IV.B  AIR QUALITY

1. INTRODUCTION

This section describes the ambient air quality of the local and regional area and provides a comparison of existing air quality to applicable federal, state, and local air pollutant standards. In addition, sources of air emissions in the vicinity of the project site are identified and discussed. This section also identifies the plans and policies developed during efforts to improve air quality. Finally, this section evaluates potential air quality impacts associated with the project and identifies mitigation measures to reduce potential impacts. Sources utilized in this discussion include the South Coast Air Quality Management District (SCAQMD) California Environmental Quality act (CEQA) Air Quality Handbook and air quality data from the United States Environmental Protection Agency (US EPA), the California Air Resources Board (CARB), and the SCAQMD. Emission calculations and air quality modeling conducted for the project is contained within Appendix IV.B of this draft environmental impact report (EIR).

a. Methodology

The methodology used to evaluate the air quality impacts associated with construction and operation of the proposed project is based on the SCAQMD's CEQA Air Quality Handbook and the URBEMIS2007 land use and air emissions estimation model for development projects. Emission factors contained in URBEMIS2007 were used to generate emissions from construction worker vehicles, heavy-duty haul-trucks, and heavy-duty off-road construction equipment. The emissions are also estimated based on information and estimated activity levels provided by the applicant. Some elements of this analysis are based on data provided in other sections of this draft EIR; for example, trip generation rates and a carbon monoxide (CO) hotspots analysis are based on the traffic impact analysis prepared for this project.

Implementation of the project would generate both construction and operation-related pollutant emissions. On-site stationary sources, heavy-duty construction vehicles, construction-worker vehicles, and vendor delivery vehicles would generate construction-related emissions. On-site stationary sources and on- and off-site mobile sources would be generating operation-related emissions. The City of Los Angeles has prepared an initial study that determined that the long-term operation of the project would not conflict or obstruct with any air quality plan and that the project would not create objectionable odors. However, construction and operational emissions associated with the proposed project were found to have the potential to cause a significant impact and further study was necessary.

2 The Initial Study is contained in Appendix I of this draft EIR. Operational emissions calculations are provided in Appendix IV.B.
Consequently, the focus of this draft EIR section is on evaluating air quality construction- and operational-related impacts associated with project implementation and whether those impacts would cause an exceedance of any ambient air quality standard or significance threshold. Where potential impacts are identified, mitigation measures are recommended to reduce such impacts, if possible, to below the level of significance.

b. Introduction to Air Quality

The Southern California area has been divided into a number of geographical air basins. The project site is located within the South Coast Air Basin (SCAB or the basin), a 6,000-square-mile area encompassing all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties, all of which are governed by the SCAQMD. This area consistently generates the highest levels of smog in the United States and is considered to have the worst air quality in the nation. The factors that influence this determination are discussed below.

c. Smog and Its Causes

Smog is a general term based on the words smoke and fog that is used to describe dense, visible air pollution. Although some air pollutants are colorless, smog is commonly used to describe the general concentrations of pollutants in the air. Smog is formed when combustion emissions and gaseous emissions, such as volatile organic compounds (VOC, also referred to as reactive organic compounds, or ROC) and oxides of nitrogen (NOx), undergo photochemical reactions in sunlight to form ozone (O3). Ozone is a gas that, in the upper atmosphere, helps to shield the earth from harmful radiation. However, in the lower atmosphere where people live, O3 poses health risks and damages crops, rubber, and other materials. Particulates, such as soil and dust materials, and vehicle exhaust particulates often mix with nitrogen dioxide (NO2) and other compounds and create a brownish haze in the air. A “smog episode” warning occurs when the 1-hour average concentration of O3 rises to a level that could endanger or cause harm to the public.

The topography and climate of the basin combine to make it an area of high smog potential. During the summer months, a warm air mass frequently descends over the lower, cool, moist marine air layer. The warm upper layer forms a cap over the marine layer and inhibits the air pollutants generated near the ground from dispersing upward. Light summer winds and the surrounding mountains further limit the horizontal disbursement of the pollutants. Concentrating volumes of pollutants in this manner allows the summer sunlight to generate high levels of smog. In the winter, cool ground temperatures and very light winds cause extremely low inversions and air stagnation that trap CO and NO2 during the late night and early morning hours. On days when no inversions occur, or when winds average 25 miles per hour or
more, there will be no important smog effects. A summary of local climatic conditions is provided later in this section.

The air pollutants within the basin are generated by both stationary and mobile sources. Stationary sources are known as “point sources,” which have one or more emission sources at a single facility. Point sources are usually associated with manufacturing and industrial uses, and include sources that produce electricity or process heat, such as refinery boilers or combustion equipment, but may also include commercial establishments, like dry cleaners or char broilers in restaurants. “Area sources,” which are widely distributed, produce many small emissions. Examples of area sources include residential water heaters, painting operations, lawn mowers, agricultural fields, landfills, and consumer products such as barbecue lighter fluid or hair spray. “Mobile sources” refer to operational and evaporative emissions from motor vehicles. Mobile sources account for over 95 percent of the CO emissions, approximately 58 percent of the sulfur oxides (SO\textsubscript{x}) emissions, over 90 percent of the NO\textsubscript{x} emissions, and over 60 percent of the VOC found within the basin.\footnote{3 California Air Resources Board, “2006 Estimated Annual Average Emissions – South Coast Air Basin,” http://www.arb.ca.gov/ei/maps/basins/abscmap.htm. 2007.}

2. ENVIRONMENTAL SETTING

a. Local Climate

The project site is located in the South Coast Air Basin, which transports and receives air pollutants to and from the coastal portions of Ventura and Santa Barbara Counties, both of which are located in the South Central Coast Air Basin. The SCAQMD’s Air Quality Management Plan (AQMP) does not specifically address the control requirements for these adjacent areas; however, the control measures in the plan meet both the federal Clean Air Act (CAA) and California Clean Air Act (CCAA) transport requirements and assist downwind areas in complying with the federal O\textsubscript{3} ambient air quality standard.

Regional climate is dominated by a persistent high-pressure area, which commonly resides over the eastern Pacific Ocean. Seasonal variations in the strength and position of this pressure cell causes changes in the weather patterns of the area. Warm summers, mild winters, infrequent rainfall, moderate daytime on-shore breezes, and moderate humidity characterize local climate conditions.
b. Ambient Air Quality

**Regional Air Quality**

The determination of whether a region’s air quality is healthful or unhealthful is determined by comparing contaminant levels in ambient air samples to national and state standards. California and the federal government have established health-based air quality standards for the following criteria air pollutants: O₃, CO, NO₂, sulfur dioxide (SO₂), PM₁₀ (particulate matter 10 microns or smaller in diameter), PM₂.₅ (particulate matter 2.5 microns or smaller in diameter), and lead. The California and national ambient air quality standards (CAAQS and NAAQS) were established to protect sensitive receptors with a margin of safety from adverse health impacts due to exposure to air pollution. The California standards are more stringent than the federal standards; in the case of PM₁₀ and SO₂, much more stringent. California has also established standards for sulfates, visibility-reducing particles, hydrogen sulfide, and vinyl chloride. The state and national ambient air quality standards for each of the monitored pollutants and their effects on health are summarized in Table IV.B-1, Ambient Air Quality Standards.

Air quality of a region is considered to be in attainment of the CAAQS if the measured ambient air pollutant levels for O₃, CO, SO₂ (1- and 24-hour), NO₂, PM₁₀, PM₂.₅ and visibility-reducing particles are not exceeded, and all other standards are not equaled or exceeded at any time in any consecutive three-year period. Air quality of a region is considered to be in attainment of the NAAQS if the measured ambient air pollutant levels (other than O₃, PM₁₀, PM₂.₅ and those based on annual averages or arithmetic mean) are not exceeded more than once per year. Attainment of the NAAQS for O₃, PM₁₀, and PM₂.₅ are based on statistical calculations over one- to three-year periods, depending on the pollutant.

