for 8-hour levels.		
Source: Mestre Greve Associates, February 2005.		

As shown in Table 4.8-5, the maximum existing CO concentrations in the vicinity of the modeled intersections are estimated to be between 11.1 and 13.2 ppm for the 1-hour averaging time and between 5.6 and 6.8 ppm for the 8-hour averaging times. The existing CO concentrations in the vicinity of the modeled intersections currently comply with the 1-hour and 8-hour State and Federal standards.

Existing Emissions from On-Site Activities

The northeastern-most portion of the project site (south of SR-91 and east of Gypsum Canyon Road) was used for sand and gravel (aggregate) mining, aggregate processing, a concrete batch plant and an asphalt batch plant until December 2004 when the extraction license agreement between the quarry operator (Robertson's Ready Mix) and The Irvine Company (property owner) expired. The entire mine site is approximately 300 acres with recent mining activities on approximately half of this area. The mining and material handling operations result in fugitive dust (PM₁₀) emissions and the equipment used for these processes as well as the asphalt batch plant generated emissions of all five criteria air pollutants. These emissions will be eliminated with closure of the quarry.

SCAQMD requires annual reporting of emissions from some of the sources at the facility. These reports for 2003 are summarized in Table 4.8-6, Annual Reported Air Pollutant Emissions from Quarry Uses, which summarizes annual emissions for the aggregate processing plant (Owl Rock Plant) and the concrete batch plant, both operated by Robertson's Ready Mix, and an asphalt batch plant operated by All American Asphalt. The emissions from each of the individual sources reported in the SCAQMD reports are shown in the table along with the total

annual emissions. Average daily emissions during plant operation are estimated by dividing this number by 313 (the plant operated six days a week).

**TABLE 4.8-6
ANNUAL REPORTED AIR POLLUTANT EMISSIONS FROM QUARRY USES**

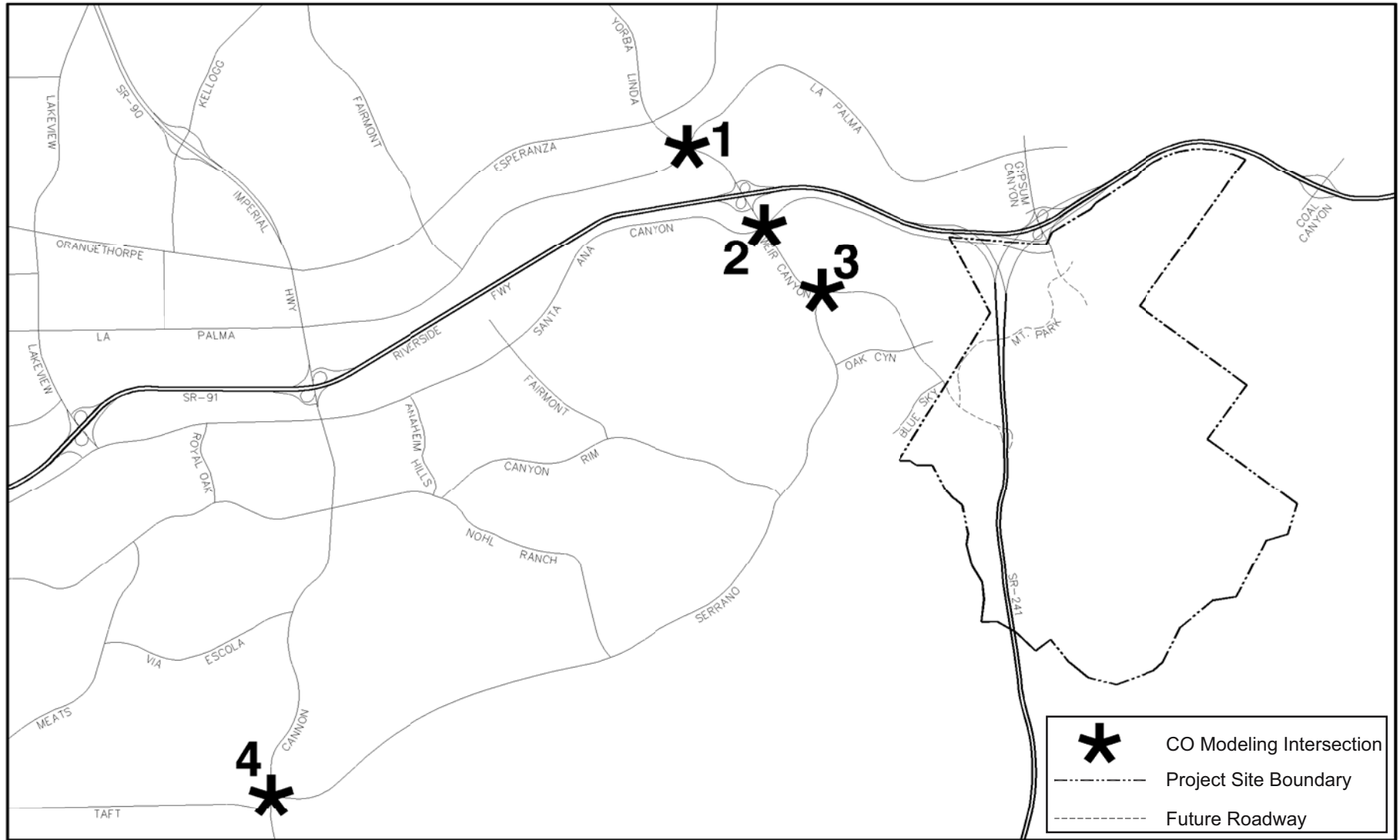
Source	Annual Emissions (lbs/year)				
	CO	ROG	NO _x	PM ₁₀	SO _x
Robertson's Ready Mix					
Rock Plant					
Material Handling	0	0	0	5,857	0
Diesel Fueling	0	14	0	0	0
Concrete Plant					
Material Handling	0	9	0	0	0
Diesel Fueling	0	0	0	389	0
All American Asphalt					
Dryer	14,316	1,382	4,401	0	679
Batch Processing	0	0	0	1,211	0
Degreasing	0	52	0	0	0
Baghouse Emissions	0	0	0	2,797	0
Asphalt Oil Storage	0	126	0	0	0
Open Storage Piles	0	0	0	160	0
Soldering, Metalizing or Welding	0	0	0	7	0
Total	14,316	1,583	4,401	10,420	679
Source: Mestre Greve Associates, February 2005.					

The data presented in Table 4.8-6 does not include emissions from some sources at the facility because they are not required to be reported to the SCAQMD. These sources are associated with the mining of materials for the rock plant and road dust PM₁₀ emissions from vehicles traveling paved and unpaved roads within the project.

Heavy equipment operated on the site and generates exhaust emissions as well as fugitive dust (PM₁₀ emissions). Robertson's Ready Mix has indicated that two Caterpillar 988 loaders, one Caterpillar D11 dozer, and one water truck operate on site 24 hours a day, six days a week. Additionally, one grader operates on the site four hours each workday. Emission factors for the equipment were obtained from the URBEMIS2002 model.

