4.2 AIR QUALITY

4.2.1 *INTRODUCTION*

This section describes the ambient air quality of the local and regional area and provides a comparison of existing air quality to applicable federal, state, and local air pollutant standards. In addition, sources of air emissions in the vicinity of the project site are identified and discussed. This section also identifies the plans and policies developed in efforts to improve air quality. Finally, this section evaluates potential air quality impacts associated with the project and identifies mitigation measures to reduce potential impacts. Sources utilized in this discussion include the South Coast Air Quality Management District (SCAQMD) California Environmental Quality Act (CEQA) Air Quality Handbook *and air quality data from the SCAQMD. Emission calculations and air quality modeling conducted for the project are provided in* **Appendix 4.2** *of this Draft Environmental Impact Report (EIR).*

4.2.2 METHODOLOGY

The methodology used to evaluate the air quality impacts associated with construction and operation of the proposed project is based on the SCAQMD's *CEQA Air Quality Handbook,* the URBEMIS2002 emissions estimation model for land use development projects, and information provided in the *Software Users' Guide [for] URBEMIS2002 for Windows with Enhanced Construction Module* (May 2002).[1] Estimates of $PM_{2.5}$ emissions were based on the $PM_{2.5}$ fractions of PM_{10} from the SCAQMD's *Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds.*[2] The emissions are also estimated based on information and estimated activity levels provided by the applicant as well as data from similar projects. Some elements of this analysis are based on data provided in other sections of this EIR; for example, trip generation rates and a carbon monoxide (CO) hotspots analysis are based on the traffic impact analysis prepared for this project.

Development of the proposed project would generate air emissions from a wide variety of stationary and mobile sources. Stationary source emissions would be generated by on-site construction activities, equipment, and consumption of natural gas once the proposed uses are occupied. Mobile source emissions would be generated by motor vehicle travel and heavy-duty equipment usage associated with construction activities and occupancy of the proposed development.

1 Rimpo and Associates. *URBEMIS2002 v8.7.* [Online] 28 December 2006. <http://www.urbemis.com>

2 South Coast Air Quality Management District. *Final Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds,* October 2006.

4.2.3 EXISTING CONDITIONS

Regional Climate

Air quality is affected by both the rate and location of pollutant emissions. It is also heavily influenced by meteorological conditions that affect the movement and dispersal of pollutants. Atmospheric conditions such as wind speed, wind direction, and air temperature gradients, along with local topography, strongly affect the relationship between pollutant emissions and air quality.

The proposed project lies within the South Coast Air Basin (Basin). The Basin consists of all or portions of four counties, including all of Orange County, most of Los Angeles County, and the western portions of San Bernardino and Riverside Counties. The region is dominated by the nearly permanent subtropical high pressure system of the North Pacific Ocean, which, when coupled with the influx of relatively cool ocean air, leads to frequent temperature inversion layers. An inversion layer exists when atmospheric temperatures increase with height in the troposphere, near the surface of the earth, hindering vertical mixing of the lower atmosphere.

The regional climate significantly influences the air quality in the Basin. The atmospheric pollution potential of the area is largely dependent on temperature, winds, humidity, precipitation, atmospheric stability, solar radiation, and topography. The combination of low wind speeds and the presence of an inversion layer produce the greatest concentration of air pollutants. Smog potential is greatly reduced on days without inversion layers or on days with winds averaging over 15 miles per hour (mph).[3] The Basin is frequently subjected to an inversion layer that traps air pollutants. Additionally, temperature has an important influence on Basin wind flow, pollutant dispersion, vertical mixing, and photochemistry (i.e., ozone formation).

Annual average temperatures throughout the Basin vary from the low to middle 60 degrees Fahrenheit (°F). However, due to decreased marine influence, the eastern portion of the Basin shows greater variability in average annual minimum and maximum temperatures. January is the coldest month throughout the Basin, with average minimum temperatures of 47 °F in downtown Los Angeles and 36 °F in San Bernardino. All portions of the Basin have recorded maximum temperatures above 100 °F.

Although the climate of the Basin can be characterized as semi-arid, the air near the land surface is quite moist on most days because of the presence of a marine layer. This shallow layer of sea air is an important modifier of Basin climate. Humidity restricts visibility in the Basin, and the conversion of

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3 South Coast Air Quality Management District. *CEQA Air Quality Handbook*, November 1993, page A8-1.

sulfur dioxide (SO_2) to sulfates is heightened in air with high relative humidity. The marine layer is an excellent environment for that conversion process, especially during the spring and summer months. The annual average relative humidity is 71 percent along the coast and 59 percent inland. Because the ocean effect is dominant, periods of heavy early morning fog are frequent and low stratus clouds are a characteristic feature. These effects decrease with distance from the coast.

More than 90 percent of the Basin's rainfall occurs from November through April. Annual average rainfall varies from approximately 9 inches in Riverside to 14 inches in downtown Los Angeles. Monthly and yearly rainfall totals are extremely variable. Summer rainfall usually consists of widely scattered thundershowers near the coast and slightly heavier shower activity in the eastern portion of the region and near the mountains.

Existing Air Quality

Regional Air Quality

The determination of whether a region's air quality is healthful or unhealthful is determined by comparing contaminant levels in ambient air samples to national and state standards. Health-based air quality standards have been established by California and the federal government for the following criteria air pollutants: ozone (O_3), CO, nitrogen dioxide (NO_2), sulfur dioxide (SO_2), respirable particulate matter (PM_{10}), fine particulate matter ($PM_{2.5}$), and lead. These standards were established to protect sensitive receptors with a margin of safety from adverse health impacts due to exposure to air pollution. The California standards are more stringent than the federal standards and in the case of PM_{10} and SO_2, much more stringent. California has also established standards for sulfates, visibility reducing particles, hydrogen sulfide, and vinyl chloride. The state and national ambient air quality standards for each of the monitored pollutants and their effects on health are summarized in **Table 4.2-1, Ambient Air Quality Standards.**

Air quality of a region is considered to be in attainment of the state standards if the measured ambient air pollutant levels for O_3, CO, SO_2 (1- and 24-hour), NO_2, PM_{10}, $PM_{2.5}$, and visibility reducing particles are not exceeded, and all other standards are not equaled or exceeded at any time in any consecutive three-year period. The National Ambient Air Quality Standards (NAAQS) (other than O_3, PM_{10}, $PM_{2.5}$ and those based on annual averages or arithmetic mean) are not to be exceeded more than once per year. The NAAQS for O_3, PM_{10}, and $PM_{2.5}$ are based on statistical calculations over 1- to 3-year periods, depending on the pollutant.

Table 4.2-1
Ambient Air Quality Standards

Air Pollutant	State Standard	Federal Primary Standard	Most Relevant Health Effects
Ozone	0.070 ppm, 8-hr avg. 0.09 ppm, 1-hr. avg.	0.08 ppm, 8-hr avg. (3-year average of annual 4th-highest daily maximum)	(a) Short-term exposures: (1) Pulmonary function decrements and localized lung edema in humans and animals; and (2) Risk to public health implied by alterations in pulmonary morphology and host defense in animals; (b) Long-term exposures: Risk to public health implied by altered connective tissue metabolism and altered pulmonary morphology in animals after long-term exposures and pulmonary function decrements in chronically exposed humans; (c) Vegetation damage; and (d) Property damage
Carbon Monoxide	9.0 ppm, 8-hr avg. 20 ppm, 1-hr avg.	9 ppm, 8-hr avg. 35 ppm, 1-hr avg.	(a) Aggravation of angina pectoris and other aspects of coronary heart disease; (b) Decreased exercise tolerance in persons with peripheral vascular disease and lung disease; (c) Impairment of central nervous system functions; and (d) Possible increased risk to fetuses
Nitrogen Dioxide[1]	0.25 ppm, 1-hr avg.	0.053 ppm, annual arithmetic mean	(a) Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; (b) Risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; and (c) Contribution to atmospheric discoloration
Sulfur Dioxide	0.04 ppm, 24-hr avg. 0.25 ppm, 1-hr. avg.	0.030 ppm, annual arithmetic mean 0.14 ppm, 24-hr avg.	(a) Bronchoconstriction accompanied by symptoms which may include wheezing, shortness of breath and chest tightness, during exercise or physical activity in person with asthma
Respirable Particulate Matter (PM_{10})	20 $\mu g/m^3$, annual arithmetic mean 50 $\mu g/m^3$, 24-hr avg.	150 $\mu g/m^3$, 24-hr avg.	(a) Excess deaths from short-term exposures and exacerbation of symptoms in sensitive patients with respiratory disease; and (b) Excess seasonal declines in pulmonary function, especially in children
Fine Particulate Matter ($PM_{2.5}$)	12 $\mu g/m^3$, annual arithmetic mean	15 $\mu g/m3$, annual arithmetic mean (3-year average) 35 $\mu g/m3$, 24-hr avg. (3-year average of 98th percentile)	(a) Increased hospital admissions and emergency room visits for heart and lung disease; (b) Increased respiratory symptoms and disease; and (c) Decrease lung functions and premature death
Sulfates	25 $\mu g/m^3$, 24-hr avg.	None	(a) Decrease in ventilatory function; (b) Aggravation of asthmatic symptoms; (c) Aggravation of cardio-pulmonary disease; (d) Vegetation damage; (e) Degradation of visibility; and (f) Property damage
Lead[1]	1.5 $\mu g/m^3$, 30-day avg.	1.5 $\mu g/m^3$, calendar quarterly average	(a) Increased body burden; and (b) Impairment of blood formation and nerve conduction

Air Pollutant	State Standard	Federal Primary Standard	Most Relevant Health Effects
Visibility-Reducing Particles	Reduction of visual range to less than 10 miles at relative humidity less than 70%, 8-hour avg. (10 AM – 6 PM)	None	Visibility impairment on days when relative humidity is less than 70 percent
Hydrogen Sulfide	0.03 ppm, 1-hr avg.	None	Odor annoyance
Vinyl Chloride[2]	0.01 ppm, 24-hr avg.	None	Known carcinogen

Source: South Coast Air Quality Management District. Final Program Environmental Impact Report to the 2003 Draft AQMP. [Online] *August 2003, Table 3.1-1, p. 3.1-2. This report may be reviewed on the SCAQMD website at http://www.aqmd.gov/ceqa/documents/2003/aqmd/finalEA/aqmp/AQMP_FEIR.html.*

$\mu g/m^3$ = microgram per cubic meter.

ppm = parts per million by volume.

[1] *The NO_2 state standard was amended on February 22, 2007 to lower the 1-hour state standard to 0.18 ppm and establish a new annual state standard of 0.030 ppm. These changes become effective after regulatory changes are submitted and approved by the Office of Administrative Law, which is expected later in 2007. Statistics shown are based on the current standards.*

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

The air pollutants within the Basin are primarily generated by two categories of sources: stationary and mobile. Stationary sources are known as "point sources" which have one or more emission sources at a single facility, or "area sources" which are widely distributed and produce many small emissions. Point sources are usually associated with manufacturing and industrial uses and include sources such as refinery boilers or combustion equipment that produce electricity or process heat. Examples of area sources include residential water heaters, painting operations, lawn mowers, agricultural fields, landfills, and consumer products, such as barbecue lighter fluid or hair spray. "Mobile sources" refer to operational and evaporative emissions from motor vehicles. Mobile sources account for over 90 percent of the CO emissions, approximately 50 percent of the oxides of sulfur (SOx) emissions, over 90 percent of the NOx emissions, and over 50 percent of the VOC found within the Basin.[4] Smog is formed when Volatile Organic Compounds (VOC) and NOx undergo photochemical reactions in sunlight to form ozone (O_3).

Local Air Quality

The Southern California area has been divided into a number of geographical air basins for the purpose of air quality planning. To monitor the concentrations of criteria pollutants, the SCAQMD has divided

4 California Air Resources Board. *2005 Estimated Basin Data – South Coast Air Basin*, July 7, 2006. [Online] 19 March 2007. <http://www.arb.ca.gov/ei/maps/basins/abscmap.htm>

the Basin into source receptor areas (SRAs) in which 32 air quality-monitoring stations are operated. The project site is located within SRA Number 2 (SRA 2), which contains the northwestern coastal areas of Los Angeles County. The station that monitors SRA 2 is located approximately 5 miles to the west of the project site at West Los Angeles Veterans Affairs Medical Center, which is located at 11301 Wilshire Boulevard. This station presently monitors pollutant concentrations of O_3, CO, and NO_2. Pollutant concentrations of PM_{10}, $PM_{2.5}$, and SO_2 were obtained from the nearest monitoring station located at North Main Street in central Los Angeles (No. 087) within SRA 1, approximately 10 miles to the east of the project site.

Table 4.2-2, Ambient Pollutant Concentrations Registered in SRA 2, below, lists the measured concentrations and the exceedances of state and federal standards that have occurred at the nearest monitoring stations from 2001 through 2005. As shown, the local monitoring stations have registered values above state standards for O_3 and PM_{10}. Concentrations of $PM_{2.5}$ have also exceeded federal standards over the previous 5 years. Hydrogen sulfide, vinyl chloride, and visibility reducing particles were not monitored by CARB or the SCAQMD in Los Angeles County during the period of 2001 to 2005.

Existing Project Site Emissions

The existing project site consists of The Beverly Hilton Hotel and ancillary facilities including an Executive Conference Center, hotel administrative offices, a five-story above-ground parking structure with one subterranean level, and Trader Vic's Restaurant. Currently, the hotel has a total of 569 guest rooms; 352 guest rooms in the three-winged Wilshire Tower, 181 guest rooms in the Palm/Oasis Court building, and 36 guest rooms in the Lanai Rooms building. The six-level parking structure contains a total of 818 stalls.

Emissions were calculated for the existing facility using the data and methodologies identified in the SCAQMD's *CEQA Air Quality Handbook* and current motor vehicle emission factors contained in the URBEMIS2002 Air Quality Impact Model. Trip generation rates were obtained from data contained in **Section 4.11, Transportation, Traffic, Parking, and Circulation.** Emissions from the queuing and idling of cars entering and exiting the existing parking structure were analyzed outside of URBEMIS2002, as the model does not account for these emissions. The CARB-approved motor vehicle emissions model, EMFAC2007 (version 2.3), was used to estimate the emissions from light-duty passenger vehicles. Since the model does not provide idling emission rates for light-duty passenger vehicles, surrogate values coinciding with a speed of 1 mph were used. It was assumed that each vehicle idled for no more than five minutes. The existing operational emissions are presented below in **Table 4.2-3, Existing Project Site Emissions – The Beverly Hilton Hotel.** The mobile source emissions include the parking structure queuing and idling emissions described above.