The basin is in an area of high air pollutant potential, particularly from June through September. This condition is generally attributed to the large amount of pollutant emissions, light winds, and shallow vertical atmospheric mixing. This frequently reduces pollutant dispersion, thus, causing elevated air pollution levels. Pollution concentrations in the basin vary with location, season, and time of day. Ozone concentrations, for example, tend to be lower along the coast, higher in the near inland valleys, and lower in the inland areas of the basin and adjacent desert.
### Table IV.B-1
Ambient Air Quality Standards

<table>
<thead>
<tr>
<th>Air Pollutant</th>
<th>State Standard</th>
<th>Federal Primary Standard</th>
<th>Most Relevant Health Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>(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</td>
</tr>
<tr>
<td>Ozone</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.070 ppm, 8-hr. avg.</td>
<td>0.075 ppm, 8-hr. avg.</td>
<td>(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</td>
</tr>
<tr>
<td>Carbon Monoxide</td>
<td>9.0 ppm, 8-hr. avg.</td>
<td>9 ppm, 8-hr. avg.</td>
<td>(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</td>
</tr>
<tr>
<td>Nitrogen Dioxide</td>
<td></td>
<td></td>
<td>(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</td>
</tr>
<tr>
<td>Sulfur Dioxide</td>
<td>0.04 ppm, 24-hr. avg.</td>
<td>0.030 ppm, annual arithmetic mean</td>
<td>Bronchoconstriction accompanied by symptoms which may include wheezing, shortness of breath and chest tightness, during exercise or physical activity in person with asthma</td>
</tr>
<tr>
<td>Respirable Particulate</td>
<td>20 µg/m³, annual arithmetic mean</td>
<td>150 µg/m³, 24-hr. avg.</td>
<td>(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</td>
</tr>
<tr>
<td>Matter (PM₁₀)</td>
<td>50 µg/m³, 24-hr. avg.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fine Particulate Matter</td>
<td>12 µg/m³, annual arithmetic mean</td>
<td>15 µg/m³, annual arithmetic mean (3-year average)</td>
<td>(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</td>
</tr>
<tr>
<td>(PM₂.₅)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### IV.B Air Quality

<table>
<thead>
<tr>
<th>Air Pollutant</th>
<th>State Standard</th>
<th>Federal Primary Standard</th>
<th>Most Relevant Health Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sulfates</td>
<td>25 μg/m³, 24-hr. avg.</td>
<td>None</td>
<td>(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</td>
</tr>
<tr>
<td>Lead²</td>
<td>1.5 μg/m³, 30-day avg.</td>
<td>1.5 μg/m³, calendar quarterly average</td>
<td>(a) Increased body burden; and (b) Impairment of blood formation and nerve conduction</td>
</tr>
<tr>
<td>Visibility-Reducing Particles</td>
<td>Reduction of visual range to less than 10 miles at relative humidity less than 70%, 8-hour avg. (10 AM – 6 PM)</td>
<td>None</td>
<td>Visibility impairment on days when relative humidity is less than 70 %</td>
</tr>
<tr>
<td>Hydrogen Sulfide</td>
<td>0.03 ppm, 1-hr. avg.</td>
<td>None</td>
<td>Odor annoyance</td>
</tr>
<tr>
<td>Vinyl Chloride²</td>
<td>0.01 ppm, 24-hr. avg.</td>
<td>None</td>
<td>Known carcinogen</td>
</tr>
</tbody>
</table>

μg/m³ = microgram per cubic meter. 
ppm = parts per million by volume. 


1 On March 12, 2008, the US 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.

### c. Local Air Quality

The Southern California area has been divided into a number of geographical air basins for the purpose of air quality planning. To monitor the concentrations of criteria pollutants, the SCAQMD has divided the basin into source receptor areas (SRAs) in which 32 air quality-monitoring stations are operated. The project site is located within SRA Number 2 (SRA 2), which contains the northwestern coastal areas of Los Angeles County. The station that monitors SRA 2 is located approximately 6 miles to the west of the project site at West Los Angeles Veterans Affairs Medical Center, which is located at 11301 Wilshire Boulevard. This station presently monitors pollutant concentrations of O₃, CO, and NO₂. Pollutant concentrations of PM₁₀, PM₂.₅, and SO₂ were obtained from the nearest monitoring station located at North Main Street in central Los Angeles within SRA 1, approximately 9 miles to the east of the project site.
As shown in Table IV.B-2, Ambient Pollutant Concentrations Registered in SRA 2, below, lists the measured concentrations and the exceedances of state and federal standards that have occurred at the nearest monitoring stations from 2003 through 2007. As shown, the local monitoring stations have registered values above state standards for O3 and PM10. Concentrations of PM2.5 have also exceeded federal standards over the previous five years. Hydrogen sulfide, vinyl chloride, and visibility-reducing particles were not monitored by CARB or the SCAQMD in Los Angeles County during the period of 2003 to 2007. Concentrations of CO and NO2 have not been exceeded within SRA 2 during the period of 2003 to 2007. However, continuing violations in the basin of the O3 standard warrant caution when dealing with its precursors, such as NOx and VOC. Due to the densely populated area coupled with high motor vehicle use and unfavorable topography, O3, NOx, and VOC have remained a lingering problem for the South Coast Air Basin. Concentrations of the other two criteria pollutants, SO2 and lead, have not been exceeded anywhere within the basin for a number of years.

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Standards1, 2</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>OZONE (O3)</td>
<td>Maximum 1-hour concentration monitored (ppm)</td>
<td>0.134</td>
<td>0.107</td>
<td>0.114</td>
<td>0.10</td>
<td>0.117</td>
</tr>
<tr>
<td></td>
<td>Maximum 8-hour concentration monitored (ppm)</td>
<td>0.105</td>
<td>0.089</td>
<td>0.090</td>
<td>0.074</td>
<td>0.087</td>
</tr>
<tr>
<td></td>
<td>Number of days exceeding state 1-hour standard</td>
<td>0.09 ppm</td>
<td>11</td>
<td>5</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Number of days exceeding federal 8-hour standard3</td>
<td>0.08 ppm</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Number of days exceeding state 8-hour standard</td>
<td>0.070 ppm</td>
<td>-</td>
<td>6</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>CARBON MONOXIDE (CO)</td>
<td>Maximum 1-hour concentration monitored (ppm)</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Maximum 8-hour concentration monitored (ppm)</td>
<td>2.7</td>
<td>2.3</td>
<td>2.1</td>
<td>2.0</td>
<td>1.9</td>
</tr>
<tr>
<td></td>
<td>Number of days exceeding state 1-hour standard</td>
<td>9.0 ppm</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Number of days exceeding state 8-hour standard</td>
<td>9.0 ppm</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>NITROGEN DIOXIDE (NO2)</td>
<td>Maximum 1-hour concentration monitored (ppm)</td>
<td>0.12</td>
<td>0.09</td>
<td>0.08</td>
<td>0.08</td>
<td>0.08</td>
</tr>
<tr>
<td></td>
<td>Annual average concentration monitored (ppm)</td>
<td>0.0231</td>
<td>0.0198</td>
<td>0.0178</td>
<td>0.0173</td>
<td>0.0200</td>
</tr>
<tr>
<td></td>
<td>Number of days exceeding state 1-hour standard4</td>
<td>0.25 ppm</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>PARTICULATE MATTER (PM10)</td>
<td>Maximum 24-hour concentration monitored (μg/m³)</td>
<td>81</td>
<td>72</td>
<td>70</td>
<td>59</td>
<td>78</td>
</tr>
<tr>
<td></td>
<td>Annual average concentration monitored (μg/m³)</td>
<td>34.6</td>
<td>32.7</td>
<td>29.6</td>
<td>30.3</td>
<td>33.3</td>
</tr>
<tr>
<td></td>
<td>Number of samples exceeding federal standard</td>
<td>150 μg/m³</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Number of samples exceeding state standard</td>
<td>50 μg/m³</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>PARTICULATE MATTER (PM2.5)</td>
<td>Maximum 24-hour concentration monitored (μg/m³)</td>
<td>83.7</td>
<td>75.0</td>
<td>73.7</td>
<td>56.2</td>
<td>64.2</td>
</tr>
<tr>
<td></td>
<td>Annual average concentration monitored (μg/m³)</td>
<td>21.3</td>
<td>19.6</td>
<td>18.1</td>
<td>15.6</td>
<td>16.8</td>
</tr>
<tr>
<td></td>
<td>Number of samples exceeding federal standard4</td>
<td>35 μg/m³</td>
<td>5</td>
<td>2</td>
<td>2</td>
<td>0 (11)</td>
</tr>
</tbody>
</table>
IV.B Air Quality

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Standards1, 2</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>SULFUR DIOXIDE (SO2)</td>
<td></td>
<td>2003</td>
</tr>
<tr>
<td>Maximum 1-hour concentration monitored (μg/m³)</td>
<td>0.05</td>
<td>0.08</td>
</tr>
<tr>
<td>Maximum 24-hour concentration monitored (μg/m³)</td>
<td>0.006</td>
<td>0.015</td>
</tr>
<tr>
<td>Number of samples exceeding federal 24-hour standard</td>
<td>365 μg/m³</td>
<td>0</td>
</tr>
<tr>
<td>Number of samples exceeding 24-hour state standard</td>
<td>105 μg/m³</td>
<td>0</td>
</tr>
</tbody>
</table>

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 O3 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 NO2 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 PM10 samples were collected every 6 days at Station No. 087 (Central Los Angeles).
6 PM2.5 samples were collected daily at Station No. 087. The federal standard for PM2.5 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 2003-2006. The statistic shown in parenthesis () for year 2006 is based on the 35 μg/m³ standard.
7 SO2 was monitored at Station No. 087.

d. Global Climate Change

Greenhouse Effect

Heat retention within the atmosphere is an essential process to sustain life on Earth. The natural process through which heat is retained in the troposphere4 is called the “greenhouse effect.” The greenhouse effect traps heat in the troposphere through a three-fold process as follows: Short-wave radiation emitted by the sun is absorbed by the Earth; the Earth emits a portion of this energy in the form of long-wave radiation; and greenhouse gases (GHGs) in the upper atmosphere absorb this long-wave radiation and emit this long-wave radiation into space and toward the Earth. This “trapping” of the long-wave (thermal) radiation emitted back toward the Earth is the underlying process of the greenhouse effect. Without the greenhouse effect, the Earth’s average temperature would be approximately -18 degrees Celsius (°C) (0°F) instead of its present 14°C (57°F).5 The most abundant GHGs are water vapor and carbon dioxide. Many other trace gases have greater ability to absorb and re-radiate long-wave radiation; however, these gases are not as plentiful. For this reason, and to gauge the potency of GHGs, scientists have established a Global Warming Potential (GWP) for each GHG based on its ability to absorb and

4 The troposphere is the bottom layer of the atmosphere, which varies in height from the Earth’s surface to 10 to 12 kilometers.
re-radiate long-wave radiation. The GWP of a gas is determined using carbon dioxide as the reference gas with a GWP of 1.