Trucks traveling on site to pick up cement, asphalt and other raw materials produced by the operation result in road dust (PM₁₀) being kicked into the air. Based on discussions with Robertson's Ready Mix approximately 66 trucks per day visit the concrete batch plant, 80 trucks per day visit the asphalt plant and 218 trucks per day haul out raw materials. Both the asphalt and concrete trucks travel approximately 1,800 feet, on paved road, on the project site as they pick up material. Raw material trucks travel approximately 750 feet on paved road and 6,000 feet on unpaved roads on the project site as they pick up materials.

The emissions from sources not reported to SCAQMD are presented in Table 4.8-7, Daily Air Pollutant Emissions from Existing Uses Not Reported to SCAQMD. Calculation worksheet showing the data and emission factors used to calculate emissions from these activities are presented in the appendix to the Air Quality Technical Report in Appendix H. Note that Table 4.8-7 does not include SO_x emissions as the heavy construction equipment emission factors from the URBEMIS2002 model do not include SO_x emissions.



CO Modeling Intersection Locations

Exhibit 4.8-1

Mountain Park Specific Plan Amendment EIR No. 331

March 11, 2005

Source:
Mestre Greve Associates, 2005



**TABLE 4.8-7
DAILY AIR POLLUTANT EMISSIONS FROM EXISTING USES NOT
REPORTED TO SCAQMD**

Source	Pollutant Emissions (lbs/day)			
	CO	ROG	NO _x	PM ₁₀
Equipment Activity	0.0	0.0	0.0	269.9
Equipment Exhaust	117.2	15.3	109.3	5.3
Road Dust	0.0	0.0	0.0	168.8
Total Emissions	117.2	15.3	109.3	444.0
Source: Mestre Greve Associates, February 2005.				

Table 4.8-8, Total Daily Air Pollutant Emissions from Existing Uses, combines the data presented in Tables 4.8-6 and 4.8-7 to present the total daily air pollutant emissions from the existing uses on the project site. These emissions will be eliminated with closure of the quarry and removal of existing facilities.

**TABLE 4.8-8
TOTAL DAILY AIR POLLUTANT EMISSIONS FROM EXISTING USES**

Source	Daily Sand & Gravel Plant Emissions (lbs/day)				
	CO	ROG	NO _x	PM ₁₀	SO _x
Reported Emissions	45.8	5.1	14.1	33.3	2.2
Unreported Emissions	117.2	15.3	109.3	444.0	0.0
Total	163.0	20.4	123.4	477.3	2.2
Source: Mestre Greve Associates, February 2005.					

Related Planning Programs

City of Anaheim General Plan

Green Element

The City of Anaheim’s Green Element contains air quality goal and policies which are applicable to the project. The goals and policies are provided in Table 4.8-15 with a project consistency analysis.

SCAG Regional Comprehensive Plan and Guide

In SCAG’s comment letter on the NOP (included in Appendix A), it noted core actions from the Air Quality Chapter of the RCPG applicable to the proposed project. These actions are provided in Table 4.8-15 with a project consistency analysis.

South Coast Air Quality Management Plan

The SCAQMD’s *CEQA Handbook* states that "New or amended GP Elements (including land use zoning and density amendments), Specific Plans, and significant projects must be analyzed for consistency with the AQMP." Strict consistency with all aspects of the plan is usually not required. A proposed project should be considered to be consistent with the plan if it furthers one or more policies and does not obstruct other policies. The Handbook identifies two key indicators of consistency that are provided in Table 4.8-15 with a project consistency analysis.

4.8.2 PROJECT IMPACT ANALYSIS

The proposed project's air quality impacts are separated into short-term impacts due to construction and long-term permanent impacts from operations. The City of Anaheim, as the lead agency, is responsible for making determinations regarding the existence of significant air quality impacts.

Thresholds of Significance

The criteria used to determine the significance of potential project-related air quality impacts are based on the City's Initial Study and the Initial Study checklist form in Appendix G of the State CEQA Guidelines. Based on these thresholds, the project would result in a significant impact related to air quality if it would:

1. Violate any air quality standard or contribute to an existing or projected air quality violation.
2. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under and applicable federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).

The significance thresholds recommended by the SCAQMD in its *CEQA Air Quality Handbook* are presented in Table 4.8-9, SCAQMD Regional Pollutant Emission Thresholds of Significance. Construction and operational emissions are considered by the SCAQMD to be significant if they exceed these thresholds.

**TABLE 4.8-9
 SCAQMD REGIONAL POLLUTANT EMISSION THRESHOLDS OF
 SIGNIFICANCE**

	Pollutant Emissions (lbs/day)				
	CO	ROG	NO _x	PM ₁₀	SO _x
Construction	550	75	100	150	150
Operation	550	55	55	150	150

3. Expose sensitive receptors to pollutant concentrations.
4. Conflict with or obstruct implementation of the applicable air quality plan.
5. Conflict with any applicable plan, policy or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect.

As previously discussed in Section 2.3.2, Effects Found Not to be Significant, during preparation of the Initial Study the City of Anaheim determined that the proposed project would not have significant impacts for the following thresholds and no further analysis is presented in this section.

- Create objectionable odors affecting a substantial number of people.

Impact Analysis

Threshold 1: Would the proposed project violate any air quality standard or contribute to an existing or projected air quality violation?

The following analysis addresses impacts from on-site project features/development, off-site project features, and project features within Caltrans right-of-way including the SR-241/Weir Canyon Road Interchange and Mountain Park Drive bridge overcrossing. The total impact area for off-site project features (including project features within Caltrans right-of-way) is approximately 22.8 acres and these areas would not all be under construction at the same time. The construction emissions from these facilities individually would not exceed the SCAQMD thresholds of significance for air quality emission, and if they were all constructed at the same time would not exceed the emissions assumed for a peak construction day, as identified below.

Short-Term Construction-Related Emissions

Temporary air quality impacts would result from project construction activities. Air pollutants would be emitted by construction equipment and construction worker vehicles and fugitive dust would be generated during construction of the existing facilities and grading of the site. The air quality technical report provided in Appendix H provides information on the assumptions and methodology used for assessing construction-related air quality impacts.

Grading is the construction activity that would result in the highest levels of project-related air pollutant emissions. Although the Mountain Park project site is approximately 3,001 acres, much of the project site would remain undisturbed open space. Approximately 872.7 acres of the site would be disturbed during the grading of the project. At this time, specific details regarding the scheduling of grading activities have not been developed. The first area of the project to be developed would be the area west of SR-241. It is possible that grading would begin on the area east of SR-241 prior to the completion of grading for the area west of SR-241. This would result in grading occurring in two areas of the project at the same time with two separate sets of grading equipment. Each set of grading equipment would move approximately 40,000 cubic yards of material on a peak working day. This would require approximately 45 pieces of equipment and approximately 100 employees for each set. Grading emissions were calculated assuming that approximately half of the total graded area would be actively graded at any one time. Up to 90 pieces of heavy construction equipment could be expected to be operating onsite at any one time and up to 200 employees trips could be expected to travel to and from the site each day during grading.