Table 4.2-2
Ambient Pollutant Concentrations Registered in SRA 2

Pollutant	Standards[1,2]	Year 2001	2002	2003	2004	2005
OZONE (O_3)						
Maximum 1-hour concentration monitored (ppm)		0.099	0.118	0.134	0.107	0.114
Maximum 8-hour concentration monitored (ppm)		0.080	0.078	0.105	0.089	0.090
Number of days exceeding state 1-hour standard	0.09 ppm	1	1	11	5	7
Number of days exceeding federal 8-hour standard	0.08 ppm	0	0	1	1	1
Number of days exceeding state 8-hour standard	0.070 ppm	-	-	-	6	5
CARBON MONOXIDE (CO)						
Maximum 1-hour concentration monitored (ppm)		4	4	5	4	3
Maximum 8-hour concentration monitored (ppm)		3.0	2.7	2.7	2.3	2.1
Number of days exceeding federal 8-hour standard	9 ppm	0	0	0	0	0
Number of days exceeding state 8-hour standard	9.0 ppm	0	0	0	0	0
NITROGEN DIOXIDE (NO_2)						
Maximum 1-hour concentration monitored (ppm)		0.11	0.11	0.12	0.09	0.08
Annual average concentration monitored (ppm)		0.0251	0.0249	0.0231	0.0198	0.0178
Number of days exceeding state 1-hour standard[3]	0.25 ppm	0	0	0	0	0
PARTICULATE MATTER (PM_{10})[4]						
Maximum 24-hour concentration monitored ($\mu g/m^3$)		97	65	81	72	70
Annual average concentration monitored ($\mu g/m^3$)		40.3	37.6	34.6	32.7	29.6
Number of samples exceeding federal standard	150 $\mu g/m^3$	0	0	0	0	0
Number of samples exceeding state standard	50 $\mu g/m^3$	20	8	6	5	4
PARTICULATE MATTER ($PM_{2.5}$)[4]						
Maximum 24-hour concentration monitored ($\mu g/m^3$)		73.4	66.3	83.7	75.0	73.7
Annual average concentration monitored ($\mu g/m^3$)		22.9	21.8	21.3	19.6	18.1
Number of samples exceeding federal standard[5]	65 $\mu g/m^3$	4	1	5	2	2
SULFUR DIOXIDE (SO_2)[4]						
Maximum 1-hour concentration monitored ($\mu g/m^3$)		0.03	0.02	0.05	0.08	0.07
Maximum 24-hour concentration monitored ($\mu g/m^3$)		0.010	0.016	0.006	0.015	0.010
Number of samples exceeding federal 24-hour standard	0.365 $\mu g/m^3$	0	0	0	0	0
Number of samples exceeding 24-hour state standard	0.105 $\mu g/m^3$	0	0	0	0	0

Sources: South Coast Air Quality Management District. Historical Data by Year. *[Online] August 2006. <http://www.aqmd.gov/smog/historicaldata.htm>*

1 *Parts by volume per million of air (ppm), micrograms per cubic meter of air ($\mu g/m^3$), or annual arithmetic mean (aam).*

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

3 *The NO_2 state standard was amended on February 22, 2007 to lower the 1-hour state standard to 0.18 ppm and establish a new annual state standard of 0.030 ppm. These changes become effective after regulatory changes are submitted and approved by the Office of Administrative Law, which is expected later in 2007. Statistics shown are based on the current standards.*

4 *These pollutants are not monitored by the station located in SRA 2. Data was taken from the nearest monitoring station located in SRA 1.*

5 *The federal standard for $PM_{2.5}$ was changed to 35 $\mu g/m^3$ in 2006. Statistics shown are based on the 65$\mu g/m^3$ standard.*

Table 4.2-3
Existing Project Site Emissions – The Beverly Hilton Hotel

Emissions Source	Emissions in Pounds per Day					
	VOC	NOx	CO	SOx	PM_{10}	$PM_{2.5}$
Summertime Emissions[1]						
Operational (Mobile) Sources[3]	49.83	44.08	469.76	0.40	28.13	6.91
Area Sources	3.14	7.30	6.85	0.00	0.01	0.01
Summertime Emission Totals:	52.97	51.38	476.61	0.40	28.14	6.92
Wintertime Emissions[2]						
Operational (Mobile) Sources[3]	44.72	57.06	474.58	0.36	28.13	6.91
Area Sources	3.03	7.30	6.13	0.00	0.01	0.01
Wintertime Emission Totals:	47.75	64.36	480.71	0.36	28.14	6.92

Source: Impact Sciences, Inc. Emissions calculations are provided in Appendix 4.2.
Totals in table may not appear to add exactly due to rounding in the computer model calculations.
1 *Summertime Emissions are representative of the conditions that may occur during the ozone season (May 1 to October 31).*
2 *Wintertime Emissions are representative of the conditions that may occur during the balance of the year (November 1 to April 30).*
3 *Includes the parking structure queuing and idling emissions.*

Global Climate Change

Greenhouse Effect

Description of the Greenhouse Effect

Heat retention within our atmosphere is an essential process to sustain life on Earth. The natural process through which heat is retained in the troposphere[5] is called the "greenhouse effect". The greenhouse effect traps heat in the troposphere through a three-fold process as follows: Short-wave radiation emitted by the Sun is absorbed by the Earth; the Earth emits a portion of this energy in the form of long-wave radiation; and greenhouse gases (GHGs) in the upper atmosphere absorb this long-wave radiation and emit this long-wave radiation into space and toward the Earth. This "trapping" of the long-wave (thermal) radiation emitted back toward the Earth is the underlying process of the greenhouse effect. Without the greenhouse effect, the Earth's average temperature would be approximately -18 degrees Celsius (°C) (0° Fahrenheit [°F]) instead of its present 14°C (57°F).[6] The most abundant GHGs are water vapor and carbon dioxide. Many other trace gases have greater ability to absorb and re-radiate long-

5 The troposphere is the bottom layer of the atmosphere, which varies in height from the Earth's surface to 10 to 12 kilometers).

6 National Climatic Data Center. Global Warming Frequently Asked Questions. [Online] 3 February 2006. <http://www.ncdc.noaa.gov/oa/climate/globalwarming.html>

wave radiation; however, these gases are not as plentiful. For this reason, and to gauge the potency of GHGs, scientists have established a Global Warming Potential (GWP) for each GHG based on its ability to absorb and re-radiate long-wave radiation. The GWP of a gas is determined using carbon dioxide as the reference gas with a GWP of 1.

Greenhouse Gases

Primary Greenhouse Gases

Greenhouse gases include, but are not limited to, the following[7]:

- Water vapor (H_2O). Although water vapor has not received the scrutiny of other GHGs, it is the primary contributor to the greenhouse effect. Water vapor and clouds contribute 66 to 85 percent of the greenhouse effect (water vapor alone contributes 36 to 66 percent).[8] Natural processes such as evaporation from oceans and rivers and transpiration from plants contribute 90 percent and 10 percent of the water vapor in our atmosphere, respectively.[9] The primary human-related source of water vapor comes from fuel combustion in motor vehicles; however, this is not believed to contribute a significant amount (less than one percent) to atmospheric concentrations of water vapor.[10] Therefore, the control and reduction of water vapor emissions is not within reach of human actions. The Intergovernmental Panel on Climate Change (IPCC) has not determined a GWP for water vapor.

- Carbon dioxide (CO_2). Carbon dioxide is primarily generated by fossil fuel combustion in stationary and mobile sources. Due to the emergence of industrial facilities and mobile sources in the past 250 years, the concentration of carbon dioxide in the atmosphere has increased 35 percent.[11] Carbon dioxide is the most widely emitted GHG and is the reference gas (GWP of 1) for determining GWPs for other GHGs. In 2004, 83.8 percent of California's GHG emissions were carbon dioxide.[12]

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7 All Global Warming Potentials (GWPs) are given as 100-year GWP. Unless noted otherwise, all GWPs were obtained from the Intergovernmental Panel on Climate Change. Climate Change 1995: The Science of Climate Change – Contribution of Working Group I to the Second Assessment Report of the IPCC. Cambridge (UK): Cambridge University Press. 1996.

8 Real Climate. Water Vapour: Feedback or Forcing?. [Online] 6 April 2005. <http://www.realclimate.org/index.php?p=142>

9 United States Geological Survey. The Water Cycle: Evaporation. [Online] 28 August 2006. <http://ga.water.usgs.gov/edu/watercycleevaporation.html>

10 Energy Information Administration. Alternatives to Traditional Transportation Fuels 1994. [Online] 17 July 2002. <http://www.eia.doe.gov/cneaf/alternate/page/environment/exec2.html>

11 United States Environmental Protection Agency. Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2004. [Online] April 2006. <http://www.epa.gov/climatechange/emissions/usinventoryreport.html>

12 California Energy Commission. Inventory of California Greenhouse Gas Emissions and Sinks 1990 to 2004. Figure 2. [Online] December 2006. <http://www.energy.ca.gov/2006publications/CEC-600-2006-013/CEC-600-2006-013-SF.PDF>

- Methane (CH_4). Methane is emitted from biogenic sources, incomplete combustion in forest fires, landfills, manure management, and leaks in natural gas pipelines. In the United States, the top three sources of methane come from landfills, natural gas systems, and enteric fermentation.[13] Methane is the primary component of natural gas, which is used for space and water heating, steam production, and power generation. The GWP of methane is 21.

- Nitrous oxide (N_2O). Nitrous oxide is produced by both natural and human-related sources. Primary human-related sources include agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuel, adipic acid production, and nitric acid production. The GWP of nitrous oxide is 310.

- Hydrofluorocarbons (HFCs). HFCs are typically used as refrigerants for both stationary refrigeration and mobile air conditioning. The use of HFCs for cooling and foam blowing is growing as the continued phase-out of chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs) gains momentum. The GWP of HFCs range from 140 for HFC-152a to 6,300 for HFC-236fa.

- Perfluorocarbons (PFCs). Perfluorocarbons are compounds consisting of carbon and fluorine. They are primarily created as a byproduct of aluminum production and semi-conductor manufacturing. Perfluorocarbons are potent GHGs with a GWP several thousand times that of carbon dioxide, depending on the specific PFC. Another area of concern regarding PFCs is their long atmospheric lifetime (up to 50,000 years).[14] The GWP of PFCs range from 5,700 to 11,900.

- Sulfur hexafluoride. Sulfur hexafluoride is a colorless, odorless, nontoxic, nonflammable gas. It is most commonly used as an electrical insulator in high voltage equipment that transmits and distributes electricity. Sulfur hexafluoride is the most potent GHG that has been evaluated by the IPCC with a GWP of 23,900. However, its global warming contribution is not as high as the GWP would indicate due to its low mixing ratio compared to carbon dioxide (4 parts per trillion [ppt] in 1990 versus 365 parts per million [ppm]).[15]

Other Greenhouse Gases

In addition to the six major GHGs discussed above (excluding water vapor), many other compounds have the potential to contribute to the greenhouse effect. Some of these substances were previously identified as stratospheric ozone depletors; therefore, their gradual phase-out is currently in effect. A few of these compounds are discussed below:

- Hydrochlorofluorocarbons (HCFCs). HCFCs are solvents, similar in use and chemical composition to CFCs. The main uses of HCFCs are for refrigerant products and air conditioning systems. As part of the Montreal Protocol, all developed countries that adhere to the Protocol are subject to a

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13 United States Environmental Protection Agency. Methane: Sources and Emissions. [Online] 19 October 2006. <http://www.epa.gov/methane/sources.html>

14 Energy Information Administration. Other Gases: Hydrofluorocarbons, Perfluorocarbons, and Sulfur Hexafluoride. [Online] 29 October 2001. <http://www.eia.doe.gov/oiaf/1605/gg00rpt/other_gases.html>

15 United States Environmental Protection Agency. High GWP Gases and Climate Change. [Online] 19 October 2006. <http://www.epa.gov/highgwp/scientific.html#sf6>

consumption cap and gradual phase-out of HCFCs. The United States is scheduled to achieve a 100 percent reduction to the cap by 2030. The GWPs of HCFCs range from 93 for HCFC-123 to 2,000 for HCFC-142b.[16]

- 1,1,1-trichloroethane. 1,1,1-trichloroethane or methyl chloroform is a solvent and degreasing agent commonly used by manufacturers. In 1992, the U.S. EPA issued Final Rule 57 FR 33754 scheduling the phase out of methyl chloroform by 2002.[17] Therefore, the threat posed by methyl chloroform as a GHG will diminish. Nevertheless, the GWP of methyl chloroform is 110 times that of carbon dioxide.[18]

- Chlorofluorocarbons (CFCs). CFCs are used as refrigerants, cleaning solvents, and aerosol spray propellants. CFCs were also part of the U.S. EPA's Final Rule 57 FR 3374 for the phase out of ozone depleting substances. Currently, CFCs have been replaced by HFCs in cooling systems and a variety of alternatives for cleaning solvents. Nevertheless, CFCs remain suspended in the atmosphere contributing to the greenhouse effect. CFCs are potent GHGs with GWPs ranging from 4,600 for CFC-11 to 14,000 for CFC-13.[19]

- Ozone. Ozone occurs naturally in the stratosphere where it is largely responsible for filtering harmful ultraviolet (UV) radiation. In the troposphere, ozone acts as a GHG by absorbing and re-radiating the infrared energy emitted by the Earth. As a result of the industrial revolution and rising emissions of oxides of nitrogen (NOx) and volatile organic compounds (VOCs) (ozone precursors), the concentrations of ozone in the troposphere have increased.[20] Due to the short life span of ozone in the troposphere, its concentration and contribution as a GHG is not well established. However, the greenhouse effect of tropospheric ozone is considered small, as the radiative forcing of ozone is 25 percent of that of carbon dioxide.[21,22]

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16 United States Environmental Protection Agency. Protection of Stratospheric Ozone: Listing of Global Warming Potential for Ozone-Depleting Substances. [Online] 7 November 2006. <http://www.epa.gov/fedrgstr/EPA-AIR/1996/January/Day-19/pr-372.html>

17 United States Environmental Protection Agency. The Accelerated Phase-Out of Class 1 Ozone-Depleting Substances. [Online] 17 April 2006. <http://www.epa.gov/ozone/title6/phaseout/accfact.html>

18 United States Environmental Protection Agency. Protection of Stratospheric Ozone: Listing of Global Warming Potential for Ozone-Depleting Substances. [Online] 7 November 2006. <http://www.epa.gov/fedrgstr/EPA-AIR/1996/ January/Day-19/pr-372.html>

19 United States Environmental Protection Agency. Class I Ozone Depleting Substances. [Online] 7 March 2006. <http://www.epa.gov/ozone/ods.html>

20 Intergovernmental Panel on Climate Change. Climate Change 2001: Tropospheric Ozone. [Online] 24 March 2006. <http://www.grida.no/climate/ipcc_tar/wg1/142.htm>

21 Radiative forcing, measured in Watts/m², is an externally imposed perturbation (e.g., stimulated by greenhouse gases) in the radiative energy budget of the Earth's climate system (i.e., energy and heat retained in the troposphere minus energy passed to the stratosphere).

22 Intergovernmental Panel on Climate Change. Climate Change 2007: The Physical Science Basis, Summary for Policymakers. [Online] February 2007. <http://ipcc-wg1.ucar.edu/wg1/docs/WG1AR4_SPM_PlenaryApproved.pdf>

Contributions to Greenhouse Gas Emissions

Global

Anthropogenically-generated GHG emissions worldwide as of 2004 (the last year for which data are available) total approximately 25,400 CO_2 equivalent million metric tons ($MMTCO_2E$)[23] with six countries and the European Community accounting for 81 percent of the total (See **Table 4.2-4, Six Top GHG Producer Countries and the European Community**).