**Greenhouse Gases**

**Primary Greenhouse Gases**

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

- Water vapor (H₂O). Although water vapor has not received the scrutiny of other GHGs, it is the primary contributor to the greenhouse effect. Water vapor and clouds contribute 66 to 85 percent of the greenhouse effect (water vapor alone contributes 36 to 66 percent). Natural processes such as evaporation from oceans and rivers and transpiration from plants contribute 90 percent and 10 percent of the water vapor in our atmosphere, respectively. The primary human-related source of water vapor comes from fuel combustion in motor vehicles; however, this is not believed to contribute a significant amount (less than 1 percent) to atmospheric concentrations of water vapor. Therefore, the control and reduction of water vapor emissions is not within reach of human actions. The Intergovernmental Panel on Climate Change (IPCC) has not determined a GWP for water vapor.

- Carbon dioxide (CO₂). Carbon dioxide is primarily generated by fossil fuel combustion in stationary and mobile sources. Due to the emergence of industrial facilities and mobile sources in the past 250 years, the concentration of carbon dioxide in the atmosphere has increased 35 percent. Carbon dioxide is the most widely emitted GHG and is the reference gas (GWP of 1) for determining GWPs for other GHGs. In 2004, 83.8 percent of California’s GHG emissions were carbon dioxide.

- Methane (CH₄). Methane is emitted from biogenic sources, incomplete combustion in forest fires, landfills, manure management, and leaks in natural gas pipelines. In the United States, the top three sources of methane come from landfills, natural gas systems, and enteric fermentation. Methane is the primary component of natural gas, which is used for space and water heating, steam production, and power generation. The GWP of methane is 21.

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


IV.B Air Quality

- Nitrous oxide (N\textsubscript{2}O). Nitrous oxide is produced by both natural and human-related sources. Primary human-related sources include agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuel, adipic acid production, and nitric acid production. The GWP of nitrous oxide is 310.

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

- Perfluorocarbons (PFCs). Perfluorocarbons are compounds consisting of carbon and fluorine. They are primarily created as a byproduct of aluminum production and semiconductor manufacturing. Perfluorocarbons are potent GHGs with a GWP several thousand times that of carbon dioxide, depending on the specific PFC. Another area of concern regarding PFCs is their long atmospheric lifetime (up to 50,000 years).\textsuperscript{13} The GWP of PFCs range from 5,700 to 11,900.

- Sulfur hexafluoride. Sulfur hexafluoride is a colorless, odorless, nontoxic, nonflammable gas. It is most commonly used as an electrical insulator in high voltage equipment that transmits and distributes electricity. Sulfur hexafluoride is the most potent GHG that has been evaluated by the IPCC with a GWP of 23,900. However, its global warming contribution is not as high as the GWP would indicate due to its low mixing ratio compared to carbon dioxide (4 parts per trillion [ppt] in 1990 versus 365 parts per million [ppm]).\textsuperscript{14}

Other Greenhouse Gases

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

- Hydrochlorofluorocarbons (HCFCs). HCFCs are solvents, similar in use and chemical composition to CFCs. The main uses of HCFCs are for refrigerant products and air conditioning systems. As part of the Montreal Protocol, all developed countries that adhere to the protocol are subject to a consumption cap and gradual phaseout of HCFCs. The United States is scheduled to achieve a 100 percent reduction to the cap by 2030. The GWP of HCFCs range from 93 for HCFC-123 to 2,000 for HCFC-142b.\textsuperscript{15}

- 1,1,1-trichloroethane. 1,1,1-trichloroethane or methyl chloroform is a solvent and degreasing agent commonly used by manufacturers. In 1992, the US EPA issued Final Rule 57 FR 33754 scheduling the


phaseout of methyl chloroform by 2002. Therefore, the threat posed by methyl chloroform as a GHG will diminish. Nevertheless, the GWP of methyl chloroform is 110 times that of carbon dioxide.

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

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

**Contributions to Greenhouse Gas Emissions**

**Global**

Anthropogenic GHG emissions worldwide as of 2005 (the latest year for which data are available for Annex I countries) totaled approximately 30,800 CO₂ equivalent million metric tons (MMTCO₂E). It should be noted that global emissions inventory data are not all from the same year and may vary.

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17 United States Environmental Protection Agency, “Protection of Stratospheric Ozone.”
20 Radiative forcing, measured in Watts/m², is an externally imposed perturbation (e.g., stimulated by greenhouse gases) in the radiative energy budget of the Earth’s climate system (i.e., energy and heat retained in the troposphere minus energy passed to the stratosphere).
22 The CO₂ equivalent emissions are commonly expressed as “million metric tons of carbon dioxide equivalent (MMTCO₂E)” The carbon dioxide equivalent for a gas is derived by multiplying the tons of the gas by the associated GWP, such that MMTCO₂E = (million metric tons of a GHG) x (GWP of the GHG). For example, the GWP for methane is 21. This means that emissions of one million metric tons of methane are equivalent to emissions of 21 million metric tons of CO₂.
depending on the source of the emissions inventory data.\textsuperscript{23} Six countries and the European Community accounted for approximately 70 percent of the total global emissions (See Table IV.B-3, Six Top GHG Producer Countries and the European Community). The GHG emissions in more recent years may be substantially different from those shown in Table IV.B-3.

\begin{table}[h]
\centering
\caption{Six Top GHG Producer Countries and the European Community}
\begin{tabular}{|l|c|}
\hline
Emitting Countries & GHG Emissions (MMTCO\textsubscript{2}E)* \\
\hline
United States & 7,241.5\textsuperscript{1} \\
China & 4,882.7\textsuperscript{2} \\
European Community & 4,192.6\textsuperscript{1} \\
Russian Federation & 2,132.5\textsuperscript{1} \\
India & 1,606.5\textsuperscript{2} \\
Japan & 1,359.9\textsuperscript{1} \\
Germany\textsuperscript{3} & 1,001.5\textsuperscript{1} \\
Total & 21,415.7 \\
\hline
\end{tabular}
\end{table}

\textbf{Sources:}
\begin{itemize}
\item \textsuperscript{1} United Nations Framework Convention on Climate Change, http://unfccc.int/ghg_emissions_data/ghg_data_from_unfccc/time_series_annex_i/items/3841.php.
\item \textsuperscript{2} GHG emissions for China and India (Calendar Year 2000) were obtained from the World Resources Institute’s Climate Analysis Indicators Tool (CAIT), http://www.cait.wri.org/cait.php.
\item \textsuperscript{3} Germany’s GHG emissions are included in the European Community.
\item * Excludes emissions/removals from land use, land-use change and forestry (LULUCF)
\end{itemize}

United States

As noted in Table IV.B-3, the United States was the top producer of greenhouse gas emissions as of 2005. Based on GHG emissions in 2004, six of the states—Texas, California, Pennsylvania, Ohio, Illinois, and Florida, in ranked order—would each rank among the top 30 GHG emitters internationally.\textsuperscript{24} The primary greenhouse gas emitted by human activities in the United States was CO\textsubscript{2}, representing

\textsuperscript{23} The global emissions are the sum of Annex I and non-Annex I countries without counting Land-Use, Land-Use Change and Forestry (LULUCF). For countries that 2004 data were unavailable, the UNFCCC data for the most recent year were used. United Nations Framework Convention on Climate Change, “Annex I Parties – GHG total without LULUCF,” http://unfccc.int/ghg_emissions_data/ghg_data_from_unfccc/time_series_annex_i/items/3841.php and “Flexible GHG Data Queries” with selections for total GHG emissions excluding LULUCF/LUCF, all years, and non-Annex I countries, http://unfccc.int/di/FlexibleQueries/Event.do?event=showProjection n.d.

approximately 84 percent of total greenhouse gas emissions.\textsuperscript{25} Carbon dioxide from fossil fuel combustion, the largest source of US greenhouse gas emissions, accounted for approximately 80 percent of US GHG emissions.\textsuperscript{26}

\textbf{State of California}

Based upon the 2004 GHG inventory data (the latest year available) compiled by CARB for the California 1990 greenhouse gas emissions inventory, California emitted emissions of 484 MMTCO\textsubscript{2}E, including emission resulting from out-of-state electrical generation.\textsuperscript{27} Based on the CARB inventory and GHG inventories for countries contributing to the worldwide GHG emissions inventory compiled by the United Nations Framework Convention on Climate Change (UNFCCC) for 2005, California’s GHG emissions rank second in the United States (Texas is number one) with emissions of 423 MMTCO\textsubscript{2}E (excluding emissions related to imported power) and internationally between Ukraine (418.9 MMTCO\textsubscript{2}E) and Spain (440.6 MMTCO\textsubscript{2}E).\textsuperscript{28}

A California Energy Commission (CEC) emissions inventory report placed CO\textsubscript{2} produced by fossil fuel combustion in California as the largest source of GHG emissions in 2004, accounting for 81 percent of the total GHG emissions.\textsuperscript{29} CO\textsubscript{2} emissions from other sources contributed 2.8 percent of the total GHG emissions, methane emissions 5.7 percent, nitrous oxide emissions 6.8 percent, and the remaining 2.9 percent was composed of emissions of high-GWP gases.\textsuperscript{30} These high-GWP gases are largely composed of refrigerants and a small contribution of sulfur hexafluoride (SF\textsubscript{6}) used as insulating materials in electricity transmission and distribution.

