4.2 AIR QUALITY

INTRODUCTION

This section describes the ambient air quality of the local and regional area and provides a comparison of existing air quality to applicable state and federal 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 to the extent feasible. 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 California Air Resources Board (CARB). Air quality emission calculations conducted for the Project are contained within ***Appendix 4.2*** *of this environmental impact report (EIR).*

ENVIRONMENTAL SETTING

Regional Climate

The Project lies within the South Coast Air Basin ("SoCAB" or "basin"). The basin, shown in **Figure 4.2-1, South Coast Air Basin**, consists of all of Orange County, most of Los Angeles County, and the western, non-desert portions of San Bernardino and Riverside Counties.

Air quality is affected by both the rate and location of pollutant emissions and the meteorological conditions that affect the movement and dispersal of pollutants. Atmospheric conditions such as wind speed, wind direction, solar radiation, atmospheric stability, along with local topography, strongly affect the relationship between pollutant emissions and air quality. The combination of low wind speeds and an inversion layer produce the greatest concentration of air pollutants. An inversion layer occurs when temperature increases with height, which inhibits convection or the vertical mixing of air, resulting in pollution being trapped near ground level. Smog potential is greatly reduced on days without inversions or on days with winds averaging over 15 miles per hour (mph).[1] Temperature generally has an important influence on basin wind flow, pollutant dispersion, vertical mixing, and photochemistry.

Annual average temperatures throughout the Basin vary from the low to middle 60s 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, and annual average minimum temperatures are 56°F in downtown Los Angeles,

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1 South Coast Air Quality Management District, *CEQA Air Quality* Handbook, (1993), A8-1.

49°F in San Bernardino, and 55°F in Long Beach. July and August are the warmest months in the Basin, and annual average maximum temperatures are 83°F in downtown Los Angeles, 95°F in San Bernardino, and 85°F in Long Beach. 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 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 near the mountains.

Existing Air Quality

Regional Air Quality

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 produces 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. In 2008, mobile sources accounted for about 95 percent of the carbon monoxide (CO) emissions, 55 percent of the sulfur oxides (SO_x) emissions, 90 percent of the nitrogen oxides (NO_x) emissions, and 59 percent of the volatile organic compounds (VOC) found within the basin.[2,3] Smog is formed when VOC and NO_x undergo photochemical reactions in sunlight to form ozone (O_3).

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2 California Air Resources Board, "2008 Estimated Basin Data – South Coast Air Basin," http://www.arb.ca.gov/ei/maps/basins/abscmap.htm. 2009.

3 Percentages do not include natural sources.

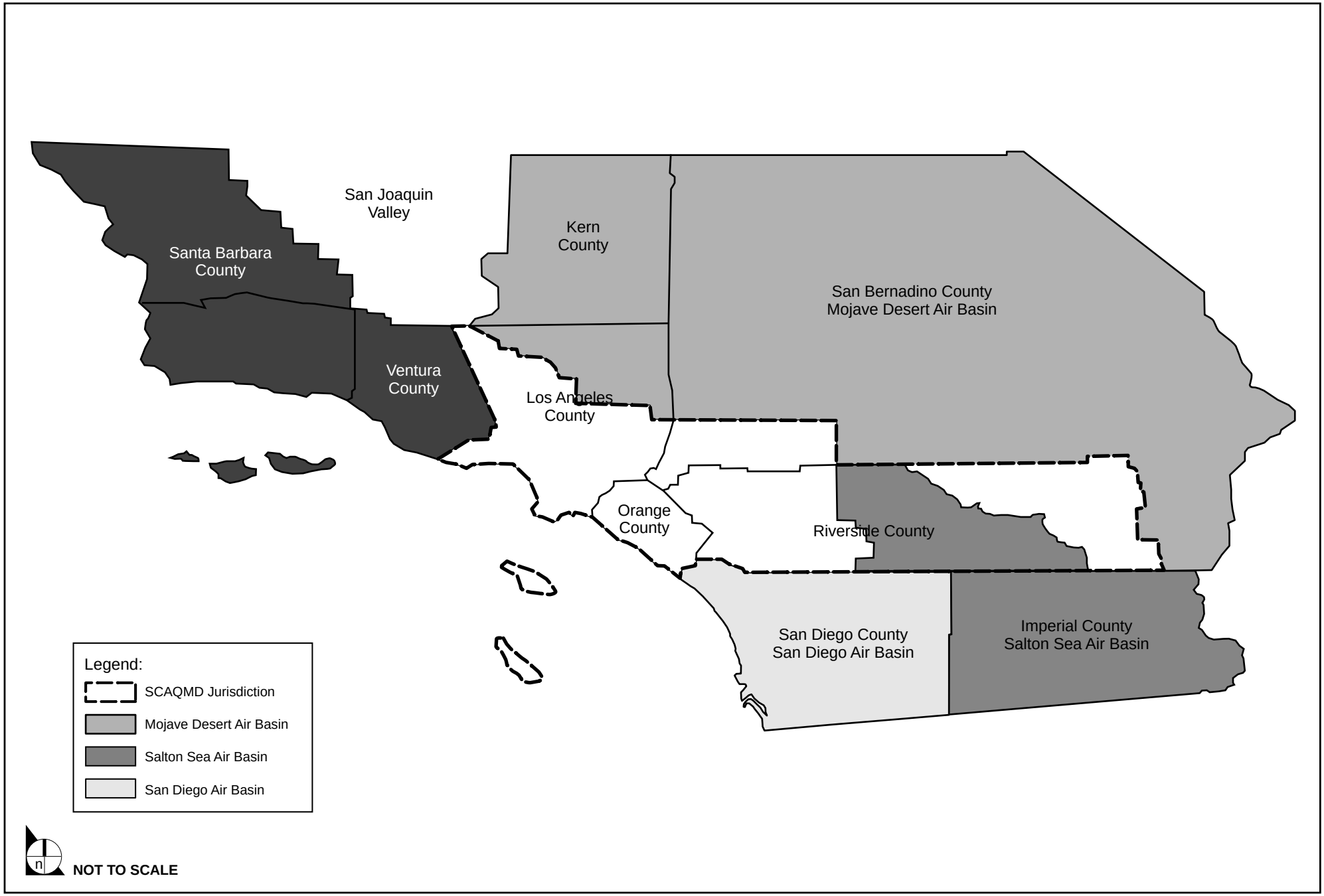

FIGURE **4.2-1**

South Coast Air Basin

1013-001•11/09

The determination of whether a region's air quality is healthful or unhealthful is evaluated by comparing contaminant levels in ambient air samples to national and state standards. The federal government and the State of California have established air quality standards for the following seven criteria air pollutants: (1) O_3, (2) CO, (3) nitrogen dioxide (NO_2), (4) SO_2, (5) respirable particulate matter (PM_{10}), (6) fine particulate matter ($PM_{2.5}$), and (7) lead (Pb). These standards were established to protect sensitive receptors from adverse health impacts due to exposure to air pollution with a margin of safety. 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, none of which has corresponding federal standards. Generally, the sources for hydrogen sulfide emissions include decomposition of human and animal wastes and industrial activities, such as food processing, coke ovens, kraft paper mills, tanneries, and petroleum refineries. There are no such uses or sources generated by the Project. Similarly, the sources for vinyl chloride emissions include manufacturing of plastic products, hazardous waste sites, and landfills, and there are no such uses or sources generated by the Project. As a result, there is no need for any further evaluation of the hydrogen sulfide or vinyl chloride emissions associated with this Project. In addition, according to the SCAQMD *2007 Final Air Quality Management Plan*, the lead, sulfate, and visibility reducing particle standards have not been exceeded anywhere in the basin. Therefore, due to the Project's size and associated types of air pollution sources, the Project is not expected to have any direct impact on those pollutants. Accordingly, this air quality analysis will focus primarily on the six "criteria" air pollutants identified above, excluding lead.

The U.S. Environmental Protection Agency (U.S. EPA) is the federal agency responsible for setting the National Ambient Air Quality Standards (NAAQS). Air quality of a region is considered to be in attainment of the NAAQS if the measured ambient air pollutant levels are not exceeded more than once per year, except for O_3, PM_{10}, $PM_{2.5}$ and those based on annual averages or arithmetic mean. The NAAQS for O_3, PM_{10}, and $PM_{2.5}$ are based on statistical calculations over one- to three-year periods, depending on the pollutant. The California Air Resources Board (CARB) is the state agency responsible for setting the California Ambient Air Quality Standards (CAAQS). Air quality of a region is considered to be in attainment of the CAAQS if the measured ambient air pollutant levels for O_3, CO, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and lead are not exceeded, and all other standards are not equaled or exceeded at any time in any consecutive three-year period.

A brief description of the criteria pollutants is provided below.

- **Ozone (O_3).** O_3 is a gas that is formed when VOCs and NO_X, both byproducts of internal combustion engine exhaust and other sources undergo slow photochemical reactions in the presence of sunlight. Ozone concentrations are generally highest during the summer months when direct sunlight, light wind, and warm temperature conditions are favorable to the formation of this pollutant.

- **Volatile Organic Compounds (VOCs).** VOCs are compounds comprised primarily of atoms of hydrogen and carbon. Internal combustion associated with motor vehicle usage is the major source of hydrocarbons. Adverse effects on human health are not caused directly by VOCs, but rather by reactions of VOCs to form secondary air pollutants, including ozone. VOCs are also referred to as reactive organic compounds (ROCs) or reactive organic gases (ROGs). VOCs themselves are not "criteria" pollutants; however, they contribute to formation of O_3.

- **Nitrogen Dioxide (NO_2).** A reddish-brown, highly reactive gas that is formed in the ambient air through the oxidation of nitric oxide (NO). NO_2 is also a byproduct of fuel combustion. The principle form of NO_2 produced by combustion is NO, but NO reacts quickly to form NO_2, creating the mixture of NO and NO_2 referred to as oxides of nitrogen (NO_X). NO_2 acts as an acute irritant and, in equal concentrations, is more injurious than NO. At atmospheric concentrations, however, NO_X is only potentially irritating. NO_2 absorbs blue light, the result of which is a brownish-red cast to the atmosphere and reduced visibility.

- **Carbon Monoxide (CO).** CO is a colorless, odorless gas produced by the incomplete combustion of fuels. CO concentrations tend to be the highest during the winter morning, with little to no wind, when surface-based inversions trap the pollutant at ground levels. Because CO is emitted directly from internal combustion engines, unlike ozone, and motor vehicles operating at slow speeds are the primary source of CO in the basin, the highest ambient CO concentrations are generally found near congested transportation corridors and intersections.

- **Sulfur dioxide (SO_2).** SO_2 is a colorless, extremely irritating gas or liquid. It enters the atmosphere as a pollutant mainly as a result of burning high-sulfur-content fuel oils and coal and from chemical processes occurring at chemical plants and refineries. When sulfur dioxide oxidizes in the atmosphere, it forms sulfates (SO_4).

- **Respirable Particulate Matter (PM_{10}).** PM_{10} consists of extremely small, suspended particles or droplets 10 microns or smaller in diameter. Some sources of PM_{10}, like pollen and windstorms, are naturally occurring. However, in populated areas, most PM_{10} is caused by road dust, diesel soot, combustion products, abrasion of tires and brakes, and construction activities.

- **Fine Particulate Matter ($PM_{2.5}$).** $PM_{2.5}$ refers to particulate matter that is 2.5 micrometers or smaller in size. The sources of $PM_{2.5}$ include fuel combustion from automobiles, power plants, wood burning, industrial processes, and diesel-powered vehicles such as buses and trucks. These fine particles are also formed in the atmosphere when gases such as sulfur dioxide, NO_x, and VOCs are transformed in the air by chemical reactions.

- **Lead (Pb).** Pb occurs in the atmosphere as particulate matter. The combustion of leaded gasoline is the primary source of airborne lead in the basin. The use of leaded gasoline is no longer permitted for on-road motor vehicles, so most such combustion emissions are associated with off-road vehicles such as racecars that use leaded gasoline. Other sources of Pb include the manufacturing and recycling of batteries, paint, ink, ceramics, ammunition, and secondary lead smelters.

The NAAQS and CAAQS for each of the criteria pollutants and their effects on health are summarized in **Table 4.2-1**, **Ambient Air Quality Standards**. **Table 4.2-1** also sets forth the state ambient air quality standards and health effects applicable to sulfates, visibility reducing particles, hydrogen sulfide and

vinyl chloride, even though such pollutants are generally not applicable to the proposed uses on the Project site.

Table 4.2-1
Ambient Air Quality Standards

Air Pollutant	Concentration/Averaging Time: State Standard	Concentration/Averaging Time: Federal Primary Standard	Most Relevant Health Effects
Ozone	0.070 ppm, 8-hr avg. 0.09 ppm, 1-hr. avg.	0.075 ppm, 8-hr avg. (3-year average of annual 4th-highest daily maximum)[1]	(a) Pulmonary function decrements and localized lung edema in humans and animals; (b) Risk to public health implied by alterations in pulmonary morphology and host defense in animals; (c) Increased mortality risk; (d) Risk to public health implied by altered connective tissue metabolism and altered pulmonary morphology in animals after long-term exposures and pulmonary function decrements in chronically exposed humans; (e) Vegetation damage; and (f) Property damage
Carbon Monoxide	9.0 ppm, 8-hr avg. 20 ppm, 1-hr avg.	9 ppm, 8-hr avg. 35 ppm, 1-hr avg.	(a) Aggravation of angina pectoris and other aspects of coronary heart disease; (b) Decreased exercise tolerance in persons with peripheral vascular disease and lung disease; (c) Impairment of central nervous system functions; and (d) Possible increased risk to fetuses
Nitrogen Dioxide	0.18 ppm, 1-hr avg. 0.030 ppm, annual arithmetic mean	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.	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) Exacerbation of symptoms in sensitive patients with respiratory or cardiovascular disease; (b) Declines in pulmonary function growth in children; and (c) Increased risk of premature death from heart or lung diseases in the elderly

Air Pollutant	Concentration/Averaging Time		Most Relevant Health Effects
	State Standard	Federal Primary Standard	
Fine Particulate Matter ($PM_{2.5}$)	12 μg/m³, annual arithmetic mean	15 μg/m³, annual arithmetic mean (3-year average) 35 μg/m³, 24-hr avg. (3-year average of 98th percentile)	(a) Exacerbation of symptoms in sensitive patients with respiratory or cardiovascular disease; (b) Declines in pulmonary function growth in children; and (c) Increased risk of premature death from heart or lung diseases in the elderly
Sulfates	25 μg/m³, 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[2]	1.5 μg/m³, 30-day avg.	1.5 μg/m³, calendar quarterly average	(a) Increased body burden; and (b) Impairment of blood formation and nerve conduction
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

μg/m³ = microgram per cubic meter.
ppm = parts per million by volume.
Source: South Coast Air Quality Management District, Final Program Environmental Impact Report for the 2007 Air Quality Management Plan*, (2007) Table 3.1-1, p. 3.1-3.*

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

[2] *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.*

Local Air Quality

The Project site is located in the City of Glendale. State Route (SR) 134, Interstate 5, Glendale Freeway (SR-2), surface arterials, residential, and commercial uses characterize the surrounding area. Sources of emissions in the area include stationary activities, such as space heating, cooking, water heating, and mobile activities—primarily automotive traffic and aircraft operations.

The Project site is located in Source Receptor Area (SRA) 7, East San Fernando Valley. As shown in **Table 4.2-2, Ambient Pollutant Concentrations registered in SRA 7**, air quality in SRA 7 indicates the various monitored emission levels in the vicinity of the Project site. The ambient air quality standards for

carbon monoxide and sulfur dioxide have not been exceeded during the period shown. Motor vehicles are the primary sources 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."

Lead and sulfates are not monitored in SRA 7, but the standard for these pollutants has not been exceeded in the basin since 1982 and 2001, respectively. Hydrogen sulfide, vinyl chloride, and visibility reducing particles were not monitored by CARB or the SCAQMD in Los Angeles County during the period of 2004 to 2008.

Table 4.2-2
Ambient Pollutant Concentrations registered in SRA 7

Pollutant	Standards[1, 2]	Year				
		2004	2005	2006	2007	2008
OZONE (O_3)						
Maximum 1-hour concentration monitored (ppm)		0.137	0.142	0.17	0.116	0.133
Maximum 8-hour concentration monitored (ppm)		0.109	0.108	0.128	0.096	0.109
Number of days exceeding state 1-hour standard	0.09 ppm	27	13	25	13	20
Number of days exceeding state 8-hour standard	0.070 ppm	37	12	23	19	35
Number of days exceeding federal 8-hour standard[3]	0.075 ppm	7	2	12	6	8
CARBON MONOXIDE (CO)						
Maximum 1-hour concentration monitored (ppm)		5	4	4	4	3
Maximum 8-hour concentration monitored (ppm)		3.7	3.4	3.5	2.8	2.6
Number of days exceeding state 8-hour standard	9.0 ppm	0	0	0	0	0
Number of days exceeding federal 8-hour standard	9.0 ppm	0	0	0	0	0
NITROGEN DIOXIDE (NO_2)						
Maximum 1-hour concentration monitored (ppm)		0.12	0.09	0.10	0.09	0.09
Annual average concentration monitored (ppm)		0.033	0.029	0.027	0.029	0.029
Number of days exceeding state 1-hour standard[4]	0.18 ppm	0	0	0	0	0
RESPIRABLE PARTICULATE MATTER (PM_{10})[5]						
Maximum 24-hour concentration monitored ($\mu g/m^3$)		74	92	71	109	66
Annual average concentration monitored ($\mu g/m^3$)		37.5	34.3	35.6	40.0	35.6
Number of samples exceeding state standard	50 $\mu g/m^3$	7	5	10	11	7
Number of samples exceeding federal standard	150 $\mu g/m^3$	0	0	0	0	0
FINE PARTICULATE MATTER ($PM_{2.5}$)[6]						
Maximum 24-hour concentration monitored ($\mu g/m^3$)		60.1	63.2	50.7	56.5	57.5
Annual average concentration monitored ($\mu g/m^3$)		19.2	17.9	16.6	16.8	14.1
Number of samples exceeding federal standard	35 $\mu g/m^3$	0	0	0 (6)	9	2

Pollutant	Standards[1, 2]	Year				
		2004	2005	2006	2007	2008
SULFUR DIOXIODE (SO_2)						
Maximum 1-hour concentration monitored (ppm)		0.02	0.01	0.01	0.01	0.01
Maximum 24-hour concentration monitored (ppm)		0.010	0.006	0.004	0.003	0.003
No. of samples exceeding 24-hour state standard	0.04 ppm	0	0	0	0	0
No. of samples exceeding federal 24-hour standard	0.14 ppm	0	0	0	0	0

NA = not available

Source: South Coast Air Quality Management District, "Historical Data by Year," http://www.aqmd.gov/smog/historicaldata.htm. 2008.

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

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

3 *The 8-hour federal O_3 standard was revised to 0.075 ppm in March 2008. The statistics shown are based on the previous standard of 0.08 ppm.*

4 *The NO_2 state standard was amended on February 22, 2007, to lower the 1-hour state standard from 0.25 ppm to 0.18 ppm and to establish a new annual state standard of 0.030 ppm. These changes became effective March 20, 2008. Statistics shown are based on the standards in effect at the time.*

5 *PM_{10} samples were collected every 6 days in SRA 7.*

6 *$PM_{2.5}$ samples were collected daily in SRA 7. The federal standard for $PM_{2.5}$ was changed to 35 µg/m³, which became effective on December 17, 2006. Statistics shown are based on the 65 µg/m³ standard for years 2004–2006. The statistic shown in parenthesis ( ) for year 2006 is based on the 35 µg/m³ standard.*

Global Climate Change

Global Climate Change Background

Global climate change refers to any significant change in climate measurements, such as temperature, precipitation, or wind, lasting for an extended period (i.e., decades or longer).[4] 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 greenhouse gases (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).