Table 4.2-4
Six Top GHG Producer Countries and the European Community

Emitting Countries	2004 GHG Emissions ($MMTCO_2E$)*
United States	7,074.4[1]
European Community	4,228.0[1]
China	3,650.0[2]
Russian Federation	2,024.2[1]
India	1,718.4[2]
Japan	1,355.2[1]
United Kingdom	665.3[1]
Total:	20,715.5

Sources:
1 *United Nations Framework Convention on Climate Change (UNFCCC). National Greenhouse Gas Inventory Data for the Period 1990 – 2004 and status of reporting. November 2006.*
2 *2004 GHG emissions for China and India were obtained from Carbon Planet Pty Ltd. <http://www.carbonplanet.com/home/country_emissions.php>*
* *Excludes emissions/removals from land use, land-use change and forestry (LULUCF)*

United States

As noted in **Table 4.2-4**, the United States is the top producer of greenhouse gas emissions. Six of the states—Texas, California, Pennsylvania, Ohio, Illinois, and Florida—would rank among the top 30 GHG emitters internationally.[24] Comparatively speaking, the GHG emissions from the lower 48 states are approximately equivalent to those emitted by China, Brazil, and the United Kingdom combined or by the United Kingdom, Brazil, Russian Federation, India, South Korea, and Canada combined.

23 The CO_2 equivalent emissions are commonly expressed as "million metric tons of carbon dioxide equivalent ($MMTCO_2E$)." The carbon dioxide equivalent for a gas is derived by multiplying the tons of the gas by the associated GWP, such that $MMTCO_2E$ = (million metric tons of a GHG) x (GWP of the GHG). For example, the GWP for methane is 21. This means that emissions of one million metric tons of methane are equivalent to emissions of 21 million metric tons of CO_2.

24 World Resources Institute < http://earthtrends.wri.org/updates/node/106 >

State of California

Based upon the 2004 GHG inventory data (the latest year available) compiled by the California Energy Commission (CEC) for California, and GHG inventories for countries contributing to the worldwide GHG emissions inventory compiled by UNFCCC for 2004, California's GHG emissions rank second in the United States (Texas is number one) with emissions of 431 $MMTCO_2E$ (excluding emissions related to imported power), and internationally between Spain (427.9 $MMTCO_2E$) and Australia (529.2 $MMTCO_2E$).

The CEC report placed CO_2 produced by fossil fuel combustion in California as the largest source of GHG emissions, accounting for 81 percent of the total GHG emissions, CO_2 emissions from other sources contributed 2.8 percent, methane emissions comprised 5.7 percent of the total GHG emissions, nitrous oxide emissions accounted for 6.8 percent of the total, and the remaining 2.9 percent was composed of emissions of high GWP gases.[25] These high GWP gases are largely composed of refrigerants and a small contribution of sulfur hexafluoride (SF_6) used as insulating materials in electricity transmission and distribution.

The primary contributors to GHG emissions in California are transportation, electric power production from both in-state and out-of-state sources; industry; agriculture and forestry; and other sources, which include commercial and residential activities. These primary contributors to California's GHG emissions and their relative contributions are presented in **Table 4.2-5, GHG Sources in California.**

Table 4.2-5
GHG Sources in California1

Source Category	Annual GHG Emissions ($MMTCO_2E$)[a]	Percent of Total	Annual GHG Emissions ($MMTCO_2E$)[b]	Percent of Total
Transportation	200.1	40.7%	200.1	46.4%
Electric Power Production	109.2	22.2%	48.4	11.2%
Industry	100.9	20.5%	100.9	23.4%
Agriculture & Forestry	40.9	8.3%	40.9	9.5%
Other	40.9	8.3%	40.9	9.5%
Total	**492.0**	**100.0%**	**431.2**	**100.0%**

Sources:

1 *California Energy Commission. Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004. December 22, 2006.*

a *Includes emissions associated with imported electricity, which account for 60.8 $MMTCO_2E$ annually.*

b *Excludes emissions associated with imported electricity.*

25 California Energy Commission. Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004. 22 December 2006. <http://www.energy.ca.gov/2006publications/CEC-600-2006-013/CEC-600-2006-013-SF.PDF>

It should be noted that emissions from each of these economic sectors are not confined to emissions from a single process, since there is cross-over with other sectors. For example, the GHG emissions from cement production places clinker manufacturing in its own category and the fuel used to heat the cement production process within the industrial fuel category. In the case of landfills, methane emissions and CO_2 emissions and sinks are reported in their respective portions of the inventory. Taken together, the CO_2 sinks approximately offset the landfill methane emissions. Additionally, fuel-related GHG emissions from transporting wastes to landfills are included in transportation fuels.

Global Climate Change

Climate change refers to any significant change in measures of climate (such as temperature, precipitation, or wind) lasting for an extended period (decades or longer).[26] Climate change may result from:

- Natural factors, such as changes in the sun's intensity or slow changes in the Earth's orbit around the sun;
- Natural processes within the climate system (e.g., changes in ocean circulation, reduction in sunlight from the addition of GHG and other gases to the atmosphere from volcanic eruptions); and
- Human activities that change the atmosphere's composition (e.g., through burning fossil fuels) and the land surface (e.g., deforestation, reforestation, urbanization, desertification).

Indications of Anthropogenic Influences

The impact of anthropogenic activities on global climate change is readily apparent in the observational record. For example, surface temperature data shows that 11 of the 12 years from 1995 to 2006 rank among the 12 warmest since 1850, the beginning of the instrumental record for global surface temperature.[27] In addition, the atmospheric water vapor content has increased since at least the 1980s over land, sea, and in the upper atmosphere, consistent with the capacity of warmer air to hold more water vapor; ocean temperatures are warmer to depths of 3,000 feet; and a marked decline has occurred in mountain glaciers and snow pack in both hemispheres, polar ice and ice sheets in both the artic and Antarctic regions.[28]

Influence of Industrialization

Air trapped by ice has been extracted from core samples taken from polar ice sheets to determine the global atmospheric variation of carbon dioxide, methane, and nitrous oxide from before the start of the

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26 United States Environmental Protection Agency, Glossary of Climate Change Terms < http://www.epa.gov/climatechange/glossary.html#Climate_change >

27 Intergovernmental Panel on Climate Change. Climate Change 2007: The Physical Science Basis, Summary for Policymakers. February 2007. <http://ipcc-wg1.ucar.edu/wg1/docs/WG1AR4_SPM_PlenaryApproved.pdf>

28 Ibid.

industrialization, around 1750, to over 650,000 years ago. For that period, it was found that carbon dioxide concentrations ranged from 180 ppm to 300 ppm. For the period from around 1750 to the present, global carbon dioxide concentrations increased from a pre-industrialization period concentration of 280 ppm to 379 ppm in 2005, with the 2005 value far exceeding the upper end of the pre-industrial period range.[29] Global methane and nitrous oxide concentrations show similar increases for the same period (see **Table 4.2-6, Comparison of Global Pre-Industrial and Current GHG Concentrations**).

Table 4.2-6
Comparison of Global Pre-Industrial and Current GHG Concentrations[1]

Greenhouse Gas	Early Industrial Period Concentrations (ppm)	Natural Range for Last 650,000 Years (ppm)	2005 Concentrations (ppm)
Carbon Monoxide	280	180 to 300	379
Methane	715	320 to 790	1774
Nitrous Oxide	270	NA	319

Sources:
[1] *Intergovernmental Panel on Climate Change. Climate Change 2007: The Physical Science Basis, Summary for Policymakers. February 2007.*

Effects of Global Climate Change

The primary effect of global climate change has been a rise in average global tropospheric temperature of 0.2° Celsius per decade, determined from meteorological measurements world-wide between 1990 and 2005.[30] Climate change modeling using 2000 emission rates shows that further warming would occur, which would induce further changes in the global climate system during the current century.[31] Changes to the global climate system and ecosystems and to California would include, but would not be limited to:

- The loss of sea ice and mountain snow pack resulting in higher sea levels and higher sea surface evaporation rates with a corresponding increase in tropospheric water vapor due to the atmosphere's ability to hold more water vapor at higher temperatures;[32]
- Rise in global average sea level primarily due to thermal expansion and melting of glaciers and ice caps, the Greenland and Antarctic ice sheets;[33]

29 Ibid.
30 Ibid.
31 Ibid.
32 Ibid.
33 Ibid.

- Changes in weather that includes widespread changes in precipitation, ocean salinity, and wind patterns, and more energetic aspects of extreme weather including droughts, heavy precipitation, heat waves, extreme cold, and the intensity of tropical cyclones;[34]
- Decline of Sierra snowpack, which accounts for approximately half of the surface water storage in California, by 70 percent to as much as 90 percent over the next 100 years;[35]
- Increase in the number of days conducive to ozone formation by 25 to 85 percent (depending on the future temperature scenario) in high ozone areas of Los Angeles and the San Joaquin Valley by the end of the 21st century;[36] and
- High potential for erosion of California's coastlines and sea water intrusion into the Delta and levee systems due to the rise in sea level.[37]

Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. Sensitive population groups include children, the elderly, the acutely ill, and the chronically ill, especially those with cardio-respiratory diseases. Any facilities that house these sensitive receptors are considered to be sensitive land uses and require developers to plan around them if the project would emit significant amounts of pollutants.

Residential areas are considered to be sensitive to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time. It is, therefore, a primary goal to avoid subjecting these populations to sustained exposure of any pollutants. Recreational land uses are considered moderately sensitive to air pollution. Although exposure periods are generally short, exercise places a high demand on respiratory functions that can magnify the damage caused by air pollution. Industrial and commercial workers are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent due to a majority of the workers staying indoors. In addition, the working population is generally the healthiest segment of the public.

Sensitive receptors in the immediate vicinity include residences located to the north of the project area. These residences are composed primarily of single-family housing. The existing housing lies to the north of Wilshire Boulevard along North Whittier Drive, Trenton Drive, and Carmelita Avenue. El Rodeo Elementary School is also located to the northwest of the project area across Wilshire Boulevard on the

34 Ibid.

35 California Environmental Protection Agency, Climate Action Team, Climate Action Team Report to Governor Schwarzenegger and the Legislature (Executive Summary). March 2006.

36 Ibid.

37 Ibid.

west side of North Whittier Drive. The former Robinsons-May department store building and the Los Angeles Country Club lie to the west of the project site and a mix of commercial buildings and residential units lie to the south and east of the project site. Also, there are a number of medical facilities to the east approximately 0.5 kilometers away, most of which provide outpatient services.

4.2.4 REGULATORY SETTING

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 primarily responsible for improving the air quality within the Basin include:

- U.S. Environmental Protection Agency;
- California Air Resources Board;
- South Coast Air Quality Management District; and
- Southern California Association of Governments.

U.S. Environmental Protection Agency

The U.S. EPA is responsible for enforcing the federal Clean Air Act (CAA) and the NAAQS that it establishes. These standards identify levels of air quality for seven "criteria" pollutants: O_3, CO, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and lead. The threshold levels are considered to be the maximum concentration of ambient (background) air pollutants determined safe (within an adequate margin of safety) to protect the public health and welfare. The state and federal ambient air quality standards are listed in **Table 4.2-1.** As indicated, the averaging times for the various pollutants (the duration over which they are measured) range from 1 hour to an annual basis.

The U.S. EPA designates air basins as being in "attainment" or "nonattainment" for each of the seven "criteria" pollutants. Nonattainment air basins are ranked (marginal, moderate, serious, severe, or extreme) according to the degree of the threshold violation. The stringency of emission control measures adopted by a state or air district depends on the severity of the air quality within the specific air basin. The status of the Basin with respect to attainment with the NAAQS is summarized in **Table 4.2-7, National Ambient Air Quality Standards and Status – South Coast Air Basin.** Severe-17 nonattainment areas have an attainment date of June 15, 2021, to comply with the 8-hour ozone standard. For PM_{10}, the Basin was required to meet the national standard by 2006, which it has achieved and is expected to continue to achieve. The Basin is required to meet attainment for the federal $PM_{2.5}$ standard by 2010; however, the SCAQMD will be filing for a five-year extension to 2015. Although the Basin is currently

designated as nonattainment for the federal CO standard, the Basin has met the federal CO standards and has applied for reclassification. The U.S. EPA has not yet officially redesignated the Basin to attainment. Those criteria pollutants currently in attainment within the Basin are expected to continue to decrease as emission control measures and strategies are developed and implemented to improve air quality.

Table 4.2-7
National Ambient Air Quality Standards and Status
South Coast Air Basin

Pollutant	Averaging Time	Designation/Classification
Ozone (O_3)	8 Hour	Nonattainment/Severe 17
Carbon Monoxide (CO)	1 Hour, 8 Hour	Attainment
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	Attainment/Unclassifiable
Sulfur Dioxide (SO_2)	24 Hour, Annual Arithmetic Mean	Attainment
Respirable Particulate Matter (PM_{10})	24 Hour	Nonattainment/Serious
Fine Particulate Matter ($PM_{2.5}$)	24 Hour, Annual Arithmetic Mean	Nonattainment
Lead (Pb)	Calendar Quarter	Attainment

Source: Environmental Protection Agency. "Region 9: Air Programs, Air Quality Maps." [Online] [July 19, 2007]. <http://www.epa.gov/region9/air/maps/maps_top.html>

The 1990 CAA Amendments were enacted in order to better protect the public's health and create more efficient methods of lowering pollutant emissions. The major areas of improvement from the amendments include: air basin designations, automobile/heavy duty engine emissions, and toxic air pollutants. In response to the rapid population growth and its subsequent rise in automobile operations, the 1990 CAA Amendments address tailpipe emissions from automobiles, heavy-duty engines, and diesel fuel engines. The 1990 Amendments established more stringent standards for hydrocarbons, nitrogen oxides (NOx), and CO emissions in order to reduce ozone and carbon monoxide levels in heavily populated areas. Fuels became more strictly regulated by requiring new fuels to be less volatile, contain less sulfur (regarding diesel fuels), and have higher levels of oxygenates (oxygen-containing substances to improve fuel combustion). The U.S. EPA also has regulatory and enforcement jurisdiction over emission sources beyond state waters (outer continental shelf), and those that are under the exclusive authority of the federal government, such as aircraft, locomotives, and interstate trucking.

Due to the lack of toxic emissions reduction by the 1977 CAA, the 1990 Amendments listed 189 hazardous air pollutants (HAPs) that are carcinogenic, mutagenic, and/or reproductive toxins to be reduced. This program involves locating all major (greater than 10 tons/year) and area emission sources in order to implement Maximum Achievable Control Technology (MACT) to reduce health impacts.

California Air Resources Board

The California Air Resources Board (CARB), a branch of the California Environmental Protection Agency (CalEPA), oversees air quality planning and control throughout California. It is primarily responsible for ensuring the implementation of the California Clean Air Act (CCAA), responding to the federal CAA requirements, and for regulating emissions from motor vehicles and consumer products within the state. CARB also sets health based air quality standards and control measures for toxic air contaminants (TACs). The focus of most of its research goes toward automobile emissions since it is the largest concern regarding air pollution in California. CARB establishes new standards for vehicles sold in California and for various types of equipment available commercially. It also sets fuel specifications to further reduce vehicular emissions.

Enacted in 1988, the CCAA established a legal mandate for air basins to achieve the California ambient air quality standards by the earliest practical date. These standards apply to the same seven criteria pollutants as the federal ambient air quality standards and also include sulfates, visibility reducing particles, hydrogen sulfide, and vinyl chloride. State standards are more stringent than the federal standards, and in the case of PM_{10} and SO_2, far more stringent.