The primary contributors to GHG emissions in California are transportation, electric power production from both in-state and out-of-state sources, industry, agriculture and forestry, and other sources, which include commercial and residential activities. These primary contributors to California’s GHG emissions and their relative contributions are presented in Table IV.B-4, GHG Sources in California.
### Table IV.B-4
GHG Sources in California

<table>
<thead>
<tr>
<th>Source Category</th>
<th>Annual GHG Emissions (MMTCO₂E)</th>
<th>Percent of Total</th>
<th>Annual GHG Emissions (MMTCO₂E)b</th>
<th>Percent of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>27.9</td>
<td>5.8%</td>
<td>27.9</td>
<td>6.6%</td>
</tr>
<tr>
<td>Commercial Uses</td>
<td>12.8</td>
<td>2.6%</td>
<td>12.8</td>
<td>3.0%</td>
</tr>
<tr>
<td>Electricity Generation</td>
<td>119.8</td>
<td>24.7%</td>
<td>58.5</td>
<td>13.8%</td>
</tr>
<tr>
<td>Forestry (excluding sinks)</td>
<td>0.2</td>
<td>0.0%</td>
<td>0.2</td>
<td>0.0%</td>
</tr>
<tr>
<td>Industrial Uses</td>
<td>96.2</td>
<td>19.9%</td>
<td>96.2</td>
<td>22.7%</td>
</tr>
<tr>
<td>Residential Uses</td>
<td>29.1</td>
<td>6.0%</td>
<td>29.1</td>
<td>6.9%</td>
</tr>
<tr>
<td>Transportation</td>
<td>182.4</td>
<td>37.7%</td>
<td>182.4</td>
<td>43.1%</td>
</tr>
<tr>
<td>Otherc</td>
<td>16.0</td>
<td>3.3%</td>
<td>16.0</td>
<td>3.8%</td>
</tr>
<tr>
<td>Totals</td>
<td>484.4</td>
<td>100.0%</td>
<td>423.1</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Sources:
2. Includes emissions associated with imported electricity, which account for 61.3 MMTCO₂E annually.
3. Excludes emissions associated with imported electricity.

It should be noted that emissions from each of these economic sectors are not confined to emissions from a single process since there is crossover with other sectors. For example, the GHG emissions from cement production places clinker manufacturing in its own category and the fuel used to heat the cement production process within the industrial fuel category. In the case of landfills, methane emissions and CO₂ emissions and sinks are reported in their respective portions of the inventory. Taken together, the CO₂ sinks approximately offset the landfill methane emissions. Additionally, fuel-related GHG emissions from transporting wastes to landfills are included in transportation fuels.

**Influences and Effects of Global Climate Change**

Climate change refers to any significant change in measures of climate (such as temperature, precipitation, or wind) lasting for an extended period (decades or longer). 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;

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• natural processes within the climate system (e.g., changes in ocean circulation, reduction in sunlight from the addition of GHG and other gases to the atmosphere from volcanic eruptions); and

• human activities that change the atmosphere’s composition (e.g., through burning fossil fuels) and the land surface (e.g., deforestation, reforestation, urbanization, desertification).

Indications of Anthropogenic Influences

The impact of anthropogenic activities on global climate change is readily apparent in the observational record. For example, surface temperature data shows that 11 of the 12 years from 1995 to 2006 rank among the 12 warmest since 1850, the beginning of the instrumental record for global surface temperature.\(^{32}\) In addition, the atmospheric water vapor content has increased since at least the 1980s over land, sea, and in the upper atmosphere, consistent with the capacity of warmer air to hold more water vapor; ocean temperatures are warmer to depths of 3,000 feet; and a marked decline has occurred in mountain glaciers and snowpack in both hemispheres, and in polar ice and ice sheets in both the arctic and Antarctic regions.\(^{33}\)

Influence of Industrialization

Air trapped by ice has been extracted from core samples taken from polar ice sheets to determine the global atmospheric variation of carbon dioxide, methane, and nitrous oxide from before the start of the 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.\(^{34}\) Global methane and nitrous oxide concentrations show similar increases for the same period (see Table IV.B-5, Comparison of Global Pre-Industrial and Current GHG Concentrations).

<table>
<thead>
<tr>
<th>Greenhouse Gas</th>
<th>Early Industrial Period Concentrations (ppm)</th>
<th>Natural Range for Last 650,000 Years (ppm)</th>
<th>2005 Concentrations (ppm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon Monoxide</td>
<td>280</td>
<td>180 to 300</td>
<td>379</td>
</tr>
<tr>
<td>Methane</td>
<td>715</td>
<td>320 to 790</td>
<td>1774</td>
</tr>
<tr>
<td>Nitrous Oxide</td>
<td>270</td>
<td>NA</td>
<td>319</td>
</tr>
</tbody>
</table>

\(^{1}\) Intergovernmental Panel on Climate Change, “Climate Change 2007.”

\(^{32}\) Intergovernmental Panel on Climate Change, “Climate Change 2007.”

\(^{33}\) Ibid.

\(^{34}\) Ibid.
Effects of Global Climate Change

The primary effect of global climate change has been a rise in average global tropospheric temperature of 0.2°C per decade, determined from meteorological measurements worldwide between 1990 and 2005.\(^{35}\) Climate change modeling using 2000 emission rates shows that further warming would occur, which would induce further changes in the global climate system during the current century.\(^{36}\) Changes to the global climate system and ecosystems and to California would include, but would not be limited to

- the loss of sea ice and mountain snowpack resulting in higher sea levels and higher sea surface evaporation rates with a corresponding increase in tropospheric water vapor due to the atmosphere’s ability to hold more water vapor at higher temperatures;\(^{37}\)
- a rise in global average sea level primarily due to thermal expansion and melting of glaciers and ice caps, the Greenland and Antarctic ice sheets;\(^ {38}\)
- changes in weather that include widespread changes in precipitation, ocean salinity, and wind patterns, and more energetic aspects of extreme weather including droughts, heavy precipitation, heat waves, extreme cold, and the intensity of tropical cyclones;\(^ {39}\)
- the decline of Sierra snowpack, which accounts for approximately half of the surface water storage in California, by 70 percent to as much as 90 percent over the next 100 years;\(^ {40}\)
- an increase in the number of days conducive to ozone formation by 25 to 85 percent (depending on the future temperature scenario) in high ozone areas of Los Angeles and the San Joaquin Valley by the end of the 21st century;\(^ {41}\) and
- high potential for erosion of California’s coastlines and sea water intrusion into the Delta and associated levee systems due to the rise in sea level.\(^ {42}\)

3. REGULATORY FRAMEWORK

The SCAQMD has jurisdiction over an area of approximately 10,743 square miles, consisting of the four-county basin (Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties) and the Riverside County portions of the Salton Sea Air Basin (SSAB) and Mojave

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35 Ibid.
36 Ibid.
37 Ibid.
38 Ibid.
39 Ibid.
41 Ibid.
42 Ibid.
Desert Air Basin (MDAB). The project site is located within the basin, which is bound by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east.

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

### a. US Environmental Protection Agency

The US 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: O₃, CO, NO₂, SO₂, PM₁₀, PM₂.₅, 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 IV.B-1. As indicated, the averaging times for the various pollutants range from 1 hour to annual. The standards are reported as a concentration in parts per million (ppm) by volume, or as a weighted mass of material per a volume of air in micrograms of pollutant per cubic meter of air (μg/m³).

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 US 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 IV.B-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, NOₓ, and CO emissions in order to reduce ozone and carbon monoxide levels in heavily populated areas. Fuels became more strictly regulated by requiring new fuels to be less volatile, contain less sulfur (regarding
IV.B Air Quality

diesel fuels), and have higher levels of oxygenates (oxygen-containing substances to improve fuel combustion). The US 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.