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 threefold process as follows: (1) short-wave

4 U.S. Environmental Protection Agency, "Glossary of Climate Change Terms," http://www.epa.gov /climatechange/glossary.html#Climate_change. 2008.

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

radiation in the form of visible light emitted by the Sun is absorbed by the Earth as heat; (2) long-wave radiation re-emitted by the Earth; and (3) GHGs in the atmosphere absorbing or trapping the long-wave radiation and re-emitting it back towards the Earth and into space. This third process is the focus of current climate change actions.

While water vapor and carbon dioxide (CO_2) are the most abundant GHG, other trace GHGs have a greater ability to absorb and re-radiate long-wave radiation. 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-emit long-wave radiation over a specific period. The GWP of a gas is determined using CO_2 as the reference gas with a GWP of 1 over 100 years. For example, a gas with a GWP of 10 is 10 times more potent than CO_2 over 100 years. The use of GWP allows GHG emissions to be reported using CO_2 as a baseline. The sum of each GHG multiplied by its associated GWP is referred to as carbon dioxide equivalents (CO_2e). This essentially means that 1 metric ton of a GHG with a GWP of 10 has the same climate change impacts as 10 metric tons of CO_2.

The primary effect of global climate change has been a rise in the average global tropospheric temperature of 0.2° Celsius per decade, determined from meteorological measurements worldwide between 1990 and 2005.[6] Climate change modeling using 2000 emission rates shows that further warming is likely to occur, which would induce further changes in the global climate system during the current century.[7] Changes to the global climate system and ecosystems and to California could include:

- Declining sea ice and mountain snowpack levels, thereby increasing sea levels and 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;[8]
- Rising average global sea levels primarily due to thermal expansion and the melting of glaciers, ice caps, and the Greenland and Antarctic ice sheets;[9]
- Changing weather patterns, including changes to 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;[10]

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

7 Ibid.

8 Ibid.

9 Ibid.

10 Ibid.

- Declining Sierra snowpack levels, which account for approximately half of the surface water storage in California, by 70 percent to as much as 90 percent over the next 100 years;[11]
- Increasing the number of days conducive to ozone formation by 25 to 85 percent (depending on the future temperature scenario) in high ozone areas located in the Southern California area and the San Joaquin Valley by the end of the 21st century;[12]
- Increasing the potential for erosion of California's coastlines and sea water intrusion into the Sacramento and San Joaquin Delta and associated levee systems due to the rise in sea level;[13]
- Increasing pest infestation making California more susceptible to forest fires;[14] and
- Increasing the demand for electricity by 1 to 3 percent by 2020 due to rising temperatures resulting in hundreds of millions of dollars in extra expenditures.[15]

Greenhouse Gases

State law defines GHGs to include the following compounds:[16]

- **Carbon Dioxide (CO_2).** CO_2 is primarily generated from fossil fuel combustion from stationary and mobile sources. CO_2 is the most widely emitted GHG and is the reference gas (GWP of 1) for determining the GWPs of other GHGs.
- **Methane (CH_4).** Methane is emitted from biogenic sources (i.e., resulting from the activity of living organisms), incomplete combustion in forest fires, landfills, manure management, and leaks in natural gas pipelines. The GWP of methane is 21.
- **Nitrous Oxide (N_2O).** Is produced by human-related sources including 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 typically are used as refrigerants in both stationary refrigeration and mobile air conditioning. The use of HFCs for cooling and foam blowing is growing particularly as the continued phase-out of chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs) gains momentum. The GWPs of HFCs ranges from 140 for HFC-152a to 11,700 for HFC-23.

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11 California Environmental Protection Agency, Climate Action Team, *Climate Action Team Report to Governor Schwarzenegger and the Legislature*, (2006).

12 Ibid.

13 Ibid.

14 Ibid.

15 Ibid.

16 All Global Warming Potentials are given as 100-year values. Unless noted otherwise, all Global Warming Potentials 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 Intergovernmental Panel on Climate Change.* Cambridge (UK): Cambridge University Press, 1996.

- **Nitrogen Trifluoride (NF_3).** Nitrogen trifluoride is one of several gases used during the manufacture of liquid crystal flat-panel displays, thin-film solar cells, and microcircuits. The GWPs of NF_3 is 17,200.

- **Perfluorocarbons (PFCs).** Perfluorocarbons are compounds consisting of carbon and fluorine. They are primarily created as a byproduct of aluminum production and semiconductor manufacturing. Perfluorocarbons are potent GHGs with a Global Warming Potential 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).[17] The GWPs of PFCs range from 5,700 to 11,900.

- **Sulfur Hexafluoride (SF_6).** 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 has a GWP of 23,900. However, it is not prevalent in the atmosphere (4 parts per trillion [ppt] in 1990 versus 365 ppm of CO_2).[18]

The primary GHGs of concern relative to the Project are CO_2, CH_4, and N_2O. These three GHGs are generally emitted from combustion activities. The other GHGs listed above are related to specific industrial uses and not anticipated to be emitted in measurable or substantial quantities by the Project.

Contributions to Greenhouse Gas Emissions

Global

Man-made GHG emissions as of 2005, the latest year for which global data are available, totaled approximately 37,408 million metric tons of CO_2e ($MMTCO_2e$).[19] The GHG emissions presented in **Table 4.2-3, Top Five GHG Producer Countries and the European Union**, are based on 2005 global inventory data, which are the most currently available data. The top five countries and the European Union accounted for approximately 52 percent of the global GHG emissions in 2005.

United States

As noted in **Table 4.2-3**, the United States was the number two emitter of global GHG emissions as of 2005. The primary GHG emitted by human activities in the United States was CO_2, representing

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17 Energy Information Administration, "Other Gases: Hydrofluorocarbons, Perfluorocarbons, and Sulfur Hexafluoride," http://www.eia.doe.gov/oiaf/1605/gg00rpt/other_gases.html. n.d.

18 U.S. Environmental Protection Agency, "High GWP Gases and Climate Change," http://www epa gov /highgwp/scientific.html#sf6. n.d.

19 World Resources Institute, "Climate Analysis Indicators Tool (CAIT)," http://cait.wri.org/. 2009. Excludes emissions and removals from land use, land-use change and forestry (LULUCF).

approximately 84 percent of total GHG emissions.[20] Carbon dioxide from fossil fuel combustion, the largest source of U.S. GHG emissions, accounted for approximately 80 percent.[21]

Table 4.2-3
Top Five GHG Producer Countries and the European Union

Emitting Countries	GHG Emissions ($MMTCO_2e$)
China	7,250
United States	7,098
European Union (EU), 27 Member States	5,342
Russian Federation	1,992
India	1,863
Japan	1,383
Total	**24,928**

Source: World Resources Institute, "Climate Analysis Indicators Tool (CAIT)," http://cait.wri.org/. 2009. Excludes emissions and removals from land use, land-use change and forestry (LULUCF).

State of California

CARB compiles GHG inventories for the State of California. Based upon the 2006 GHG inventory data (i.e., the latest year for which data are available) for the 2000–2006 greenhouse gas emissions inventory, California emitted 484 $MMTCO_2e$ ***including*** emissions resulting from imported electrical power in 2006.[22] Based on the CARB inventory data and GHG inventories compiled by the World Resources Institute, California's total statewide GHG emissions rank second in the United States (Texas is number one) with emissions of 434 $MMTCO_2e$ ***excluding*** emissions related to imported power.[23]

A California Energy Commission emissions inventory report placed CO_2 produced by fossil fuel combustion in California as the largest source of California's GHG emissions in 2004, accounting for 80 percent of the total GHG emissions.[24] Emissions of CO_2 from other sources contributed 3.1 percent of the total GHG emissions; methane emissions 6.4 percent; nitrous oxide emissions 7.6 percent; and the

20 U.S. Environmental Protection Agency, "Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2006," http://www.epa.gov/climatechange/emissions/usinventoryreport.html. 2008.

21 Ibid.

22 California Air Resources Board, "California Greenhouse Gas 2000-2006 Inventory by Scoping Plan Category - Summary," http://www.arb.ca.gov/cc/inventory/data/data.htm. 2009.

23 Ibid.

24 California Energy Commission, "Revisions to the 1990-2004 Greenhouse Gas Emissions Inventory Report, Published in December 2006," http://www.energy.ca.gov/2006publications/CEC-600-2006-013/2007-01-23_GHG_INVENTORY_REVISIONS.PDF. 2007.

remaining 3.2 percent was composed of emissions of high-GWP gases.[25] These high-GWP gases are largely composed of refrigerants, with small contributions of SF_6 used in connection with insulating materials for 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. **Table 4.2-4, GHG Emissions in California**, provides a summary of GHG emissions reported in California in 1990 and 2006 separated by categories defined by the United Nations Intergovernmental Panel on Climate Change (IPCC).

Table 4.2-4
GHG Emissions in California

Source Category	1990 ($MMTCO_2e$)	Percent of Total	2006 ($MMTCO_2e$)	Percent of Total
ENERGY	**386.41**	**89.2%**	**419.32**	**86.7%**
Energy Industries	157.33	36.3%	160.82	33.2%
Manufacturing Industries & Construction	24.24	5.6%	19.03	3.9%
Transport	150.02	34.6%	184.78	38.2%
Other (Residential/Commercial/Institutional)	48.19	11.1%	48.36	10.0%
Non-Specified	1.38	0.3%	0.00	0.0%
Fugitive Emissions from Oil & Natural Gas	2.94	0.7%	3.25	0.7%
Fugitive Emissions from Other Energy Production	2.31	0.5%	2.03	0.4%
INDUSTRIAL PROCESSES & PRODUCT USE	**18.34**	**4.2%**	**30.22**	**6.2%**
Mineral Industry	4.85	1.1%	5.92	1.2%
Chemical Industry	2.34	0.5%	0.37	0.1%
Non-Energy Products from Fuels & Solvent Use	2.29	0.5%	1.85	0.4%
Electronics Industry	0.59	0.1%	0.77	0.2%
Substitutes for Ozone Depleting Substances	0.04	0.0%	13.38	2.8%
Other Product Manufacture and Use	3.18	0.7%	1.67	0.3%
Other	5.05	1.2%	6.25	1.3%
AGRICULTURE, FORESTRY, & OTHER LAND USE	**19.11**	**4.4%**	**25.10**	**5.2%**
Livestock	11.67	2.7%	15.68	3.2%
Land	0.19	0.0%	0.19	0.0%
Aggregate Sources & Non-CO_2 Sources on Land	7.26	1.7%	9.24	1.9%
WASTE	**9.42**	**2.2%**	**9.23**	**1.9%**
Solid Waste Disposal	6.26	1.4%	6.31	1.3%
Wastewater Treatment & Discharge	3.17	0.7%	2.92	0.6%

25 Ibid.

Source Category	1990 ($MMTCO_2e$)	Percent of Total	2006 ($MMTCO_2e$)	Percent of Total
EMISSIONS SUMMARY				
Gross California Emissions	433.29		483.87	
Sinks from Forests and Rangelands	-6.69		-4.07	
Net California Emissions	426.60		479.80	

Sources:

[1] *California Air Resources Board, "California Greenhouse Gas 1990-2004 Inventory by IPCC Category - Summary," http://www.arb.ca.gov/cc/inventory/archive/archive.htm. 2007.*

[2] *California Air Resources Board, "California Greenhouse Gas 2000-2006 Inventory by IPCC Category - Summary," http://www.arb.ca.gov/cc/inventory/data/data.htm. 2009.*

Between 1990 and 2006, the population of California grew by approximately 7.3 million (from 29.8 to 37.1 million).[26] This represents an increase of approximately 24.5 percent from 1990 population levels. In addition, the California economy, measured as gross state product, grew from $788 billon in 1990 to $1.7 trillion in 2006 representing an increase of approximately 116 percent (over twice the 1990 gross state product).[27] Despite the population and economic growth, California's net GHG emissions only grew by approximately 12 percent. The California Energy Commission attributes the slow rate of growth to the success of California's renewable energy programs and its commitment to clean air and clean energy.[28]

Global Ambient CO_2 Concentrations

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 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 4.2-5, Comparison of Global Pre-Industrial and Current GHG Concentrations**).

26 U.S. Census Bureau, "Data Finders," http://www.census.gov/. 2009; California Department of Finance, "E-5 City/County Population and Housing Estimates, 2008, Revised 2001–2007, with 2000 Benchmark," http://www.dof.ca.gov/research/demographic/reports/estimates/e-5_2001-06/. 2008.

27 California Department of Finance, "Financial & Economic Data: Gross Domestic Product, California," http://www.dof.ca.gov/HTML/FS_DATA/LatestEconData/FS_Misc.htm. 2009. Amounts are based on current dollars as of the data of the report (June 2, 2009).

28 California Energy Commission, *Inventory of California Greenhouse Gas Emissions and Sinks 1990 to 2004*, (2006).

29 Ibid.

Table 4.2-5
Comparison of Global Pre-Industrial and Current GHG Concentrations

Greenhouse Gas	Early Industrial Period Concentrations (ppm)	Natural Range for Last 650,000 Years (ppm)	2005 Concentrations (ppm)
Carbon Monoxide (CO)	280	180 to 300	379
Methane (CH_4)	715	320 to 790	1,774
Nitrous Oxide (N_2O)	270	NA	319

Source: Intergovernmental Panel on Climate Change, Climate Change 2007: The Physical Science Basis, Summary for Policymakers, *(2007).*

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 cardiorespiratory diseases. Any facilities that house these sensitive receptors are considered sensitive land uses.

The SCAQMD *Final Localized Significance Threshold Methodology*[30] (*LST Methodology*) defines sensitive receptors as persons who could potentially remain at a location for a specific length of time (1 hour, 8 hours, or 24 hours) depending on the pollutant being analyzed. The SCAQMD considers residences, hospitals, and convalescent facilities as sensitive receptors. Commercial and industrial facilities and other land uses may be considered sensitive receptors if it is possible that an individual could remain in a particular location for the aforementioned lengths of time.

Land uses around the Project site include commercial and retail uses to the north, south and west, a residential community to the southwest, and the Glendale Memorial Hospital to the east of the Project site.

REGULATORY FRAMEWORK

Air quality within the basin is addressed through the efforts of various federal, state, regional and local government agencies. These agencies work jointly, as well as individually, to improve air quality through legislation, regulations, planning, policymaking, education and a variety of programs. The agencies

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

primarily responsible for improving the air quality within the basin are discussed below along with their individual responsibilities.

United States Environmental Protection Agency

The U.S. EPA is responsible for enforcing the federal Clean Air Act (CAA) and the NAAQS. 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 federal ambient air quality standards are listed in **Table 4.2-1**. As indicated, the averaging times for the various pollutants range from 1 hour to annual. The standards are reported as a concentration, in ppm by volume, or as a weighted mass of material per a volume of air, in micrograms of pollutant per cubic meter of air ($\mu g/m^3$).

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 hazardous air pollutants (HAPs). 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 air basin is then required to submit a State Implementation Plan (SIP) that describes how the state will achieve the federal standards by specified dates. The stringency of emission control measures in a given SIP depends on the severity of the air quality within specific air basin. The status of the basin with respect to NAAQS attainment is summarized in **Table 4.2-6**, **National Ambient Air Quality Standards and Status – South Coast Air Basin (Los Angeles County)**.

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, NO_X, 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 CAA Amendments listed 189 HAPs that are carcinogenic, mutagenic, and/or reproductive toxins to be reduced. Title III of the 1990 federal CAA Amendments amended Section 112 of the CAA to replace the former program with an entirely new technology-based program. This program involves identifying all major sources (greater than 10 tons/year of a single HAP or 25 tons/year of combined HAPs) and area sources (i.e., non-major sources) in order to implement Maximum Achievable Control Technology (MACT) that will reduce health impacts.

Table 4.2-6
National Ambient Air Quality Standards and Status
South Coast Air Basin (Los Angeles County)

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[1]	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: U.S. Environmental Protection Agency, "Region 9: Air Programs, Air Quality Maps," http://www.epa.gov/region9/air/maps/maps_top.html. 2008.

[1] *The U.S. EPA has promulgated a new 1-hour NAAQS for NO_2. The new 1-hour standard is 100 parts per billion (188 micrograms per cubic meter) and goes into effect on April 12, 2010. The U.S. EPA will make nonattainement area designations by 2012.*

** Nonattainment/Severe 17: When the U.S. EPA promulgated the 8-hour ozone standard in 2004, it classified the South Coast Air Basin as Severe-17, which means it has 17 years to reach attainment of the standard (by 2021).*

*** A pollutant is designated unclassified if the data are incomplete and do not support a designation of attainment or nonattainment.*

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

California Air Resources Board

CARB, a branch of the California Environmental Protection Agency (Cal/EPA), oversees air quality planning and control throughout California. It is primarily responsible for ensuring 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 has established emission 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 CAA and also include sulfates, visibility reducing particles, hydrogen sulfide and vinyl chloride. The state standards are more stringent than the federal standards and, in the case of PM_{10} and SO_2, far more stringent.

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" for the state standards. In addition, Health and Safety Code Section 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 10 criteria pollutants: O_3, CO, NO_2, SO_2, PM_{10}, $PM_{2.5}$, sulfates, lead, hydrogen sulfide and visibility-reducing particles.[31] CARB will designate an area as nonattainment for a pollutant if monitoring data shows that a CAAQS for a particular pollutant was violated at least once during the previous three years. The status of the basin with respect to attainment with the CAAQS is summarized in **Table 4.2-7, California Ambient Air Quality Standards and Status – South Coast Air Basin (Los Angeles County)**, below.

South Coast Air Quality Management District

The management of air quality in the South Coast Air Basin is the responsibility of the SCAQMD. This responsibility was given to SCAQMD by the state legislature's adoption of the 1977 Lewis-Presley Air Quality Management Act, which merged four county air pollution control bodies into one regional district. Under the Lewis-Presley Air Quality Act, the SCAQMD is responsible for bringing air quality in the areas under its jurisdiction into conformity with federal and state air quality standards. Specifically, the SCAQMD is responsible for monitoring ambient air pollutant levels throughout the Basin and for developing and implementing attainment strategies to ensure that future emissions will be within federal and state standards.

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31 California Air Resources Board, "Area Designations (Activities and Maps)," http://www.arb.ca.gov/desig/desig.htm. 2007. According to California Health and Safety Code, Section 39608, "state board, in consultation with the districts, shall identify, pursuant to subdivision (e) of Section 39607, and classify each air basin which is in attainment and each air basin which is in nonattainment for any state ambient air quality standard." Section 39607(e) states that the State shall "establish and periodically review criteria for designating an air basin attainment or nonattainment for any state ambient air quality standard set forth in Section 70200 of Title 17 of the California Code of Regulations. California Code of Regulations, Title 17, Section 70200 does not include vinyl chloride; therefore, CARB does not make area designations for vinyl chloride.

Table 4.2-7
California Ambient Air Quality Standards and Status
South Coast Air Basin (Los Angeles County)

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," http://www.arb.ca.gov/desig/adm/adm.htm. 2007.

[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.*

An air basin is a land area with similar meteorological and geographic conditions throughout. To the extent possible, air basins include both the air pollutant source and immediate downwind receptor areas. For example, air quality in the non-desert portions of Riverside and San Bernardino Counties are directly influenced by pollution generated in the more populous Los Angeles and Orange Counties; therefore those areas are included as part of the South Coast Air Basin.