Table 4.8-10, Air Pollutant Emissions During Grading, presents peak air pollutant emissions estimates during grading. These estimates represent the highest potential level of construction-related emissions attributable to the proposed project. As shown in Table 4.8-10, on a peak construction day, the proposed project would exceed the thresholds of significance for the following air pollutants: CO, ROG, NO_x and PM₁₀. This is considered a significant short-term impact of the proposed project that applies to on-site project features/development, off-site project features, the SR-241/Weir Canyon Road interchange, Mountain Park Drive bridge overcrossing and other project features within Caltrans right-of-way.

**TABLE 4.8-10
AIR POLLUTANT EMISSIONS DURING GRADING**

	Pollutant Emissions (lbs/day)			
	CO	ROG	NO _x	PM ₁₀
Grading Activity	0.0	0.0	0.0	5,755.2
Construction Equipment	1,547.3	199.5	1,438.1	65.5
Employee Travel	76.5	5.4	9.9	0.5
Total Project Emissions	1,623.9	204.9	1,448.0	5,821.2
Existing Emissions	163	20.4	123.4	477.3
Increase in Emissions	1,460.9	184.6	1,324.6	5,343.9
SCQAMD Thresholds	550	75	100	150
Note: Columns may not add due to rounding.				
Source: Mestre Greve Associates, February 2005.				

Impact 4.8-1 *Project-related grading activities would result in a significant short-term construction-related air quality impact for the following air pollutants: CO, ROG, NO_x and PM₁₀. Implementation of MM 8-1 and 8-2 would reduce these impacts but not to a level considered less than significant.*

In addition to Mitigation Measures 8-1 and 8-2, a requirement to pave haul roads at the project was considered to further reduce emissions. However, such a requirement would be extraordinarily expensive and wasteful given that haul roads are temporary facilities. The cost of paving haul roads at the project site is high, estimated at \$660,000 per mile. The cost to remove the paved haul road and remove the waste asphalt would be approximately \$140,000 per mile, bringing the total cost of paving haul roads at the project site to \$800,000 per mile.

The location of haul roads changes daily in large grading operations. A requirement to pave haul roads would result in a continuous paving operation as the locations of haul roads change. Air emissions would result from the paving of haul roads, and additional emissions would result from the removal of the paving materials. Air emissions would also result from the delivery of paving materials for haul roads to the project site. In addition, waste asphalt materials from paved haul roads would need to be removed from the project site, resulting in higher emissions and the disposal of waste asphalt in significant quantities. As such, the purported environmental benefits associated with dust control from road paving would be offset by the negative environmental and economic impacts paving haul roads. Therefore, this potential mitigation measure for construction is considered infeasible.

Furthermore, a requirement to install diesel particulate filters on construction equipment used at the project was considered to further reduce emissions. However, the availability of construction equipment retrofitted with diesel particulate filters is limited. This is a result of operational problems in diesel engines equipped with these filters. Therefore, this potential mitigation measure for construction is considered infeasible.

Long-Term Operations Emissions

Local Air Quality

Because the project would introduce changes in traffic on the roadways serving the project, a detailed analysis of CO concentrations at sensitive areas in the project vicinity was conducted. Modeling was performed with and without the project for four future scenarios: 2010, 2025 with the Committed Circulation System, 2025 with buildout of the Master Plan of Arterial Highways

(MPAH), and 2025 with the buildout of the MPAH and the East Orange General Plan with its associated MPAH amendments.

Carbon Monoxide (CO) Modeling Results

CO modeling results for each of the four study intersections: Weir Canyon at La Palma, Weir Canyon at Santa Ana Canyon, Weir Canyon at Serrano, and Serrano at Cannon, are presented in Table 4.8-11, Worst Case Projections of CO Concentrations, with pollutant levels expressed in parts per million (ppm). Existing concentrations and existing plus project concentrations are also presented⁹. The CO levels reported in Table 4.8-11 are composites of the background levels of CO in the area plus those generated by the local roadways as modeled in CALINE4.

**TABLE 4.8-11
WORST CASE PROJECTIONS OF CO CONCENTRATIONS (ppm)**

Intersection	Exist	Exist +Proj.	2010		2025 (CCS)		2025 (MPAH)		2025 (MPAH+)	
			No Proj	w/ Proj	No Proj	w/ Proj	No Proj	w/ Proj	No Proj	w/ Proj
Modeled 1-Hour CO Concentration (ppm)										
1. Weir Canyon at La Palma	13.2	13.3	10.3	10.4	8.9	9.0	8.8	8.8	8.8	8.8
2. Weir Canyon at Santa Ana Canyon	12.6	12.6	10.0	10.0	9.0	9.0	8.9	8.9	8.7	8.9
3. Weir Canyon at Serrano	11.1	11.2	9.1	9.2	8.5	8.5	8.6	8.6	8.4	8.4
4. Serrano at Cannon	11.6	11.7	9.9	9.9	8.6	8.6	8.5	8.5	8.6	8.6
State Standard	20	20	20	20	20	20	20	20	20	20
No. of Exceedances	0	0	0	0	0	0	0	0	0	0
Modeled 8-Hour CO Concentration (ppm)										
1. Weir Canyon at La Palma	6.8	6.9	5.3	5.3	4.4	4.5	4.4	4.4	4.4	4.4
2. Weir Canyon at Santa Ana Canyon	6.5	6.5	5.1	5.1	4.5	4.5	4.4	4.4	4.3	4.4
3. Weir Canyon at Serrano	5.6	5.6	4.6	4.6	4.2	4.2	4.3	4.3	4.1	4.1
4. Serrano at Cannon	5.9	5.9	5.0	5.0	4.3	4.3	4.2	4.2	4.3	4.3
State Standard	9	9	9	9	9	9	9	9	9	9
No. of Exceedances	0	0	0	0	0	0	0	0	0	0
<p>Note: The CO concentrations include the ambient concentrations of 9.5 ppm for 1-hour levels, and 4.6 ppm for 8-hour levels for existing conditions, 8.0ppm for 1-hour levels, and 3.9 ppm for 8-hour levels for future (2010 & 2025 conditions).</p> <p>2025 CCS: Conditions for year 2025 with Committed Circulation System MPAH: Conditions for year 2025 with Master Plan of Arterial Highways Circulation System MPAH+: Conditions for year 2025 with Master Plan of Arterial Highways Circulation System with amendments to circulation system and East Orange land uses proposed by East Orange GPA</p> <p>Source: Mestre Greve Associates, February 2005.</p>										

Table 4.8-11 shows that CO concentrations would not exceed the State ambient air quality standards at any of the four study intersections under any of the four traffic scenarios. Table 4.8-11 also shows that the project has little or no effect on the CO concentrations in the vicinity of the intersections modeled. Because the concentrations are projected to remain below the air quality standards and the project would not substantially increase CO concentrations, the project would not result in a significant long-term local air quality impact.