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Averaging Time</th>
<th>Designation/Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ozone (O₃)</td>
<td>8 Hour</td>
<td>Nonattainment/Severe 17</td>
</tr>
<tr>
<td>Carbon Monoxide (CO)</td>
<td>1 Hour, 8 Hour</td>
<td>Attainment</td>
</tr>
<tr>
<td>Nitrogen Dioxide (NO₂)</td>
<td>Annual Arithmetic Mean</td>
<td>Attainment/Unclassifiable</td>
</tr>
<tr>
<td>Sulfur Dioxide (SO₂)</td>
<td>24 Hour, Annual Arithmetic Mean</td>
<td>Attainment</td>
</tr>
<tr>
<td>Respirable Particulate Matter PM₁₀</td>
<td>24 Hour</td>
<td>Nonattainment/Serious</td>
</tr>
<tr>
<td>Fine Particulate Matter (PM₂.₅)</td>
<td>24 Hour, Annual Arithmetic Mean</td>
<td>Nonattainment</td>
</tr>
<tr>
<td>Lead (Pb)</td>
<td>Calendar Quarter</td>
<td>Attainment</td>
</tr>
</tbody>
</table>


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.

b. 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 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. CARB will designate an area as nonattainment for a pollutant if monitoring data shows that a California Ambient Air Quality Standard (CAAQS) for a particular pollutant was violated at least once during the previous three years. The status of the basin with respect to attainment with the CAAQS is summarized in Table IV.B-7, California Ambient Air Quality Standards and Status – South Coast Air Basin (Los Angeles County), below.

c. 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, SCAQMD is responsible for bringing air quality in the areas under its jurisdiction into conformity with federal and state air quality standards. Specifically, 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. 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 US EPA to regulate. In order to achieve air quality standards, the SCAQMD adopts an Air Quality Management Plan (AQMP)

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43 California Air Resources Board, “Area Designations (Activities and Maps),” http://www.arb.ca.gov/desig/desig.htm. 2007. Written communication with Marcy Nystrom, California Air Resources Board, December 24, 2003, stating that state law states requires ARB to make area designations for pollutants with state standards listed in California Code of Regulations, Title 17, Section 70200. However, vinyl chloride is not included in this section of the California Code of Regulations; therefore, the ARB does not make area designations for vinyl chloride.
that serves as a guideline to bring pollutant concentrations into attainment with federal and state standards. The District determines if certain rules and control measures are appropriate for their specific region according to technical feasibility, cost effectiveness, and the severity of nonattainment. Once the District has adopted the proper rules, control measures, and permit programs, it is responsible to implement and enforce compliance with those rules, control measures, and programs.

### Table IV.B-7

**California Ambient Air Quality Standards and Status**  
**South Coast Air Basin (Los Angeles County)**

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Averaging Time</th>
<th>Designation/Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ozone ($O_3$)</td>
<td>1 Hour, 8 Hour</td>
<td>Nonattainment¹</td>
</tr>
<tr>
<td>Carbon Monoxide (CO)</td>
<td>1 Hour, 8 Hour</td>
<td>Attainment</td>
</tr>
<tr>
<td>Nitrogen Dioxide (NO₂)</td>
<td>1 Hour</td>
<td>Attainment</td>
</tr>
<tr>
<td>Sulfur Dioxide (SO₂)</td>
<td>1 Hour, 24 Hour</td>
<td>Attainment</td>
</tr>
<tr>
<td>Respirable Particulate Matter (PM₁₀)</td>
<td>24 Hour, Annual Arithmetic Mean</td>
<td>Nonattainment</td>
</tr>
<tr>
<td>Fine Particulate Matter (PM₂.₅)</td>
<td>Annual Arithmetic Mean</td>
<td>Nonattainment</td>
</tr>
<tr>
<td>Lead (Pb)²</td>
<td>30 Day Average</td>
<td>Attainment</td>
</tr>
<tr>
<td>Sulfates (SO₄)</td>
<td>24 Hour</td>
<td>Attainment</td>
</tr>
<tr>
<td>Hydrogen Sulfide (H₂S)</td>
<td>1 Hour</td>
<td>Unclassified</td>
</tr>
<tr>
<td>Vinyl Chloride²</td>
<td>24 Hour</td>
<td>Unclassified</td>
</tr>
<tr>
<td>Visibility Reducing Particles</td>
<td>8 Hour (10 AM–6 PM)</td>
<td>Unclassified</td>
</tr>
</tbody>
</table>


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.

### SCAQMD CEQA Air Quality 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. There has been one full update to the document in November 1993, and it is currently undergoing an update process. The document describes the criteria that SCAQMD uses when reviewing and commenting on the adequacy of environmental documents. The handbook recommends thresholds of significance in order to determine if a project will have a significant adverse environmental impact. Other important contents are methodologies for predicting project emissions and mitigation measures that can be taken to avoid or reduce air quality impacts. Although the Governing Board of the SCAQMD has adopted the CEQA Air Quality Handbook, it does not, nor does it intend to, supersede a local jurisdiction’s CEQA procedures.
The CEQA Air Quality Handbook is currently undergoing revision. As of January 2007, the CEQA Air Quality Handbook was still undergoing revision. However, the air quality significance thresholds have been revised, and a new procedure referred to as “localized significance thresholds,” has been added. The CEQA Air Quality Handbook and these revised methodologies were used in preparing the air quality analysis in this draft EIR section.

**SCAQMD Air Quality Management Plan**

The SCAQMD is required to produce plans 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 US 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 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 US EPA, CARB, local 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 Final 2007 Air Quality Management Plan (2007 AQMP) on June 1, 2007. CARB approved the 2007 AQMP as the comprehensive SIP component for the basin on September 27, 2007. Because the 2007 AQMP has been approved by the SCAQMD and CARB, it is an “applicable regional plan” in terms of CEQA requirements for assessing plan consistency. Federal approval is only relevant as to the federal CAA components of the 2007 AQMP. Like previous basin AQMPs, the 2007 AQMP includes elements that are beyond the scope of the federal requirements.

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 US EPA’s approval of a “bump-up” to the “extreme” nonattainment classification for the basin, which would extend the attainment date to 2024 and allow for the attainment demonstration to rely on emission reductions from measures that anticipate the development of new technologies or improvement of existing control technologies. Although PM$_{2.5}$ plans for nonattainment areas are due in April 2008, the 2007 AQMP also focuses on attainment strategies for the PM$_{2.5}$ standard through stricter control of sulfur oxides, directly emitted PM$_{2.5}$, NO$_x$, and VOCs. The need to commence PM$_{2.5}$-control strategies before April 2008 is due to the attainment date for PM$_{2.5}$ (2015) being much earlier than that for ozone (2021 for the current designation of severe-17 or 2024 for the extreme designation). Control measures and strategies for PM$_{2.5}$ will also help control ozone generation in
the region because PM$_{2.5}$ and ozone share similar precursors (e.g., NO$_x$). The district has integrated PM$_{2.5}$ and ozone reduction control measures and strategies in the 2007 AQMP. In addition, the AQMP focuses on reducing VOC emissions, which have not been reduced at the same rate as NO$_x$ emissions in the past. Hence, the basin has not achieved the reductions in ozone as were expected in previous plans. The AQMP was based on assumptions provided by both CARB and SCAG in the new EMFAC2007 motor vehicle model and the most recent demographics information, respectively.

**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 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 NOx limits, this rule allows emission mitigation fees to be collected from water heater manufacturers to fund stationary and mobile source emission reduction projects targeted at offsetting NOx emissions from water heaters that do not meet Rule 1121 emission standards.

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

- **Rule 1186 (PM10 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 PM10 emissions by requiring the clean-up of material deposited onto paved roads, use of certified street sweeping equipment, and treatment of high-use unpaved roads (see also Rule 403).

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

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.44 The AQMP assigns local governments certain responsibilities to assist the basin in meeting air quality goals and policies. In general, a first step toward implementation of a local government’s responsibility is accomplished by identifying air quality goals, policies and implementation measures in its general plan, such as the air quality section in the County of Los Angeles General Plan. Through capital improvement programs, local governments can fund infrastructure that contributes to improved air quality by requiring such improvements as bus turnouts, energy-efficient streetlights, and synchronized traffic signals.45 In accordance with the California Environmental Quality act (CEQA) requirements and the CEQA review process, local governments assess

45 Ibid.
IV.B Air Quality

air quality impacts, require mitigation of potential air quality impacts by conditioning discretionary permits and monitor and enforce implementation of such mitigation.46

Southern California Association of Governments

The Southern California Association of Governments (SCAG) is a council of governments for the counties of Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura. As a regional planning agency, SCAG serves as a forum for regional issues relating to transportation, 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 (MPO) for the Southern California region, it is responsible, pursuant to Section 176(c) of the 1990 amendments to the CAA, for providing current population, employment, travel, and congestion projections for regional air quality planning efforts.

d. Greenhouse Gas Regulatory Programs

International Activities

Kyoto Protocol

The original Kyoto Protocol was negotiated in December 1997 and came into force on February 16, 2005. As of April 2008, 180 countries and the European Economic Community have ratified the agreement.47 Notably, however, the US has not ratified the protocol. Participating nations are separated into Annex I (i.e., industrialized countries) and Non-Annex I (i.e., developing countries) countries that have differing requirements for GHG reductions. The goal of the protocol is to achieve overall emissions reduction targets for six GHGs by the period 2008 to 2012. The six GHGs regulated under the protocol are carbon dioxide, methane, nitrous oxide, sulfur hexafluoride, HFCs, and PFCs. Each nation has an emissions reduction target under which they must reduce GHG emissions a certain percentage below 1990 levels (e.g., 8 percent reduction for the European Union, 6 percent reduction for Japan). The average reduction

46 Ibid.
target for nations participating in the Kyoto Protocol is approximately 5 percent below 1990 levels.\textsuperscript{48} Although the United States has not ratified the protocol, it has established a target of 18 percent reduction in GHG emissions intensity by 2012.\textsuperscript{49} Greenhouse gas intensity is the ratio of GHG emissions to economic output (i.e., gross domestic product).