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

SCAQMD Air Quality Analysis Guidance Handbook

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.[32] The SCAQMD is in the process of developing an *Air Quality Analysis Guidance Handbook* to replace the *CEQA Air Quality Handbook*.[33] The documents describe 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*, and is in the process of developing a replacement document, it does not, nor does it intend to, supersede a local jurisdiction's CEQA procedures.[34]

While the *Air Quality Analysis Guidance Handbook* is being developed, supplemental information has been adopted by the SCAQMD. These include revisions to the air quality significance thresholds and a new procedure referred to as "localized significance thresholds," which has been added as a significance threshold under the *Final Localized Significance Threshold Methodology*.[35] The SCAQMD has recommended that lead agencies not use the screening tables in the *CEQA Air Quality Handbook's* Chapter 6 because the tables were derived using an obsolete version of CARB's mobile source emission factor inventory and are also based on outdated trip generation rates from a prior edition of the Institute of Transportation Engineer's Trip Generation Handbook.[36] The SCAQMD has also recommended that lead agencies not use the on-road mobile source emission factors in Table A9-5-J1 through A9-5-L as they are obsolete, and instead recommends using on-road mobile source emission factors approved by the CARB.[37] The outdated and obsolete information were not used in this analysis. The applicable portions of the *CEQA Air Quality Handbook*, the *Air Quality Analysis Guidance Handbook* supplemental information, and other revised methodologies were used in preparing the air quality analysis in this section.

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

33 Ibid.

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

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

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

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

SCAQMD Air Quality Management Plan

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

The SCAQMD is the agency responsible for preparing the AQMP for the basin. Since 1979, a number of AQMPs have been prepared. The SCAQMD adopted the currently applicable Final 2007 Air Quality Management Plan (2007 AQMP) on June 1, 2007. CARB approved the 2007 AQMP as the comprehensive State Implementation Plan component for the basin on September 27, 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 of ozone for the Basin, which would extend the attainment date from 2021 to 2024 and allow for the attainment demonstration to rely on emission reductions from measures that anticipate the development of new technologies or improvement of existing control technologies.

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

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, which limit the emissions that can be generated by various uses/activities and that identify specific pollution reduction measures, which must be implemented in association with various uses and activities. These rules not only regulate the emissions of the federal and state criteria pollutants but also toxic air contaminants (TACs) and acutely hazardous materials. The rules are also subject to ongoing refinement by SCAQMD.

Among the SCAQMD rules applicable to the Project are Rule 403 (Fugitive Dust), Rule 1113 (Architectural Coatings), and Rule 1403 (Asbestos Emissions from Demolition/Renovation Activities). Rule 403 requires the use of stringent best available control measures to minimize PM_{10} emissions during grading and construction activities. Rule 1113 will require reductions in the VOC content of coatings, with a substantial reduction in the VOC content limit for flat coatings in July 2008. Compliance with SCAQMD Rule 1403 requires that the owner or operator of any demolition or renovation activity to have an asbestos survey performed prior to demolition and provide notification to the SCAQMD prior to commencing demolition activities. Additional details regarding these rules and other potentially applicable rules are presented below.

- **Rule 403 (Fugitive Dust)** – This rule requires fugitive dust sources to implement 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 NO_X emission limits for natural gas-fired water heaters with heat input rates less than 75,000 Btu per hour. It applies to manufacturers, distributors, retailers, and installers of natural gas-fired water heaters. In lieu of meeting these NO_X limits, this rule allows emission mitigation fees to be collected from water heater manufacturers to fund stationary and mobile source emission reduction projects targeted at offsetting NO_X emissions from water heaters that do not meet Rule 1121 emission standards.

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

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

- **Rule 1403 (Asbestos Emissions from Demolition/Renovation Activities)** – This rule requires owners and operators of any demolition or renovation activity and the associated disturbance of asbestos-containing materials, 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 asbestos-containing materials.

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 AQMPs. The Project would be subject to SCAQMD rules and regulations to reduce specific emissions and to mitigate potential air quality impacts.

Local Governments

Local governments have the authority and responsibility to reduce air pollution through their police power and land use decision-making authority. Specifically, local governments are responsible for the mitigation of emissions resulting from land use decisions and for the implementation of transportation control measures as outlined in the AQMP.[38] The AQMP assigns local governments certain responsibilities to assist the basin in meeting air quality goals and policies. In general, the first step towards assigning a local government's responsibility is accomplished by identifying the air quality goals, policies and implementation measures in its general plan, such as the Air Quality section in the City of Glendale General Plan. Through capital improvement programs, local governments can fund infrastructure that contributes to improved air quality, by requiring improvements such as bus turnouts, energy-efficient streetlights, and synchronized traffic signals.[39] In accordance with the CEQA requirements and the CEQA review process, local governments assess air quality impacts, require mitigation of potential air quality impacts by conditioning discretionary permits, and monitor and enforce implementation of such mitigation.[40]

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

39 Ibid.

40 Ibid.

Southern California Association of Governments

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

Although SCAG is not an air quality management agency, it is responsible for several air quality planning issues. Specifically, as the designated Metropolitan Planning Organization for the Southern California region, it is responsible, pursuant to Section 176(c) of the 1990 amendments to the Clean Air Act, for providing current population, employment, travel, and congestion projections for regional air quality planning efforts. With respect to air quality, SCAG has prepared the *2004 Regional Transportation Plan*[41] and the *2006 Regional Transportation Improvement Program*[42] for the SCAG region, which form the basis for the transportation components of the AQMP and are utilized in the preparation of air quality forecasts and the consistency analysis that is included in the AQMP.

Greenhouse Gas Regulatory Programs

Federal Activities

In *Massachusetts vs. EPA*, the Supreme Court held that U.S. EPA has the statutory authority under Section 202 of the CAA to regulate GHGs from new motor vehicles. The court did not hold that the U.S. EPA was required to regulate GHG emissions; however, it indicated that the agency must decide whether GHGs from motor vehicles cause or contribute to air pollution that is reasonably anticipated to endanger public health or welfare. Upon the final decision, President Bush signed Executive Order 13432 on May 14, 2007, directing the U.S. EPA, along with the Departments of Transportation, Energy, and Agriculture, to initiate a regulatory process that responds to the Supreme Court's decision. The order requires the U.S. EPA to coordinate closely with other federal agencies and to consider the president's Twenty-in-Ten plan in this process, which would establish a new alternative fuel standard that would require the use of 35 billion gallons of alternative and renewable fuels by 2017. The U.S. EPA will be working closely with the Department of Transportation in developing new automotive efficiency standards.

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

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

In December 2007, President Bush signed the Energy Independence and Security Act of 2007, which sets a mandatory Renewable Fuel Standard requiring fuel producers to use at least 36 billion gallons of biofuel in 2022 and sets a national fuel economy standard of 35 miles per gallon (mpg) by 2020. The Act also contains provisions for energy efficiency in lighting and appliances and for the implementation of green building technologies in federal buildings. The Act is positioned as a response to President Bush's Twenty-in-Ten plan.

On July 11, 2008, the U.S. EPA issued an Advance Notice of Proposed Rulemaking on regulating GHGs under the Clean Air Act. The Advance Notice of Proposed Rulemaking reviews the various Clean Air Act provisions that may be applicable to the regulation of GHGs and presents potential regulatory approaches and technologies for reducing GHG emissions. In the Advance Notice of Proposed Rulemaking, the U.S. EPA seeks further public comment on the regulation of GHG emissions under the Clean Air Act.[43]

The U.S. EPA proposed a mandatory GHG reporting rule on March 10, 2009, which was adopted on September 22, 2008. The rule would require suppliers of fossil fuels or industrial greenhouse gases, manufacturers of vehicles and engines, and facilities that emit 25,000 metric tons or more per year of GHG emissions submit annual reports to the U.S. EPA beginning in 2011 (covering the 2010 calendar year emission). Vehicle and engine manufacturers would begin reporting for model year 2011. Approximately 10,000 facilities nationwide are subject to the reporting requirements, accounting for 85 percent of U.S. GHG emissions

On May 19, 2009, the Obama Administration announced a new national policy intended to reduce fuel consumption and GHG emissions. The proposed standards cover vehicle model years 2012–2016 and will require an average fuel economy standard of 35.5 mpg in 2016 (39 mpg for cars, 30 mpg for trucks), or approximately 250 grams of CO_2 per mile. This policy is in contrast to the Corporate Average Fuel Economy (CAFE) standards established under 2007 legislation, which specified a minimum of 35 mpg by 2020. Both the U.S. EPA and the National Highway Traffic Safety Administration (NHTSA) issued a Notice of Upcoming Joint Rulemaking to Establish Vehicle GHG Emissions and CAFE Standards the same day as the announcement in order to establish a consistent national policy pursuant to the separate statutory frameworks under which U.S. EPA and Department of Transportation (DOT) operate (NHTSA is a division of DOT).

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43 U.S. Environmental Protection Agency, "Advance Notice of Proposed Rulemaking: Regulating Greenhouse Gas Emissions under the Clean Air Act," http://www.epa.gov/climatechange/anpr.html. 2008.

California Activities

Title 24 Building Standards Code

The California Energy Commission first adopted Energy Efficiency Standards for Residential and Nonresidential Buildings (California Code of Regulations, Title 24, Part 6) in 1978 in response to a legislative mandate to reduce energy consumption in the state. Although not originally intended to reduce GHG emissions, increased energy efficiency and reduced consumption of electricity, natural gas, and other fuels would result in fewer GHG emissions from residential and nonresidential buildings subject to the standard. The standards are updated periodically to allow for the consideration and inclusion of new energy efficiency technologies and methods. The latest revisions were adopted in 2008 and became effective on August 1, 2009.

Assembly Bill 1493

In response to the transportation sector's contribution of more than half of California's CO_2 emissions, Assembly Bill 1493 (AB 1493, Pavley) was enacted on July 22, 2002. AB 1493 requires CARB to set GHG emission standards for passenger vehicles, light-duty trucks, and other vehicles whose primary use is noncommercial personal transportation. CARB adopted the standards in September 2004. 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 a reduction of about 22 percent in greenhouse gas emissions compared to the emissions from the 2002 fleet, while the midterm (2013–2016) standards will result in a reduction of about 30 percent.

In December 2004, these regulations were challenged in federal court by the Alliance of Automobile Manufacturers, who claimed that the law regulated vehicle fuel economy, a duty assigned to the federal government. The U.S. Supreme Court's ruling in *Massachusetts v. EPA* has been interpreted as a likely vindication of State efforts to control GHG emissions. Thus, in December 2007, the U.S. District Court for the Eastern District dismissed the case against the AB 1493 regulations by the Alliance of Automobile Manufacturers.

However, before these regulations may go into effect, the U.S. EPA must grant California a waiver under the federal Clean Air Act, which ordinarily preempts state regulation of motor vehicle emission standards. On December 19, 2007, the U.S. EPA denied the waiver citing the need for a national approach to reducing greenhouse gas emissions, the lack of a "need to meet compelling and extraordinary conditions," and the benefits to be achieved through the Energy Independence and Security Act of

2007.[44] The California Attorney General subsequently filed suit in January 2008 to overturn the Administrator's decision. In 2009, the Obama Administration issued an executive order requiring the U.S. EPA to reconsider granting California the waiver. In light of the May 19, 2009 announcement by the Obama Administration establishing a target of 35.5 mpg by 2016, California—and states adopting California emissions standards—have agreed to defer to the proposed national standard through model year 2016 if granted a waiver by the U.S. EPA. The 2016 endpoint of the two standards is similar, although the national standard ramps up slightly more slowly than required under the California standard. The Pavley standards require additional reductions in CO_2 emissions beyond 2016 (referred to as Phase II standards). On June 30, 2009, the U.S. EPA formally approved California's waiver request. Nonetheless, California and other states adopting the California standards will not toughen standards beyond the proposed national standard until at least the 2017 model year.

Senate Bill 1078 and 107

In 2002, Senate Bill 1078 (SB 1078, Sher) established California's Renewable Portfolio Standard which requires investor-owned utilities, such as Pacific Gas and Electric, Southern California Edison, and San Diego Gas and Electric, to increase energy production from renewable source 1 percent per year up to a minimum of 20 percent of total energy generation by 2017. SB 107 (Simitian), signed by the Governor on September 26, 2008, accelerated the Renewable Portfolio Standard by requiring investor-owned utilities to meet the 20 percent target by 2010.

Executive Order S-3-05 and the Climate Action Team

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, 1990 levels by 2020, and 80 percent below 1990 levels by 2050. The Secretary of Cal/EPA is required to coordinate efforts of various agencies in order to collectively and efficiently reduce GHGs. Some of the agency representatives involved in the GHG reduction plan include the Secretary of the Business, Transportation and Housing Agency, the Secretary of the Department of Food and Agriculture, the Secretary of the Resources Agency, the Chairperson of CARB, the Chairperson of the California Energy Commission (CEC), and the President of the Public Utilities Commission. Representatives from each of the aforementioned agencies comprise the Climate Action Team.

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44 Letter to Governor Arnold Schwarzenegger from U.S. EPA Administrator Stephen L. Johnson, December 19, 2007.

Climate Action Team

The Climate Action Team is responsible for implementing global warming emissions reduction programs. The Cal/EPA secretary is required to submit a biannual progress report from the Climate Action Team to the governor and state legislature disclosing the progress made toward GHG emission reduction targets and the impacts of global warming on California's water supply, public health, agriculture, the coastline, and forestry, and reporting possible mitigation and adaptation plans to combat these impacts. The Climate Action Team has fulfilled both of these report requirements through its March 2006 Climate Action Team Report to Governor Schwarzenegger and the legislature.[45]

Climate Action Team Report

The Final 2006 Climate Action Team Report identified key measures that will help ensure that California will meet the GHG reduction goals established under the Governor's Executive Order S-3-05 (1990 levels by 2020 and 80 percent below 1990 levels by 2050). These key measures include establishing a market-based carbon trading system, mandatory GHG reporting for large emitters, production of alternative transportation fuels, energy efficiency and renewable portfolio standards for utilities, emission reporting protocols for local governments, establishing a public goods charge for transportation that funds key strategies to reduce climate change emissions, and leveraging California's universities to train the next generation of workers needed to service new technologies.

Some strategies currently being implemented by state agencies include CARB introducing vehicle climate change standards and diesel anti-idling measures, the Energy Commission implementing building and appliance efficiency standards, and the Cal/EPA implementing their green building initiative. The Climate Action Team also recommends future emission reduction strategies, such as using only low-GWP refrigerants in new vehicles, developing ethanol as an alternative fuel, reforestation, solar power initiatives for homes and businesses, and investor-owned utility energy efficiency programs. According to the report, implementation of current and future emission reduction strategies have the potential to achieve the goals set forth in Executive Order S-3-05. The report also describes potential impacts, as previously listed. The 2008 report has been drafted and the final version is forthcoming. New information and details in the 2008 report includes: (1) development of new climate and sea-level projections using new information and tools that have become available in the last two years; and (2) evaluation of climate change within the context of broader social changes, such as land-use changes and demographic shifts.

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45 Cal/EPA, *Climate Action Team Report to Governor Schwarzenegger and the Legislature*, (2006).

Assembly Bill 32

In furtherance of the goals established in Executive Order S-3-05, the legislature enacted Assembly Bill 32 (AB 32, Nuñez and Pavley), 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. AB 32 requires the State to undertake several actions – the major requirements are discussed below:

CARB Early Action Measures

CARB is responsible for carrying out and developing the programs and requirements necessary to achieve the goals of AB 32 – the reduction of California's GHG emissions to 1990 levels by 2020. The first action under AB 32 resulted in CARB's adoption of a report listing three specific early action greenhouse gas emission reduction measures on June 21, 2007. On October 25, 2007, CARB approved an additional six early action GHG reduction measures under AB 32. CARB has adopted regulations for all early action measures, which are listed below.

- A low-carbon fuel standard to reduce the "carbon intensity" of California fuels;
- Reduction of refrigerant losses from motor vehicle air conditioning system maintenance and to restrict the sale of "do-it-yourself" automotive refrigerants; and
- Increased methane capture from landfills by requiring broader use of state-of-the-art methane capture technologies.
- Reduction of aerodynamic drag, and thereby fuel consumption, from existing trucks and trailers through retrofit technology;
- Reduction of auxiliary engine emissions of docked ships by requiring port electrification;
- Reduction of perfluorocarbons from the semiconductor industry;
- Reduction of propellants in consumer products (e.g., aerosols, tire inflators, and dust removal products);
- Require that all tune-up, smog check and oil change mechanics ensure proper tire inflation as part of overall service in order to maintain fuel efficiency; and
- Restriction on the use of sulfur hexafluoride (SF_6) from non-electricity sectors if viable alternatives are available.

State of California 1990 Greenhouse Gas Inventory

As required under AB 32, on December 6, 2007, CARB approved the 1990 greenhouse gas emissions inventory, thereby establishing the emissions limit for 2020. The 2020 emissions limit was set at 427 MMTCO_2e. The inventory revealed that in 1990, transportation, with 35 percent of the state's total emissions, was the largest single sector generating carbon dioxide; followed by industrial emissions, 24 percent; imported electricity, 14 percent; in-state electricity generation, 11 percent; residential use, 7 percent; agriculture, 5 percent; and commercial uses, 3 percent. AB 32 does not require individual sectors to meet their individual 1990 GHG emissions inventory; the total statewide emissions are required to meet the 1990 threshold by 2020.

CARB Mandatory Reporting Requirements

In addition to the 1990 emissions inventory, CARB also adopted regulations requiring mandatory reporting of GHG emissions for large facilities on December 6, 2007. The mandatory reporting regulations require annual reporting from the largest facilities in the state, which account for approximately 94 percent of greenhouse gas emissions from industrial and commercial stationary sources in California. About 800 separate sources fall under the new reporting rules, which includes electricity generating facilities, electricity retail providers and power marketers, oil refineries, hydrogen plants, cement plants, cogeneration facilities, and industrial sources that emit over 25,000 tons of carbon dioxide each year from on-site stationary combustion sources. Transportation sources, which account for 38 percent of California's total greenhouse gas emissions as of the 2006 GHG inventory conducted by CARB, are not covered by these regulations but will continue to be tracked through existing means. Affected facilities will begin tracking their emissions in 2008, to be reported beginning in 2009 with a phase-in process to allow facilities to develop reporting systems and train personnel in data collection. Emissions for 2008 may be based on best available emission data. Beginning in 2010, however, emissions reports will be more rigorous and will be subject to third-party verification. Verification will take place annually or every three years, depending on the type of facility.

AB 32 Climate Change Scoping Plan

As indicated above, AB 32 requires CARB to adopt a scoping plan indicating how reductions in significant GHG sources will be achieved through regulations, market mechanisms, and other actions. CARB released the *Climate Change Proposed Scoping Plan* in October 2008, which contains an outline of the proposed state strategies to achieve the 2020 greenhouse gas emission limits. The CARB Governing Board approved the *Climate Change Scoping Plan* on December 11, 2008. The *Climate Change Scoping Plan* indicated how emission reductions will be achieved from significant sources of GHGs via regulations,

market mechanism, and other actions. The *Climate Change Scoping Plan* identifies 18 recommended measures that state should implement to achieve AB 32. Throughout 2009 and 2010, CARB will draft rule language and conduct a series of public workshops and rulemakings based on the scoping plan recommendations.

Key elements of the Scoping Plan include the following recommendations:

- Expanding and strengthening existing energy efficiency programs as well as building and appliance standards
- Achieving a statewide renewables energy mix of 33 percent
- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system
- Establishing targets for transportation-related greenhouse gas emissions for regions throughout California and pursuing policies and incentives to achieve those targets
- Adopting and implementing measures pursuant to existing state laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard
- Creating targeted fees, including a public goods charge on water use, fees on high global warming potential gases, and a fee to fund the administrative costs of the state's long-term commitment to AB 32 implementation

Under the Scoping Plan, approximately 85 percent of the state's emissions are subject to a cap-and-trade program where covered sectors are placed under a declining emissions cap. The emissions cap incorporates a margin of safety whereby the 2020 emissions limit will still be achieved even in the event that uncapped sectors do not fully meet their anticipated emission reductions. Emissions reductions will be achieved through regulatory requirements and the option to reduce emissions further or purchase allowances to cover compliance obligations. It is expected that emission reduction from this cap-and-trade program will account for a large portion of the reductions required by AB 32. **Table 4.2-8, AB 32 Scoping Plan Measures**, lists CARB's recommendations for achieving greenhouse gas reductions under AB 32 along with a brief description of the reduction strategies.