CARB supervises and supports the regulatory activities of local air quality districts as well as monitors air quality itself. Health and Safety Code Section 39607(e) requires CARB to establish and periodically review area designation criteria. These designation criteria provide the basis for CARB to designate areas of the state as "attainment," "nonattainment," or "unclassified" according to state standards. CARB will designate an area as nonattainment for a pollutant if monitoring data shows that a California Ambient Air Quality Standard (CAAQS) for a particular pollutant was violated at least once during the previous three years. In addition, Health and Safety Code §39608 requires CARB to use the designation criteria to designate areas of California and to annually review those area designations. CARB makes area designations for ten criteria pollutants: O_3, CO, NO_2, SO_2, PM_{10}, $PM_{2.5}$, sulfates, lead, hydrogen sulfide, and visibility-reducing particles. The status of the Basin with respect to attainment for the CAAQS is summarized in **Table 4.2-8, California Ambient Air Quality Standards and Status – South Coast Air Basin.**

Table 4.2-8
California Ambient Air Quality Standards and Status
South Coast Air Basin

Pollutant	Averaging Time	Designation/Classification
Ozone (O_3)	1 Hour, 8 Hour	Nonattainment[1]
Carbon Monoxide (CO)	1 Hour, 8 Hour	Attainment
Nitrogen Dioxide (NO_2)	1 Hour	Attainment
Sulfur Dioxide (SO_2)	1 Hour, 24 Hour	Attainment
Respirable Particulate Matter (PM_{10})	24 Hour, Annual Arithmetic Mean	Nonattainment
Fine Particulate Matter ($PM_{2.5}$)	Annual Arithmetic Mean	Nonattainment
Lead (Pb)[2]	30 Day Average	Attainment
Sulfates (SO_4)	24 Hour	Attainment
Hydrogen Sulfide (H_2S)	1 Hour	Unclassified
Vinyl Chloride[2]	24 Hour	Unclassified
Visibility Reducing Particles	8 Hour (10 AM–6 PM)	Unclassified

Source: California Air Resources Board. "Area Designations Maps/State and National." [Online] [July 26, 2007]. <http://www.arb.ca.gov/desig/adm/adm.htm>

1 *CARB has not issued area classifications based on the new state 8-hour standard. The previous classification for the 1-hour ozone standard was Extreme.*

2 *CARB has identified lead and vinyl chloride as "toxic air contaminants" with no threshold level of exposure for adverse health effects determined.*

Greenhouse Gas Regulatory Programs

Kyoto Protocol

The original Kyoto Protocol was negotiated in December 1997 and came into force on February 16, 2005. As of December 2006, 169 countries have ratified the agreement; however, notably, the U.S. and Australia have not ratified the Protocol. Participating nations are separated into Annex 1 (i.e., industrialized countries) and Non-Annex 1 (i.e., developing countries) countries that have different requirements for GHG reductions. The goal of the Protocol is to achieve overall emissions reduction targets for six GHGs by the period 2008-2012. The six GHGs regulated under the Protocol are carbon dioxide, methane, nitrous oxide, sulfur hexafluoride, HFCs, and PFCs. Each nation has an emissions reduction target for which they must reduce GHG emissions a certain percentage below 1990 levels (e.g., 8 percent reduction for the European Union, 6 percent reduction for Japan). The average reduction target for nations participating in the Kyoto Protocol is approximately 5 percent below 1990 levels.[38] Although the United States has not ratified the Protocol, it has established an 18 percent reduction in GHG emissions intensity

38 Pew Center on Global Climate Change. Bush Policy vs. Kyoto. <http://www.pewclimate.org/what_s_being_done/in_the_world/bush_intensity_targe_2.cfm>

by 2012.[39] Greenhouse gas intensity is the ratio of GHG emissions to economic output (i.e., gross domestic product).

AB 1493

In a response to the transportation sector accounting for more than half of California's CO_2 emissions, Assembly Bill 1493 (AB 1493, Pavley) was enacted on July 22, 2002. AB 1493 required CARB to set GHG emission standards for passenger vehicles, light-duty trucks, and other vehicles determined by the state board to be vehicles whose primary use is noncommercial personal transportation in the state. The bill required that CARB set the GHG emission standards for motor vehicles manufactured in 2009 and all subsequent model years. In setting these standards, CARB must consider cost-effectiveness, technological feasibility, economic impacts, and provide maximum flexibility to manufacturers. CARB adopted the standards in September 2004. These standards are intended to reduce emissions of carbon dioxide and other greenhouse gases (e.g., nitrous oxide, methane). The new standards would phase in during the 2009 through 2016 model years. When fully phased in, the near-term (2009-2012) standards will result in about a 22 percent reduction in greenhouse gas emissions compared to the emissions from the 2002 fleet, while the mid-term (2013-2016) standards will result in a reduction of about 30 percent. Some currently used technologies that achieve GHG reductions include small engines with superchargers, continuously variable transmissions, and hybrid electric drive.

Executive Order S-3-05

In June 2005, Governor Schwarzenegger established California's GHG emissions reduction targets in Executive Order S-3-05. The Executive Order established the following goals: GHG emissions should be reduced to 2000 levels by 2010; GHG emissions should be reduced to 1990 levels by 2020; and GHG emissions should be reduced to 80 percent below 1990 levels by 2050. The Secretary of the CalEPA (the Secretary) is required to coordinate efforts of various agencies in order to collectively and efficiently reduce GHGs. Some of the agencies involved in the GHG reduction plan include Secretary of Business, Transportation and Housing Agency, Secretary of Department of Food and Agriculture, Secretary of Resources Agency, Chairperson of CARB, Chairperson of the Energy Commission, and the President of the Public Utilities Commission. The Secretary is required to submit a biannual progress report to the Governor and State Legislature disclosing the progress made toward GHG emission reduction targets. In addition, another biannual report must be submitted illustrating the impacts of global warming on California's water supply, public health, agriculture, the coastline, and forestry, and report possible mitigation and adaptation plans to combat these impacts.

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39 The White House. Addressing Global Climate Change. [Online] 9 March 2007. <http://www.whitehouse.gov/ceq/global-change.html>

AB 32

In furtherance of the goals established in Executive Order S-3-05, the Legislature enacted Assembly Bill 32 (AB 32, Nunez), the California Global Warming Solutions Act of 2006, which Governor Schwarzenegger signed on September 27, 2006. AB 32 represents the first enforceable statewide program to limit GHG emissions from all major industries with penalties for noncompliance. CARB has been assigned to carry out and develop the programs and requirements necessary to achieve the goals of AB 32. The foremost objective of CARB is to adopt regulations that require the reporting and verification of statewide GHG emissions. This program will be used to monitor and enforce compliance with the established standards. The first GHG emissions limit is equivalent to the 1990 levels, which are to be achieved by 2020. CARB is also required to adopt rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emission reductions. AB 32 allows CARB to adopt market-based compliance mechanisms to meet the specified requirements. Finally, CARB is ultimately responsible for monitoring compliance and enforcing any rule, regulation, order, emission limitation, emission reduction measure, or market-based compliance mechanism adopted. In order to advise CARB, it must convene an Environmental Justice Advisory Committee and an Economic and Technology Advancement Advisory Committee. By January 2008, the first deadline for AB 32, a statewide cap for 2020 emissions based on 1990 levels must be adopted. The following year (January 2009), CARB must adopt mandatory reporting rules for significant sources of GHGs and also a plan indicating how reductions in significant GHG sources will be achieved through regulations, market mechanisms, and other actions.

Executive Order S-1-07

On January 18, 2007, California further solidified its dedication to reducing GHGs by setting a new Low Carbon Fuel Standard (LCFS) for transportation fuels sold within the state. Executive Order S-1-07 sets a declining standard for GHG emissions measured in CO_2-equivalent gram per unit of fuel energy sold in California. The target of the LCFS is to reduce the carbon intensity of California passenger vehicle fuels by at least 10 percent by 2020. The LCFS will apply to refiners, blenders, producers, and importers of transportation fuels and will use market-based mechanisms to allow these providers to choose how they reduce emissions during the "fuel cycle" using the most economically feasible methods. The Executive Order requires the Secretary of the CalEPA to coordinate with actions of the California Energy Commission (CEC), CARB, the University of California, and other agencies to develop a protocol to measure the "life-cycle carbon intensity" of transportation fuels. CARB is anticipated to complete its review of the LCFS protocols no later than June 2007 and implement the regulatory process for the new standard by December 2008.

South Coast Air Quality Management District

The Basin is home to nearly 16 million people. The SCAQMD is responsible for regional air quality to be in attainment with both federal and state ambient air quality standards. The SCAQMD primarily regulates emissions from stationary sources such as manufacturing and power generation. Mobile sources such as buses, automotive vehicles, trains, and airplanes are largely out of the SCAQMD's jurisdiction and are up to CARB and the U.S. EPA to regulate. In order to achieve air quality standards, the SCAQMD adopts an Air Quality Management Plan (AQMP) that serves as a guideline to bring pollutant concentrations into attainment with federal and state standards. The District determines if certain rules and control measures are appropriate for their specific region according to technical feasibility, cost effectiveness, and the severity of nonattainment. Once the District has adopted the proper rules, control measures, and permit programs, it is responsible to implement and enforce compliance with the programs.

Southern California Association of Governments (SCAG)

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

Although SCAG is not an air quality management agency, it is responsible for several air quality planning issues. As the designated Metropolitan Planning Organization (MPO) for the Southern California region, it is responsible, pursuant to §176(c) of the 1990 amendments to the CAA, for providing current population, employment, travel, and congestion projections for regional air quality planning efforts.

Local Rules and Regulations

Emissions that would result from stationary and areas sources during construction and operation of the proposed project are subject to the rules and regulations of the SCAQMD.[40] Rules and regulations of this agency are designed to achieve state and national ambient air quality standards. To that purpose, they limit the emissions and the permissible impacts of emissions from projects, and specify emission control technologies for various types of emitting sources. The following sections discuss applicable air quality plans, guidance documents, rules and regulations that relate to the proposed project.

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40 South Coast Air Quality Management District. Rules and Regulations, 2006.

Air Quality Plans

For this project, the SCAQMD and SCAG have the responsibility of preparing the AQMP that addresses both federal and state CAA requirements.[41] The AQMP specifies goals, policies, and programs for improving air quality and establishes thresholds for daily operation emissions. Environmental review of individual projects within the region must demonstrate whether daily construction and operational emissions exceed thresholds established by the SCAQMD and are consistent with growth projects and goals contained in the AQMP.[42]

2003 Air Quality Management Plan (AQMP)

The SCAQMD is the agency responsible for preparing the AQMP for the Basin. Since 1979, a number of AQMPs have been prepared. The SCAQMD adopted the 2003 Air Quality Management Plan (2003 AQMP) on August 1, 2003. CARB approved the 2003 AQMP as the comprehensive State Implementation Plan (SIP) component for the Basin on October 23, 2003. CARB submitted the 2003 AQMP to the U.S. EPA on January 9, 2004.

Because the 2003 AQMP has been approved by the SCAQMD and CARB, it is an "applicable regional plan" in terms of CEQA requirements for assessing plan consistency. Federal approval is only relevant as to the federal CAA components of the 2003 AQMP. Like previous Basin AQMPs, the 2003 AQMP includes elements that are beyond the scope of the federal requirements. Accordingly, the SIP revision made by the 2003 AQMP that was sent to the U.S. EPA includes only the elements needed to meet federal requirements, as directed by state law.

The 2003 AQMP replaces the 1997 attainment demonstration for the federal CO standard and provides for a maintenance plan for CO for future years. The 2003 AQMP also provides for a maintenance plan for the federal NO_2 standard that the Basin has met since 1992. In terms of working toward O_3 attainment, the 2003 AQMP builds upon the 1997 AQMP and 1999 Amendments to the Ozone State Implementation Plan for the Basin. The PM_{10} control strategy in the 1997 AQMP has been augmented by a number of additional PM_{10} control measures. Major changes included within the 2003 AQMP, as compared to the 1997 AQMP, that are relevant to this analysis include:

- Emissions inventory projections using 1997 as the base year, use of CARB's EMFAC2002 vehicle emission rate model, and use of forecast assumptions from Southern California Association of Government's (SCAG's) 2001 Regional Transportation Plan (RTP);

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41 South Coast Air Quality Management District. *2003 Air Quality Management Plan.* [Online] 27 March 2007. <http://www.aqmd.gov/aqmp/AQMD03AQMP.htm>,

42 Ibid.

- Changes in the control strategy for emissions which include updates of control measures from the 1997/1999 SIP as well as new control measures based on current technology; and
- Use of 1997 O_3 episodes and updated modeling tools for attainment demonstration for O_3 and PM_{10}.

The 2003 AQMP contains control measures, which incorporate (1) the District's Stationary and Mobile Source Control Measures; (2) State Control Measures proposed by CARB; 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 seek to create emissions reductions to meet the state and federal ambient air quality standards with a multilevel partnership of governmental agencies at the federal, state, regional, and local level. These agencies (i.e., the EPA, ARB, SCAQMD, and local governments) implement the AQMP programs. The 2003 AQMP provides an attainment planning framework that sets specific dates by which the Basin will achieve the federal and state air quality standards.

The SCAQMD has published the Draft Final 2007 AQMP, which was adopted by the SCAQMD Governing Board on June 1, 2007. The purpose of the 2007 AQMP for the Basin (and those portions of the Salton Sea Air Basin under the SCAQMD's jurisdiction) is to set forth a comprehensive program that will lead these areas into compliance with federal and state air quality planning requirements for ozone and $PM_{2.5}$. In addition, as part of the 2007 AQMP, the SCAQMD is requesting U.S. EPA's approval of a "bump-up" to the "extreme" nonattainment classification for the Basin, which would extend the attainment date to 2024 and allow for the attainment demonstration to rely on emission reductions from measures that anticipate the development of new technologies or improvement of existing control technologies. Although $PM_{2.5}$ plans for nonattainment areas are due in April 2008, the 2007 AQMP also focuses on attainment strategies for the $PM_{2.5}$ standard through stricter control of sulfur oxides, directly-emitted $PM_{2.5}$, NOx, and VOCs. The need to commence $PM_{2.5}$ control strategies before April 2008 is due to the attainment date for $PM_{2.5}$ (2015) being much earlier than that for ozone (2021 for the current designation of severe-17 or 2024 for the extreme designation). Control measures and strategies for $PM_{2.5}$ will also help control ozone generation in the region because $PM_{2.5}$ and ozone share similar precursors (e.g., NOx). The District has integrated $PM_{2.5}$ and ozone reduction control measures and strategies in the 2007 AQMP. In addition, the AQMP focuses on reducing VOC emissions, which have not been reduced at the same rate as NOx emissions in the past. Hence, the Basin has not achieved the reductions in ozone as were expected in previous plans. The AQMP was based on assumptions provided by both CARB and SCAG in the new EMFAC2007 model for the most recent motor vehicle and demographics information, respectively.

California Environmental Quality Act Guidelines

In 1993, the SCAQMD prepared its *CEQA Air Quality Handbook* to assist local government agencies and consultants in preparing environmental documents for projects subject to CEQA. There has been one full update to the document in November 1993, and it is currently undergoing an update process. The document describes the criteria that SCAQMD uses when reviewing and commenting on the adequacy of environmental documents. The handbook recommends thresholds of significance in order to determine if a project will have a significant adverse environmental impact. Other important contents are methodologies for predicting project emissions and mitigation measures that can be taken to avoid or reduce air quality impacts. Although the Governing Board of the SCAQMD has adopted the *CEQA Air Quality Handbook*, it does not, nor does it intend to, supersede a local jurisdiction's CEQA procedures.

As of March 2007, the *CEQA Air Quality Handbook* was still undergoing revision. However, the air quality significance thresholds have been revised, and a new procedure referred to as localized significance thresholds has been added. The *CEQA Air Quality Handbook* and these revised methodologies were used in preparing the air quality analysis in this EIR section.