**Intergovernmental Panel on Climate Change**

The World Meteorological Organization (WMO) and United Nations Environmental Program (UNEP) established the Intergovernmental Panel on Climate Change (IPCC) in 1988. The goal of the IPCC is to evaluate the risk of climate change caused by human activities. Rather than performing research or monitoring climate, the IPCC relies on peer-reviewed and published scientific literature to make its assessment. The IPCC assesses information (i.e., scientific literature) regarding human-induced climate change, impacts of human-induced climate change, and options for adaptation and mitigation of climate change. The IPCC reports its evaluation through special reports called “assessment reports.” The latest assessment report (i.e., Fourth Assessment Report, consisting of three working group reports and a synthesis report based on the first three reports) was published in 2007.\textsuperscript{50}

**Federal Activities**

In *Massachusetts vs. EPA*, the Supreme Court held that US 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 US 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 US 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 US EPA to coordinate closely with other federal agencies and to consider the president’s Twenty-in-Ten plan in this process. The Twenty-in-Ten plan would establish a new alternative fuel standard that would require the use of 35 billion gallons of alternative and renewable fuels by 2017. The US EPA will be working closely with the Department of Transportation in developing new automotive efficiency standards.

\textsuperscript{48} Pew Center on Global Climate Change, “Bush Policy vs. Kyoto,” \url{http://www.pewclimate.org/what_s_being_done/in_the_world/bush_intensity_large_2.cfm} n.d.

\textsuperscript{49} The White House, “Addressing Global Climate Change,” \url{http://www.whitehouse.gov/ceq/global-change.html} n.d.

\textsuperscript{50} The IPCC’s Fourth Assessment Report is available online at \url{http://www.ipcc.ch/}. 
California Activities

AB 1493

In a response to the transportation sector accounting for more than half of California’s CO₂ emissions, Assembly Bill 1493 (AB 1493, Pavley) was enacted on July 22, 2002. AB 1493 required CARB to set GHG emission standards for passenger vehicles, light-duty trucks, and other vehicles determined by the state board to be vehicles whose primary use is noncommercial personal transportation in the state. The bill required that CARB set the GHG emission standards for motor vehicles manufactured in 2009 and all subsequent model years. In setting these standards, CARB must consider cost-effectiveness, technological feasibility, economic impacts, and provide maximum flexibility to manufacturers. CARB adopted the standards in September 2004. These standards are intended to reduce emissions of carbon dioxide and other greenhouse gases (e.g., nitrous oxide, methane). The new standards would phase in during the 2009 through 2016 model years. When fully phased in, the near-term (2009–2012) standards will result in a reduction of about 22 percent in GHG emissions compared to the emissions from the 2002 fleet, while the mid-term (2013–2016) standards will result in a reduction of about 30 percent. Some currently used technologies that achieve GHG reductions include small engines with superchargers, continuously variable transmissions, and hybrid electric drive.

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 case had been put on hold by a federal judge in Fresno pending the US Supreme Court’s decision in Massachusetts vs. EPA. The US Supreme Court’s ruling in favor of the state of Massachusetts has been discussed as a likely vindication of state efforts to control GHG emissions. In December 2007, Judge Ishii of the US District Court for the Eastern District dismissed the case by the Alliance of Automobile Manufacturers. However, before these regulations may go into effect, the US EPA must grant California a waiver under the federal Clean Air Act, which ordinarily preempts state regulation of motor vehicle emission standards. Following the issuance of the Massachusetts vs. EPA decision, the US EPA announced that it would decide whether to grant California a waiver by December 2007. On December 19, 2007, Stephen Johnson, the US EPA Administrator, 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. The California Attorney General subsequently filed suit in January 2008 to overturn the administrator’s decision.

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Executive Order S-3-05

In June 2005, Governor Schwarzenegger established California’s GHG emissions reduction targets in Executive Order S-3-05. The Executive Order established the following goals: GHG emissions should be reduced to 2000 levels by 2010; GHG emissions should be reduced to 1990 levels by 2020; and GHG emissions should be reduced to 80 percent below 1990 levels by 2050. The Secretary of 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 CEC, and the President of the Public Utilities Commission. Representatives from each of the aforementioned agencies comprise the Climate Action Team. The Climate Action Team is responsible for implementing global warming emissions reduction programs. In order to achieve these goals, the Climate Action Team is organized into two subgroups: the market-based options subgroup and the scenario analysis subgroup. 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. In addition, another biannual report must be submitted illustrating the impacts of global warming on California’s water supply, public health, agriculture, the coastline, and forestry, and 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.52 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.

AB 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.

CARB has been assigned to carry out and develop the programs and requirements necessary to achieve the goals of AB 32. The foremost objective of CARB is to adopt regulations that require the reporting and verification of statewide GHG emissions. This program will be used to monitor and enforce compliance with the established standards. The first GHG emissions limit is equivalent to the 1990 levels, which are to be achieved by 2020. CARB is also required to adopt rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emission reductions. AB 32 allows CARB to adopt market-based compliance mechanisms to meet the specified requirements. Finally, CARB is ultimately responsible for monitoring compliance and enforcing any rule, regulation, order, emission limitation, emission reduction measure, or market-based compliance mechanism adopted. In order to advise CARB, it must convene an Environmental Justice Advisory Committee and an Economic and Technology Advancement Advisory Committee. By January 2008, the first deadline for AB 32, a statewide cap for 2020 emissions based on 1990 levels and mandatory reporting rules for significant sources of GHGs must be adopted. The following year (January 2009), CARB must adopt a scoping plan indicating how reductions in significant GHG sources will be achieved through regulations, market mechanisms, and other actions.

The first action under AB 32 resulted in the adoption of a report listing early action greenhouse gas emission reduction measures on June 21, 2007. The early actions include three specific GHG control rules. On October 25, 2007, CARB approved an additional six early action GHG reduction measures under AB 32. These early action GHG reduction measures are to be adopted and enforced before January 1, 2010, along with 32 other climate-protecting measures CARB is developing between now and 2011. The report divides early actions into three categories:

- Group 1 – GHG rules for immediate adoption and implementation
- Group 2 – Several additional GHG measures under development
- Group 3 – Air pollution controls with potential climate co-benefits

The original three adopted early action regulations meeting the narrow legal definition of “discrete early action GHG reduction measures” include

- a low-carbon fuel standard to reduce the “carbon intensity” of California fuels;
- reduction of refrigerant losses from motor vehicle air conditioning system maintenance to restrict the sale of “do-it-yourself” automotive refrigerants; and
- increased methane capture from landfills to require broader use of state-of-the-art methane capture technologies.
The additional six early action regulations adopted on October 25, 2007, also meeting the narrow legal definition of “discrete early action GHG reduction measures,” include

- 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 (SF6) from non-electricity sectors if viable alternatives are available.

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 MMT CO2E. The inventory revealed that in 1990 transportation, with 35 percent of the state’s total emissions, was the largest single sector, 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.

In addition to the 1990 emissions inventory, CARB also adopted regulations requiring mandatory reporting of greenhouse gases for large facilities on December 6, 2007. The mandatory reporting regulations require annual reporting from the largest facilities in the state, which account for 94 percent of greenhouse gas emissions from industrial and commercial stationary sources in California. About 800 separate sources that fall under the new reporting rules and include 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, 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.
SB 1368

Governor Schwarzenegger, just two days after signing AB 32, reiterated California’s commitment to reducing GHGs by signing SB 1368. SB 1368 requires the CEC to develop and adopt regulations for GHG emissions performance standards for the long-term procurement of electricity by local publicly owned utilities. The CEC must adopt the standards on or before June 30, 2007. These standards must be consistent with the standards adopted by the Public Utilities Commission. This effort will help to protect energy customers from financial risks associated with investments in carbon-intensive generation by allowing new capital investments in power plants whose GHG emissions are as low or lower than new combined-cycle natural gas plants, by requiring imported electricity to meet GHG performance standards in California and requiring that the standards be developed and adopted in a public process.