Table 4.2-8
AB 32 Scoping Plan Measures

Scoping Plan Measure	Description
SPM-1: California Cap-and-Trade Program linked to Western Climate Initiative	Implement a broad-based cap-and-trade program that links with other Western Climate Initiative Partner programs to create a regional market system. Ensure California's program meets all applicable AB 32 requirements for market-based mechanisms. Capped sectors include transportation, electricity, natural gas, and industry. Projected 2020 business-as-usual emissions are estimated at 512 $MMTCO_2e$; preliminary 2020 emissions limit under cap-and-trade program are estimated at 365 $MMTCO_2e$ (29 percent reduction).
SPM-2: California Light-Duty Vehicle GHG Standards	Implement adopted Pavley standards and planned second phase of the program. AB 32 states that if the Pavley standards (AB 1493) do not remain in effect, CARB shall implement equivalent or greater alternative regulations to control mobile sources.
SPM-3: Energy Efficiency	Maximize energy efficiency building and appliance standards, and pursue additional efficiency efforts. The Scoping Plan considers green building standards as a framework to achieve reductions in other sectors, such as electricity.
SPM-4: Renewables Portfolio Standard	Achieve 33 percent Renewable Portfolio Standard by both investor-owned and publicly owned utilities.
SPM-5: Low Carbon Fuel Standard	CARB identified the Low Carbon Fuel Standard as a Discrete Early Action item and the final regulation was adopted on April 23, 2009. In January 2007, Governor Schwarzenegger issued Executive Order S-1-07, which called the reduction of the carbon intensity of California's transportation fuels by at least 10 percent by 2020.
SPM-6: Regional Transportation-Related Greenhouse Gas Targets	Develop regional greenhouse gas emissions reduction targets for passenger vehicles. SB 375 requires CARB to develop, in consultation with metropolitan planning organizations, passenger vehicle greenhouse gas emissions reduction targets for 2020 and 2035 by September 30, 2010. SB 375 requires metropolitan planning organizations to prepare a sustainable communities strategy to reach the regional target provided by CARB.
SPM-7: Vehicle Efficiency Measures	Implement light-duty vehicle efficiency measures. CARB is pursuing fuel-efficient tire standards and measures to ensure properly inflated tires during vehicle servicing.
SPM-8: Goods Movement	Implement adopted regulations for port drayage trucks and the use of shore power for ships at berth. Improve efficiency in goods movement operations.
SPM-9: Million Solar Roofs Program	Install 3,000 megawatts of solar-electric capacity under California's existing solar programs.
SPM-10: Heavy/Medium-Duty Vehicles	Adopt heavy- and medium-duty vehicle and engine measures. Measures targeting aerodynamic efficiency, vehicle hybridization, and engine efficiency are recommended.

Scoping Plan Measure	Description
SPM-11: Industrial Emissions	Require assessment of large industrial sources to determine whether individual sources within a facility can cost-effectively reduce greenhouse gas emissions and provide other pollution reduction co-benefits. Reduce greenhouse gas emissions from fugitive emissions from oil and gas extraction and gas transmission. Adopt and implement regulations to control fugitive methane emissions and reduce flaring at refineries.
SPM-12: High Speed Rail	Support implementation of a high-speed rail system. This measure supports implementation of plans to construct and operate a high-speed rail system between Northern and Southern California serving major metropolitan centers.
SPM-13: Green Building Strategy	Expand the use of green building practices to reduce the carbon footprint of California's new and existing inventory of buildings.
SPM-14: High Global Warming Potential Gases	Adopt measures to reduce high global warming potential gases. The Scoping Plan contains 6 measures to reduce high global warming potential gases from mobile sources, consumer products, stationary sources, and semiconductor manufacturing.
SPM-15: Recycling and Waste	Reduce methane emissions at landfills. Increase waste diversion, composting, and commercial recycling. Move toward zero-waste.
SPM-16: Sustainable Forests	Preserve forest sequestration and encourage the use of forest biomass for sustainable energy generation. The federal government and California's Board of Forestry and Fire Protection has the regulatory authority to implement the Forest Practice Act to provide for sustainable management practices. This measure is expected to play a greater role in the 2050 goals.
SPM-17: Water	Continue efficiency programs and use cleaner energy sources to move water. California will also establish a public goods charge for funding investments in water efficiency that will lead to as yet undetermined reductions in greenhouse gases.
SPM-18: Agriculture	In the near-term, encourage investment in manure digesters and at the five-year Scoping Plan update determine if the program should be made mandatory by 2020. Increase efficiency and encourage use of agricultural biomass for sustainable energy production. CARB has begun research on nitrogen fertilizers and will explore opportunities for emission reductions.

Source: California Air Resources Board, Climate Change Scoping Plan, (2008).

Senate Bill 1368

Two days after signing AB 32, Governor Schwarzenegger signed Senate Bill 1368 (SB 1368, Perata) into law. SB 1368 required the CEC and the California Public Utilities Commission (CPUC) to develop and adopt regulations for GHG emissions performance standards for the long-term procurement of electricity by local publicly owned utilities. The CEC adopted its standard on May 23, 2007 and the CPUC adopted

its standard on January 25, 2007. SB 1368 includes measures that protect energy customers from financial risks by allowing new capital investments in power plants with GHG emissions that are as low as or lower than new combined-cycle natural gas plants, requiring imported electricity from out-of-state to meet GHG performance standards in California, and requiring that the standards be developed and adopted in a public process.[46]

Executive Order S-1-07

On January 18, 2007, California set 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. CARB identified the Low Carbon Fuel Standard as an early action item under AB 32 and the final regulation was adopted on April 23, 2009.

Senate Bill 97

In August 2007 the legislature enacted Senate Bill 97 (SB 97, Dutton), which directs the Governor's Office of Planning and Research (OPR) to develop guidelines under CEQA for the mitigation of greenhouse gas emissions July 1, 2009. The Resources Agency is directed to adopt guidelines by January 1, 2010. A number of actions have taken place under SB 97, which are discussed below:

OPR Climate Change Technical Advisory

On June 19, 2008, OPR issued a technical advisory as interim guidance regarding the analysis of GHG emissions in CEQA documents.[47] The advisory indicated that a project's GHG emissions, including those associated with vehicular traffic, energy consumption, water usage, and construction activities, should be identified and estimated. The advisory further recommended that the lead agency determine significance of the impacts and impose all mitigation measures that are necessary to reduce GHG emissions to a less

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46 The adopted SB 1368 regulations are available on the California Energy Commission's website at: http://www.energy.ca.gov/emission_standards/regulations/index.html.

47 Governor's Office of Planning and Research, *Technical Advisory – CEQA and Climate Change: Addressing Climate Change through California Environmental Quality Act (CEQA) Review*, (2008).

then significant level. The advisory did not recommend a specific threshold of significance. Instead, OPR requested that CARB recommend a method for setting thresholds that lead agencies may adopt.[48]

CEQA Guideline Amendments

In its work to formulate CEQA Guideline Amendments for GHG emissions, OPR submitted the *Proposed Draft CEQA Guideline Amendments for Greenhouse Gas Emissions* to the Secretary for Natural Resources on April 13, 2009. The Natural Resources Agency conducted formal rulemaking procedures in 2009 and adopted the CEQA Guideline Amendments on December 30, 2009.

Senate Bill 375

The California Legislature passed Senate Bill 375 (SB 375, Steinberg) on September 1, 2008, which requires CARB to set regional GHG reduction targets after consultation with local governments. The target must then be incorporated within that region's Regional Transportation Plan (RTP), which is used for long-term transportation planning, in a Sustainable Communities Strategy. SB 375 also requires each region's Regional Housing Needs Assessment (RHNA) to be adjusted based on the Sustainable Communities Strategy in its RTP. Additionally, SB 375 will reform the environmental review process to create incentives to implement the strategy, especially transit priority projects. The Governor signed SB 375 into law on September 30, 2008. CARB is not expected to issue any SB 375 mandated regional GHG reduction targets until 2010. The Office of the Governor has released a Fact Sheet on SB 375 on its website.[49]

California Climate Action Registry

The California Climate Action Registry (CCAR) is a private non-profit organization formed by the State of California and serves as a voluntary GHG registry to protect and promote early actions to reduce GHG emissions by organizations. The CCAR was formally established by law through Senate Bill 1771 (SB 1771, Sher) and Senate Bill 527 (SB 527, Sher). The CCAR began with 23 Charter Members and currently has over 300 corporations, universities, cities and counties, government agencies and environment organizations voluntarily measuring, monitoring, and publicly reporting their GHG emissions using the CCAR protocols. The CCAR has published a General Reporting Protocol, as well as project- and industry-specific protocols for landfill activities, livestock activities, the cement sector, the

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48 Office of Planning and Research, *Proposed Draft CEQA Guideline Amendments for Greenhouse Gas Emissions*, (2009) 4.

49 The Fact Sheet may be viewed at the following website: http://gov.ca.gov/fact-sheet/10707/.

power/utility sector, and the forest sector. The protocols provide the principles, approach, methodology, and procedures required for participation in the CCAR.

Due to the growth of the California Climate Action Registry, it now operates under the Climate Action Reserve,[50] which is a national offsets program for the U.S. carbon market. As part of this transition, the California Climate Action Registry was instrumental in establishing The Climate Registry, with the mission of expanding the California Registry's emissions reporting work to include all of North America.[51] Emissions inventory reporting is being transitioned to The Climate Registry, and reports for the 2009 reporting year will be the last the California Registry will accept. However, even after that year, the California Registry will continue to represent its members' emissions reports to the State of California.

Attorney General: Addressing Global Warming Impacts Under CEQA

The California Attorney General's Office has published a document titled, *The California Environmental Quality Act: Addressing Global Warming Impacts at the Local Agency Level*.[52] The document acknowledges that lead agencies can play an important role in "moving the state away from 'business as usual' and toward a low-carbon future." The document is intended to provide information to lead agencies that may be helpful in carrying out their duties under CEQA with respect to greenhouse gases and climate change impacts. Provided in the document are measures that can be included as project design features, required changes to the project, or mitigation measures at the project level and at the general plan level. The measures are not intended to be exhaustive and may not be appropriate for every project or general plan. The Attorney General's Office affirms that "the decision of whether to approve a project—as proposed or with required changes or mitigation—is for the local agency, exercising its informed judgment in compliance with the law and balancing a variety of public objectives."

CARB Draft GHG Significance Thresholds

On October 24, 2008, CARB staff released a draft and preliminary proposal for determining whether the emissions related to proposed new projects are significant impacts under CEQA. While the proposal is focused on helping lead agencies determine under which conditions a project may be found exempt from the preparation of an EIR, the proposal also provides a guide for establishing significance thresholds for projects for which EIRs would be prepared regardless of the project's climate change impact. According

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50 Additional information about the Climate Action Reserve may be obtained at the following website: http://www.climateactionreserve.org/.

51 Additional information about The Climate Registry may be obtained at the following website: http://www.theclimateregistry.org/.

52 Department of Justice, "The California Environmental Quality Act – Addressing Global Warming Impacts at the Local Agency Level," http://ag.ca.gov/globalwarming/pdf/GW_mitigation_measures.pdf. 2008.

to this proposal, the threshold for determining whether a project's emissions are significant is not zero emissions, but must be a stringent performance-based threshold to meet the requirements of AB 32. If the project meets certain specific yet to be developed performance standards for several categories of emissions, including construction emissions, building energy use, water use, solid waste, and transportation, and the project emits no more than a to-be-determined amount of metric tons of carbon equivalents per year, the project's impact would not be significant. According to CARB, California Energy Commission Tier II building energy use standards are proposed to be used, which generally require a reduction in energy usage of 30 percent beyond Title 24 (2008) building code requirements. CARB has also proposed a 7,000 metric ton carbon dioxide equivalent ($MTCO_2e$) threshold for industrial projects, but has not yet proposed thresholds for residential and commercial projects. The annual threshold does not explicitly include emissions associated with construction- and transportation-related activities. At this time, CARB has postponed development of this threshold.

Local Activities

In April 1990, the SCAQMD adopted a "Policy on Global Warming and Stratospheric Ozone Depletion." The policy commits the SCAQMD to consider global warming impacts in rulemaking procedures and Air Quality Management Plans. In March 1992, the SCAQMD adopted amendments to the policy, which included the following directives:

- Phase out the use and corresponding emissions of CFCs, methyl chloroform (1,1,1-trichloroethane or TCA), carbon tetrachloride, and halons by December 1995;
- Phase out the large quantity use and corresponding emissions of hydrochlorofluorocarbons (HCFCs) by the year 2000;
- Develop recycling regulations for HCFCs (e.g., SCAQMD Rules 1411 and 1415);
- Develop an emissions inventory and control strategy for methyl bromide; and
- Support the adoption of a California GHG emission reduction goal.

In April 2008, the SCAQMD, in order to provide guidance to local lead agencies on determining the significance of GHG emissions identified in CEQA documents, convened a GHG CEQA Significance Threshold Working Group.[53] The goal of the working group is to develop and reach consensus on an acceptable CEQA significance threshold for GHG emissions that would be utilized on an interim basis until CARB (or some other state agency) develops statewide guidance on assessing the significance of GHG emissions under CEQA. The SCAQMD released, in October 2008, a *Draft Guidance Document –*

53 For more information see: http://www.aqmd.gov/ceqa/handbook/GHG/GHG.html.

Interim CEQA Greenhouse Gas (GHG) Significance Threshold that, among other things, recommended a screening level of 3,000 $MTCO_2e$ per year for mixed-use projects and 10,000 $MTCO_2e$ for industrial projects. In December 2008, the SCAQMD Governing Board adopted the threshold for industrial projects where the SCAQMD is the lead agency. The working group is continuing development of the thresholds.

ENVIRONMENTAL IMPACTS

Thresholds of Significance

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 *State CEQA Guidelines*. The impact analysis addresses whether the Project would:

- conflict with or obstruct the implementation of the applicable air quality plan?
- violate any air quality standard or contribute substantially to an existing or projected air quality violation?
- result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?
- expose sensitive receptors to substantial pollutant concentrations?
- create objectionable odors affecting a substantial number of people?

The *State 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. The potential air quality impacts of the Project are, therefore, evaluated according to thresholds developed by the SCAQMD in their *CEQA Air Quality Handbook*, *Air Quality Analysis Guidance Handbook*, and subsequent guidance, which are listed below. While the SCAQMD has established significance thresholds for lead, construction and operation of the Project will not exceed the established thresholds as previously discussed above. Furthermore, as discussed near the beginning of this section, the region is below the state and federal ambient air quality standards for lead. Therefore, lead emissions from the Project will not cause an air quality violation and will not be analyzed further.

Construction Emissions Thresholds

Impacts related to construction emissions associated with the Project would be considered significant when the Project exceeds the limits specified in **Table 4.2-9, SCAQMD Daily Construction Emission Thresholds**:

Table 4.2-9
SCAQMD Daily Construction Emission Thresholds

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

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

Operational Emissions Thresholds

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

Primary Thresholds

Impacts related to operational emissions associated with the Project would be considered significant when the Project's operational emissions exceed the limits specified in **Table 4.2-10, SCAQMD Daily Operation Emission Thresholds**. As previously discussed, this analysis relies on methodologies prescribed by the SCAQMD, including revisions and supplemental information that have been adopted since the *CEQA Air Quality Handbook*.

The SCAQMD established the operational emission thresholds, in part, based on Section 182(e) of the federal Clean Air Act that identifies 10 tons per year of VOCs and NO_X as the significance level for stationary sources of emissions in extreme nonattainment areas for O_3. As discussed earlier, VOC and NO_X undergo photochemical reactions in sunlight to form O_3, and, at the time these thresholds were established, the Basin was the only extreme nonattainment area for O_3 in the United States. This emission threshold has been converted to a pound per day threshold for the operational phase of a project. Thresholds for other emissions have been identified based on regulatory limits adopted by the SCAQMD.

Because the thresholds are converted from a Clean Air Act threshold, the SCAQMD has determined that these thresholds are based on scientific and factual data.[54] Therefore, the SCAQMD recommends that the following thresholds be used by lead agencies in making a determination of operation-related project significance:

Table 4.2-10
SCAQMD Daily Operation Emission Thresholds

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

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

Secondary Thresholds

Project impacts would be considered significant if operation of the project meets any of the SCAQMD secondary thresholds listed below:

- The project could interfere with the attainment of the federal or state ambient air quality standards by either violating or contributing to an existing or projected air quality violation;
- The project could result in population increases within an area, which would be in excess of that projected by SCAG in the AQMP, or increase the population in an area where SCAG has not projected that growth for the project's buildout year;
- The project could generate vehicle trips that cause a CO hotspot or project could be occupied by sensitive receptors that are exposed to a CO hotspot;
- The project will have the potential to create, or be subjected to, an objectionable odor that could impact sensitive receptors;
- The project will have hazardous materials on site and could result in an accidental release of toxic air emissions or acutely hazardous materials posing a threat to public health and safety;
- The project could emit a toxic air contaminant regulated by SCAQMD rules or that is on a federal or state air toxic list;
- The project could be occupied by sensitive receptors and be located within 0.25 mile of an existing facility that emits air toxics identified in SCAQMD Rule 1401; or
- The project could emit carcinogenic or toxic air contaminants that individually or cumulatively exceed the maximum individual cancer risk of 10 in 1 million.

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

Localized Significance Thresholds

In addition to the above listed emission-based thresholds, the SCAQMD also recommends the evaluation of localized air quality impacts to sensitive receptors in the immediate vicinity of the Project site as a result of construction activities. 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.[55] 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 significance threshold for $PM_{2.5}$ is intended to constrain emissions so as to aid in progress toward attainment of the ambient air quality standards.[56]

For project sites of 5 acres or less, the SCAQMD *Localized Significance Threshold Methodology* (LST Methodology) includes screening tables that can be used to determine the maximum allowable daily emissions that would satisfy the localized significance criteria (i.e., not cause an exceedance of the applicable concentration limits) without project-specific dispersion modeling. The allowable emission rates depend on (a) the SRA in which the project is located, (b) the size of the project site, and (c) the distance between the project site and the nearest sensitive receptor (e.g., residences, schools, hospitals).