SCAQMD Rules and Regulations

The SCAQMD is responsible for limiting the amount of emissions that can be generated throughout the Basin by various stationary, area, and mobile sources. Specific rules and regulations have been adopted by the SCAQMD Governing Board that limit the emissions that can be generated by various uses and/or activities, and that identify specific pollution reduction measures which must be implemented in association with various uses and activities. The rules are subject to on-going refinement by SCAQMD.

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

- **Rule 403 (Fugitive Dust)** – This rule requires fugitive dust sources to implement Best Available Control Measures for all sources and all forms of visible particulate matter are prohibited from crossing any property line. SCAQMD Rule 403 is intended to reduce PM_{10} emissions from any transportation, handling, construction, or storage activity that has the potential to generate fugitive dust (see also Rule 1186).
- **Rule 1113 (Architectural Coatings)** – This rule requires manufacturers, distributors, and end-users of architectural and industrial maintenance coatings to reduce VOC emissions from the use of these coatings, primarily by placing limits on the VOC content of various coating categories.

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

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

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

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

4.2.5 SIGNIFICANCE CRITERIA

The following thresholds for determining the significance of impacts related to air quality are contained in the environmental checklist form contained in Appendix G of the most recent update of the *California Environmental Quality Act (CEQA) Guidelines.* Impacts related to air quality are considered significant if the proposed project would:

AQ-1 Conflict with or obstruct implementation of the applicable air quality plan.

AQ-2 Violate any air quality standard or contribute substantially to an existing or projected air quality violation.

AQ-3 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).

AQ-4 Expose sensitive receptors to substantial pollutant concentrations.

AQ-5 Create objectionable odors affecting a substantial number of people.

The *CEQA Guidelines* (Section 15064.7) provide that, when available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make determinations of significance. To evaluate the air quality impacts for the proposed project, thresholds developed by the SCAQMD will be relied upon to address the Appendix G thresholds above. The SCAQMD thresholds from the *CEQA Air Quality Handbook* are discussed below.

South Coast Air Quality Management District

The CEQA Air Quality Handbook provides significance thresholds for both construction and operation of projects within the South Coast Air Quality Management District jurisdictional boundaries. Exceedance of the South Coast Air Quality Management District thresholds could result in a potentially significant impact. However, ultimately the lead agency determines the thresholds of significance for impacts. If the project proposes development in excess of the established thresholds, as illustrated in **Table 4.2-9, South Coast Air Quality Management District Emission Thresholds**, a significant air quality impact may occur and additional analysis is warranted to fully assess the significance of impacts.

Table 4.2-9
South Coast Air Quality Management District Emission Thresholds

	Pollutant (lbs/day)					
Phase	ROG	NOx	CO	SOx	PM_{10}	$PM_{2.5}$
Construction	75	100	550	150	150	55
Operational	55	55	550	150	150	55

Source: South Coast Air Quality Management District, CEQA Air Quality Handbook, *November 1993.*

In addition, the significance of localized project impacts depends on whether ambient CO levels in the vicinity of the project are above or below state and federal CO standards. If the project causes an exceedance of either the state 1-hour or 8-hour CO concentrations, the project would be considered to have a significant local impact. If ambient levels already exceed a state or federal standard, then project emissions would be considered significant if they increase 1-hour CO concentrations by 1.0 ppm or more, or 8-hour CO concentrations by 0.45 ppm or more.

Localized Significance Thresholds

In addition to the above listed emission-based thresholds, the SCAQMD also recommends that the potential impacts on ambient air concentrations due to construction emissions be evaluated. This evaluation requires that anticipated ambient air concentrations, determined using a computer-based air

quality dispersion model, be compared to localized significance thresholds for PM_{10}, $PM_{2.5}$, NO_2 and CO.[43,44] The significance threshold for PM_{10} represents compliance with Rule 403 (Fugitive Dust), while the thresholds for NO_2 and CO represent the allowable increase in concentrations above background levels in the vicinity of the project that would not cause or contribute to an exceedance of the relevant ambient air quality standards. The localized significance thresholds for SRA 2 (Northwest Los Angeles County Coastal), along with the relevant ambient air quality standards (AAQS), are shown in **Table 4.2-10, Localized Significance Criteria for SRA 2.**

Table 4.2-10
Localized Significance Criteria for SRA 2

Pollutant	Averaging Period	LST Criteria		CAAQS/NAAQS[1]	
		µg/m³	ppm	µg/m³	ppm
Respirable Particulate Matter (PM_{10})	24 hours	10.4	NA	50	NA
Fine Particulate Matter ($PM_{2.5}$)	24 hours	10.4	NA	35	NA
Nitrogen Dioxide (NO_2)	1 hour	244	0.13	470	0.25
Carbon Monoxide (CO)	1 hour	17,165	15	23,000	20
	8 hours	7,209	6.3	10,000	9.0

Source: South Coast Air Quality Management District, Final Localized Significance Threshold Methodology, *June 2003 and* Final Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds, *October 2006. LST criteria for NO_2 and CO are based on highest concentrations during 2003-2005 (see Appendix 4.2).*

[1] *California has not adopted a 24-hour AAQS for $PM_{2.5}$; the 24-hour $PM_{2.5}$ AAQS shown is the national standard. All other standards are the California standards.*

Additional SCAQMD Significance Criteria

In addition, the SCAQMD recommends that projects meeting any of the following criteria also be considered to have significant air quality impacts:[45]

- Project could interfere with the attainment of the federal or state ambient air quality standards by either violating or contributing to an existing or projected air quality violation;

43 South Coast Air Quality Management District, *Final Localized Significance Threshold Methodology* (Diamond Bar, California: South Coast Air Quality Management District, June 2003). This methodology includes "lookup tables" that can be used to determine the maximum allowable emissions that would satisfy the localized significance criteria; however, these tables may be used only for project sites less than 5 acres in overall area.

44 South Coast Air Quality Management District, Final Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds (Diamond Bar, California: South Coast Air Quality Management District, October 2006).

45 South Coast Air Quality Management District. *CEQA Air Quality Handbook*, November 1993, pp. 6-2 and 6-3.

- Project could result in population increases within an area which would be in excess of that projected by SCAG in the AQMP, or increase the population in an area where SCAG has not projected that growth for the project's buildout year;
- Project could generate vehicle trips that cause a CO hotspot or project could be occupied by sensitive receptors that are exposed to a CO hotspot;
- Project will have the potential to create, or be subjected to, an objectionable odor that could impact sensitive receptors;
- Project will have hazardous materials on site and could result in an accidental release of toxic air emissions or acutely hazardous materials posing a threat to public health and safety;
- Project could emit a TAC regulated by SCAQMD rules or that is on a federal or state air toxic list;
- Project could be occupied by sensitive receptors within ¼ mile of an existing facility that emits air toxics identified in SCAQMD Rule 1401; or
- Project could emit carcinogenic or TACs that individually or cumulatively exceed the maximum individual cancer risk of 10 in 1 million.

Projects within the Basin with daily operation-related emissions that exceed any of the above emission thresholds may be considered significant. The operational impact analysis will take into account a net approach, which assumes elimination of portions of the existing facility and the air pollution generated vehicles from that portion of the facility in operation as described in the discussion of traffic impacts in **Section 4.11, Transportation, Traffic, Parking, and Circulation.** Therefore, the above significance criteria will be evaluated based on the net operational impact.

Asbestos Emissions

Project construction would involve the demolition and removal of several existing structures located on the project site. Demolition of the existing structures would be a potential hazard if the buildings contained asbestos fibers. The existing buildings were constructed in the 1950s and 1960s. Typically, buildings built before 1978 are considered to have a higher probability of containing asbestos fibers; however, under Rule 1403, all buildings must be properly inspected for the presence of asbestos. Demolition of all existing structures on site must comply with the precautionary requirements specified in Rule 1403 (Asbestos Emissions from Demolition/Renovation Activities). All structures must be stabilized and removed in accordance with applicable regulations including SCAQMD Rule 1403. This rule is intended to limit asbestos emissions from demolition or renovation of structures and the associated disturbance of asbestos-containing waste material generated or handled during these activities. The rule addresses the U.S. EPA National Emissions Standards for Hazardous Air Pollutants (NESHAP) and provides additional requirements to cover non-NESHAP areas. The rule requires that the

SCAQMD be notified before any demolition or renovation activity occurs. This notification includes a description of the structures and methods utilized to determine the presence or absence of asbestos. All asbestos-containing material found on the site must be removed prior to demolition or renovation activity. As part of project implementation, the project applicant must comply with the requirements of SCAQMD Rule 1403. Project compliance with Rule 1403 would ensure that asbestos-containing materials would be removed and disposed of appropriately. With adherence to this applicable regulation, the potential for significant adverse health impacts would be reduced to less than significant level.

Cumulative Emissions

The SCAQMD 2003 AQMP was prepared to accommodate growth, meet state and federal air quality standards, and minimize the fiscal impact that pollution control measures have on the local economy. According to the SCAQMD *CEQA Air Quality Handbook,* project-related emissions that fall below the established construction and operational thresholds should be considered less than significant unless there is pertinent information to the contrary.[46]

If a project exceeds these emission thresholds, the SCAQMD *CEQA Air Quality Handbook* states that the significance of a project's contribution to cumulative impacts should be determined based on whether the rate of growth in average daily trips exceeds the rate of growth in population.

4.2.6 ENVIRONMENTAL IMPACT ANALYSIS

South Coast Air Quality Management District

Construction Emissions

Development of the proposed project would involve several phases of construction including the demolition of existing buildings and parking, site excavation and grading, and construction of the new buildings on site. The project phasing schedule was provided by Gensler & Associates.[47] According to *The Beverly Hilton ~~Specific~~ Revitalization Project~~Plan~~ Construction Phasing* document, construction activities would be completed approximately within a 50-month period. Demolition, excavation, grading, and building construction would occur throughout the entire period with frequent overlapping phases.[48]

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46 South Coast Air Quality Management District, *CEQA Air Quality Handbook* (Diamond Bar, California: South Coast Air Quality Management District, April 1993), pp. 9–12.

47 Gensler & Associates. *The Beverly Hilton Revitalization Plan Construction Phasing,* May 17, 2007.

48 Ibid.

Construction emissions for each of the construction activities were estimated according to the SCAQMD's *CEQA Air Quality Handbook* and construction emission factors and parameters contained in the URBEMIS2002 Air Quality Impact Model, which provides methodologies for calculating emissions generated by all types of vehicles and equipment associated with construction activities. The SCAQMD recommends the use of URBEMIS2002, and this model is commonly used throughout California to assess the air quality impacts generated by land development projects. Input parameters for the URBEMIS2002 model were based on information and activity levels provided by the applicant. Where data was not available, model default values or data from similar projects were used. Based on the construction schedule outlined in *The Beverly Hilton ~~Specific~~ Revitalization Project~~Plan~~ Construction Phasing* document, emission results from the URBEMIS2002 model for concurrent construction activities during the different phases were added together to determine the anticipated maximum daily emissions associated with the proposed project. According to the results, the maximum anticipated daily emissions for NO_x, SO_x, PM_{10}, and $PM_{2.5}$ are anticipated to occur between September 2008 and November 2008, when demolition activity associated with Phase 2 overlaps with grading and excavation activity associated with Phase 3, Stage 1. The maximum anticipated daily emissions of VOC and CO are anticipated to occur during February 2010, when grading and construction activity are expected during the latter part of Phase 3.

Table 4.2-11, Unmitigated Project Construction Emissions – The Beverly Hilton Revitalization Project~~Specific Plan~~, identifies estimated maximum daily emissions during each year of construction for the proposed project. These emission estimates are based on the expected location, size, and development phase of the project. The emissions shown in **Table 4.2-11** are for those construction activities that would generate the highest daily emissions within each year of the construction period. The analysis assumes that all of the identified construction equipment and activities would occur continuously over the day and that activities would overlap. In reality, this would not occur, since most equipment would operate only a fraction of each workday and many of the activities would not overlap on a daily basis. Therefore, **Table 4.2-11** represents a worst-case scenario for construction activities at the project site. These calculations also assume that appropriate dust control measures would be implemented during each construction activity of the project as required by SCAQMD Rule 403-Fugitive Dust.

Table 4.2-11
Unmitigated Project Construction Emissions – The Beverly Hilton Revitalization Project~~Specific Plan~~

Construction Year/Phase	Emissions in Pounds per Day					
	VOC	NOx	CO	SOx	PM_{10} [1]	$PM_{2.5}$ [1]
2008						
{ Phase 2	8.09	55.71	65.64	0.01	5.56	2.68
Phase 3, Stage 1 }	19.25	205.28	134.46	0.21	31.87	11.23
Maximum 2008 Emissions	27.34	260.99	200.10	0.22	37.43	13.91
2009						
{ Phase 3, Stage 1 }	46.00	176.90	217.55	0.00	7.31	6.73
Maximum 2009 Emissions	46.00	176.90	217.55	0.00	7.31	6.73
2010						
{ Phase 3, Stage 1	45.94	168.35	223.14	0.00	6.62	6.10
Phase 3, Stage 2 }	7.94	49.00	66.86	0.00	1.96	1.62
{ Phase 4	8.00	49.57	67.41	0.00	2.88	1.82
Phase 5, Stage 1 }	15.12	109.14	120.68	0.08	10.31	4.57
Maximum 2010 Emissions	53.88	217.35	290.00	0.08	13.19	7.72
2011						
{ Phase 5, Stage 2 }	11.98	72.45	101.13	0.00	2.67	2.22
Maximum 2011 Emissions	11.98	72.45	101.13	0.00	2.67	2.22
2012						
{ Phase 5, Stage 2 }	7.93	48.93	66.24	0.00	3.10	1.86
{ Phase 5, Stage 3 }	12.04	72.40	101.12	0.00	2.63	2.21
Maximum 2012 Emissions	12.04	72.40	101.12	0.00	3.10	2.21
Maximum Emissions in Any Year	53.88	260.99	290.00	0.22	37.43	13.91
SCAQMD Thresholds	75	100	550	150	150	55
Exceeds Thresholds?	NO	YES	NO	NO	NO	NO

Source: Impact Sciences, Inc. Emissions calculations are provided in Appendix 4.2.
Note: Phases contained within the brackets indicate concurrent construction activities.
Totals in table may not appear to add exactly due to rounding in the computer model calculations.
[1] *PM_{10} and $PM_{2.5}$ emissions reflect SCAQMD Rule 403 compliance.*

As shown in **Table 4.2-11** above, air pollutant emissions generated during the first three years of construction activity for the proposed project are expected to exceed the SCAQMD threshold for emissions of NOx. As this project involves a subterranean parking structure, site grading activities have the potential to generate large quantities of air pollutants, particularly NOx, PM_{10}, and $PM_{2.5}$. Emissions estimates presented above are based on information provided by the applicant as well as URBEMIS2002 model default values with respect to the number of pieces and type of equipment expected to be utilized during site grading and building construction. Since construction of the proposed project is significant

for NOx, mitigation measures are required to reduce the impacts of the pollutant. The effect of mitigation measures on the construction emissions is discussed later in this section.

Operational Emissions

Operational emissions at the project site would be generated by both stationary and mobile sources as a result of normal day-to-day activities on the project site after occupation. Stationary emissions would be generated by the consumption of natural gas for space and water heating devices. Mobile emissions would be generated by the motor vehicles traveling to, from, and within the project site.