⁹ The existing plus project concentrations represent the concentrations that would be experienced if the project were constructed with no other developments or changes to the roadway network in the vicinity of the project.

It should be noted that Table 4.8-11 shows that future CO concentration levels would be lower than existing CO levels. This is mainly due to the anticipated decrease in the future emission rates and background concentration levels. In general, the background CO concentration and the vehicular air pollutant emission factors are projected to decrease steadily in the future years due to newer, cleaner, vehicles. While the local traffic volumes are projected to increase in the future, this is more than offset by the decrease of background levels and lower emission factors.

Project Site CO Modeling Results

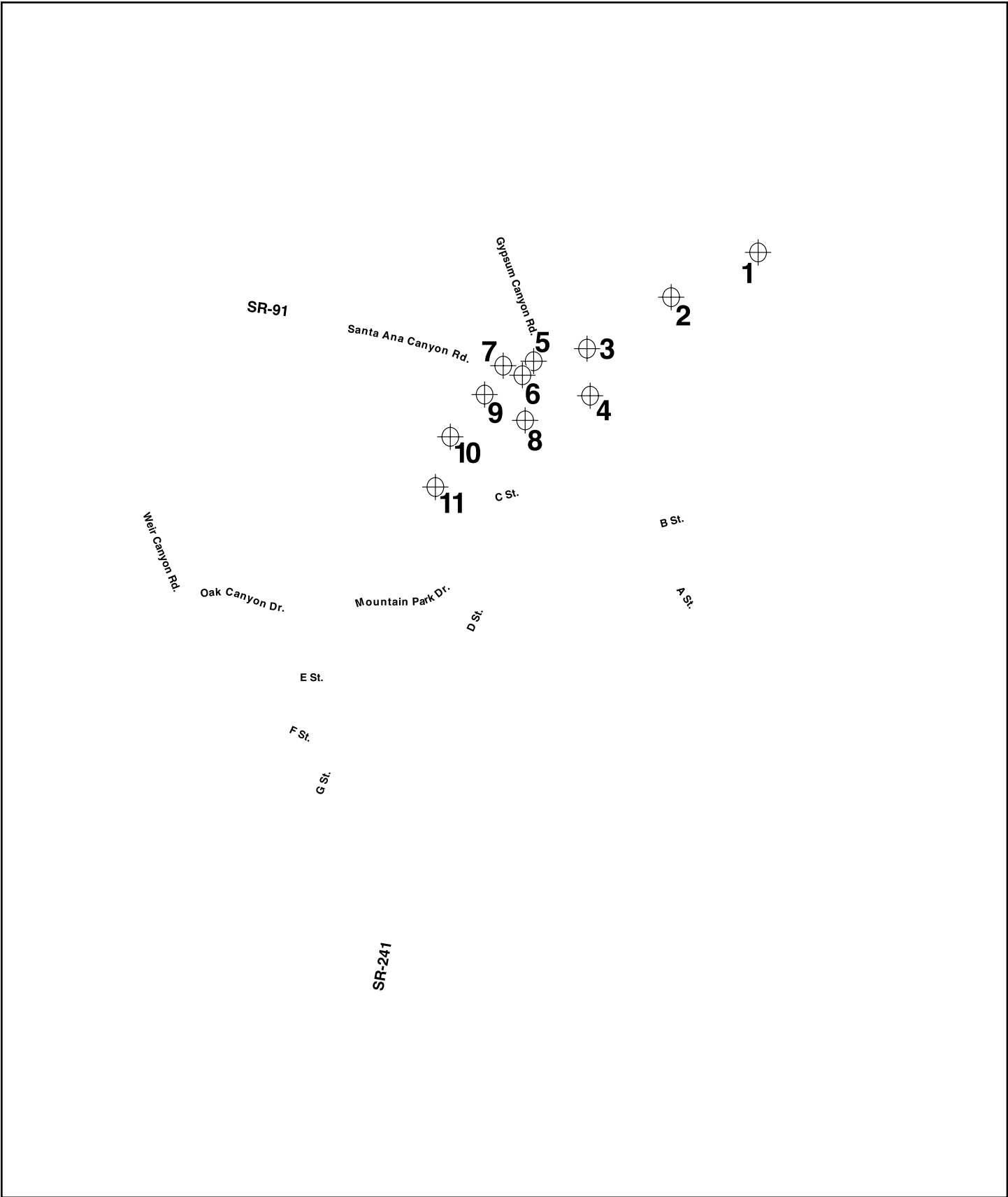
Because of the project site's proximity to SR-91 and the SR-91/SR-241 interchange, CO modeling was performed for eleven receptors within the project site that represent residences proposed by the project. The location of the receptors is presented in Exhibit 4.8-2. The modeling was performed for five future with-project traffic scenarios, Existing Plus Project, 2010 with the Committed Circulation System, 2025 with the Committed Circulation System, 2025 with buildout of the current MPAH, and 2025 with the amended East Orange General Plan and the MPAH amendments proposed by that plan. Table 4.8-12 presents the results of the modeling.

Table 4.8-12, Modeled CO Concentrations at Receptors on Project Site, shows that CO concentrations are projected to be below the state standards for all five scenarios modeled at each of the receptor locations. The highest concentrations are projected under the Existing plus project scenario. This scenario assumes that the project is constructed with no other changes to the surrounding area. Worst-case concentrations at the residential areas would be expected to be somewhat lower than this on the first day of occupation of the residential areas. While traffic volumes may increase slightly on the roadways in the vicinity of the project between existing and opening day conditions, reductions in vehicle emissions would be expected to offset this increase in traffic. This is demonstrated in the projected 2010 concentrations. The 2010 concentrations are lower than the Existing Plus Project conditions even though background (i.e., non-project) traffic volumes are projected to increase between existing conditions and 2010. Both scenarios include traffic generated by the project. The concentrations with the three 2025 scenarios are projected to be relatively similar among the scenarios and less than the projected concentrations under Existing Plus Project conditions and 2010 conditions. Based on this modeling, the project site is not significantly impacted by local air pollutant sources.

Regional Air Quality

The primary source of regional emissions generated by the proposed project would be from motor vehicles. Other emissions from the project site would be generated from the combustion of natural gas for space heating and the use of consumer products. Emissions would also be generated off-site by the use of natural gas and oil for the generation of electricity consumed by the project.