The Project site is approximately 2.1 acres. The nearest sensitive receptors are a residential community approximately 100 meters (328 feet) to the southwest and the Glendale Memorial Hospital, approximately 270 meters (886 feet) to the east of the Project site across Central Avenue.[57] Therefore, the distance used to determine the mass-rate emissions from the screening tables is 100 meters (328 feet), as specified in the LST Methodology. The allowable mass-rate emissions were linearly interpolated for a 2.1-acre site using the specified thresholds for 2- and 5-acre sites. The applicable thresholds are shown in **Table 4.2-11, Localized Significance Thresholds for a 2.1-Acre Site located in SRA 7 (East San Gabriel Valley).**

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

56 Ibid.

57 Distance between property lines of project site and the hospital was used.

Table 4.2-11
Localized Significance Thresholds for a 2.1-Acre Site located in SRA 7 (East San Gabriel Valley)[1]

Pollutant	LST Thresholds[1] (Pounds per day)	Exceeds LST?
Project Construction		
Nitrogen Oxides (NO_X)	122.83	NO
Carbon Monoxide (CO)	1,627.50	NO
Respirable Particulate Matter (PM_{10})	34.73	NO
Fine Particulate Matter ($PM_{2.5}$)	10.17	NO
Project Operation		
Nitrogen Oxides (NO_X)	122.83	NO
Carbon Monoxide (CO)	1,627.50	NO
Respirable Particulate Matter (PM_{10})	9.17	NO
Fine Particulate Matter ($PM_{2.5}$)	3.03	NO

Source: Impact Sciences, Inc., (2009).
[1] *South Coast Air Quality Management District,* Final Localized Significance Threshold Methodology, *(2008).*

Cumulative Thresholds

Regional Emission Threshold

In large part, the SCAQMD 2007 AQMP was prepared to accommodate growth, to meet state and federal air quality standards, and to minimize the fiscal impact that pollution control measures have on the local economy. According to the SCAQMD *CEQA Air Quality Handbook*, projects that are within the emission thresholds identified above should be considered less than significant on a cumulative basis unless there is other pertinent information to the contrary.[58]

If a project is not within the emission thresholds above, the SCAQMD *CEQA Air Quality Handbook* identifies three possible methods to determine the cumulative significance of land use projects.[59] The SCAQMD's methods are based on performance standards and emission reduction targets necessary to attain the federal and state air quality standards identified in the 2007 AQMP. However, one method is no longer recommended and supported by the SCAQMD, and another method is not applicable as the

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

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

SCAQMD repealed the underlying regulation (Regulation XV) after the *CEQA Air Quality Handbook* was published.[60] Therefore, the only viable SCAQMD method for determining cumulative impacts is based on whether the rate of growth in average daily trips exceeds the rate of growth in population and whether the project is consistent with the AQMP.

Greenhouse Gas Emission Threshold

The City has not yet adopted a significance threshold for assessing impacts related to global climate change or GHG emissions. At the time that this section was being prepared, no air agency or municipality had yet formally established or adopted significance thresholds for GHG emissions. Accordingly, while GHG emissions can be quantified, there is no guidance adopted by any federal, state, or local agency to determine significance for the Project under CEQA. "The determination of whether a project may have a significant effect on the environment calls for careful judgment on the part of the public agency involved, based to the extent possible on scientific and factual data."[61] CEQA grants agencies with the general authority to adopt criteria for determining whether a given impact is "significant."[62] When no guidance exists under CEQA, the agency may look to and assess general compliance with comparable regulatory schemes.[63]

The Natural Resources Agency has proposed amendments to the *CEQA Guidelines* to include thresholds of significance for GHG emissions in Appendix G. According to the proposed amendments, a project would have a significant effect on the environment if it would:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; and/or
- Conflict with any applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

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

61 *State CEQA Guidelines* Section 15064(b).

62 See Cal. Pub. Resources Code Section 21082.

63 See *Protect Historic Amador Waterways v. Amador Water Agency (2004) 116 Cal. App. 4th 1099, 1107* ["[A] lead agency's use of existing environmental standards in determining the significance of a project's environmental impacts is an effective means of promoting consistency in significance determinations and integrating CEQA environmental review activities with other environmental program planning and resolution."]. Lead agencies can, and often do, use regulatory agencies' performance standards. A project's compliance with these standards usually is presumed to provide an adequate level of protection for environmental resources. See, e.g., *Cadiz Land Co. v. Rail Cycle (2000) 83 Cal.App.4th 74, 99* (upholding use of regulatory agency performance standard).

While AB 32 created a framework for the reduction of GHGs in California, the Act did not address the role of CEQA in achieving the goals of the Act. To date, CARB has not formally adopted numerical significance thresholds for GHG emissions. Furthermore, the SCAQMD has only adopted threshold for industrial projects where it is the lead agency. Currently, there are several existing potentially applicable regulatory schemes to evaluate the significance of a project's GHG emissions: (1) AB 32 and associated guidance, (2) 2006 Climate Action Team Report, and the (3) OPR Technical Advisory. The California Attorney General also has been active, issuing comment letters and other documents concerning proposed development projects and encouraging the use of certain mitigation measures for those projects to reduce GHG emissions.[64] Although these measures are not a part of a regulatory scheme at this time, they provide another tool to assess general compliance with the standards of AB 32.

The regulations required to meet the goal under AB 32 of reducing emissions to 1990 levels by 2020 have yet to be implemented – they are scheduled to be implemented no later than January 1, 2010 (for discrete early actions) or January 1, 2012 (for other rules and market mechanisms). Regulations for the discrete early actions have already been adopted or are currently being considered for adoption. At this time, there is no single relevant criterion by which the implementation of the Project can be judged to support or hinder attainment of the state's goals.

Neither federal, state, nor local authorities have yet formally established project-level significance thresholds for GHG emissions. OPR has issued the following guidelines to consider in determining significance:

- Lead agencies must describe the existing environmental conditions or setting, without the project, which normally constitutes the baseline physical conditions for determining whether a project's impacts are significant;
- Lead agencies' determination of significant impacts must be consistent with available guidance and current CEQA practice;
- Although global climate change is ultimately a cumulative impact, not every individual project that emits GHGs must necessarily be found to contribute to a significant cumulative impact on the environment.[65]

The State of California, through its governor and its legislature, has established a comprehensive framework for the substantial reduction of GHG emissions over the next 40-plus years. This will occur primarily through the implementation of AB 32 and Executive Order S-3-05, which will address GHG

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64 California Attorney General, *The California Environmental Quality Act, Addressing Global Warming Impacts At The Local Agency Level*, available at http://ag.ca.gov/globalwarming/pdf/GW_mitigation_measures.pdf.

65 Governor's Office of Planning and Research, *Technical Advisory – CEQA and Climate Change: Addressing Climate Change through California Environmental Quality Act (CEQA) Review*, (2008).

emissions on a statewide cumulative basis. In addition, the Secretary of Cal/EPA created the Climate Action Team, which, in March 2006, published the 2006 Climate Action Team Report to Governor Schwarzenegger and the Legislature. The 2006 Climate Action Team Report identifies a recommended list of strategies that the state could pursue to reduce climate change GHG emissions.

In the absence of any adopted thresholds, this analysis applies a threshold of significance where the Project would be found to not have a significant impact on global climate change if it is consistent with the goals, strategies, and control measures established under: (1) AB 32 and associated guidance, (2) 2006 Climate Action Team Report, and the (3) OPR Technical Advisory. These goals, strategies, and control measures represent the current state and local efforts (and regulatory schemes) to mitigate and reduce the State of California's impacts on global climate change.

Impact Analysis

Each applicable threshold of significance is listed below followed by analysis of the significance of any potential impacts and the identification of mitigation measures that would lessen or avoid potential impacts. Finally, the significance of potential impacts after implementation of all identified mitigation measures is presented.

Threshold: Conflict with or obstruct the implementation of the applicable air quality plan.

Impact Analysis:

The 2007 AQMP, discussed previously, was prepared to accommodate growth, to reduce the high levels of pollutants within the areas under the jurisdiction of SCAQMD, to return clean air to the region, and to minimize the impact on the economy. Projects that are considered consistent with the AQMP would not interfere with attainment 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 attainment of the air quality levels identified in the AQMP, even if they exceed the SCAQMD's recommended daily emissions thresholds.

Demographic growth forecasts for various socioeconomic categories (e.g., population, housing, employment), developed by SCAG for their 2004 RTP were used to estimate future emissions within the 2007 AQMP (refer to the 2007 AQMP, Chapter 3). Projects that are consistent with the growth projections are considered consistent with the AQMP. The Project would result in employment growth for the region (the Project only includes commercial land uses). Based on SCAG data, the existing employment population for the Arroyo Verdugo subregion, in which the City of Glendale is located, is approximately

202,934.[66] The employment projections used to estimate emissions in the 2007 AQMP for year 2012 anticipated an employment population of 227,537 for the Arroyo Verdugo subregion.[67] The Project would add 209 employees, which when added to the existing employment of the City of Glendale would result in an employment population of 203,143. This total is within the growth projections for the subregion as adopted by SCAG. Because the SCAQMD has incorporated these same projections into the AQMP, the Project would be consistent with the projections in the 2007 AQMP.

Level of Significance Before Mitigation: Less than Significant.

Mitigation Measures: None are required.

Level of Significance After Mitigation: Less than Significant.

Threshold: **Violate any air quality standard or contribute substantially to an existing or projected air quality violation as a result of construction activity.**

Impact Analysis:

Project construction consists of demolition, grading, building construction, architectural coating, and asphalt paving phases, which would last approximately 24 months. The demolition phase would involve the removal of the existing on-site vacant structures, which would generate approximately 4,000 cubic yards of debris. Demolition equipment would include the use of a backhoe, dozer, loaders, industrial saw, and haul trucks. Daily haul truck round trips would approximate to 18 round trips per day. This phase is anticipated to take 15 days to complete and is assumed to begin in December 2010.

The site-grading phase would involve the grading, excavation, and export of existing fill materials and replacement with properly compacted fill materials. Grading would require the excavation of up to 62,500 cubic yards of earth material. This would involve the use of a grader, dozer, loader, one water truck, and haul trucks. Daily haul truck round trips would approximate to 95 truck round trips per day for the export of soil. This phase is anticipated to take 45 days to complete and is assumed to begin in late December 2010.

The building construction phase would consist of sub-grade construction and above-grade building construction. Building activities during this phase would involve the use of standard construction

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66 Southern California Association of Governments, "Integrated Growth Forecast," http://www.scag.ca.gov/forecast/index.htm. 2008.

67 Employment projections for the purposes of determining consistency with the 2007 AQMP are based on the 2004 SCAG Integrated Growth Forecast. The 2008 Integrated Growth Forecast was released after the 2007 AQMP had been adopted.

equipment, including one crane, loader, and two forklifts. In addition, building construction would involve vendor truck trips for concrete and building material delivery. This phase is anticipated to take approximately 22 months to complete and is assumed to begin in February 2011. The architectural coating phase would take place during the last three months of the building construction phase, and is assumed to begin in September 2012. The asphalt paving phase would take place during the last month of the building construction phase, and is assumed to begin in November 2012. Asphalt paving would include additional equipment such as cement and mortar mixers, pavers, and rollers.

Construction emissions were calculated according to the SCAQMD's *CEQA Air Quality Handbook*, and construction emission factors contained in the URBEMIS2007 Environmental Management Software.[68] URBEMIS2007 is a land use and transportation based computer model designed to estimate regional air emissions from new development projects. The model accounts for certain meteorological conditions that characterize specific air basins in California. Land uses entered into the URBEMIS2007 model include:

- 25,000 square feet of health spa;
- 32,000 square feet of general office building;
- 32,000 square feet of medical office building;
- 26,880 square feet of strip mall;
- 36,000 square feet of supermarket;
- 6,810 square feet of quality restaurant;
- 4,400 square feet of high turnover (sit-down) restaurant; and
- 250,000 square feet of parking (modeled as a warehouse).

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

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

68 Rimpo and Associates Inc., "URBEMIS Environmental Management Software," http://www.urbemis.com/. 2009.

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

The estimated maximum daily emissions during each phase of Project construction are listed in **Table 4.2-12, Estimated Unmitigated Construction Emissions**. These estimates are based on the expected location, size, and development of the Project. The analysis assumes that all of the construction equipment and activities would occur continuously over the day and that activities would overlap. In reality, this would not occur, as most equipment would operate only a fraction of each workday and many of the activities would not overlap on a daily basis. Therefore, **Table 4.2-12** represents a worst-case scenario for construction activities.

As shown in **Table 4.2-12**, project-related construction emissions for VOC would exceed SCAQMD's significance threshold in 2012 during project construction. Architectural coating activities emit the majority of the VOC emissions. URBEMIS2007 takes into account SCAQMD's Rule 1113 (Architectural Coating), which requires reductions in the VOC content of coatings, with a substantial reduction in the VOC content limit for flat coating. As VOC emissions exceed the SCAQMD significance threshold for VOCs, impacts resulting from construction of the Project are considered significant. Mitigation measures are recommended to reduce the level of impacts.

Table 4.2-12
Estimated Unmitigated Construction Emissions

	Maximum Emissions in Pounds per Day					
Construction Phase	**VOC**	**NO_X**	**CO**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
2010 (Phases do not overlap)						
Demolition	2.48	24.75	12.26	0.02	17.88	4.64
Mass Grading	8.30	89.67	39.76	0.08	11.05	5.18
Maximum pounds per day:	**8.30**	**89.67**	**39.76**	**0.08**	**17.88**	**5.18**
SCAQMD Threshold:	**75**	**100**	**550**	**150**	**150**	**55**
Exceeds Threshold?	NO	NO	NO	NO	NO	NO
2011 (Phases do not overlap)						
Mass Grading	7.72	81.80	36.92	0.08	10.68	4.84
Building Construction	6.47	41.64	59.24	0.09	2.59	2.17
Maximum pounds per day:	**7.72**	**81.80**	**59.24**	**0.09**	**10.68**	**4.84**
SCAQMD Threshold:	**75**	**100**	**550**	**150**	**150**	**55**
Exceeds Threshold?	NO	NO	NO	NO	NO	NO

Construction Phase	Maximum Emissions in Pounds per Day					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
2012 (Phases overlap)						
Building Construction	5.96	38.07	55.42	0.09	2.38	1.98
Architectural Coating	136.18	0.08	1.44	0.00	0.01	0.01
Asphalt Paving	3.40	18.17	12.82	0.01	1.51	1.37
Maximum pounds per day:	**145.55**	**56.32**	**69.68**	**0.09**	**3.90**	**3.36**
SCAQMD Thresholds:	**75**	**100**	**550**	**150**	**150**	**55**
Exceeds Thresholds?	**YES**	NO	NO	NO	NO	NO

Source: Impact Sciences, Inc., (2009). 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.

Level of Significance Before Mitigation: Significant.

Mitigation Measures:

4.2-1 The contractor shall use SCAQMD-approved super-compliant architectural coatings for interior and exterior applications, which would reduce architectural coating VOC content by 96 percent.

Level of Significance After Mitigation: Less than Significant.

Threshold: **Violate any air quality standard or contribute substantially to an existing or projected air quality violation as a result of project operation.**

Impact Analysis:

Operational emissions would be generated by both stationary and mobile sources as a result of normal day-to-day activity on the Project site after occupancy. 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 and from the Project site.

The analysis of daily operational emissions has been prepared using the data and methodologies identified in the SCAQMD's *CEQA Air Quality Handbook* and current motor vehicle emission factors in the URBEMIS2007 model. Land uses entered into the URBEMIS2007 model include:[69]

- 25,000 square feet of health spa;
- 32,000 square feet of general office building;

69 The parking structure does not generate trips or direct area source emissions.

- 32,000 square feet of medical office building;
- 26,880 square feet of strip mall;
- 36,000 square feet of supermarket;
- 6,810 square feet of quality restaurant; and
- 4,400 square feet of high turnover (sit-down) restaurant.

Trip rates for these land uses were obtained from the traffic report for the Project. The estimated emissions are based upon development of all the proposed land uses on the Project site, and are presented in **Table 4.2-13, Estimated Unmitigated Operational Emissions**, and are compared to the SCAQMD established operational significance thresholds. As shown, the emissions associated with the Project would not exceed the SCAQMD's recommended operational emission thresholds. As a result, the operational impacts associated with the Project are considered less than significant.

Table 4.2-13
Estimated Unmitigated Operational Emissions

Emissions Source	Emissions in Pounds per Day					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Project Summertime Emissions[1]						
Operational (Mobile) Sources	36.58	43.99	392.64	0.45	72.74	14.18
Area/Stationary Sources	1.91	1.52	11.98	0.00	0.04	0.04
Summertime Emissions Total	**38.49**	**45.51**	**404.62**	**0.45**	**72.78**	**14.22**
SCAQMD Threshold	**55**	**55**	**550**	**150**	**150**	**55**
Exceeds Threshold?	NO	NO	NO	NO	NO	NO
Project Wintertime Emissions[2]						
Operational (Mobile) Sources	42.63	52.78	388.64	0.37	72.74	14.18
Area/Stationary Sources	1.05	1.38	1.16	0.00	0.00	0.00
Wintertime Emissions Total	**43.68**	**54.16**	**389.8**	**0.37**	**72.74**	**14.18**
SCAQMD Threshold	**55**	**55**	**550**	**150**	**150**	**55**
Exceeds Threshold?	NO	NO	NO	NO	NO	NO

*Source: Impact Sciences, Inc., (2009). 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).*

Level of Significance Before Mitigation: Less than Significant.

Mitigation Measures: None are required.

Level of Significance After Mitigation: Less than Significant.

Threshold: **Expose sensitive receptors to substantial pollutant concentrations.**

Impact Analysis:

The SCAQMD recommends the evaluation of localized NO_X, CO, PM_{10}, and $PM_{2.5}$ impacts as a result of on-site construction and operational activities to sensitive receptors in the immediate vicinity of the Project site. This analysis determines the ambient air quality impacts due to construction and operational activities on the day with the highest estimated daily mass emission rates as presented in **Table 4.2-12** and **Table 4.2-13.** The Project-specific localized significance thresholds for SRA 7 (East San Fernando Valley) are shown in **Table 4.2-14, Localized Significance Thresholds Analysis**, and are compared with the maximum daily on-site construction and operational emissions.

Table 4.2-14
Localized Significance Thresholds Analysis

Pollutant	Maximum On-Site Emissions (Pounds per day)	LST Thresholds[1] (Pounds per day)	Exceeds LST?
Project Construction			
Nitrogen Oxides (NO_X)	31.48	122.83	NO
Carbon Monoxide (CO)	20.96	1,627.50	NO
Respirable Particulate Matter (PM_{10})	17.10	34.73	NO
Fine Particulate Matter ($PM_{2.5}$)	3.97	10.17	NO
Project Operation			
Nitrogen Oxides (NO_X)	1.52	122.83	NO
Carbon Monoxide (CO)	11.98	1,627.50	NO
Respirable Particulate Matter (PM_{10})	0.04	9.17	NO
Fine Particulate Matter ($PM_{2.5}$)	0.04	3.03	NO

Source: Impact Sciences, Inc., (2009).
[1] *South Coast Air Quality Management District,* Final Localized Significance Threshold Methodology, *(2008).*

As shown in **Table 4.2-14**, project-related construction and operational emissions would not exceed the localized significance thresholds for NO_X, CO, PM_{10}, and $PM_{2.5}$ during Project construction and operation. Therefore, the impacts resulting from construction and operation of the Project are considered to have a less than significant localized impact.

It should be noted that the U.S. EPA promulgated a new 1-hour NAAQS for NO_2. The new 1-hour standard is 100 parts per billion (ppb) (188 micrograms per cubic meter [$\mu g/m^3$]) and goes into effect on April 12, 2010. Compliance with the standard is determined on a statistical basis (i.e., the 3-year average

of the 98th-percentile of the annual distribution of daily maximum 1-hour concentrations). The U.S. EPA also retained the existing annual average standard of 53 ppb (100 μg/m^3).

The LST analysis should be based on the most stringent ambient air quality standards in effect. Prior to the new U.S. EPA standard, the 1-hour CAAQS for NO_2 was the most stringent standard at 180 ppb. The SCAQMD screening tables for NO_2 are based on the 1-hour CAAQS. The SCAQMD has not revised the LST screening tables to correspond to the new U.S. EPA 1-hour NO_2 standard. However, as shown in **Table 4.2-14**, the NO_X emissions are less than 26 percent of the previous threshold. Given that the project's NO_X emissions are well under the previous threshold, the project would not exceed the new U.S. EPA 1-hour NO_2 standard at nearby sensitive receptors.

Carbon monoxide is produced in greatest quantities from vehicle combustion, and is usually concentrated at or near ground level because it does not readily disperse into the atmosphere. As a result, potential air quality impacts to sensitive receptors are assessed through an analysis of localized CO concentrations. Areas of vehicle congestion have the potential to create "pockets" of CO called "hotspots." These pockets have the potential to exceed the state ambient air quality 1-hour standard of 20 ppm or the 8-hour standard of 9.0 ppm. Note that the federal levels are based on 1- and 8-hour standards of 35 and 9 ppm, respectively. Thus, an exceedance condition would occur based on the state standards prior to exceedance of the federal standard. As such, exceedance of the state ambient air quality 1-hour standard of 20 ppm or the 8-hour standard of 9.0 ppm would constitute a significant air quality impact from the creation of substantial concentrations of CO.