Daily operational emissions were calculated using the data and methodologies identified in the SCAQMD's *CEQA Air Quality Handbook* and current motor vehicle emission factors in the URBEMIS2002 Air Quality Impact Model. Trip generation rates were obtained from data contained in **Section 4.11, Transportation, Traffic, Parking, and Circulation.** Emissions from the queuing and idling of cars entering and exiting the proposed project subterranean parking structure were analyzed outside of URBEMIS2002, as the model does not account for these emissions. The CARB-approved mobile source emissions model, EMFAC2007 (version 2.3), was used to estimate the emissions from light-duty passenger vehicles. Since the model does not provide idling emission rates for light-duty passenger vehicles, surrogate values coinciding with a speed of 1 mph were used. It was assumed that each vehicle idled for no more than five minutes. The anticipated operational emissions are based upon build out of all land uses associated with the proposed project and are reflected in **Table 4.2-12, Unmitigated Project Operational Emissions – The Beverly Hilton ~~Specific Plan~~Revitalization Project**, below. The mobile source emissions include the parking structure queuing and idling emissions described above. The net emissions represent the project operational emissions less the existing project site operational emissions from **Table 4.2-3.** A negative value indicates that the proposed project would generate less operational emissions than the existing facility would at the time of the proposed project buildout for that particular pollutant. As shown in **Table 4.2-12,** the majority of emissions that would occur as a result of the proposed project are generated by the operation of vehicular sources. Emissions from area sources and on-site uses comprise only a small portion of the overall emissions inventory associated with the proposed development. As presented in **Table 4.2-12,** net operational emissions associated with the complete buildout and operation of the project would not exceed SCAQMD thresholds. Therefore, operational emissions are considered less than significant.

Table 4.2-12
Unmitigated Project Operational Emissions – The Beverly Hilton Revitalization Project~~Specific Plan~~

Emissions Source	Emissions in Pounds per Day					
	VOC	NOx	CO	SOx	PM_{10}	$PM_{2.5}$
Summertime Emissions[1]						
Operational (Mobile) Sources[3]	42.97	38.31	399.02	0.48	33.58	8.36
Area Sources	8.56	8.02	9.47	0.00	0.02	0.02
Summertime Emission Totals	51.53	46.33	408.49	0.48	33.60	8.38
Emissions Due To Existing Land Uses	52.97	51.38	476.61	0.40	28.14	6.92
Net Emissions	- 1.44	- 5.05	- 68.12	0.08	5.46	1.46
Recommended Threshold	55	55	550	150	150	55
Exceeds Threshold?	NO	NO	NO	NO	NO	NO
Wintertime Emissions[2]						
Operational (Mobile) Sources[3]	37.54	50.33	406.05	0.44	33.58	8.36
Area Sources	8.15	8.63	6.60	0.00	0.06	0.06
Wintertime Emission Totals	45.69	58.96	412.65	0.44	33.64	8.42
Emissions Due To Existing Land Uses	47.75	64.36	480.71	0.36	28.14	6.92
Net Emissions	- 2.06	- 5.40	- 68.06	0.08	5.50	1.50
Recommended Threshold	55	55	550	150	150	55
Exceeds Threshold?	NO	NO	NO	NO	NO	NO

Source: Impact Sciences, Inc. Emissions calculations are provided in Appendix 4.2.
Totals in table may not appear to add exactly due to rounding in the computer model calculations.
[1] *Summertime Emissions are representative of the conditions that may occur during the ozone season (May 1 to October 31).*
[2] *Wintertime Emissions are representative of the conditions that may occur during the balance of the year (November 1 to April 30).*
[3] *Includes the parking structure queuing and idling emissions.*

Carbon Monoxide Concentrations

Motor vehicles are a primary source of pollutants within the project vicinity. Traffic-congested roadways and intersections have the potential to generate localized high levels of CO. Localized areas where ambient concentrations exceed state and/or federal standards are termed CO "hotspots." Such hotspots are defined as locations where the ambient CO concentrations exceed the state or federal ambient air quality standards. CO is produced in greatest quantities from vehicle combustion and is usually concentrated at or near ground level because it does not readily disperse into the atmosphere. As a result, potential air quality impacts to sensitive receptors are assessed through an analysis of localized CO concentrations.

The SCAQMD recommends the use of CALINE4, a dispersion model developed by Caltrans for predicting CO concentrations near roadways, as the preferred method of estimating pollutant concentrations at various locations. CALINE4 adds roadway-specific CO emissions calculated from peak traffic volumes to ambient CO air concentrations. Maximum CO concentrations at project study

intersections were estimated using a simplified screening version of CALINE4. The simplified model was developed by the Bay Area Air Quality Management District (BAAQMD) and is used to identify a potential CO hotspot. If a hotspot is identified, the complete CALINE4 model is then utilized to determine precisely the CO concentrations predicted at the intersections in question. This methodology assumes worst-case conditions (i.e., wind direction is parallel to the primary roadway, 90 degrees to the secondary road; wind speed of less than one meter per second; and extreme atmospheric stability) and provides a screening of maximum, worst-case, CO concentrations. The simplified approach is acceptable to the SCAQMD as long as it is used consistently with the BAAQMD Guidelines.[49]

Maximum CO concentrations were calculated for peak hour traffic volumes at 10 intersections in the project vicinity that are in proximity to sensitive uses (e.g., residences, schools, parks, hospitals, etc.). Morning (AM) peak hour and afternoon (PM) peak hour traffic volume information were used in the CO modeling to determine the highest impacts. Since CO hotspots tend to occur at heavily congested intersections, using the highest peak hour volume represents the worst-case situation.

The volumes used to determine the CO concentrations are based on the traffic study prepared for the proposed project, as discussed in **Section 4.11, Transportation, Traffic, Parking, and Circulation.** The results of these CO concentration calculations are presented in **Table 4.2-13, Predicted Future Local Carbon Monoxide Concentrations – With Project**, for representative receptors located 0 and 25 feet from each roadway.

As shown **Table 4.2-13**, the CALINE4 screening procedure predicts that, under worst-case conditions, future CO concentrations at each intersection would not exceed the state or federal 1-hour and 8-hour standards due to the emissions from the cumulative traffic, including that from the proposed project. No significant CO hotspot impacts would occur to sensitive receptors in the vicinity of these intersections. As a result, no significant project-related impacts, as a result of the implementation of the proposed project, would occur relative to projected CO concentrations.

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

Table 4.2-13
Predicted Future Local Carbon Monoxide Concentrations – With Project

	0 Feet		25 Feet	
Intersection	1-Hour[1]	8-Hour[2]	1-Hour[1]	8-Hour[2]
1. Santa Monica Blvd N. and Beverly Dr	8.4	~~5.4~~5.5	~~7.1~~7.2	4.5
2. Santa Monica Blvd N. and Wilshire Blvd	~~9.2~~9.3	~~5.9~~6.0	~~7.8~~7.9	5.0
3. Santa Monica Blvd S. and Beverly Dr	7.6	4.8	6.6	4.1
4. Santa Monica Blvd S. and Wilshire Blvd	~~8.3~~8.7	~~5.3~~5.6	~~7.2~~7.5	~~4.5~~4.8
5. Santa Monica Blvd N. and Merv Griffin Way	7.7	4.9	6.6	4.1
6. Wilshire Blvd and Beverly Dr	~~7.8~~7.9	~~4.9~~5.0	~~6.8~~6.9	4.3
7. Wilshire Blvd and N Whittier Dr	8.9	5.7	7.5	4.8
8. Santa Monica Blvd and Crossover	9.9	6.4	7.9	5.0
9. Santa Monica Blvd and Century Park East	8.9	5.7	7.5	4.7
10. Sunset Blvd and Whittier Dr	7.3	4.6	6.4	3.9
Exceeds state 1-hour standard of 20 ppm?	NO	NO	NO	NO
Exceeds federal 1-hour standard of 35 ppm?	NO	NO	NO	NO
Exceeds state 8-hour standard of 9.0 ppm?	NO	NO	NO	NO
Exceeds federal 8-hour standard of 9 ppm?	NO	NO	NO	NO

Source: Impact Sciences, Inc. Emissions calculations are provided in Appendix 4.2.

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

[2] *State 8-hour standard is 9.0 parts per million. Federal 8-hour standard is 9 parts per million.*

Localized Significance Threshold Analysis

Per the recommendation of the SCAQMD, ambient NO_2, CO, PM_{10}, and $PM_{2.5}$ concentrations due to the construction of the proposed project were analyzed using methods described in its *Final LST Methodology*.[50] The SCAQMD-approved dispersion model, Industrial Source Complex – Short Term (ISCST3[51]) was used for the analysis to model the dispersion of the pollutants of concern.

Table 4.2-14, Modeling Results – Maximum Impacts at Residential Receptors, and **Table 4.2-15, Modeling Results – Maximum Impacts at Sensitive Receptors,** show the maximum PM_{10}, $PM_{2.5}$, NO_2, and CO concentrations associated with the proposed project at the nearest residential and sensitive receptors, respectively. The nearest residential communities to the project site are located to the north of the proposed project site, across Wilshire Boulevard along the eastern side of North Whittier Drive and south of the site along Durant Drive. Both residential communities are located in the City of Beverly

50 South Coast Air Quality Management District. *Final Localized Significance Threshold Methodology*, June 2003 and *Final Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds*, October 2006.

51 Lakes Environmental Software, *ISC-AERMOD View* (Version 5.6.0).

Hills. The nearest sensitive receptor is El Rodeo Elementary School, which is located directly north of the proposed project site across Wilshire Boulevard in the City of Beverly Hills.

Table 4.2-14
Modeling Results
Maximum Impacts at Residential Receptors

Pollutant	Averaging Period	Modeling Results µg/m³	Modeling Results ppm	LST Criteria[1] µg/m³	LST Criteria[1] ppm	Exceeds Threshold?
Respirable Particulate Matter (PM_{10})	24 hours	56.91	NA	10.4	NA	YES
Fine Particulate Matter ($PM_{2.5}$)	24 hours	29.19	NA	10.4	NA	YES
Nitrogen Dioxide (NO_2)	1 hour	176	0.09	244	0.13	NO
Carbon Monoxide (CO)	1 hour	3,051	2.67	17,165	15	NO
	8 hours	2,204	1.93	7,209	6.3	NO

Source: Impact Sciences, Inc.

[1] *South Coast Air Quality Management District,* Final Localized Significance Threshold Methodology, *June 2003 and* Final Methodology to Calculate Particulate Matter (PM) 2.5 and PM2.5 Significance Thresholds, *October 2006.*

The maximum impacts were observed at the residential area directly across Wilshire Boulevard from the proposed project site.

Table 4.2-15
Modeling Results
Maximum Impacts at Sensitive Receptors

Pollutant	Averaging Period	Modeling Results µg/m³	Modeling Results ppm	LST Criteria[1] µg/m³	LST Criteria[1] ppm	Exceeds Threshold?
Respirable Particulate Matter (PM_{10})	24 hours	27.36	NA	10.4	NA	YES
Fine Particulate Matter ($PM_{2.5}$)	24 hours	16.97	NA	10.4	NA	YES
Nitrogen Dioxide (NO_2)	1 hour	233	0.12	244	0.13	NO
Carbon Monoxide (CO)	1 hour	3,348	2.93	17,165	15	NO
	8 hours	1,163	1.02	7,209	6.3	NO

Source: Impact Sciences, Inc.

[1] *South Coast Air Quality Management District,* Final Localized Significance Threshold Methodology, *June 2003 and* Final Methodology to Calculate Particulate Matter (PM) 2.5 and PM2.5 Significance Thresholds, *October 2006.*

The maximum impacts were observed at El Rodeo Elementary School located north of the proposed project site across Wilshire Boulevard.

As indicated in the tables above, the LST analysis shows that maximum 24-hour PM_{10} concentrations are anticipated to exceed the threshold of significance established by SCAQMD at the nearest residential and sensitive receptors to the project site. The maximum 24-hour $PM_{2.5}$ concentrations are also anticipated to exceed the threshold of significance established by SCAQMD at the nearest residential and sensitive receptors to the project site.

The impacts suggest that PM_{10} emissions could exceed the limitations in SCAQMD Rule 403. For detailed information regarding the LST Analysis, refer to **Appendix 4.2, Localized Significance Threshold Analysis ~~for The Beverly Hilton Specific Plan~~**.

Additional SCAQMD Significance Criteria

As previously discussed, the SCAQMD lists additional criteria indicating when a project may create potential air quality impacts.[52] These criteria are listed below along with an analysis of whether or not the project meets any of them. If a project meets any one of the criteria, project air quality impacts would be significant relative to that criterion.

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

SCAQMD's *CEQA Air Quality Handbook* suggests that an air quality modeling analysis (i.e., dispersion modeling) may be performed that identifies the project's potential impact on regional ambient air quality. A project would not create potential significant adverse air quality impacts if the dispersion modeling demonstrates that the project's incremental emissions would not increase the frequency or the severity of existing air quality violations, or contribute to a new violation.[53] A project-specific CO "hotspots" analysis was conducted (see results below), and it was demonstrated that the project's CO emissions would not exceed the state or federal 1-hour or 8-hour standards. With respect to the other pollutants (i.e., NOx, SOx, VOC, PM_{10}, and $PM_{2.5}$), SCAQMD staff have stated that air quality dispersion models do not currently exist for general development projects that can determine if the project's NOx, SOx, VOC, and PM_{10} (and $PM_{2.5}$) emissions would increase the frequency or the severity of existing regional air quality violations, or contribute to a new violation.[54] Therefore, no such air quality dispersion analysis can be undertaken for this project.

Instead, SCAQMD staff state that a project's consistency with the population number and location assumptions identified by SCAG and used in the preparation of the 2003 AQMP should be assessed as required by the next criterion:

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

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52 South Coast Air Quality Management District, *CEQA Air Quality Handbook*, November 1993, pp. 6-2–6-3.

53 South Coast Air Quality Management District, *CEQA Air Quality Handbook*, November 1993, p. 12-3.

54 Personal correspondence with Steve Smith, Program Supervisor, South Coast Air Quality Management District, Diamond Bar, California, February 23, 1996.

The 2003 AQMP is designed to accommodate planned growth, to reduce the high levels of pollutants within the areas under the jurisdiction of SCAQMD, to achieve the former federal 1-hour ozone standard by 2010, and to minimize the impact on the economy. Projects that are considered to be consistent with the AQMP do not interfere with attainment and do not contribute to the exceedance of an existing air quality violation because this growth is included in the projections utilized in the formulation of the AQMP. Therefore, projects, uses, and activities that are consistent with the applicable assumptions used in the development of the AQMP would not jeopardize the long-term attainment of the air quality levels identified in the AQMP, even if they exceed the SCAQMD's recommended thresholds.

Future air emissions within the Basin are based on demographic projections developed by SCAG for its 2001 RTP.[55] Projects that are consistent with the projections of population forecasts identified in the 2001 RTP are considered consistent with the AQMP growth projections.

The proposed project site is located in the City of Beverly Hills. As discussed in **Section 4.9, Population and Housing**, the population growth associated with the proposed project would exceed SCAG's 2010 projected population in the City of Beverly Hills by 1.3 percent. However, the project would still be within the long-term SCAG growth projections for the City of Beverly Hills. In addition, as discussed in **Section 4.11, Transportation, Traffic, Parking, and Circulation**, the project is anticipated to result in a minor increase in the number of daily trips to the site compared to the existing levels. Since the federal 8-hour ozone attainment date for the Basin is 2021 and since implementation of the project is expected not to exceed the SCAG growth projections in 2015 and beyond, the project would not jeopardize the regional attainment plan for ozone. Furthermore, as discussed in other sections of this EIR, implementation of the proposed project would not cause significant operational impacts to water supply, public utilities, traffic, or other regional issues. For these reasons, impacts associated with the project are not significant relative to this criterion.