The total project emissions are presented in Table 4.8-13, Total Project Emissions. The existing emissions from the current site activities (quarry operations) are subtracted from the project emissions to compare the increase in emissions due to the project against the SCAQMD significance thresholds. As shown in Table 4.8-13, the project-related emissions of CO, ROG and NO_x are projected to be in excess of the SCAQMD thresholds which is considered a significant regional air quality impact.



CO Modeling Receptor Locations

Exhibit 4.8-2

Mountain Park Specific Plan Amendment EIR No. 331

March 11, 2005

Source:
Mestre Greve Associates, 2005



Impact 4.8-2 Project-related regional air emissions would exceed established thresholds for the following air pollutants and is considered a significant regional air quality impact: CO, ROG, and NO_x. Implementation of MMs 8-3 and 8-4 would reduce these impacts but not to a level considered less than significant.

Threshold 2: Would the proposed project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under and applicable federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).

**TABLE 4.8-12
MODELED CO CONCENTRATIONS AT RECEPTORS ON PROJECT SITE**

Receptor	Existing +Project	2010	2025 (CCS)	2025 (MPAH)	2025 (MPAH+)
Modeled 1-Hour CO Concentration (ppm)					
1	12.0	9.8	8.8	8.8	8.8
2	12.3	10.0	8.9	8.8	8.8
3	11.9	9.8	8.8	8.7	8.7
4	11.2	9.3	8.6	8.5	8.5
5	12.3	10.0	9.0	8.9	8.9
6	11.9	9.7	8.8	8.7	8.7
7	13.0	10.5	9.3	9.2	9.2
8	11.3	9.2	8.6	8.5	8.5
9	12.0	9.8	8.9	8.8	8.8
10	11.4	9.3	8.6	8.6	8.6
11	11.0	9.0	8.5	8.4	8.4
State Standard	20	20	20	20	20
No. of Exceedances	0	0	0	0	0
Modeled 8-Hour CO Concentration (ppm)					
1	6.1	5.0	4.4	4.4	4.4
2	6.3	5.1	4.4	4.4	4.4
3	6.0	5.0	4.4	4.3	4.3
4	5.6	4.7	4.3	4.2	4.2
5	6.3	5.1	4.5	4.4	4.4
6	6.0	4.9	4.4	4.3	4.3
7	6.7	5.4	4.7	4.6	4.6
8	5.7	4.6	4.3	4.2	4.2
9	6.1	5.0	4.4	4.4	4.4
10	5.7	4.7	4.3	4.3	4.3
11	5.5	4.5	4.2	4.1	4.1
State Standard	9	9	9	9	9
No. of Exceedances	0	0	0	0	0
<p>Note: The CO concentrations include the ambient concentrations of 9.5 ppm for 1-hour levels, and 4.6 ppm for 8-hour levels for existing conditions, 8.0ppm for 1-hour levels, and 3.9 ppm for 8-hour levels for future (2010 & 2025) conditions.</p> <p>2025 CCS: Conditions for year 2025 with Committed Circulation System MPAH: Conditions for year 2025 with Master Plan of Arterial Highways Circulation System MPAH+: Conditions for year 2025 with Master Plan of Arterial Highways Circulation System with amendments to circulation system and East Orange land uses proposed by East Orange GPA</p> <p>Source: Mestre Greve Associates, February 2005.</p>					

**TABLE 4.8-13
TOTAL PROJECT EMISSIONS**

Source	Pollutant Emissions (lbs/day)				
	CO	ROG	NO _x	PM ₁₀	SO _x
Vehicular Trips	2,018	146	232	26	39
Natural Gas Consumption	10.9	2.9	43.8	0.1	0.0
Consumer Product Usage	0.0	128.3	0.0	0.0	0.0
Electrical Generation	8.4	0.4	48.2	1.7	5.0
Total Project Emissions	2,037.7	277.2	324.3	27.6	43.8
Existing Emissions	163.0	20.4	123.4	477.30	2.2
Increase in Emissions	1,874.7	256.9	200.9	-449.7¹	41.7
SCAQMD Thresholds	550	55	55	150	150

¹ Closure of the quarry in the northeastern-most portion of the project site would result in a significant reduction in PM₁₀ emissions. Therefore, future with-project PM₁₀ emissions would actually be lower than current conditions.

Source: Mestre Greve Associates, February 2005.

A project which contributes to a cumulatively considerable impact and causes a net increase of any criteria pollutant for which the project region is in non-attainment is considered to result in a cumulatively significant impact. As previously noted, EPA has designated SCAB as extreme non-attainment for 1-hour ozone and 8-hour ozone, and serious non-attainment for suspended particulates (PM₁₀) and CO. The SCAG was formerly a non-attainment area for nitrogen dioxide (NO₂); however it qualifies for re-designation to attainment because it has met federal standards for several years in a row. Until the SCAB is re-designated, NO₂ monitoring would continue to be required.

As shown in Tables 4.8-10 and 4.8-13, the proposed project would result in significant short-term and long-term air quality impacts because emissions of the following pollutants would exceed established thresholds: CO, NO_x, PM₁₀ (short-term only) and ROG. Because the region is in non-attainment for ozone, CO, and NO₂, and project-related increases of these pollutants are above SCAQMD thresholds, operation of the project would result in a significant cumulative air quality impact for CO, NO_x, and ROG (an ozone precursor). During the construction phase, the project would result in short-term significant impacts for CO, NO_x, ROG and PM₁₀.

Impact 4.8-3 *The proposed project contributes to a net increase in CO, NO_x, PM₁₀ and ROG. Therefore, the proposed project would have a significant cumulative air quality impact. Implementation of the mitigation measures presented in Section 4.8.3 would reduce these impacts but not to a level considered less than significant.*

For informational purposes, Table 4.8-14 compares the project's emissions to the projected basin wide emissions from the 2003 AQMP. This comparison shows that the project represents a very small fraction of the total regional emissions. For the three pollutants above the thresholds, the project represents, at most, 53 thousandths of one percent of the total regional emissions.

**TABLE 4.8-14
COMPARISON OF PROJECT EMISSIONS WITH SCAB EMISSIONS**

	Pollutant Emissions (tons/day)				
	CO	ROG	NO _x	PM ₁₀	SO _x
Project Emissions	1.019	0.139	0.162	0.014	0.022
2020 South Coast Air Basin ¹	2,414	584	532	318	76
Project as Percentage of Basin	0.053%	0.025%	0.032%	0.004%	0.030%
¹ 2003 AQMP					
Source: Mestre Greve Associates, February 2005					

Potential Health Issues Associated With Project Air Emissions

As shown in Tables 4.8-10 and 4.8-13, this project would add to levels of CO, NO_x, PM₁₀ (short-term) and ROG which are already above the levels set by EPA and the State of California to avoid adverse health effects. As a result, the project's added emissions would contribute to the adverse health effects from exposure to ROG, NO_x, PM₁₀, and CO.