Executive Order S-1-07

On January 18, 2007, California further solidified its dedication to reducing GHGs by setting a new Low Carbon Fuel Standard (LCFS) for transportation fuels sold within the state. Executive Order S-1-07 sets a declining standard for GHG emissions measured in CO₂-equivalent gram per unit of fuel energy sold in California. The target of the LCFS is to reduce the carbon intensity of California passenger vehicle fuels by at least 10 percent by 2020. The LCFS will apply to refiners, blenders, producers, and importers of transportation fuels and will use market-based mechanisms to allow these providers to choose how they reduce emissions during the “fuel cycle” using the most economically feasible methods. The executive order requires the Secretary of Cal/EPA to coordinate with actions of the CEC, CARB, the University of California, and other agencies to develop a protocol to measure the “life-cycle carbon intensity” of transportation fuels. CARB is anticipated to complete its review of the LCFS protocols no later than June 2007 and implement the regulatory process for the new standard by December 2008.

SB 97

In August 2007, as part of the legislation accompanying the state budget negotiations, the legislature enacted 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. OPR is to develop proposed guidelines by July 1, 2009, and the Resources Agency is directed to adopt guidelines by January 1, 2010. Until such guidelines are promulgated, there is no guidance from OPR or other agencies regarding the analysis of greenhouse gas emissions in EIRs.
4. EXISTING CONDITIONS

a. Existing Project Site

The Wilshire and La Brea Project is located in the Wilshire Community Planning Area of Los Angeles, which has a pattern of low-to-medium density residential uses interspersed with areas of higher-density residential uses. Long narrow corridors of commercial activity can be found along major boulevards including Wilshire Boulevard. In addition, the northern portion of the proposed site is located within the Miracle Mile District, a mile-long commercial corridor fronting Wilshire Boulevard from Sycamore Avenue to Fairfax Avenue. The district consists of a mixture of commercial retail, upscale restaurants, and museums that are a very popular destination for tourists. The district also consists of single-family and multi-family residential areas predominately found to the south and east of the project site. Other prominent land uses in the immediate vicinity of the project site include high-rise office buildings, La Brea Tar Pits, Hancock Park, Los Angeles County Museum of Art (LACMA), Cantor Sculpture Garden, Japanese Art Pavilion, and many surface parking lots.

Emissions sources within the Wilshire Community Planning Area include stationary activities, such as space heating, cooking, and water heating, and mobile activities, primarily automobile traffic. Motor vehicles are the primary sources of pollutants within the project vicinity. The prominence of worker commuting and a highly dense area magnify the impacts that these sources have on air quality. The addition of the Wilshire and La Brea Project would include residential units that could possibly reduce worker commutes and promote environmentally friendly transportation, such as walking, biking, and public transportation.

The approximately 3.4-acre project site is bound by Wilshire Boulevard to the north, Sycamore Avenue to the east, West 8th Street to the south, and La Brea Avenue to the west. Existing uses on the project site include a 35,000-square-foot church and a 30,000-square-foot commercial strip center. The operational emissions associated the existing land uses are presented below in Table IV.B-8, Existing Estimated Operational Emissions.

In addition to criteria air pollutant emissions, the existing site also emits GHGs due to fuel combustion from motor vehicles, building heating systems, and landscaping equipment. Building and motor vehicle air conditioning systems may use HFCs (and HCFCs and CFCs to the extent that they have not been completely phased out at later dates), which may result in emissions through leaks, but are not quantified in this draft EIR. The other primary GHGs (perfluorocarbons and sulfur hexafluoride) are associated with specific industrial sources and are not expected to be associated with the proposed project.
Table IV.B-8
Existing Estimated Operational Emissions

<table>
<thead>
<tr>
<th>Emissions Source</th>
<th>Emissions in Pounds per Day</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>VOC</td>
</tr>
<tr>
<td><strong>Summertime Emissions</strong></td>
<td></td>
</tr>
<tr>
<td>Operational (Mobile) Sources</td>
<td>7.75</td>
</tr>
<tr>
<td>Area Sources</td>
<td>0.71</td>
</tr>
<tr>
<td><strong>Summertime Emission Totals</strong></td>
<td>8.46</td>
</tr>
<tr>
<td><strong>Wintertime Emissions</strong></td>
<td></td>
</tr>
<tr>
<td>Operational (Mobile) Sources</td>
<td>8.86</td>
</tr>
<tr>
<td>Area Sources</td>
<td>0.43</td>
</tr>
<tr>
<td><strong>Wintertime Emission Totals</strong></td>
<td>9.29</td>
</tr>
</tbody>
</table>


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).

The emissions of CO₂, the primary greenhouse gas associated with operation of the existing site were estimated using URBEMIS2007 with the following adjustments to convert CO₂ emissions to GHG emissions on a carbon dioxide equivalent (CO₂E) basis:

- Motor vehicles: The CO₂ emissions associated with existing trips were multiplied by a factor based on the assumption that CO₂ represents 95 percent of the CO₂E emissions associated with passenger vehicles, which account for most of the project-related trips, and by 365 operational days per year.⁵³

- Area sources (natural gas combustion): The CO₂ emissions from natural gas consumption for the existing site were adjusted based on emission factors for CO₂, CH₄, and N₂O for natural gas combustion from the US EPA’s Compilation of Air Pollutant Emission Factors;⁵⁴ the global warming potential for each GHG; and 365 days per year.

The existing site GHG emissions are presented below in Table IV.B-9, Estimated Operational Greenhouse Gas Emissions. The emissions below represent direct GHG emissions. Indirect GHG emissions due to operation of the existing site (e.g., GHG emissions due to electricity demand, water delivery, wastewater treatment, and solid waste disposal) are not estimated for the existing site.

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Table IV.B-9
Estimated Operational Greenhouse Gas Emissions

<table>
<thead>
<tr>
<th>Emissions Source</th>
<th>Emissions in Metric Tons CO₂E Per Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operational (Mobile) Sources</td>
<td>954.2</td>
</tr>
<tr>
<td>Area Sources</td>
<td>126.1</td>
</tr>
<tr>
<td><strong>Total Existing Site (Direct GHG Emissions)</strong></td>
<td><strong>1,080.3</strong></td>
</tr>
</tbody>
</table>


b. Sensitive Receptors

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

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

Sensitive receptors in the immediate vicinity include residential uses with in 60 feet of the project site to the south and 75 feet to the east. These residences are composed primarily of single- and multi-family housing. The existing housing lies to the south and to the east of the project site.

5. ENVIRONMENTAL IMPACT ANALYSIS

a. Significance Criteria

New and modified projects will often affect regional air quality, both directly and indirectly. When determining the extent of a project’s environmental impact and the significance of such impact, the project should be compared with established thresholds of significance. The following discusses the thresholds set forth by the SCAQMD for both construction and operational emissions that would be
generated by the project. The City of Los Angeles has not adopted specific Citywide significance thresholds for air quality impacts; however, the Los Angeles CEQA Thresholds Guide references the thresholds and methodologies contained in the SCAQMD CEQA Air Quality Handbook for evaluating proposed projects in the City.\(^5\) While the SCAQMD CEQA Air Quality Handbook contains significance thresholds for lead, construction and operation of the proposed project will not exceed the established thresholds. Furthermore, as discussed in subsection 2.d., Local Air Quality, the region is well 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 Emission Thresholds**

**Emission Thresholds**

The SCAQMD recommends that projects with construction-related emissions that exceed any of the following emissions thresholds should be considered significant:

- 75 pounds per day of VOC
- 100 pounds per day of NO\(_x\)
- 550 pounds per day of CO
- 150 pounds per day of PM\(_{10}\)
- 55 pounds per day of PM\(_{2.5}\)
- 150 pounds per day of SO\(_x\)

**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\(_x\), and CO.\(^5\) The significance threshold for PM\(_{10}\) represents compliance with Rule 403 (Fugitive Dust), while the thresholds for NO\(_x\) 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


\(^{5}\) SCAQMD, Final Localized Significance Threshold Methodology, (2008).
intended to constrain emissions so as to aid in progress toward attainment of the ambient air quality standards.\textsuperscript{57}

For project sites of 5 acres or less, the SCAQMD Localized Significance Threshold Methodology (LST document) includes “lookup 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 3.4 acres the distance to the nearest sensitive receptors range from about 60 to 75 feet (18 to 23 meters). The LST document states that a minimum distance of 25 meters should be used to determine the mass-rate emissions from the lookup tables, even if receptor are actually located closer to the project site.\textsuperscript{58} The allowable mass-rate emissions were linearly interpolated for a 3.4-acre site in SRA 2 using the specified thresholds for 2- and 5-acre sites. The applicable thresholds for each pollutant are shown in Table IV.B-10, Localized Significance Criteria for a 3.4-Acre Site in SRA 2.

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Threshold (Pounds/day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respirable Particulate Matter (PM\textsubscript{10})</td>
<td>9.3</td>
</tr>
<tr>
<td>Fine Particulate Matter (PM\textsubscript{2.5})</td>
<td>4.9</td>
</tr>
<tr>
<td>Nitrogen Dioxide (NO\textsubscript{x})</td>
<td>202</td>
</tr>
<tr>
<td>Carbon Monoxide (CO)</td>
<td>1,139</td>
</tr>
</tbody>
</table>

\textsuperscript{1} LST thresholds are interpolated from the values in these documents, based on the project size and the distance to the nearest sensitive receptor.
\textsuperscript{2} The NO\textsubscript{x} LST thresholds contained in the SCAQMD lookup tables are based on emissions of NO\textsubscript{x} from construction of the project and assume gradual conversion to NO\textsubscript{2} based on the distance from the project site boundary.