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

As presented above, the project will not generate vehicle trips that cause a CO hotspot in the vicinity of the project area nor will the project be occupied by sensitive receptors that are exposed to a CO hotspot. Therefore, no significant impact is anticipated with respect to this criterion.

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

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55 South Coast Air Quality Management District. *2003 AQMP*, December 22, 2003, p. 3-9. [Online] <http://www.aqmd.gov/aqmp/AQMD03AQMP.htm>, February 19, 2007.

The proposed residential, hotel, retail and office uses on the site would not generate objectionable odors. Airborne odors associated with the commercial portion of the project, specifically the restaurant uses, would result primarily from the preparation of food for human consumption. However, because the food will be prepared largely within an enclosed kitchen area, it is unlikely the odors would permeate substantially to the outside environment. Furthermore, refuse associated with operation of the proposed project will be disposed of in accordance with all applicable regulations. Consequently, no significant impacts from such odors are anticipated.

- *Project will have hazardous materials on site and could result in an accidental release of toxic air emissions or acutely hazardous materials posing a threat to public health and safety;*
- *Project could emit a toxic air contaminant regulated by SCAQMD rules or that is on a federal or state air toxic list;*
- *Project could be occupied by sensitive receptors within 1/4-mile of an existing facility that emits air toxics identified in SCAQMD Rule 1401; or*
- *Project could emit carcinogenic or toxic air contaminants that individually or cumulatively exceed the maximum individual cancer risk of 10 in 1 million.*

With respect to the above four criteria, the project will not have hazardous materials on site and will not be a source of toxic air contaminants regulated by the SCAQMD, state, or federal government, except as a result of normal use of household and consumer products, architectural coatings, and similar products. Therefore, no significant impacts are anticipated with respect to the above four criteria.

Parking Structure Emissions

The URBEMIS2002 model does not calculate emissions associated with the queuing and idling of vehicles entering and exiting parking structures. As the proposed project incorporates a subterranean parking structure, these emissions were estimated outside of the URBEMIS2002 model and added to the operational emissions for the proposed project and existing land uses.

Areas with high vehicle density such as congested intersections and parking structures have the potential to generate CO hotspots. Such hotspots are defined as locations where the ambient CO concentrations exceed the 1-hour or 8-hour state (20 ppm and 9.0 ppm, respectively) or federal (35 ppm and 9 ppm, respectively) ambient air quality standards. Sensitive receptors closest to the project include residential areas to the north of the project site and the El Rodeo Elementary School to the north. As these land uses could be occupied during peak usage of the parking structure, the location was selected for the analysis of CO hotspots generated by the parking structure.

Because the parking structure is subterranean, a line source model such as CALINE4, could not be used to model the formation of CO hotspots in the vicinity of the garage. Turbulence created by vehicle motion and at the entry and exit areas would cause CO emissions generated by vehicles in the parking garage to irregularly emit from the openings in the underground structure. As such, the CO emissions generated by the parking garage were modeled as a volume source using the SCREEN3 air quality model developed by the U.S. EPA. The volume source was given a 5-meter horizontal and vertical dimension to simulate the parking structure entry and exit openings. The release height, initial lateral dimension, and initial vertical dimension of the volume source were based on this dimension.

It was estimated that a maximum of 40 vehicles would enter or exit the residential portion of the parking structure and 415 vehicles would enter or exit the hotel and restaurant portion of the parking structure during the peak hour as determined by the peak hour trip generation rates presented in the traffic report. Based on this data and the emissions data calculated for the operational impacts from the parking structure, the results of the SCREEN3 model indicate that during peak usage, the highest CO 1-hour concentration at the residential and sensitive receptors to the north of the project site would be 0.11 ppm above ambient conditions. The highest 8-hour concentration at this location would be 0.08 ppm above ambient conditions, based on a persistence factor of 0.7 as recommended by the SCAQMD. The distance from the volume source to the residential and sensitive receptors was based on the site plan for the proposed project, which indicates the location of the parking structure entrances and exits. The location closest to the residential and sensitive receptors was selected for this analysis. As shown in **Table 4.2-2**, the highest registered 1-hour and 8-hour CO concentrations registered in the surrounding area in recent years were 5 ppm and 3.0 ppm, respectively. Using these values as the ambient CO concentration, the total 1-hour and 8-hour CO concentrations associated with the parking garage would be relatively unchanged. As these values are still less than the state 1-hour and 8-hour standards, operation of the parking structure is not anticipated to adversely affect human health. Consequently, this impact is considered less than significant.

Parking garages are categorized as indoor environments and are not widely regulated the way the ambient environment is regulated.[56] Parking garages are not considered sensitive receptors because individuals utilizing such structures are exposed to pollutant levels for short periods. The proposed parking structure would comply with all relevant City of Beverly Hills Municipal Code provisions with regard to parking structure ventilation. As such, impacts pertaining to CO concentrations from the proposed parking structure would be less than significant.

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56 California Air Resources Board. *Indoor Air Pollution in California*, July 2005, pp. 57–60.

Greenhouse Gas Emissions

As noted in **Section 4.2.3**, the primary source of GHGs in California is fossil fuel combustion. The primary GHG associated with fuel combustion is carbon dioxide, with lesser amounts of methane and nitrous oxide. Accordingly, the project would result in emissions of these GHGs due to fuel combustion in motor vehicles and building heating systems associated with the project. Building and motor vehicle air conditioning systems may use HFCs (and HCFCs and CFCs to the extent that they have not been completely phased out at later dates), which may result in emissions through leaks. The other GHGs (perfluorocarbons and sulfur hexafluoride) are associated with specific industrial sources and are not expected to be associated with the proposed project.

While the project would result in emissions of GHGs, the significance of the impact of a single project on global climate cannot be determined at this time. First, no guidance exists to indicate what level of GHG emissions would be considered substantial enough to result in a significant adverse impact on global climate. Even though the GHG emissions associated with an individual development project could be estimated, there is no emissions threshold that can be used to evaluate the significance of these emissions. Second, global climate change models are not sensitive enough to be able to predict the effect of a single project on global temperatures and the resultant effect on climate; therefore, they cannot be used to evaluate the significance of a project's impact. Thus, insufficient information and predictive tools exist to assess whether a single project would result in a significant impact on global climate. For these reasons, determining the significance of the impact of the project on global climate is speculative. The appropriate context for consideration of project contributions to greenhouse gases is within the cumulative impacts analysis. Refer to **subsection 4.2-7, Cumulative Impacts**, for this analysis.

Nonetheless, the proposed project would be a mixed-use infill project that is intended to minimize vehicle trips between residential and commercial uses as well as place additional residential units in proximity to the economic center of the City of Beverly Hills. The project site is located on two major roadways and is well-served by public transit. As noted in **Table 4.2-12**, the project would result in emission reductions for CO, NOx, SOx, PM_{10}, and $PM_{2.5}$ relative to the existing uses. This suggests that the project would result in a proportionately small increase (or even a decrease) in GHG emissions relative to existing uses. Given the level of GHG emissions from California, as listed in **Table 4.2-5**, and from the six top GHG producer countries and the European Community, as listed in **Table 4.2-4**, the GHG emissions associated with a single mixed-use infill development project would be too small to influence global climate on its own.

Health Impacts

The following discussion addresses potential health effects of the criteria pollutants and precursors that were determined to exceed established thresholds, and for which significant impacts were found.

As identified in **subsection 4.2.6, Environmental Impact Analysis,** the proposed project is anticipated to exceed the SCAQMD regional significance threshold during construction with respect to the daily emissions of NOx and the localized significance thresholds with respect to ambient air quality impacts for PM_{10} and $PM_{2.5}$. In general, the health effects of NOx include those associated with NO_2 and ozone. The Basin is currently designated as attainment for the state and federal NO_2 standards and as nonattainment for the state and federal ozone standards. During construction, combustion exhaust emissions of NOx primarily occur as nitric oxide (NO). NO is converted to NO_2 via chemical reactions in the atmosphere. The SCAQMD has published a NO_2-to-NOx conversion ratio as a function of downwind distance.[57] This ratio predicts that slightly less than half of all emitted NOx, primarily in the form of NO, is converted to NO_2 at 1,000 meters (0.62 miles) from the emission source. At 5,000 meters (3.11 miles), all emitted NOx is assumed to be converted to NO_2. Ambient levels of NO_2 are currently below the state and federal standards and not all of the emitted NOx will have converted to NO_2 in the atmosphere when the emissions from the construction site reach the sensitive receptors. Moreover, the localized significance thresholds (LST) analysis did not predict that the state standard for NO_2 would be exceeded at any time during construction in the vicinity of the project site. Thus, measurable health impacts due to NO_2 emissions from the project are not expected.

Ozone is a secondary pollutant that forms in the lower atmosphere via photochemical reactions with precursor pollutants, such as NOx and VOC. As indicated above, the project would result in daily construction emissions of NOx above the SCAQMD significance threshold. In the Basin, mobile sources account for most of the NOx and VOC emissions. The formation of ozone requires sunlight and takes place over time and distance. Due to the geographic and meteorological conditions present in the Basin, NOx and VOC emissions are usually driven inland by an on-shore wind during the morning and early afternoon hours. This typically results in higher ozone concentrations in regions east of downtown Los Angeles. Thus, ozone formation due to precursor emissions is usually of regional rather than local concern. However, determining any regional health impact from ozone formation due to the development of a single project would be speculative due to the lack of methods to assess such an impact on a regional level. Furthermore, since the ambient ozone concentrations in the vicinity of the project, as well as throughout the Basin, already exceed the state and federal ozone standards, health impacts in the

57 South Coast Air Quality Management District, *Final Localized Significance Threshold Methodology,* June 2003, p. 2-8. The NO_2 conversion rates are adapted by the SCAQMD from Arellano, J.V., A.M. Talmon, and P.J.H. Builtjes, "A Chemically Reactive Plume Model for the NO-NO_2-O_3 System," Atmospheric Environment 24A, 2237-2246.

vicinity of the project are attributable to the existing background concentrations regardless of project implementation.

Health effects associated with PM_{10} and $PM_{2.5}$ include aggravated respiratory, pulmonary, and heart function as described in **Table 4.2-1**. During construction of the proposed project, PM_{10} and $PM_{2.5}$ is generated as fugitive dust and combustion exhaust emissions. Based on the LST analysis, the project is anticipated to result in significant PM_{10} and $PM_{2.5}$ localized impacts to sensitive receptors in the vicinity of the project site at the maximum estimated levels during construction. However, the LST analysis only considered maximum emission levels, which do not occur throughout construction of the project. Construction activity is not uniform and emissions of PM_{10} and $PM_{2.5}$ vary greatly by phase. Therefore, any potential increases in health impacts are anticipated to be minor and temporary.

The combustion exhaust portion of PM_{10} and $PM_{2.5}$ is also referred to as diesel particulate matter (DPM), when emitted by diesel-fueled equipment. On August 27, 1998, CARB designated DPM emissions from diesel-fueled engines as a toxic air contaminant (TAC). The Office of Environmental Health Hazard Assessment (OEHHA) has established a chronic (long-term) noncancer health risk value and a cancer risk value for DPM. It has not established an acute (short-term) health risk value. Because the DPM emissions during construction are relatively short-term, it is not expected that the chronic noncancer health risk or cancer risk would exceed the established thresholds in the vicinity of the project.

Project implementation would incorporate required mitigation measures, described in **subsection 4.2.7, Project Mitigation Measures**, and comply with other required City of Beverly Hills regulations that will reduce construction emissions. The intent of these mitigation measures on potential health impacts is to reduce the incremental health impacts from project construction. Furthermore, CARB recently adopted an In-Use Off-Road Diesel Vehicle Control Measure that is aimed at reducing PM_{10}, $PM_{2.5}$ and NO_x emissions from construction equipment and other diesel-fueled off-road vehicles. Certain vehicles would have to comply with the new regulation as early as 2010. This could also lead to further emissions reductions, thereby reducing incremental health impacts.

4.2.7 CUMULATIVE IMPACTS

Regional Analysis

As discussed previously, the SCAQMD's *CEQA Air Quality Handbook* identifies methodologies to determine the cumulative significance of land use projects where the construction and/or operation emission generation thresholds have been exceeded. The SCAQMD method employed for this project is that which determines whether the rate of growth in average daily trips exceeds the rate of growth in population. This method differs from the methodology used in other sections of this EIR in which all

foreseeable future development within a given service boundary or geographical area is predicted and its impacts measured. The SCAQMD has not identified thresholds to which the total emissions of all cumulative development can be compared. Instead, the SCAQMD's methods are based on performance standards and emission reduction targets necessary to attain the federal and state air quality standards identified in the AQMP.

Residential uses proposed on the project site would result in an on-site population of approximately 269 individuals.[58] Using this population value along with the residential project Average Daily Trip (ADT) volume included in the traffic study, SCAG population growth data, and traffic data for the portion of Los Angeles County located within the Basin obtained from CARB's EMFAC2007 on-road motor vehicle emissions model, the ratio of project ADT to anticipated regional ADT and the ratio of the project population to the anticipated regional population were determined. Since project implementation would reduce the number of hotel guestrooms and commercial square footage on the project site, no increase in the number of employees on site is anticipated and cumulative impacts related to employment would therefore be less than significant. As shown in **Table 4.2-16, Comparison of ADT to Population and Employment Growth – The Beverly Hilton** Revitalization Project~~Specific Plan~~, the ADT ratio is less than the population ratio at project buildout in 2012. As such, the project's incremental contribution to cumulative impacts would be less than cumulatively considerable and therefore not significant.

Table 4.2-16
Comparison of ADT to Population and Employment Growth – The Beverly Hilton Revitalization Project~~Specific Plan~~

	ADT	Population/Employees
Population Comparison		
Residences at the Proposed Project[1, 4]	426	269
Los Angeles County[2, 3]	41,946,600	10,876,313
Ratio of Project to Los Angeles County	0.000010	0.000025
Employment Comparison		
Employees at the Proposed Project	No net increase	No net increase
Los Angeles County[2, 3]	41,946,600	5,092,825
Ratio of Project to Los Angeles County	N/A	N/A

Source: Impact Sciences, Inc.

1 *Based on a population generation rate of 2.24 persons per household. U.S. Census Bureau.* Profile of General Demographic Characteristics, *2000.*

2 *Estimated ADT in Los Angeles County as determined by EMFAC2007.*

3 *Southern California Association of Governments.* City Projections. *[Online] 5 March 2007. <http://scag.ca.gov/forecast/index.htm>,*

4 *Estimated ADT for project residents and employees as determined by URBEMIS2002.*

58 Based on a population generation rate of 2.24 persons per household. U.S. Census Bureau. *Profile of General Demographic Characteristics,* 2000.

In addition to the cumulative significance methodologies contained in SCAQMD's *CEQA Air Quality Handbook*, the SCAQMD staff has suggested that the emissions-based thresholds be used to determine if a project's contribution to regional cumulative emissions is cumulatively considerable.[59] As shown in **Table 4.2-11**, the project's construction emissions would exceed the project-level threshold of significance for NOx. The project also exceeds the localized impacts for PM_{10} and $PM_{2.5}$. Accordingly, the project's construction emissions, prior to mitigation, would be considered cumulatively considerable, and the cumulative air quality impact would be significant under this criterion.