ROG and NO_x are generally considered on a regional basis because these two pollutants are converted into ground level ozone in the presence of sunlight. Ozone can limit the ability to take a deep breath, and may cause coughing, throat irritation, and breathing discomfort. Ozone may also lower resistance to respiratory disease (such as pneumonia), damage lung tissue, and aggravate chronic lung disease (such as asthma or bronchitis). Children and those with pre-existing lung problems are sensitive to the health effects of ozone. Even healthy adults involved in moderate or strenuous outdoor activities can experience the unhealthy effects of ozone.

Particles in the air such as PM₁₀ and PM_{2.5} can cause or aggravate health problems and may be linked with heart or lung diseases. The health effects of exposure to PM₁₀ range from minor effects, such as nose and throat irritation, to more serious effects such as aggravation of existing respiratory and cardiovascular disease. Fine particulate matter may bypass the body's defense mechanisms and become embedded in the deepest recesses of the lung, and can disrupt cellular processes. Nitrogen Dioxide (NO₂) is a portion of NO_x emissions. NO₂ can irritate the nose throat, and lungs, especially in people with asthma, and lowers resistance to respiratory infection.

CO impacts health by reducing the oxygen carrying capacity of the blood. This occurs because CO binds more readily to hemoglobin than does oxygen. This can result in impacts to the brain, nervous tissues, heart muscle and other specialized tissues that require large amounts of oxygen to function. As a result of oxygen deprivation, these tissues may suffer damage.

Table 4.8-14 shows that the project represents a very small percentage of the total criteria pollutant emissions in the South Coast Air Basin. Therefore, the increased risk of adverse health effects from project construction and operations air emissions would also be relatively small.

Threshold 3: *Would the proposed project expose sensitive receptors to pollutant concentrations?*

Some people are especially sensitive to air pollution emissions and should be given special consideration when evaluating air quality impacts from projects. These people include children, the elderly, persons with preexisting respiratory or cardiovascular illness, and athletes and

others who engage in frequent exercise. SCAQMD's *Air Quality Handbook* defines sensitive receptors as structures that house these persons or places where they gather to exercise.

The nearest sensitive receptors to the project are Running Springs Elementary School, located approximately 0.25 mile to the west of the western project boundary, and Bryant Ranch Elementary School located approximately one mile to the north of the northern project boundary. There are also existing residential uses located along the western boundary of the project site. The next nearest residential uses are located to the north of the project on the opposite side of SR-91 and the Santa Ana River. In addition to the adjacent uses, there is a school planned on the project site, as well as the possibility of people with health problems living in proposed residences on the project site.

As shown in Table 4.8-10, the project would result in short-term exceedances of SCAQMD thresholds for CO, ROG, NO_x, and PM₁₀ during construction activities. Sensitive receptors, primarily residences adjacent to the western boundary of the project site, would be exposed to these pollutants during construction. Short-term impacts would be reduced by measures discussed in section 4.8.3, but not to a level that is considered less than significant, resulting in potentially significant impacts to sensitive receptors.

Table 4.8-13 shows that the project would result in long-term exceedances of SCAQMD thresholds for CO, ROG and NO_x. However, the majority of these emissions, those due to vehicles and electrical generation would take place off-site. Emissions from on-site sources, natural gas combustion and consumer product usage would be less than the thresholds except for VOC. However, VOC is a concern because of its contribution to ozone formation rather than local impacts. There are no ambient air quality standards for VOC concentrations. Further, Table 4.8-12 shows that the project would not cause or contribute to any ambient air quality violations next to roadways served by the project. However, operation of the project would potentially impact sensitive receptors in the vicinity of the project.

Impact 4.8-4 Construction and operation of the proposed project would expose sensitive receptors to pollutant concentration that exceed SCAQMD thresholds.

Threshold 4: Would the proposed project conflict with or obstruct implementation of the applicable air quality plan?

Threshold 5: Would the proposed project conflict with any applicable plan, policy or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect?

An EIR must discuss the consistency between the proposed project and applicable General Plans and regional plans. As discussed above, plans that apply to the proposed project include the City of Anaheim General Plan, SCAG's Regional Comprehensive Plan and Guide, and the South Coast Air Quality Management Plan.

Table 4.8-15, Consistency of the Proposed Project with Air Quality Related Goals and Policies, addresses the consistency of the proposed project with the relevant goals and policies. As identified in Table 4.8-15 the proposed project would be considered consistent with the relevant goals and policies related to air quality.

**TABLE 4.8-15
CONSISTENCY OF THE PROPOSED PROJECT WITH AIR QUALITY
RELATED GOALS AND POLICIES**

GOALS AND POLICIES	CONSISTENCY ANALYSIS
City of Anaheim General Plan	
<p><u>Green Element</u> GOAL 8.1: Reduce locally generated emissions through improved traffic flows and construction management practices.</p> <p>Policy 1: Reduce vehicle emissions through traffic flow improvements, such as traffic signal synchronization, Intelligent Transportation Systems, the Scoot Adaptive Traffic Control System, and related capital improvements.</p> <p>Policy 2: Regulate construction practices, including grading, dust suppression, chemical management, and encourage pre-determined construction routes that minimize dust and particulate matter pollution.</p>	<p>The proposed project includes implementation of the circulation plan shown on Exhibit 3-5 in Section 3, Project Description, as well as off-site roadway improvements, construction of the SR-241/Weir Canyon Road interchange, and Mountain Park Drive bridge overcrossing. Mitigation measures are also identified in Section 4.7, Traffic and Circulation to reduce potential impacts to a level considered less than significant. The proposed on-site circulation plan and off-site roadway improvements would improve traffic flow in the vicinity of the project site, consistent with Goal 8.1, Policy 1. Mitigation measures for air quality emissions are outlined in Section 4.8.5 below and would reduce air quality emissions to the extent feasible.</p> <p>The City of Anaheim General Plan identifies truck routes within the City with the intention of minimizing impacts from trucks on local roadways (refer to Figure C-5 of the General Plan, Truck Routes). The nearest truck routes to the project site are along Weir Canyon Road and Imperial Highway north of the SR-91. La Palma Avenue to Weir Canyon Road is also identified as a truck route. Project construction traffic would follow these routes.</p>
SCAG's Regional Comprehensive Plan and Guide	
<p><u>Air Quality Chapter</u> Core Action 5.07: Determine specific programs and associated actions needed (e.g., indirect source rules, enhanced use of telecommunications, provision of community based shuttle services, provision of demand management based programs, or vehicle-miles-traveled/emission fees) so that options to command and control regulations can be assessed.</p> <p>Core Action 5.11: Through the environmental document review process, ensure that plans at all levels of government (regional, air basin, county, subregional and local) consider air quality, land use, transportation and economic relationships to ensure consistency and minimize conflicts.</p>	<p>Although SCAG has recommended that the Draft EIR address this RCPG policy, the policy is mainly applicable to air quality agencies and local jurisdiction general plans. The proposed project would not impede air quality command and control regulations or their alternatives.</p> <p>Consistent with CEQA Guidelines, the Mountain Park Specific Plan Amendment EIR addresses the proposed project's potential impacts on air quality, land use, and transportation, as well as consistency of the project with planning programs related to these issues. A fiscal impact analysis has also been prepared for the project for consideration by the City of Anaheim.</p>
South Coast Air Quality Management Plan	
<p>Criterion 1: Increase in the Frequency or Severity of Violations</p>	<p>Based on the air quality modeling analysis contained in this report, there would be significant short-term construction and long-term operational impacts due to the project based on the SCAQMD thresholds of significance. While emissions would be generated in excess of SCAQMD's threshold criteria, it is unlikely that short-term construction activities would increase the frequency or severity of existing air quality violations due to required compliance with SCAQMD Rules and Regulations. Similarly, the emissions from the project are projected to be a fraction of a percentage of the</p>