The Project was evaluated to determine if it would cause a CO hotspot utilizing a simplified CALINE4 screening model developed by the Bay Area Air Quality Management District (BAAQMD). The simplified model is intended as a screening analysis that identifies a potential CO hotspot. If a hotspot is identified, the complete CALINE4 model is then utilized to determine precisely the CO concentrations predicted at the intersections in question. This methodology assumes worst-case conditions (i.e., wind direction is parallel to the primary roadway and 90 degrees to the secondary road, wind speed of less than 1 meter per second and extreme atmospheric stability) and provides a screening of maximum, worst-case, CO concentrations. According to the BAAQMD CEQA Guidelines Assessing the Air Quality Impacts of Projects and Plans, the simplified approach is acceptable for projects and plans that generate fewer than 10,000 new trips per day. The simplified approach is acceptable to the SCAQMD as long as it is used consistently with the BAAQMD Guidelines. This model is utilized to predict existing and future CO concentrations 0 and 25 feet from the intersections in the study area based on projected traffic volumes from these intersections contained in the project traffic study. Post-project maximum future CO concentrations were calculated for peak hour traffic volumes. The results of these CO concentration

calculations are presented in **Table 4.2-15, Future Cumulative Carbon Monoxide Concentrations – With Project**, for representative receptors located 0 and 25 feet from the intersection.

As shown, the CALINE4 screening procedure predicts that, under worst-case conditions, future CO concentrations at each intersection would not exceed the state 1-hour and 8-hour standards with or without the development of the Project. No significant CO hotspot impacts would occur to sensitive receptors in the vicinity of these intersections. As a result, no significant project-related impacts would occur relative to future carbon monoxide concentrations.

Table 4.2-15
Future Cumulative Carbon Monoxide Concentrations – With Project

Traffic Study Intersection No. (LOS D, E, and F only)	0 Feet		25 Feet	
	1-Hour[1]	8-Hour[2]	1-Hour[1]	8-Hour[2]
2. Glenfeliz Boulevard at Los Feliz Boulevard	6.9	5.5	5.7	4.7
3. Brunswick Avenue at Los Feliz Boulevard	6.7	5.4	5.6	4.6
4. Revere Avenue at Los Feliz Boulevard	6.7	5.4	5.6	4.6
6. Gardena Avenue at Los Feliz Road	6.9	5.5	5.7	4.7
7. San Fernando Road at Chevy Chase Drive	6.2	5.0	5.3	4.4
8. San Fernando Road at Fernando Court	5.6	4.6	5.0	4.2
9. San Fernando Road at Los Feliz Road	7.1	5.7	5.9	4.8
10. San Fernando Road at Central Avenue	6.0	4.9	5.2	4.3
11. San Fernando Road at Brand Boulevard	6.4	5.2	5.6	4.6
14. Central Avenue at Los Feliz Road	6.1	5.0	5.3	4.4
15. Brand Boulevard at Chevy Chase Drive	6.1	5.0	5.3	4.4
16. Brand Boulevard at Los Feliz Road	6.0	4.9	5.3	4.4
17. Glendale Avenue at Chevy Chase Drive	5.8	4.8	5.2	4.3
Exceeds state 1-hour standard of 20 ppm?	NO	-	NO	-
Exceeds federal 1-hour standard of 35 ppm?	NO	-	NO	-
Exceeds state 8-hour standard of 9.0 ppm?	-	NO	-	NO
Exceeds federal 8-hour standard of 9 ppm?	-	NO	-	NO

*Source: Impact Sciences, Inc., (2009). Emissions calculations are provided in **Appendix 4.2**.*
[1] *State standard is 20 parts per million. Federal standard is 35 parts per million.*
[2] *State standard is 9.0 parts per million. Federal standard is 9 parts per million.*

Level of Significance Before Mitigation: Less than Significant.

Mitigation Measures: None are required.

Level of Significance After Mitigation: Less than Significant.

Threshold: Create objectionable odors affecting a substantial number of people.

Impact Analysis:

According to the SCAQMD, "while almost any source may emit objectionable odors, some land uses will be more likely to produce odors…because of their operation."[70] Land uses that are more likely to produce odors include agriculture, chemical plants, composting operations, dairies, fiberglass molding, landfills, refineries, rendering plants, rail yards, and wastewater treatment plants. The Project does not include these land use types; therefore, it not likely to be a source of substantial odors.

Nonetheless, the Project could be a source of minor odors. During construction, certain pieces of construction equipment could emit odors associated with exhaust. However, odors emitted from certain pieces of construction equipment would dissipate quickly and be short term in duration. Odors resulting from spray coating applications of paint and related materials during construction would be regulated by SCAQMD Rule 481 (Spray Coating Operations). This rule imposes equipment and operational restrictions during construction for all spray painting and spray coating operations. Compliance with SCAQMD rules and permit requirements would ensure that no objectionable odors are created during construction. Therefore, impacts from odors during construction would be less than significant.

Refuse associated with operation of the Project will continue to be disposed of in accordance with applicable regulations. The SCAQMD lists land uses primarily associated with odor complaints as waste transfer and recycling stations, wastewater treatment plants, landfills, composting operations, petroleum operations, food and byproduct processes, factories, and agricultural activities, such as livestock operations. The proposed restaurant uses could have a potential to emit odors associated with the preparation and disposal of food products. The food will be prepared and disposed of in accordance with local regulations relating to ventilation and refuse disposal. In addition, the food will be prepared within an enclosed kitchen area, and not outdoors. Therefore, it is unlikely for substantial nuisance odors to permeate to the outside environment. It is unknown at the time this report was written whether the proposed restaurant uses would use a chain-driven charbroiler. A chain-driven charbroiler is used to prepare meat, such as hamburger patties. If the Project were to install a chain-driven charbroiler, it must

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

comply with the provisions of SCAQMD Rule 1138, which requires the use of catalytic oxidizers to reduce the amount of smoke and gas generated by the cooking of meat. Compliance with Rule 1138 would reduce the emissions of odorous compounds.

In addition, any unforeseen odors generated by the Project will be controlled in accordance with SCAQMD Rule 402 (Nuisance). Rule 402 prohibits the discharge of air contaminants that cause "injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause injury or damage to business or property." Failure to comply with Rule 402 could subject the offending facility to possible fines and/or operational limitations in an approved odor control or odor abatement plan. Adherence to Rule 402 would mitigate unforeseen odors to a less than significant impact.

Level of Significance Before Mitigation: Less than significant.

Mitigation Measures: None are required.

Level of Significance after Mitigation: Less than significant.

Secondary Thresholds

Project impacts would be considered significant if operation of the Project meets or exceeds any of the SCAQMD secondary thresholds listed below:

Threshold: **Result in an accidental release of toxic air emissions or acutely hazardous materials posing a threat to public health and safety.**

Impact Analysis:

Project construction would involve the demolition and removal of several existing structures located on the Project site. Because some of these structures were constructed during a period when asbestos-containing building materials were not regulated, these structures have the potential to contain building materials containing such hazardous materials. All structures must be stabilized and demolished in accordance with applicable regulations including SCAQMD Rule 1403 (Asbestos Emissions from Demolition/Renovation Activities). 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. All asbestos-containing material found on the site must be removed prior to demolition or renovation activity. Project compliance with Rule 1403 would ensure that asbestos-containing materials would be removed and disposed of appropriately. Adherence to this regulation would reduce the potential for asbestos impacts to a less-then-significant level.

Project operation would not result in hazardous materials on site in any appreciable quantity. Development and operation of the Project would not result in an accidental release of toxic air emissions or acutely hazardous materials that pose a threat to public health and safety. As a result, impacts from this would remain less than significant.

Level of Significance Before Mitigation: Less than significant.

Mitigation Measures: None are required.

Level of Significance after Mitigation: Less than significant.

Threshold: **Emit a toxic air contaminant regulated by SCAQMD rules or that is on a federal or state air toxic list.**

Impact Analysis:

The Project would not have hazardous materials on site in any appreciable quantity. Development and operation of the Project would not result in emissions of TACs regulated by SCAQMD rules or TACs on federal or state air toxics lists. As a result, impacts from this would remain less than significant.

Level of Significance Before Mitigation: Less than significant.

Mitigation Measures: None are required.

Level of Significance after Mitigation: Less than significant.

Threshold: **Locate sensitive receptors within 0.25 mile of an existing facility that emits air toxics identified in SCAQMD Rule 1401.**

Impact Analysis:

The Project is a commercial project and does not contain land uses that would locate sensitive populations on site. Therefore, the Project would not locate sensitive receptors within 0.25 mile of an existing facility that emits air toxics. Therefore the Project would have no impact relative to this threshold.

Level of Significance Before Mitigation: No impact.

Mitigation Measures: None are required.

Level of Significance after Mitigation: No impact.

Threshold: **Emit carcinogenic or toxic air contaminants that individually or cumulatively exceed the maximum individual cancer risk of 10 in 1 million.**

Impact Analysis:

The land uses associated with the Project are not anticipated to emit individual or cumulative TACs in appreciable quantities. Equipment or processes that emit a substantial amount of TACs are required to be permitted by the SCAQMD. No such equipment or processes are proposed for the Project. Accordingly, the Project would not emit carcinogenic or toxic air contaminants that individually or cumulatively exceed the maximum individual cancer risk of 10 in 1 million. No significant impacts with respect to the criteria listed above are expected to occur.

Level of Significance Before Mitigation: Less than significant.

Mitigation Measures: None are required.

Level of Significance after Mitigation: Less than significant.

Cumulative Impact Analysis

The geographic context for cumulative air quality impacts is the South Coast Air Basin. The determination of cumulative air quality impacts is based on methodologies employed by the SCAQMD, which takes into consideration planned growth in the region.

Threshold: **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).**

Impact Analysis:

The *CEQA Air Quality Handbook* identifies possible methods to determine the cumulative significance of land use projects.[71] All of 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. The SCAQMD staff has suggested that the emissions-based thresholds be used to determine if a project's

[71] South Coast Air Quality Management District, *CEQA Air Quality Handbook*, (1993) 9-12; Written communication with Steve Smith, Program Supervisor, South Coast Air Quality Management District, November 20, 2003.

contribution to regional cumulative emissions is cumulatively considerable.[72] Individual projects that exceed the SCAQMD-recommended daily thresholds for project-specific impacts would be considered to cause a cumulatively considerable increase in emissions for those pollutants for which the basin is in nonattainment. As presented previously in **Table 4.2-12**, construction of the Project would result in daily construction emissions that would exceed the SCAQMD threshold of significance for VOC. Project-related construction emissions would not exceed the localized significance thresholds for PM_{10}, $PM_{2.5}$, NO_X, and CO during Project construction. As presented previously in **Table 4.2-13**, operation of the Project would result in daily operational emissions that do not exceed the thresholds of significance recommended by the SCAQMD. Since the Project would have significant impacts due to construction activities, the Project would generate a cumulatively considerable contribution to air pollutant emissions during Project construction prior to mitigation. Therefore, the Project would have a significant cumulative impact with respect to this criterion.

Level of Significance Before Mitigation: Significant.

Mitigation Measures: The Project shall implement **mitigation measure 4.2-1**.

Level of Significance after Mitigation: Less than Significant.

Threshold: **Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.**

Impact Analysis:

The Project would result in short term emissions of GHGs during construction. These emissions, primarily CO_2, CH_4, and N_2O, are the result of fuel combustion by construction equipment and motor vehicles. The other primary GHGs (hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride) are typically associated with specific industrial sources and are not expected to be emitted by the Project.

URBEMIS2007 only calculates CO_2 emissions and does not provide estimates of other GHGs associated with combustion, namely CH_4 and N_2O. Therefore, in order to account for emissions of these compounds, the following adjustments were made to the URBEMIS2007 emission calculations:

- **Construction diesel trucks and equipment**: The CO_2 emissions associated with off-road and on-road equipment were multiplied by a factor based on the assumption that CO_2 represents approximately

72 Communication with Steve Smith, Program Supervisor, South Coast Air Quality Management District, April 19, 2006.

99.1 and 99.9 percent, respectively, of the CO_2e emissions. These assumptions were derived from the California Climate Action Registry[73] and the California Energy Commission.[74]

- **Motor vehicles**: The CO_2 emissions associated with project-generated trips were multiplied by a factor based on the assumption that CO_2 represents 95 percent of the CO_2e emissions associated with passenger vehicles, which account for most of the project-related trips.[75]

Current CEQA practice is to amortized construction-related GHG emissions over a project's lifetime in order to include these emissions as part of a project's annualized lifetime total emissions, so that GHG reduction measures will address construction GHG emissions as part of the operational GHG reduction strategies. A project lifetime has generally been defined as 30 years. In accordance with this methodology, the estimated Project's construction GHG emissions have been annualized over a 30-year period and are included in the annualized operational GHG emissions discussed below.

Unlike federally and state-regulated criteria pollutants, which predominantly affect local and regional air quality, GHGs tend to remain in the atmosphere for longer periods of time and have global impacts. As previously explained, the methodology for evaluating the global warming potential of GHGs is to estimate the climate change impacts of GHGs using the warming potential of CO_2 over a 100-year period as a baseline. Although GHGs are generated during construction and are accordingly considered one-time emissions, it is important to include construction-related GHG emissions when assessing all of the long-term GHG emissions associated with a project.

This is in contrast to the current recommended methodology for the evaluation of Project-related criteria pollutants, which predominantly affect local and regional (not global) air quality. The method of including construction-related GHG emissions in long-term operational assessments is consistent with current CEQA practice.

Table 4.2-16, Estimated Construction GHG Emissions, lists the estimated GHG emissions associated with construction of the Project. Detailed calculations are provided in **Appendix 4.2**.

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73 California Climate Action Registry, *General Reporting Protocol: Reporting Entity-Wide Greenhouse as Emissions* Version 3.1, (2009) 96, 98, 100.

74 California Energy Commission, *Diesel Use in California*, Remarks by Commissioner James D. Boyd, (2002).

75 U.S. Environmental Protection Agency, Office of Transportation and Air Quality, *Greenhouse Gas Emissions from a Typical Passenger Vehicle (EPA420-F-05-004)*, (2005) 4.

Table 4.2-16
Estimated Construction Greenhouse Gas Emissions

Construction Year	Emissions in Metric Tons CO_2e/Year
2010	61.52
2011	1,247.05
2012	1,241.39
Total Construction	**2,549.96**
Total Construction Amortized over Project Lifetime	**85.00**

Source: Impact Sciences, Inc., (2009). Emissions calculations are provided in ***Appendix 4.2****.*

At buildout, the Project would result in direct annual emissions of GHGs during operation. These emissions, primarily CO_2, CH_4, and N_2O, are the result of fuel combustion from building heating systems and motor vehicles. 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); however, they are not quantified since emissions would only occur through accidental leaks.

Direct emissions of CO_2, the primary greenhouse gas generated from operation of the Project, are primarily due to natural gas consumption and mobile source emissions. Emission factors for GHGs due to natural gas consumption were obtained from the California Climate Action Registry *General Reporting Protocol.*[76] Mobile source emissions were calculated using URBEMIS2007, based on trip generation rates provided by the traffic impact analysis for the Project. URBEMIS2007 provides only CO_2 emissions; therefore, to account for other GHGs associated with fossil fuel combustion, the CO_2 emissions associated with Project-generated trips were multiplied by a factor based on an U.S. EPA assumption that CO_2 represents 95 percent of the CO_2e emissions associated with passenger vehicles, which account for most of the Project-related trips.[77]

The Project would also result in indirect GHG emissions due to electricity demand. Emission factors for GHGs due to electricity demand were obtained from CARB's *Local Government Operating Protocol*, which contains GHG emission factors from utility providers in California.[78] The cited factors in the CARB report is based on data collected by the California Climate Action Registry. The emission factors take into account the current mix of energy sources used to generate electricity and the relative carbon intensities of these sources, and includes natural gas, coal, nuclear, large hydroelectric, and other renewable sources of energy.

76 California Climate Action Registry, *General Reporting Protocol: Reporting Entity-Wide Greenhouse Gas Emissions*, Version 3.1, (2009) 101-103.

77 U.S. Environmental Protection Agency, Office of Transportation and Air Quality, *Greenhouse Gas Emissions from a Typical Passenger Vehicle (EPA420-F-05-004)*, (2005) 4.

78 California Air Resources Board, *Local Government Operating Protocol*, Version 1.0, (2008) 174.

In addition to electrical demand, operation of the Project would result in indirect GHG emissions due to water demand. GHG emissions from water demand are due to the electricity needed to convey, treat, and distribute potable water. The annual electrical demand factor for water demand was obtained from the California Energy Commission.[79] GHG emissions from wastewater are due to the electricity needed to treat wastewater and the treatment process itself, which primarily releases CH_4 into the atmosphere. GHG emissions from solid waste generation are due to the decomposition of organic material, which releases CH_4 into the atmosphere. The annual electrical demand factor for water demand[80] was obtained from the California Energy Commission. GHG emission factors for wastewater treatment[81] and solid waste generation[82] were obtained from the U.S. EPA.

The annual GHG emissions associated with the Project are provided below in **Table 4.2-17, Estimated Operational GHG Emissions**. Detailed calculations are provided in **Appendix 4.2**.

Table 4.2-17
Estimated Operational GHG Emissions

GHG Emissions Source	Emissions (Metric Tons CO_2e/year)
Project	
Amortized Construction	85.00
Operational (Mobile) Sources	7,379.05
Area Sources (Natural Gas Consumption)	279.01
Electricity Consumption	854.94
Solid Waste Generation	7.12
Water Supply	69.30
Wastewater Treatment	9.54
Annual Total	**8,683.96**

*Source: Impact Sciences, Inc., (2009). Emissions calculations are provided in **Appendix 4.2**.*
Totals in table may not appear to add exactly due to rounding.

79 California Energy Commission, *Refining Estimates of Water-Related Energy Use in California*, PIER Final Project Report (CEC-500-2006-118), (2006) 22.

80 California Energy Commission, *Refining Estimates of Water-Related Energy Use in California, PIER Final Project Report* (CEC-500-2006-118), (2006) 22. Prepared by Navigant Consulting, Inc.

81 U.S. Environmental Protection Agency, *Compilation of Air Pollutant Emission Factors, AP-42,* Fifth Edition, Volume I, Chapter 4.3.5, (1998).

82 U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, *Greenhouse Gas Emission Factors for Management of Selected Materials in Municipal Solid Waste* (EPA-530-R-98-013), (1998).

As previously discussed, California emitted approximately 484 $MMTCO_2e$ in 2006, based on CARB's inventory data. While the Project would result in emissions of GHGs, the Project would result in a very small fraction of the state's GHG emissions, as presented in **Table 4.2-18, Comparison of GHG Emissions between the Project and California**.

Table 4.2-18
Comparison of GHG Emissions between the Project and California

Emitting Entity	GHG Emissions ($MTCO_2e$)
Project	8,121.14
California (with imported electricity)	483,870,000.00
Project Percent of State Emissions (2025)	**0.0017%**

Source: Impact Sciences, Inc., (2009).

The emissions associated with the Project likely represents a conservative assessment of the actual GHG emissions that would result from development. The construction emissions were based on the assumption that equipment would operate continuously throughout the workday. In reality, construction equipment tends to operate cyclically for only a portion of the workday. In addition, as noted in CARB's AB 32 *Climate Change Scoping Plan*, reductions in GHG emissions from construction equipment are expected to occur upon implementation of the low carbon fuel standard (Scoping Plan Measure 5) and vehicle hybridization and energy efficiency standards adopted for medium- and heavy-duty vehicles (Scoping Plan Measure 10). These additional reductions were not quantified in this analysis resulting in conservatively estimated construction GHG emissions.