Global Climate Change

In addition to the project-level impact on global climate, the project's contribution to state, national, and global GHG emission inventories and the resultant effect on global climate must also be evaluated on a cumulative basis. The project would generate GHG emissions, which would contribute to potential cumulative impacts of GHG emissions on global climate.

Under Section 15064(h)(1) of the *CEQA Guidelines*, a project must be assessed to determine if it would have a cumulatively considerable effect on a resource, where cumulatively considerable is defined as "...the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects."[60] Section 15064(h)(4) further states, "The mere existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the proposed project's incremental effects are cumulatively considerable."[61] Therefore, the fact that the proposed project would result in emissions of GHGs (chiefly carbon dioxide), and that global GHGs emissions contribute to the greenhouse effect and the resultant impacts on global climate, does not mean that the proposed project would have a cumulatively considerable impact on global climate. Accordingly, the potential contribution of the project to this cumulative impact is evaluated under other criteria.

To date, no quantitative emission thresholds or similar criteria have been established to evaluate the cumulative impact of a single project on global climate. In the absence of quantitative emissions thresholds, consistency with adopted programs and policies is used by many jurisdictions to evaluate the significance of cumulative impacts. A project's consistency with the implementing programs and regulations to achieve the statewide GHG emission reduction goals established under Executive Order

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

60 *California Environmental Quality Act (CEQA) Guidelines*, California Code of Regulations (CCR), Title 14, Division 6, Chapter 3, Section 15064.

61 Ibid.

S-3-05 and AB 32 cannot yet be evaluated because they are still under development. Nonetheless, the Climate Action Team, established by Executive Order S-3-05, has recommended strategies for implementation at the statewide level to meet the goals of the Executive Order. In the absence of an adopted plan or program, the Climate Action Team's strategies serve as current statewide approaches to reducing the state's GHG emissions. As no other plan or program for GHG emissions that would apply to the project has been adopted, consistency with these strategies is assessed to determine if the project's contribution to cumulative GHG emissions is considerable.

In its report to the Governor and the Legislature, the Climate Action Team recommended strategies that could be implemented by various state boards, departments, commissions, and other agencies to reduce GHG emissions.[62] This EIR contains several project design features and mitigation measures that would result in lower fuel combustion emissions, reduced energy usage, water conservation, and other collateral benefits with respect to GHG emissions.[63] The Climate Action Team strategies that are relevant to the proposed project, the implementing agencies, and the project's design features or mitigation measures that would be consistent with these strategies are listed in **Table 4.2-17, Project Features and Mitigation Measures to Achieve Climate Action Team Strategies.** Based on the analysis in **Table 4.2-17,** the proposed project would substantially reduce its contribution to GHG emissions and global climate due to its consistency with these strategies. In addition, the proposed project would be a mixed-use project that is intended to minimize vehicle trips between residential and commercial uses as well as place additional residential units in proximity to the economic center of the City of Beverly Hills. Lastly, as noted in **Table 4.2-12,** the project would result in small increases in pollutant emissions (and in the case of NOx and CO, emission reductions) relative to the existing uses. This suggests that the project would result in a proportionately small increase in GHG emissions. Based on these findings, the contribution of the project to cumulative GHG emissions is not considered cumulatively considerable.

62 California Environmental Protection Agency, Climate Action Team, Climate Action Team Report to Governor Schwarzenegger and the Legislature. March 2006.

63 Project design features and mitigation measures that are intended to reduce criteria pollutant emissions associated with fuel combustion (e.g., motor vehicle emissions) or energy conservation would also serve to reduce GHG emissions.

Table 4.2-17
Project Features and Mitigation Measures to Achieve Climate Action Team Strategies

CAT Strategy	Implementing Agency	Project Feature/Mitigation
Vehicle Climate Change Standards	Air Resources Board	The project would be consistent with this strategy to the extent that new passenger vehicle and light trucks are purchased by the project's users starting in the 2009 model year.
HFC Reduction Strategies	Air Resources Board	Project air conditioning systems would comply with the latest standards for new systems. Use of consumer products using HFCs would comply with CARB regulations, when adopted.
Building Energy Efficiency Standards in Place	Energy Commission	The project will meet or exceed California energy standards or energy efficient lighting requirements.
Appliance Energy Efficiency Standards in Place	Energy Commission	
Water Use Efficiency	Department of Water Resources	The project will meet or exceed California water use and conservation standards.

Source: California Climate Action Team. Final 2006 Climate Action Team Report to the Governor and Legislature, *March 2006.*

4.2.8 PROJECT MITIGATION MEASURES

The proposed project may result in potentially significant air quality impacts during construction of the proposed project with respect to emissions NOx and localized concentrations of PM_{10} and $PM_{2.5}$. Therefore, the following mitigation measures are required to be implemented as part of the project.

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

MM-AQ-2 The Contractor shall ensure that the use of all construction equipment is suspended during first-stage smog alerts.

MM-AQ-3 The Contractor shall promote the use of electricity or alternate fuels for on-site mobile equipment instead of diesel equipment to the extent feasible.

MM-AQ-4 The Contractor shall maintain construction equipment by conducting regular tune-ups according to the manufacturers' recommendations.

MM-AQ-5 The Contractor shall promote the use of electric welders to avoid emissions from gas or diesel welders to the extent feasible.

MM-AQ-6 The Contractor shall promote the use of on-site electricity or alternative fuels rather than diesel-powered or gasoline-powered generators to the extent feasible.

MM-AQ-7 Prior to use in construction, the project applicant and contractor will evaluate the feasibility of retrofitting the large off-road construction equipment that will be operating for significant periods. Retrofit technologies, such as particulate traps, selective catalytic reduction, oxidation catalysts, and air enhancement technologies, shall be evaluated. These technologies will be required if they are verified by CARB and/or the U.S. EPA and are commercially available and can feasibly be retrofitted onto construction equipment.

MM-AQ-8 The Contractor shall ensure that traffic speeds on all unpaved roads are reduced to 15 mph or less.

MM-AQ-9 The Contractor shall ensure that the project site is watered at least three times daily during dry weather.

MM-AQ-10 The Contractor shall install wind monitoring equipment, to the extent feasible, and suspend grading activities when wind speeds exceed 25 mph per SCAQMD guidelines.

MM-AQ-11 The Contractor shall water storage piles by hand or apply cover when wind events are declared (wind speeds in excess of 25 miles per hour).

MM-AQ-12 The Contractor shall apply nontoxic chemical soil stabilizers on inactive construction areas (disturbed lands within construction projects that are unused for at least four consecutive days).

MM-AQ-13 The Contractor shall replace ground cover in disturbed areas as quickly as possible.

4.2.9 CUMULATIVE MITIGATION MEASURES

Cumulative impacts during construction are considered significant. Construction-related mitigation measures identified in **Section 4.2-8, Project Mitigation Measures**, would also apply for cumulative impacts.

4.2.10 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Project Impacts

Although the recommended mitigation measures, if feasible, would reduce the magnitude of construction impacts, no feasible mitigation exists that would reduce all of these emissions to below the SCAQMD's recommended thresholds of significance. The project's construction-related emissions of NOx are considered significant and unavoidable. The project's unmitigated operational emissions would result in air quality impacts that are less than significant. Additionally, based on the SCAQMD Localized Significance Thresholds, the project may result in potentially temporary and localized impacts of PM_{10} and $PM_{2.5}$ to receptors in the immediate vicinity of the project site, which are also considered significant and unavoidable.

Cumulative Impacts

The proposed project in consistent with regional growth projections, therefore the cumulative impacts during operation of the proposed project are less than significant based on this criterion. However, the mitigated construction-related NOx emissions exceed the SCAQMD's recommended daily emission thresholds of significance. Additionally, localized impacts for PM_{10} and $PM_{2.5}$ may exceed the SCAQMD Localized Significance Thresholds. As the Basin is already designated as nonattainment for ozone (NOx is an ozone precursor), PM_{10}, and $PM_{2.5}$, project emissions that exceed the SCAQMD thresholds during construction are cumulatively considerable, and thus, are considered significant and unavoidable cumulative air quality impacts.

As mentioned above, the Global Warming Solutions Act of 2006, referred to as Assembly Bill (AB) 32, requires the California Air Resources Board (CARB) to adopt rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emission reductions. CARB is ultimately responsible for monitoring compliance and enforcing any rule, regulation, order, emission limitation, emission reduction measure, or market-based compliance mechanism adopted. While residential and commercial development projects may be required to reduce emissions of greenhouse gases based on potential future CEQA guidelines to be developed in accordance with Senate Bill 97, CARB does not currently intend to require greenhouse gas emission reductions from specific residential and commercial development projects as part of AB 32. Therefore, the Project will not interfere with the goals and emission reduction targets for AB 32. Nonetheless, statewide GHG reduction measures that would apply to motor vehicles, consumer products, and energy and appliance efficiency will aid in reducing the project's GHG emissions.

Health Impacts

The following discussion addresses potential health effects of the criteria pollutants and precursors that were determined to exceed established thresholds, and for which significant impacts were found.

As identified in **subsection 4.2.6, Environmental Impact Analysis**, the proposed project is anticipated to exceed the SCAQMD regional significance threshold during construction with respect to the daily emissions of NOx and the localized significance thresholds with respect to ambient air quality impacts for PM_{10} and $PM_{2.5}$. In general, the health effects of NOx include those associated with NO_2 and ozone. The Basin is currently designated as attainment for the state and federal NO_2 standards and as nonattainment for the state and federal ozone standards. During construction, combustion exhaust emissions of NOx primarily occur as nitric oxide (NO). NO is converted to NO_2 via chemical reactions in the atmosphere. The SCAQMD has published a NO_2-to-NOx conversion ratio as a function of downwind distance.[57] This ratio predicts that slightly less than half of all emitted NOx, primarily in the form of NO, is converted to NO_2 at 1,000 meters (0.62 miles) from the emission source. At 5,000 meters (3.11 miles), all emitted NOx is assumed to be converted to NO_2. Ambient levels of NO_2 are currently below the state and federal standards and not all of the emitted NOx will have converted to NO_2 in the atmosphere when the emissions from the construction site reach the sensitive receptors. Moreover, the localized significance thresholds (LST) analysis did not predict that the state standard for NO_2 would be exceeded at any time during construction in the vicinity of the project site. Thus, measurable health impacts due to NO_2 emissions from the project are not expected.

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57 South Coast Air Quality Management District, *Final Localized Significance Threshold Methodology*, June 2003, p. 2-8. The NO_2 conversion rates are adapted by the SCAQMD from Arellano, J.V., A.M. Talmon, and P.J.H. Builtjes, "A Chemically Reactive Plume Model for the NO-NO_2-O_3 System," Atmospheric Environment 24A, 2237-2246.

Ozone is a secondary pollutant that forms in the lower atmosphere via photochemical reactions with precursor pollutants, such as NOx and VOC. As indicated above, the project would result in daily construction emissions of NOx above the SCAQMD significance threshold. In the Basin, mobile sources account for most of the NOx and VOC emissions. The formation of ozone requires sunlight and takes place over time and distance. Due to the geographic and meteorological conditions present in the Basin, NOx and VOC emissions are usually driven inland by an on-shore wind during the morning and early afternoon hours. This typically results in higher ozone concentrations in regions east of downtown Los Angeles. Thus, ozone formation due to precursor emissions is usually of regional rather than local concern. However, determining any regional health impact from ozone formation due to the development of a single project would be speculative due to the lack of methods to assess such an impact on a regional level. Furthermore, since the ambient ozone concentrations in the vicinity of the project, as well as throughout the Basin, already exceed the state and federal ozone standards, health impacts in the

MM-AQ-5 The Contractor shall promote the use of electric welders to avoid emissions from gas or diesel welders to the extent feasible.

MM-AQ-6 The Contractor shall promote the use of on-site electricity or alternative fuels rather than diesel-powered or gasoline-powered generators to the extent feasible.

MM-AQ-7 Prior to use in construction, the project applicant and contractor will evaluate the feasibility of retrofitting the large off-road construction equipment that will be operating for significant periods. Retrofit technologies, such as particulate traps, selective catalytic reduction, oxidation catalysts, and air enhancement technologies, shall be evaluated. These technologies will be required if they are verified by CARB and/or the U.S. EPA and are commercially available and can feasibly be retrofitted onto construction equipment.

MM-AQ-8 The Contractor shall ensure that traffic speeds on all unpaved roads are reduced to 15 mph or less.

MM-AQ-9 The Contractor shall ensure that the project site is watered at least three times daily during dry weather.

MM-AQ-10 The Contractor shall install wind monitoring equipment, to the extent feasible, and suspend grading activities when wind speeds exceed 25 mph per SCAQMD guidelines.

MM-AQ-11 The Contractor shall water storage piles by hand or apply cover when wind events are declared (wind speeds in excess of 25 miles per hour).

MM-AQ-12 The Contractor shall apply nontoxic chemical soil stabilizers on inactive construction areas (disturbed lands within construction projects that are unused for at least four consecutive days).

MM-AQ-13 The Contractor shall replace ground cover in disturbed areas as quickly as possible.

MM-AQ-14 **The project proponent shall establish a third-party air quality consultant to conduct monitoring of the PM_{10} (dust) concentrations at one upwind (background) location and one or more downwind receptor locations to determine if such results are in compliance with the established threshold in SCAQMD Rule 403. The monitoring shall be conducted at least one time per week for the duration of the demolition and grading period. The third-party consultant shall be approved by the City of Beverly Hills Planning Department. Sample locations, methods, and sampling duration shall be selected in accordance with Rule 403. To the extent feasible, one downwind**

monitoring station shall be located at or near the El Rodeo School's southern perimeter. Costs for the monitoring stations and tests by the third-party consultant shall be borne by the project proponent. If any measurements are found by the consultant to exceed the SCAQMD Rule 403 threshold, the project proponent shall submit a corrective action plan to the City of Beverly Hills within 7 calendar days after receipt of the report from the consultant. The corrective action plan shall specify a schedule for ongoing remedial action and implementation shall begin as soon as reasonably practical, as determined by mutual agreement with the City of Beverly Hills.

4.2.9 CUMULATIVE MITIGATION MEASURES

Cumulative impacts during construction are considered significant and unavoidable. Construction-related mitigation measures identified in **Section 4.2-8, Project Mitigation Measures**, would also apply for cumulative impacts.

4.2.10 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Project Impacts

Although the recommended mitigation measures, if feasible, would reduce the magnitude of construction impacts, no feasible mitigation exists that would reduce all of these emissions to below the SCAQMD's recommended thresholds of significance. The project's construction-related emissions of NOx are considered significant and unavoidable. The project's unmitigated operational emissions would result in air quality impacts that are less than significant. Additionally, based on the SCAQMD Localized Significance Thresholds, the project may result in potentially temporary and localized impacts of PM_{10} and $PM_{2.5}$ to receptors in the immediate vicinity of the project site, which are also considered significant and unavoidable.

Cumulative Impacts

The proposed project in consistent with regional growth projections, therefore the cumulative impacts during operation of the proposed project are less than significant based on this criterion. However, the mitigated construction-related NOx emissions exceed the SCAQMD's recommended daily emission thresholds of significance. Additionally, localized impacts for PM_{10} and $PM_{2.5}$ may exceed the SCAQMD Localized Significance Thresholds. As the Basin is already designated as nonattainment for ozone (NOx is an ozone precursor), PM_{10}, and $PM_{2.5}$, project emissions that exceed the SCAQMD thresholds during construction are cumulatively considerable, and thus, are considered significant and unavoidable cumulative air quality impacts.