TABLE 4.8-15 (Continued)
CONSISTENCY OF THE PROPOSED PROJECT WITH AIR QUALITY
RELATED GOALS AND POLICIES

GOALS AND POLICIES	CONSISTENCY ANALYSIS
	<p>basin wide emissions. The analysis for long-term local air quality impacts showed that local pollutant concentrations are not projected to exceed any of the air quality standards.</p> <p>The proposed project is not projected to contribute to the exceedance of any air pollutant concentration standards, thus the project is found to be consistent with the AQMP for the first criterion.</p>
<p>Criterion 2: Exceed assumptions in the AQMP in 2010 or increments based on the year of project buildout and phase.</p>	<p>Consistency with the AQMP assumptions is determined by comparing the project's population, housing and employment growth with the growth assumptions in the AQMP. Thus, the emphasis of this criterion is to insure that the project growth and associated emissions do not exceed those assumed as a basis for the AQMP.</p> <p>The 1997 AQMP is the applicable federally-approved air plan for the South Coast Air Basin, which includes the project area. The 2003 AQMP has been locally adopted but has not yet been fully federally approved as a replacement for the 1997 AQMP. Both of these AQMPs are based on regional growth forecasts prepared by SCAG. SCAG's 1994 forecast incorporated into the 1997 AQMP reflected local general plans. SCAG's 2001 forecast incorporated into the 2003 AQMP also reflected local general plans as included in Orange County Projections-2000 (OCP-2000).</p> <p>In 1991, the City of Anaheim approved a Specific Plan for the Mountain Park project site (SP 90-4); however, the approved development was never implemented by the property owner/developer (refer to discussion in Section 3, Project Description). In May 2004, the City of Anaheim approved a General Plan Update (GPA No. 2004-00419) that decreased the intensity of development in the Mountain Park Specific Plan area from 7,966 residential units to 2,500 units and eliminated proposed commercial and mineral extraction uses, two school sites and one neighborhood park site.</p> <p>Thus, both the applicable 1997 AQMP and the 2003 AQMP pending full federal approval assume development of the larger, previously approved project in their emissions inventories. The larger project would have produced substantially higher emissions than the currently proposed project. Since the growth and projected emissions that would be generated by the proposed project are less than what is assumed for the area in the AQMP, the project is consistent with the AQMP assumptions.</p>

**TABLE 4.8-15 (Continued)
CONSISTENCY OF THE PROPOSED PROJECT WITH AIR QUALITY
RELATED GOALS AND POLICIES**

GOALS AND POLICIES	CONSISTENCY ANALYSIS
	<p>Not only is the proposed project below AQMP growth assumptions for the project area, but the City of Anaheim’s General Plan Land Use Plan, including the reduced Mountain Park project, was found to be consistent with the AQMP in the General Plan Final EIR. The 2004 General Plan Update provided additional housing in the Platinum Triangle and other parts of the City that exceed the reduction in units in Mountain Park. These changes in the distribution of jobs, housing and population resulted in a reduction in average daily vehicle trips expected to be generated by the year 2025. The General Plan Final EIR concluded that the land use update “is consistent with the AQMP and other regional planning strategies to reduce the number of trips and length of trips in the region, and to improve the balance between jobs and housing at the subregional level.”</p>

4.8.3 MITIGATION PROGRAM

Construction: Particulate Emission (PM₁₀) Control

MM 8-1 Prior to approval of the first grading plan, the following requirements shall be incorporated into the Storm Water Pollution Prevention Program (SWPPP) and Erosion and Sedimentation Control Plan submitted for review and approval by the Department of Public Works. During construction of the proposed project, the property owner/development and its contractors shall be required to comply with regional rules, which shall assist in reducing short-term air pollutant emissions. SCAQMD Rule 402 requires that air pollutant emissions not be a nuisance off-site. SCAQMD Rule 403 requires that fugitive dust be controlled with the best available control measures so that the presence of such dust does not remain visible in the atmosphere beyond the property line of the emission source. Two options are presented in Rule 403: monitoring of particulate concentrations or active control. Monitoring involves a sampling network around the project with no additional control measures unless specified concentrations are exceeded. The active control option does not require any monitoring, but requires that a list of measures be implemented starting with the first day of construction.

Rule 403 requires that “No person conducting active operations without utilizing the applicable best available control measures included in Table 1 of this Rule to minimize Fugitive dust emissions from each fugitive dust source type within the active operation.” The measures from Table 1 of Rule 403 are presented in Table 15 in Appendix H. The applicable measures presented in Table 1 are required to be implemented by Rule 403.

Rule 403 requires that “Large Projects” implement additional measures. A Large Project is defined as “any active operations on property which contains 50 or more acres of disturbed surface area; or any earth-moving operation with a daily earth-moving or throughput volume of 3,850 cubic meters (5,000 cubic yards) or more three times during the most recent 365 day period. Grading of the project would be

considered a Large Project under Rule 403. Therefore, the project shall be required to implement the applicable actions specified in Table 2 of the Rule. Table 2 from Rule 403 is presented in Table 16 of Appendix H. As a Large Operation, the project shall also be required to:

- Submit a fully executed Large Operation Notification (SCAQMD Form 403N) to the SCAQMD Executive Officer within 7 days of qualifying as a large operation;
- Include, as part of the notification, the name(s), address(es), and phone number(s) of the person(s) responsible for the submittal, and a description of the operation(s), including a map depicting the location of the site;
- Maintain daily records to document the specific dust control actions taken, maintain such records for a period of not less than three years; and make such records available to the Executive Officer upon request.
- Install and maintain project signage with project contact signage that meets the minimum standards of the Rule 403 Implementation Handbook, prior to initiating any earthmoving activities.
- Identify a dust control supervisor that is employed by or contracted with the property owner/developer, is on the site or available on-site within 30 minutes during working hours, has the authority to expeditiously employ sufficient dust mitigation measures to ensure compliance with all Rule requirements, and has completed the AQMD Fugitive Dust Control Class and has been issued a valid Certificate of Completion for the class.
- Notify the SCAQMD Executive Officer in writing within 30 days after the site no longer qualifies as a large operation.