As shown in **Table 4.2-17**, GHG emissions from motor vehicles represent over half of the total emissions associated with the Project. Neither the state nor the federal government regulates tailpipe GHG emissions. However, several proposed actions have taken place at the federal and state level that would reduce GHG emissions from motor vehicles once specific regulations have been adopted and implemented. These reductions were not accounted for in the model.

This assessment also is conservative because it does not account for improvements in fuel economy standards for cars, light trucks, and sport utility vehicles. In 2007, the President signed the Energy Independence and Security Act, which set a goal of achieving a Corporate Average Fuel Economy (CAFE) standard of 35 miles per gallon by 2020 for new cars, light trucks, and sport utility vehicles. Additionally, as mentioned above, California has adopted the Low Carbon Fuel Standard. Under CARB's *Climate Change Scoping Plan*, fuel-efficient tire standards are being pursued (Scoping Plan Measure 7). Also, as previously discussed, the U.S. EPA is currently developing regulations that would set GHG

emission standards for motor vehicles similar to the Pavley requirements in established AB 1493. Furthermore, the U.S. EPA granted California the waiver to implement Phase II of the Pavley standards, which would achieve additional reductions in motor vehicle GHG emissions beyond 2016. Additionally, to the extent technology continues to improve and CAFE standards become more stringent, this analysis provides a conservative estimate of motor vehicle emissions based on current technology and CAFE standards, which are not accounted for in the air quality models.

Similarly, the GHG emissions associated with electricity, natural gas, and water consumption represent conservative estimates. It is likely that the California Energy Commission will adopt more stringent Title 24 standards in the future, which would reduce energy consumption for buildings constructed under those future standards.

While the Project would result in emissions of GHGs, no adopted guidance exists to indicate what level of GHG emissions would be considered substantial enough to result in a significant adverse impact on global climate. However, it is generally the case that an individual project of this size is of insufficient magnitude by itself to influence climate change or result in a substantial contribution to the global GHG inventory.[83] GHG impacts are recognized as exclusively cumulative impacts; there are no non-cumulative GHG emission impacts from a climate change perspective.[84] Accordingly, the Project's contribution to state, national, and global GHG emission inventories and the resultant effect on global climate should be evaluated on a cumulative basis. Therefore, based on the conservatively estimated GHG emissions provided above and that the Project would result in emissions that are a fraction of the State's GHG emissions, the Project would not individually generate GHGs that have a significant impact on the environment.

Level of Significance Before Mitigation: Less than Significant.

Mitigation Measures: None are required.

Level of Significance After Mitigation: Less than Significant.

Threshold: **Conflict with any applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.**

Impact Analysis: The goal of AB 32 is to reduce statewide GHG emissions to 1990 levels by 2020. In December 2008, CARB adopted a *Climate Change Scoping Plan* detailing strategies to meet that goal. Many of the *Scoping Plan* measures must be implemented at the State level through the State regulatory process.

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83 California Air Pollution Control Officers Association, *CEQA & Climate Change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act*, (2008) 35.

84 Ibid.

However, the *Scoping Plan* instructs local governments to establish sustainable community strategies to reduce GHG emissions associated with transportation, energy, and water, as required under SB 375. Planning efforts that lead to reduced vehicle trips while preserving personal mobility should be undertaken in addition to programs such as employee transit incentives, telework programs, car sharing, parking policies, public education programs and other strategies that enhance and complement land use and transit strategies. The *Scoping Plan* also recommends energy efficiency measures in buildings such as maximizing the use of energy efficient appliances and solar water heating as well as complying with green building standards that result in decreased energy consumption compared to Title 24 building codes. In addition, the *Scoping Plan* encourages the use of solar photovoltaic panels and other renewable sources of energy to provide clean energy and reduce fossil-fuel based energy. *Scoping Plan* measures that would apply to the Project are listed below (*Scoping Plan* measures not listed below do not directly apply to the Project because they are beyond the scope of the Project):

- **SPM-3: Energy Efficiency.** Maximize energy efficiency building and appliance standards, and pursue additional efficiency efforts. The Scoping Plan considers green building standards as a framework to achieve reductions in other sectors, such as electricity.

- **SPM-6: Regional Transportation-Related Greenhouse Gas Targets.** Develop regional greenhouse gas emissions reduction targets for passenger vehicles. SB 375 requires CARB to develop, in consultation with metropolitan planning organizations, passenger vehicle greenhouse gas emissions reduction targets for 2020 and 2035 by September 30, 2010. SB 375 requires metropolitan planning organizations to prepare a sustainable communities strategy to reach the regional target provided by CARB.

- **SPM-9: Million Solar Roofs Program.** Install 3,000 megawatts of solar-electric capacity under California's existing solar programs.

- **SPM-13: Green Building Strategy.** Expand the use of green building practices to reduce the carbon footprint of California's new and existing inventory of buildings.

- **SPM-15: Recycling and Waste.** Reduce methane emissions at landfills. Increase waste diversion, composting, and commercial recycling. Move toward zero-waste.

- **SPM-17: Water.** Continue efficiency programs and use cleaner energy sources to move water. California will also establish a public goods charge for funding investments in water efficiency that will lead to as yet undetermined reductions in greenhouse gases.

In addition to the measures listed in the *Climate Change Scoping Plan*, other state offices have provided recommended measures that would assist lead agencies in determining consistency with the State's GHG reduction goals. The California Office of the Attorney General has stated that lead agencies can play an

important role in "moving the state away from 'business as usual' and toward a low-carbon future."[85] The Attorney General's Office has released a guidance document that provides information to lead agencies that may be helpful in carrying out their duties under CEQA with respect to GHGs and climate change impacts. Provided in the document are measures that can be included as Project design features, required changes to the Project, or mitigation measures at the project level. The measures are not intended to be exhaustive and may not be appropriate for every project or general plan. The Attorney General's Office affirms that "the decision of whether to approve a project—as proposed or with required changes or mitigation—is for the local agency, exercising its informed judgment in compliance with the law and balancing a variety of public objectives."

On June 19, 2008, OPR issued a technical advisory as interim guidance regarding the analysis of GHG emissions in CEQA documents.[86] The OPR technical advisory included recommended mitigation measures for projects. In addition, the Secretary of California EPA created the Climate Action Team, which, in March 2006, published the Climate Action Team Report to Governor Schwarzenegger and the Legislature ("2006 CAT Report"). The 2006 CAT Report identifies a recommended list of strategies that the state could pursue to reduce climate change GHG emissions.

The following measures listed in **Table 4.2-19, Applicable Attorney General, OPR, and 2006 CAT Report GHG Measures**, would apply to the Project:

Table 4.2-19
Applicable Attorney General, OPR, and 2006 CAT Report GHG Measures

Plans, Policies, and Measures (Applicable)	
ENERGY EFFICIENCY	
Attorney General's Recommended "Project-Level" Measures: AG-1. Design buildings to be energy-efficient. Site buildings to take advantage of shade, prevailing winds, landscaping and sun screens to reduce energy use. AG-2. Install efficient lighting and lighting control systems. Use daylight as an integral part of lighting systems in buildings. AG-3. Install light colored "cool" roofs, cool pavements, and strategically placed shade trees. AG-5. Install energy efficient heating and cooling systems, appliances and equipment, and control systems.	**Discussion:** These Plans, Policies, and Measures are applicable to the Project, because the Project could install on-site solar photovoltaic panels and/or evaluate the feasibility of installing off-site renewable energy, such as solar photovoltaic panels or wind turbines, as a means of achieving a 15 percent reduction. The Project could also install light-emitting diodes (LEDs) or other similarly energy efficient lighting for all outdoor fixtures and could limit outdoor lighting to

85 California Office of the Attorney General, *The California Environmental Quality Act: Addressing Global Warming Impacts at the Local Agency Level*, (2008)

86 Governor's Office of Planning and Research, *Technical Advisory – CEQA and Climate Change: Addressing Climate Change through California Environmental Quality Act (CEQA) Review*, (2008).

Plans, Policies, and Measures (Applicable)	
ENERGY EFFICIENCY (continued)	
AG-6. Install light emitting diodes (LEDs) for traffic, street and other outdoor lighting. AG-7. Limit the hours of operation of outdoor lighting. AG-10. Install solar and wind power systems, solar and tankless hot water heaters, and energy-efficient heating ventilation and air conditioning. Educate consumers about existing incentives. ***California Climate Action Team Recommended Measures:*** CAT-37. Green Buildings Initiative: Executive Order, S-20-04, sets an ambitious goal of reducing energy use in public and private buildings by 20 percent by the year 2015, as compared with 2003 levels. CAT-39. California Solar Initiative: The solar initiative includes installation of 1 million solar roofs or an equivalent 3,000 MW by 2017 on homes and businesses. ***OPR Recommended Measures:*** OPR-11. Recognize and promote energy saving measures beyond Title 24 requirements for residential and commercial projects. OPR-14. Replace traffic lights, streetlights, and other electrical uses with energy efficient bulbs and appliances. OPR-15. Purchase Energy Star equipment and appliances for public agency use. OPR-16. Incorporate on-site renewable energy production, including installation of photovoltaic cells or other solar options.	appropriate hours to reduce GHG emissions. In addition, the Project could plant shade trees around the mixed-use commercial and parking structures to reduce energy requirements from heating and cooling. These measures would reduce GHG emissions due to reduction in energy requirement.
WATER CONSERVATION AND EFFICIENCY	
Attorney General's Recommended Project-Level Measures: AG-13. Create water-efficient landscapes. AG-14. Install water-efficient irrigation systems and devices, such as soil moisture-based irrigation controls. AG-15. Use reclaimed water for landscape irrigation in new developments and on public property. Install the infrastructure to deliver and use reclaimed water. AG-16. Design buildings to be water-efficient. Install water-efficient fixtures and appliances. AG-18. Restrict watering methods (e.g., prohibit systems that apply water to non-vegetated surfaces) and control runoff. AG-19. Restrict the use of water for cleaning outdoor surfaces and vehicles. AG-20. Implement low-impact development practices that maintain the existing hydrologic character of the site to manage storm water and protect the environment. (Retaining stormwater runoff on site can drastically reduce the need for energy-intensive imported water at the site.)	**Discussion:** These Plans, Policies, and Measures are applicable to the Project because the Project could install water-efficient, low-flow faucets equipped with automatic shutoff sensors, and high efficiency toilets and urinals in all on-site public facilities and restrooms. The Project could also use drought-tolerant vegetation for outdoor landscaping, utilize drip/subsurface irrigation to the maximum extent for outdoor landscaping, could prohibit irrigation during peak daylight hours when evaporation rates are highest, and could use reclaimed water for outdoor landscape irrigation. The Project could also utilize low-impact development practices, such as designing landscaped areas to retain sufficient amounts of stormwater in order to reduce irrigation needs. These measures could reduce GHG emissions due to reduction in water consumption.

Plans, Policies, and Measures (Applicable)	
WATER CONSERVATION AND EFFICIENCY (continued)	
AG-21. Devise a comprehensive water conservation strategy appropriate for the project and location. The strategy may include many of the specific items listed above, plus other innovative measures that are appropriate to the specific project. ***California Climate Action Team Recommended Measures:*** CAT-21. Water Use Efficiency: Approximately 19 percent of all electricity, 30 percent of all natural gas, and 88 million gallons of diesel are used to convey, treat, distribute and use water and wastewater. Saving water saves energy. Saving water that gets treated as wastewater saves more energy. Saving water that gets heated or additionally pressurized saves still more. ***OPR Recommended Measures:*** No specific measures.	
SOLID WASTE MEASURES	
Attorney General's Recommended Project-Level Measures: AG-23. Reuse and recycle construction and demolition waste (including, but not limited to soil, vegetation, concrete, lumber, metal, and cardboard). AG-24. Provide interior and exterior storage areas for recyclables and green waste and adequate recycling containers located in public areas. AG-26. Provide education and publicity about reducing waste and available recycling services. ***California Climate Action Team Recommended Measures:*** CAT-13. Achieve 50% Statewide Recycling Goal: Achieving the State's 50 percent waste diversion mandate as established by the Integrated Waste Management Act of 1989, (AB 939, Sher, Chapter 1095, Statutes of 1989), will reduce climate change emissions associated with energy intensive material extraction and production as well as methane emission from landfills. CAT-15. Zero Waste—High Recycling: Additional recovery of recyclable materials from landfills will reduce the climate change emissions associated with energy intensive material extraction and production as well as methane emission from landfills. Transforming organics/biomass and plastic waste into marketable products will also reduce the amount of material going to landfill, and therefore will further reduce climate change emissions. ***OPR Recommended Measures:*** OPR-30. Create incentives to increase recycling and reduce generation of solid waste by residential users. OPR-32. Add residential/commercial food waste collection to existing greenwaste collection programs.	**Discussion:** These Plans, Policies, and Measures are applicable to the Project because the Project could reuse and/or recycle demolition material to the maximum extent, and could provide on-site containers or dedicated areas for the collection of recyclable materials. Furthermore, the Project's construction waste would be transferred to the Scholl Canyon Landfill, which has the capability to capture the methane gas generated by solid waste. These measures could reduce GHG emissions due to reductions in solid waste generation and methane gas capture from the landfill.

Plans, Policies, and Measures (Applicable)	
LAND USE MEASURES	
Attorney General's Recommended Project-Level Measures: AG-27. Include mixed-use, infill, and higher density in development projects to support the reduction of vehicle trips, promote alternatives to individual vehicle travel, and promote efficient delivery of services and goods. AG-29. Incorporate public transit into project design. ***California Climate Action Team Recommended Measures:*** No specific measures. ***OPR Recommended Measures:*** OPR-1. Implement land use strategies to encourage jobs/housing proximity, promote transit-oriented development, and encourage high-density development along transit corridors. Encourage compact, mixed-use projects, forming urban villages designed to maximize affordable housing and encourage walking, bicycling and the use of public transit systems. OPR-2. Encourage infill, redevelopment, and higher density development, whether in incorporated or unincorporated settings. OPR-5. Incorporate features into project design that would accommodate the supply of frequent, reliable and convenient public transit. OPR-6. Implement street improvements that are designed to relieve pressure on a region's most congested roadways and intersections.	**Discussion:** These Plans, Policies, and Measures are applicable to the Project because the Project is a mixed-use and infill development. Sidewalks along the frontages of the Project site would be replaced to improve pedestrian access to the site. Furthermore, the Los Angeles County Metropolitan Transportation Authority (Metro) and the City of Glendale, Glendale Beeline, would operate bus routes near the Project site. Additionally, the routes serving the Project make a stop at the Glendale Transportation Center (GTC), which provides access to the greater Los Angeles Metropolitan region via bus and commuter trains. The GTC also provides statewide access via Amtrak long distance trains. The GTC is 0.4 mile south from the Project site and is accessible via Gardena Avenue. These Project features would reduce GHG emissions due to reductions in vehicle miles traveled.
TRANSPORTATION AND MOTOR VEHICLES	
Attorney General's Recommended Project-Level Measures: AG-33. Limit idling time for commercial vehicles, including delivery and construction vehicles. AG-34. Use low or zero-emission vehicles, including construction vehicles. AG-38. Provide the necessary facilities and infrastructure to encourage the use of low or zero-emission vehicles (e.g., electric vehicle charging facilities and conveniently located alternative fueling stations.) AG-39. Increase the cost of driving and parking private vehicles by, e.g., imposing tolls and parking fees. AG-46. For commercial projects, provide adequate bicycle parking near building entrances to promote cyclist safety, security, and convenience. For large employers, provide facilities that encourage bicycle commuting, including, e.g., locked bicycle storage or covered or indoor bicycle parking. AG-50. Provide information on all options for individuals and businesses to reduce transportation-related emissions. Provide education and information about public transportation.	**Discussion:** These Plans, Policies, and Measures are applicable to the Project because the Project could place signs at all commercial loading docks prohibiting idling for more than 5-minutes, in accordance with CARB regulations. The Project could also the feasibility and availability of low or zero-emission vehicles for construction and operation, and provide electric vehicle charging facilities. Parking tolls could be placed, and adequate bicycle parking could be installed. Information on public transportation could also be provided to the customers of the Project. These measures could reduce GHG emissions due to reductions in vehicle miles traveled and idling time.

Plans, Policies, and Measures (Applicable)	
TRANSPORTATION AND MOTOR VEHICLES (continued)	
California Climate Action Team Recommended Measures: CAT-2. Diesel Anti-Idling: In July 2004 the CARB adopted a measure to limit diesel-fueled commercial motor vehicle idling. ***OPR Recommended Measures:*** OPR-7. Limit idling time for commercial vehicles, including delivery and construction vehicles.	
URBAN FORESTRY	
Attorney General's Recommended Project-Level Measures: No specific measures. ***California Climate Action Team Recommended Measures:*** CAT-19. Urban Forestry: This strategy would expand the State Urban Forestry Program. A new state-wide goal of planting five million trees in urban areas by 2020 would be achieved through the expansion of local urban forestry programs. ***OPR Recommended Measures:*** OPR-8. Plant trees and vegetation near structures to shade buildings and reduce energy requirements for heating/cooling. OPR-9. Preserve or replace on-site trees (that are removed due to development) as a means of providing carbon storage.	**Discussion:** These Plans, Policies, and Measures are applicable to the Project because the Project could plant trees near the mixed-use commercial and parking structures for shade and carbon storage. This measure could reduce GHG emissions due to reductions in building energy requirements and from the storage of CO_2.

Sources:
California Department of Justice, Office of the Attorney General, "The California Environmental Quality Act – Addressing Global Warming Impacts at the Local Agency Level," http://ag.ca.gov/globalwarming/pdf/GW_mitigation_measures.pdf. 2008.
California Environmental Protection Agency, Climate Action Team, Climate Action Team Report to Governor Schwarzenegger and the Legislature, *(2006).*
Office of Planning and Research, "CEQA and Climate Change: Addressing Climate Change Through CEQA Review," http://www.opr.ca.gov/ceqa/pdfs/june08-ceqa.pdf. 2008.

Many of the recommended measures are clearly not applicable to the Project. This is because some of the measures are not within the scope of the Project, must be implemented at the state level, or are not feasible for the Project. The following measures listed in **Table 4.2-20, Attorney General, OPR, and 2006 CAT Report GHG Measures Not Applicable**, would not apply to the Project:

Table 4.2-20
Attorney General, OPR, and 2006 CAT Report GHG Measures Not Applicable

Plans, Policies, and Measures (Not applicable)	
ENERGY EFFICIENCY	
Attorney General's Recommended "Project-Level Measures" that are Not Applicable to the Project: AG-4. Provide information on energy management services for large energy users. AG-8. Use solar heating, automatic covers, and efficient pumps and motors for pools and spas. AG-9. Provide education on energy efficiency. AG-11. Install solar panels on carports and over parking areas. AG-12. Use combined heat and power in appropriate applications. ***California Climate Action Team Measures that are Not Applicable to the Project:*** CAT-22/25. Building Energy Efficiency Standards in Place and in Progress: The Energy Action Plan and the Integrated Energy Policy Report both call for ongoing updating of the standards, including meeting energy efficiency goals, addressing demand response, and promoting the combination of solar photovoltaics and high-energy efficiency buildings. As part of the process of updating the Building Energy Efficiency Standards, the Energy Commission evaluates new and emerging technology for possible inclusion in the standards. CAT-23/26. Appliance Energy Efficiency Standards in Place and in Progress: The Energy Commission adopts new standards for a variety of appliances. As part of the process of updating the Appliance Energy Efficiency Standards, the CEC evaluates new and emerging technology for increasing the energy efficiency of appliances and equipment for possible inclusion in the standards. CAT-28. Municipal Utility Energy Efficiency Programs/Demand Response: The Energy Commission and the California PUC are collaborating on additional energy efficiency programs beyond those programs already adopted. CAT-29. Municipal Utility Renewable Portfolio Standard: Achieve the 20 percent goal by 2010 and 33 percent goal by 2020. CAT-30. Municipal Utility Combined Heat and Power: This strategy constitutes cost-effective reductions from fossil fuel consumption in the commercial and industrial sector through application of on-site power production to meet both heat and electricity loads.	**Discussion:** These measures are not applicable to the Project because they are either for the State to implement, for the lead agency to implement, for the City to implement, beyond the scope of the project, not feasible for the Project, and/or the Project does not contain land use types that the measures specify.

Plans, Policies, and Measures (Not applicable)	
ENERGY EFFICIENCY (continued)	
CAT-31. Municipal Utility Electricity Sector Carbon Policy: The Energy Commission and the CPUC are collaborating on additional programs to address ways to transition investor-owned utilities away from carbon-intensive electricity sources. CAT-38. Accelerated Renewable Portfolio Standard to 33 percent by 2020 (includes load-serving entities). CAT-40. Investor Owned Utility Energy Efficiency Programs: In September 2004, the PUC adopted aggressive savings targets for the investor-owned utility energy efficiency programs through 2013. CAT-41. Investor-Owned Utility (IOU) Additional Energy Efficiency Programs/Demand Response: In September 2004, the PUC adopted aggressive savings targets for the IOUs' energy efficiency programs through 2013. CAT-42. IOU Combined Heat and Power Initiative: This strategy encourages the installation of on-site power production to meet both heat and electricity loads, known as combined heat and power projects (CHP). CAT-43. IOU Electricity Sector Carbon Policy: The PUC is currently investigating various strategies and incentives to encourage the IOUs to make cost-effective procurement decisions that are based in part on reducing climate change emissions. ***OPR Measures that are Not Applicable to the Project:*** OPR-10. Encourage public and private construction of LEED (Leadership in Energy and Environmental Design) certified (or equivalent) buildings. OPR-12. Where feasible, include in new buildings facilities to support the use of low/zero carbon-fueled vehicles, such as the charging of electric vehicles from green electricity sources. OPR-13. Educate the public, schools, other jurisdictions, professional associations, business and industry about reducing GHG emissions. OPR-17. Execute an Energy Savings Performance Contract with a private entity to retrofit public buildings. This type of contract allows the private entity to fund all energy improvements in exchange for a share of the energy savings over a period of time. OPR-18. Design, build, and operate schools that meet the Collaborative for High Performance Schools (CHPS) best practices. OPR-19. Retrofit municipal water and wastewater systems with energy efficient motors, pumps and other equipment, and recover wastewater treatment methane for energy production.	

Plans, Policies, and Measures (Not applicable)	
ENERGY EFFICIENCY (continued)	
OPR-20. Convert landfill gas into energy sources for use in fueling vehicles, operating equipment, and heating buildings. OPR-21. Purchase government vehicles and buses that use alternatives fuels or technology, such as electric hybrids, biodiesel, and ethanol. Where feasible, require fleet vehicles to be low emission vehicles. Promote the use of these vehicles in the general community. OPR-22. Offer government incentives to private businesses for developing buildings with energy and water efficient features and recycled materials. The incentives can include expedited plan checks and reduced permit fees. OPR-23. Offer rebates and low-interest loans to residents that make energy-saving improvements on their homes.	
WATER CONSERVATION AND EFFICIENCY	
Attorney General's Recommended "Project-Level Measures" that are Not Applicable to the Project: AG-17. Use gray water. (Gray water is untreated household wastewater from bathtubs, showers, bathroom washbasins, and water from clothes washing machines.) For example, install dual plumbing in all new development allowing gray water to be used for landscape irrigation. AG-22. Provide education about water conservation and available programs and incentives. ***California Climate Action Team Measures that are Not Applicable to the Project:*** No specific measures. ***OPR Measures that are Not Applicable to the Project:*** No specific measures.	**Discussion:** These measures are not applicable to the Project because they are either for the State to implement, for the lead agency to implement, for the City to implement, beyond the scope of the project, not feasible for the Project, and/or the Project does not contain land use types that the measures specify.
SOLID WASTE MEASURES	
Attorney General's Recommended "Project-Level Measures" that are Not Applicable to the Project: AG-25. Recover by-product methane to generate electricity. ***California Climate Action Team Measures that are Not Applicable to the Project:*** CAT-14. Landfill Methane Capture: Landfills can install direct gas use projects or electricity projects with backup flare systems to capture and use methane. ***OPR Measures that are Not Applicable to the Project:*** OPR-31. Implement a Construction and Demolition Waste Recycling Ordinance to reduce the solid waste created by new development.	**Discussion:** These measures are not applicable to the Project because they are either for the state to implement, for the lead agency to implement, for the City to implement, beyond the scope of the project, not feasible for the Project, and/or the Project does not contain land use types that the measures specify.

Plans, Policies, and Measures (Not applicable)	
LAND USE MEASURES	
Attorney General's Recommended "Project-Level Measures" that are Not Applicable to the Project: AG-28. Educate the public about the benefits of well-designed, higher density development. AG-30. Preserve and create open space and parks. Preserve existing trees, and plant replacement trees at a set ratio. AG-31. Develop "brownfields" and other underused or defunct properties near existing public transportation and jobs. AG-32. Include pedestrian and bicycle-only streets and plazas within developments. Create travel routes that ensure that destinations may be reached conveniently by public transportation, bicycling or walking. ***California Climate Action Team Measures that are Not Applicable to the Project:*** No specific measures. ***OPR Measures that are Not Applicable to the Project:*** OPR-3. Encourage new developments to integrate housing, civic and retail amenities (jobs, schools, parks, shopping opportunities) to help reduce VMT resulting from discretionary automobile trips. OPR-4. Apply advanced technology systems and management strategies to improve operational efficiency of transportation systems and movement of people, goods and services.	**Discussion:** These measures are not applicable to the Project because they are either for the State to implement, for the lead agency to implement, for the City to implement, beyond the scope of the project, not feasible for the Project, and/or the Project does not contain land use types that the measures specify.
TRANSPORTATION AND MOTOR VEHICLES	
Attorney General's Recommended "Project-Level Measures" that are Not Applicable to the Project: AG-35. Promote ride sharing programs e.g., by designating a certain percentage of parking spaces for ride-sharing vehicles, designating adequate passenger loading and unloading and waiting areas for ride-sharing vehicles, and providing a web site or message board for coordinating rides. AG-36. Create car-sharing programs. Accommodations for such programs include designating parking spaces for the car-share vehicles at convenient locations accessible by public transportation. AG-37. Create local "light vehicle" networks, such as neighborhood electric vehicle (NEV) systems. AG-40. Build or fund a transportation center where various public transportation modes intersect. AG-41. Provide shuttle service to public transit. AG-42. Provide public transit incentives such as free or low-cost monthly transit passes. AG-43. Promote "least polluting" ways to connect people and goods to their destinations.	**Discussion:** These measures are not applicable to the Project because they are either for the State to implement, for the lead agency to implement, for the City to implement, beyond the scope of the project, not feasible for the Project, and/or the Project does not contain land use types that the measures specify.

Plans, Policies, and Measures (Not applicable)	
TRANSPORTATION AND MOTOR VEHICLES (continued)	
AG-44. Incorporate bicycle lanes and routes into street systems, new subdivisions, and large developments. AG-45. Incorporate bicycle-friendly intersections into street design. AG-47. Create bicycle lanes and walking paths directed to the location of schools, parks and other destination points. AG-48. Work with the school district to restore or expand school bus services. AG-49. Institute a telecommute work program. Provide information, training, and incentives to encourage participation. Provide incentives for equipment purchases to allow high-quality teleconferences. ***California Climate Action Team Measures that are Not Applicable to the Project:*** CAT-1. Vehicle Climate Change Standards: With the passage of AB 1493, Pavley, Chapter 200, Statutes of 2002, California moved to the forefront of reducing vehicle climate change emissions. This bill required the state to develop and adopt regulations that achieve the maximum feasible and cost-effective reduction of climate change emissions emitted by passenger vehicles and light duty trucks. CAT-3. Other New Light Duty Vehicle Technology Improvements: New standards would be adopted to phase in beginning in the 2017 model year (following up on the existing mid-term standards that reach maximum stringency in 2016). CAT-5. Transport Refrigeration Units Electrification, Off-road Electrification, Port Electrification (ship to shore). CAT-8. Alternative Fuels: Biodiesel Blends: CARB would develop regulations to require the use of 1 to 4 percent biodiesel displacement of California diesel fuel. CAT-9. Alternative Fuels: Ethanol: Increase use of E-85 fuel. CAT-10. Heavy-Duty Vehicle Emission Reduction Measures: Climate change emissions can be reduced with improved aerodynamics, climate engine-based improved efficiency, vehicle weight reduction, and rolling and inertia resistance improvements.	

Plans, Policies, and Measures (Not applicable)	
TRANSPORTATION AND MOTOR VEHICLES (continued)	
CAT-12. Hydrogen Highway: The California Hydrogen Highway Network (CA H2 Net) is a State initiative to promote the use of hydrogen as a means of diversifying the sources of transportation energy in order achieve a secure energy future, address environmental, public health, and economic challenges, and work in partnership with other State programs to advance energy efficiency and renewable energy. The CA H2 Net mission is to assure that hydrogen infrastructure is in place as fuel cells and other hydrogen technologies reach commercial readiness. CAT-24. Fuel-Efficient Replacement Tires & Inflation Programs: State legislation established a statewide program to encourage the production and use of more efficient tires. CAT-32. Alternative Fuels: Non-Petroleum Fuels: This strategy involves increasing the use of non-petroleum fuels in California's transportation sector. CAT-33. Measures to Improve Transportation Energy Efficiency: This strategy builds on current efforts to provide a framework for expanded and new initiatives including incentives, tools and information that advance cleaner transportation and reduce climate change emissions. CAT-34. Smart Land Use and Intelligent Transportation: Strategies include: Promoting jobs and housing proximity and transit-oriented development; Encouraging high density residential/commercial development along transit/rail corridor; Valuing and congestion pricing; Implementing intelligent transportation systems, traveler information/traffic control, incident management; Accelerating the development of broadband infrastructure; and Comprehensive, integrated, multimodal/intermodal transportation planning. ***OPR Measures that are Not Applicable to the Project:*** OPR-24. Create bicycle lanes and walking paths directed to the location of schools, parks and other destination points. OPR-25. Offer government employees financial incentives to carpool, use public transportation, or use other modes of travel for daily commutes. OPR-26. Encourage large businesses to develop commute trip reduction plans that encourage employees who commute alone to consider alternative transportation modes. OPR-27. Develop shuttle systems around business district parking garages to reduce congestion and create shorter commutes.	

Plans, Policies, and Measures (Not applicable)	
TRANSPORTATION AND MOTOR VEHICLES (continued)	
OPR-28. Create an online ridesharing program that matches potential carpoolers immediately through email. OPR-29. Develop a Safe Routes to School program that allows and promotes bicycling and walking to school.	
URBAN FORESTRY	
Attorney General's Recommended "Project-Level Measures" that are Not Applicable to the Project: No specific measures. ***California Climate Action Team Measures that are Not Applicable to the Project:*** CAT-16. Forest Management: Strategies for storing more carbon through forest management activities can involve a range of management activities such as increasing either the growth of individual trees, the overall age of trees prior to harvest, or dedicating land to older aged trees. CAT-17. Forest Conservation: Conservation projects are designed to minimize/prevent the climate change emissions that are associated with the conversion of forestland to non-forest uses by adding incentives to maintain an undeveloped forest landscape. CAT-18. Fuels Management/Biomass: Fire management and biomass development projects could be accelerated by establishing a new state goal of thinning, removing, and treating public and privately owned forestland. CAT-20. Afforestation/Reforestation: Reforestation projects focus on restoring native tree cover on lands that were previously forested and are now covered with other vegetative types. ***OPR Measures that are Not Applicable to the Project:*** No specific measures.	**Discussion:** These measures are not applicable to the Project because they are either for the State to implement, for the lead agency to implement, for the City to implement, beyond the scope of the project, not feasible for the Project, and/or the Project does not contain land use types that the measures specify.
OTHER SECTORS	
Attorney General's Recommended "Project-Level Measures" that are Not Applicable to the Project: No specific measures. ***California Climate Action Team Measures that are Not Applicable to the Project:*** CAT-4. HFC Reduction Strategies: CARB staff has identified five possible measures to reduce HFC emissions from vehicular and commercial refrigeration systems: (1) Ban the retail sale of hydrofluorocarbon (HFC) in small (mostly 12-oz.) cans; (2) Require that only low-GWP refrigerants be used in new vehicular systems; (3) Adopt specifications for new commercial refrigeration; (4) Add refrigerant leak-tightness to the "pass" criteria for vehicular Inspection and Maintenance programs (all vehicles) and adopt an "inspect and repair" measure for commercial systems; (5) Enforce the federal ban on releasing HFCs.	**Discussion:** These measures are not applicable to the Project because they are either for the State to implement, for the lead agency to implement, for the City to implement, beyond the scope of the project, not feasible for the Project, and/or the Project does not contain land use types that the measures specify.

Plans, Policies, and Measures (Not applicable)	
OTHER SECTORS (continued)	
CAT-6. Manure Management. CAT-7. Semi Conductor Industry Targets (PFC Emissions). CAT-11. Reduced Venting and Leaks in Oil and Gas Systems: A model rule would be developed to be considered for adoption by the Air Pollution Control Districts. CAT-27. Cement Manufacturing: This strategy involves cost-effective reductions to reduce energy consumption and to lower carbon dioxide emissions in the cement industry. CAT-35. Conservation tillage/cover crops: Conservation tillage and cover crops practices are increasingly being used by California farmers for a variety of reasons, including improved soil tilth, improved water use efficiency, reduced tillage requirements, saving labor and fuel, and reduced fertilizer inputs. CAT-36. Enteric Fermentation: To reduce climate change emissions resulting from enteric fermentation, feed adjustments may be made that improve milk and meat productivity. ***OPR Measures that are Not Applicable to the Project:*** No specific measures.	

Sources:
California Department of Justice, Office of the Attorney General, "The California Environmental Quality Act – Addressing Global Warming Impacts at the Local Agency Level," http://ag.ca.gov/globalwarming/pdf/GW_mitigation_measures.pdf. 2008.
California Environmental Protection Agency, Climate Action Team, Climate Action Team Report to Governor Schwarzenegger and the Legislature, *(2006).*
Office of Planning and Research, "CEQA and Climate Change: Addressing Climate Change Through CEQA Review," http://www.opr.ca.gov/ceqa/pdfs/june08-ceqa.pdf. 2008.

The Project includes features that would result in decreased GHG emissions. The Los Angeles/Glendale Water Reclamation Plant provides recycled water to Glendale for non-potable uses such as irrigation. The reclamation plant has a capacity of 61.38 acre-feet per day and has been delivering recycled water to the City since the late 1970s. The City of Glendale is entitled to 50 percent of any effluent produced at the plant, or 10 million acre-feet per year. Thus, the Project has the potential to use reclaimed water for landscape irrigation, which would reduce GHG emissions. The sewage from the Project would be treated by the Hyperion Treatment Plant, which is equipped with methane capture technologies. Therefore, the wastewater produced by the Project would not contribute to GHG emissions during its treatment process. In addition, the Project would recycle more than half its solid waste, which would further reduce GHG emissions from the Project. Moreover, the Project's construction waste would be transferred to the Scholl Canyon Landfill in Glendale, which has the capability to capture methane gas. The Project is also located in the southern portion of the City of Glendale in the vicinity of industrial, commercial, and

multi-family land uses and is an in-fill project located close to major transit corridors. The Los Angeles County Metropolitan Transportation Authority (Metro) and the City of Glendale, Glendale Beeline, would operate bus routes near the Project site. Additionally, the routes serving the Project make a stop at the Glendale Transportation Center (GTC), which provides access to the greater Los Angeles Metropolitan region via bus and commuter trains. The GTC also provides statewide access via Amtrak long distance trains. The GTC is 0.4 mile south from the Project site and is accessible via Gardena Avenue. The Project would result in average daily trip reductions due to its in-fill nature and mix of commercial/office land uses, although some of these reductions were not taken into account in the traffic impact study in order to provide a worst-case analysis.

The Project does not specifically include specific measures to reduce GHG emissions from energy and water consumption. In order to demonstrate consistency with the plans, policies, and measures discussed above, it is recommended that the Project implement the additional mitigation measures below to reduce energy- and water-related GHG emissions.

Level of Significance Before Mitigation: Significant.

Mitigation Measures: CARB's *Scoping Plan* recommends a greenhouse gas reduction goal for local governments of 15 percent below today's levels by 2020 to ensure that their municipal and communitywide emissions match the State's reduction target.[87] Therefore, based on CARB's *Scoping Plan* recommendation, the Project should include the following mitigation measures:

4.2-2 The Project shall achieve a minimum 15 percent reduction in building combined space heating, cooling, and water heating energy compared to the 2008 Title 24 Standards for commercial buildings. The Project shall evaluate the feasibility of installing on- or off-site renewable energy, such as solar photovoltaic panels or wind turbines, as a means of achieving a 15 percent reduction.

4.2-3 The Project shall install light-emitting diodes (LEDs) or other similarly energy efficient lighting for all outdoor fixtures and shall limit outdoor lighting to appropriate hours.

4.2-4 The Project shall use white or light colored roofing material instead of the typical darker colored roof materials employed in commercial construction (light colored roofing materials provide a higher reflectivity, which helps reduce building energy consumption and reduces the heat island effect, as compared to buildings utilizing darker roofing materials).

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87 California Air Resources Board, *Climate Change Scoping Plan*, (2008) E-S 5.

4.2-5 The Project shall plant native or drought-tolerant trees and vegetation around its structures to shade buildings and reduce energy requirements for heating and cooling.

4.2-6 The Project shall install low-flow water faucets equipped with automatic shutoff sensors in all on-site public facilities and restrooms.

4.2-7 The Project shall install high efficiency toilets (1.28 gallons per flush or less, or dual flush) and high efficiency/ultra low water urinals in all on-site public facilities and restrooms.

4.2-8 The Project shall utilize drip/subsurface irrigation (micro-irrigation) to the maximum extent for outdoor landscaping and shall prohibit irrigation during peak daylight hours when evaporation rates are highest.

4.2-9 The Project shall use only drought-tolerant vegetation for outdoor landscaping.

4.2-10 The Project shall use only reclaimed water for outdoor landscape irrigation if a connection from the Project site to the Los Angeles/Glendale Water Reclamation Plant exists.

4.2-11 The Project shall utilize low-impact development practices, such as designing landscaped areas to retain sufficient amounts of stormwater in order to reduce irrigation needs.

4.2-12 The Project shall reuse and/or recycle demolition material to the maximum extent.

4.2-13 The Project shall provide on-site containers or dedicated areas for the collection of recyclable materials, if consistent with the contracted waste management company's collections practices.

4.2-14 The Project shall place signs at all commercial loading docks prohibiting idling for more than 5 minutes, in accordance with CARB regulations (this does not apply to transportation refrigeration units (TRUs), emergency vehicles, or other exempt equipment under the CARB regulation).

4.2-15 The Project shall provide the necessary facilities and infrastructure to encourage the use of low or zero-emission vehicles (e.g., appropriate infrastructure for the installation of electric vehicle charging facilities).

4.2-16 The Project shall provide adequate bicycle parking near building entrances to promote cyclist safety, security, and convenience and large employers shall provide facilities that encourage bicycle commuting (e.g., locked bicycle storage or covered or indoor bicycle parking).

4.2-17 The Project shall provide information to employees and visitors on convenient public transportation options available to the site.

Level of Significance after Mitigation: Less than significant.