Rule 403 also requires that the construction activities “shall not cause or allow PM₁₀ levels exceed 50 micrograms per cubic meter when determined by simultaneous sampling, as the difference between upwind and down wind sample.” Large Projects that cannot meet this performance standard are required to implement the applicable actions specified in Table 3 of Rule 403. Table 3 from Rule 403 is presented in Table 17 of Appendix H. Rather than perform monitoring to determine conformance with the performance standard, which will not reduce PM₁₀ emissions, the project shall implement all applicable measures presented in Rule 403 Table 3 regardless of conformance with the Rule 403 performance standard. This potentially results in a higher reduction of particulate emissions than if these measures were implemented only after being determined to be required by monitoring.

Further, Rule 403 requires that that the project shall not “allow track-out to extend 25 feet or more in cumulative length from the point of origin from an active operation.” All track-out from an active operation is required to be removed at the conclusion of each workday or evening shift. Any active operation with a disturbed surface area of five or more acres or with a daily import or export of 100 cubic yards or more of bulk materials must utilize at least one of the measures listed in Table 18 of Appendix H at each vehicle egress from the site to a paved public road.

Construction: Construction Equipment Emission Control

MM 8-2 Prior to approval of grading plans, the property owner/developer shall include the following notes on the contractor specifications submitted for review and approval by the Department of Public Works: "To reduce construction equipment emissions, the following measures shall be implemented when feasible.

- Use low emission mobile construction equipment. The property owner/developer shall comply with CARB requirements for heavy construction equipment.
- Maintain construction equipment engines by keeping them tuned.
- Use low sulfur fuel for stationary construction equipment. This is required by SCAQMD Rules 431.1 and 431.2.
- Utilize existing power sources (i.e., power poles) when feasible. This measure would minimize the use of higher polluting gas or diesel generators.
- Configure construction parking to minimize traffic interference.
- Minimize obstruction of through-traffic lanes. When feasible, construction should be planned so that lane closures on existing streets are kept to a minimum.
- Schedule construction operations affecting traffic for off-peak hours.
- Develop a traffic plan to minimize traffic flow interference from construction activities (the plan may include advance public notice of routing, use of public transportation and satellite parking areas with a shuttle service.
- Use aqueous diesel fuel where feasible and reasonably commercially available.
- Use cooled exhaust gas recirculation (EGR) where feasible and reasonably commercially available.

Several of the mitigation measures listed above are advanced emission control technologies, which are currently not commercially available. For example, aqueous diesel fuel reduces NO_x formation by reducing combustion temperatures, resulting in lower NO_x emissions. According to the SCAQMD, the current availability of this fuel technology is limited, and it may not be available for use for the project. In addition, with EGR diesel engines, a small amount of hot exhaust gas is routed through a cooler and mixed with fresh air entering the engine. The exhaust gas helps reduce the temperature during combustion, which lowers the formation of thermal NO_x. EGR technology is in the development phase, and has not been fully commercialized. To the extent that the advanced emissions control technologies become reasonably commercially available, or are required by the CARB from grading contractors, then such advanced emissions control technologies shall be used.

Regional Operational Impacts

MM 8-3 The property owner/developer shall reduce operation-related emissions through implementation of practices identified in SCAQMD's CEQA Handbook and the URBEMIS2002 model. SCAQMD's CEQA Handbook includes several measures that can be used to minimize emissions associated with residential projects. In addition, the URBEMIS2002 model identifies several measures, some of which overlap those in the CEQA Handbook. The following measures, based on these sources, shall be implemented by the property owner/developer and contractors, where feasible to reduce criteria pollutant emissions from stationary sources directly related to the project. Said measures shall be included on plans submitted for residential building permits:

- install solar or low-emission water heaters;
- use central water-heating systems;
- use built-in, energy-efficient appliances; and
- ensure that sidewalks and pedestrian paths are installed throughout the project area.

MM 8-4 All buildings shall comply with Title 24, Part 6. Reducing the need to heat or cool structures by improving thermal integrity will result in a reduced expenditure of energy and a reduction in pollutant emissions. Any necessary written evidence and/or standard details demonstrating compliance with Title 24, Part 6, shall be included on plans submitted for building permits.

4.8.4 CUMULATIVE IMPACTS

As previously discussed, the project site is located within the SCAB, a 6,600-square-mile area comprised of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties. The SCAB is the study area for cumulative air quality Impacts. The air basin is in federal non-attainment for ozone, carbon monoxide (CO), fine particulate matter (PM₁₀), and nitrogen dioxide (NO₂). Further, the Costa Mesa monitoring station and Mission Viejo station data which are representative of the project site show that violations of thresholds exist for NO_x and PM₁₀. As addressed in this section, the proposed project would have a significant construction-related impact on air quality regarding CO, NO_x, PM₁₀ and ROG. Additionally, the project would have a significant long-term regional impact on air quality related to CO, NO_x, and ROG. A project which contributes to a cumulatively considerable impact and causes a net increase of any criteria pollutant for which the project region is in non-attainment is considered to result in a cumulatively significant impact. Therefore, the proposed project's impacts associated with the exceedance of CO, NO_x, PM₁₀ and ROG thresholds would be considered cumulatively significant (refer to Impact 4.8-3). Feasible mitigation measures to reduce the impacts from operations would be implemented for the proposed project; however, even after mitigation, the impacts on operations are significant and unavoidable.

4.8.5 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Short-Term Impacts

The analysis indicates that project emissions from construction activities would exceed the SCAQMD's Thresholds of Significance for CO, ROG, NO_x and PM₁₀ (Impact 4.8-1), and would expose sensitive receptors to these pollutants (Impact 4.8-4). Mitigation would reduce emissions, but not to a level below the SCAQMD's thresholds. Therefore, construction emissions of CO, ROG, NO_x and PM₁₀ would exceed the SCAQMD thresholds after mitigation, and short-term construction air quality impacts would remain significant and unavoidable.

Long-Term Impacts

The analysis indicates that operational project emissions would exceed the SCAQMD's Thresholds of Significance for CO, ROG, and NO_x (Impact 4.8-2) and would expose sensitive receptors to these pollutants (Impact 4.8-4). Mitigation would reduce emissions, but not to a level below the SCAQMD's thresholds. Therefore, project-related operational emissions of CO, ROG, and NO_x would exceed the SCAQMD thresholds after mitigation, and long-term regional air quality impacts would remain significant and unavoidable.

Cumulative Impact

The proposed project's impacts associated with the exceedance of CO, NO_x, PM₁₀ and ROG thresholds would be considered cumulatively significant (refer to Impact 4.8-3). Mitigation would reduce these emissions, but not to a level below the SCAQMD's thresholds. Therefore, cumulative air quality impacts would remain significant and unavoidable.