**Operational Emissions**

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

\textsuperscript{57} Ibid.
\textsuperscript{58} The Final Localized Significance Threshold Methodology states that “projects with boundaries located closer than 25 meters to the nearest receptor should use the LSTs for receptors located at 25 meters.”
are identified in the following discussion under Primary Effects and Secondary Effects. The SCAQMD recommends that a project’s impacts be considered significant if thresholds are exceeded for either primary or secondary effects.

**Primary Thresholds**

The SCAQMD has established these thresholds, in part, based on Section 182(e) of the federal CAA that identifies 10 tons per year of volatile organic gases as the significance level for stationary sources of emissions in extreme nonattainment areas for O₃. As discussed earlier, VOC and NOₓ undergo photochemical reactions in sunlight to form O₃, and, at the time these thresholds were established, the basin was an extreme nonattainment area for O₃ 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 in SCAQMD. Because they are converted from a CAA threshold, the SCAQMD has determined that these thresholds are based on scientific and factual data. Therefore, the district recommends that the following thresholds be used by lead agencies in making a determination of operation-related project significance:

- 55 pounds per day of VOC
- 55 pounds per day of NOₓ
- 550 pounds per day of CO
- 150 pounds per day of PM₁₀
- 55 pounds per day of PM₂.₅
- 150 pounds per day of SOₓ

**Secondary Thresholds**

The SCAQMD recommends that projects meeting any of the following criteria also be considered to have significant air quality impacts:

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

---

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

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

• Project will have hazardous materials on site and could result in an accidental release of toxic air emissions or acutely hazardous materials posing a threat to public health and safety.

• Project could emit a TAC regulated by SCAQMD rules or that is on a federal or state air toxic list.

• Project could be occupied by sensitive receptors within one-quarter mile of an existing facility that emits air toxics identified in SCAQMD Rule 1401.

• Project could emit carcinogenic or TACs that individually or cumulatively exceed the maximum individual cancer risk of 10 in 1 million.

**Cumulative Thresholds**

**Criteria Air Pollutants**

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 unless there is other pertinent information to the contrary.60

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.61 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 2003 AQMP. However, one method is no longer recommended and supported by the SCAQMD and another method is not applicable as the SCAQMD repealed the underlying regulation (Regulation XV) after the CEQA Air Quality Handbook was published. Therefore, the only viable SCAQMD method is based on whether the rate of growth in average daily trips exceeds the rate of growth in population.

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61 Ibid. Written communication with Steve Smith, South Coast Air Quality Management District, November 20, 2003.
Greenhouse Gas Emission Threshold

To date, no local or state air quality agency has adopted significance criteria for GHG emissions. While the Global Warming Solutions Act (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. As noted earlier, in August 2007, the governor signed SB 97 (Dutton) into law, which requires the Governor’s Office of Planning and Research (OPR) to prepare State CEQA Guidelines for the mitigation of GHG emissions or the effects of greenhouse gas emissions. Despite the foregoing, this draft EIR provides a discussion of the impacts of the project with respect to global climate change in the absence of an established significance threshold. To assess the impact of the project with respect to global climate change, the project will be evaluated as to whether it would impede or conflict with the emissions reduction targets and strategies prescribed in or developed to implement AB 32.

b. Project Impacts

Construction-Related Impacts

Construction of the proposed project is expected to begin in December 2009 and last approximately 36 months (although some units may be occupied prior to full project completion). Development of the proposed project would involve several phases including demolition, excavation, sub-grade construction, and building construction. Construction staging would occur within the proposed project site. Implementation of the project would require export of on-site soil associated with excavation of the subterranean parking structure.

During periods of construction activity, on-site stationary sources, heavy-duty construction vehicles, construction worker vehicles, and energy use would generate emissions. In addition, fugitive dust would be generated by grading and construction activities. During later phases of the project, architectural coatings would be applied to the permanent buildings, which would generate emissions, as would workers arriving and leaving the construction site. However, construction impacts would be short term in nature and limited only to the time period when construction activity is taking place on the property.

Demolition Activities

Demolition of the existing buildings has the potential to result in emissions of criteria pollutants. Approximately 14,000 cubic yards of materials would be generated during demolition. Demolition and removal would involve the use of standard construction equipment, such as excavators, and other related equipment, such as haul trucks. This phase is anticipated to take 2 months to complete.
In addition to the emissions of criteria pollutants, demolition of the existing buildings has the potential to result in the release of asbestos fibers due to the age of the structures. Demolition activity is subject to 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. The rule addresses the US EPA National Emission Standards for Hazardous Air Pollutants (NESHAP) and provides additional requirements to cover non-NESHAP areas. As part of project implementation, the Wilshire and La Brea Project must comply with the requirements of SCAQMD Rule 1403. The rule requires the SCAQMD to be notified before demolition or renovation activity occurs. This notification includes a description of structures and methods utilized to determine the presence of asbestos or lack thereof. All asbestos containing material found on the site must be removed prior to demolition or renovation activity in accordance with the requirements of Rule 1403. Project compliance with Rule 1403 would ensure that asbestos-containing materials would be disposed of appropriately. Compliance with the requirements of this measure would avoid a significant construction-related air quality impact in relation to demolition activities by preventing the release of asbestos emissions.

**Site Grading**

Site grading and excavation would involve the grading and excavation of existing on-site soils. Grading would require excavation up to depths of approximately 36 feet below ground surface at 8th Street and approximately 27 feet below ground surface at Wilshire Boulevard. It is anticipated that approximately 163,000 cubic yards of earth material would be removed from the project site. Grading and excavation activities would involve the use of standard earth moving equipment, such as excavators, backhoes, and dump trucks, and other related heavy-duty equipment, which would be stored on site during construction to minimize disruption of the surrounding land uses. This phase is anticipated to take 4 months to complete.

**Sub-Grade and Building Construction**

Sub-grade construction would involve construction of the foundations and sub-grade portions of the parking structure while building construction would involve above grade construction of the base building. Building activities during these two phases on a worst-case day would involve the use of standard construction equipment, including cranes, a forklift, and two backhoes. Sub-grade construction is expected to take 9 months to complete while building construction is expected to take 14 months to complete. There would be 3 months of overlap lap of the two phases.
Construction Emissions

The URBEMIS2007 computer model was used to quantify construction emissions generated during each phase of project construction. URBEMIS2007 is a land use and transportation based computer model designed to estimate regional air emissions from new development projects. The model accounts for specific meteorological conditions that characterize each specific air basin in California.

A number of variables are input into the model including the type of construction equipment required to build the project (based on conversation with the civil engineer) and emission factors for each piece of equipment, which are obtained from the CARB’s emissions inventory contained in the URBEMIS2007 model. All of the construction equipment and activities are assumed to occur continuously over an 8-hour period. In reality, this would not occur, as most equipment would operate only a fraction of each workday. However, for the purposes of this analysis, a “worst-case scenario” will be analyzed. Construction timelines, numbers, and types of construction equipment entered into URBEMIS2007 were obtained from the project proponent. Lastly, modeling assumes the use of standard construction practices such as compliance with SCAQMD Rule 403 (Fugitive Dust) to minimize fugitive dust, specifically the watering of unpaved roads two times daily, and the use of properly maintained equipment to avoid excessive emissions. Operational modeling assumes that all residential units would use natural gas appliances and not include fireplaces.

In order to minimize construction PM$_{10}$ emissions, the construction contractor is required to comply with the following control measures under SCAQMD Rule 403 (Fugitive Dust), which were assumed during modeling. Rule 403 requires that grading operations take actions specified in Tables 1 and 2 of the rule for each applicable source of fugitive dust and take certain notification and record keeping actions.

The following control measures would be implemented during grading operations:

a. Apply approved non-toxic chemical soil stabilizers according to manufacturer’s specification or other measures agreed to by the City to all inactive construction areas (previously graded areas inactive for four days or more). (This measure has a reduction efficiency for PM$_{10}$ estimated at up to 65 percent.)

b. Replace ground cover in disturbed areas as quickly as possible. (This measure has reduction efficiency for PM$_{10}$ estimated at up to 49 percent.)

c. Enclose, cover, water twice daily, or apply approved soil binders to exposed piles (i.e., gravel, sand, dirt) according to manufacturers’ specifications. (This measure has reduction efficiency for PM$_{10}$ estimated at up to 74 percent.)

d. Suspend all excavating and grading operations when wind speeds (as instantaneous gusts) exceed 25 miles per hour (mph). (The reduction efficiency for this measure is not quantified.)
e. Provide temporary wind fencing consisting of 3- to 5-foot barriers with 50 percent or less porosity along the perimeter of site that have been cleared or are being graded, if necessary. (The reduction efficiency for this measure is not quantified.)

f. All trucks hauling dirt, sand, soil, or other loose materials are to be covered or should maintain at least 2 feet of freeboard (i.e., minimum vertical distance between top of the load and the top of the trailer), in accordance with Section 23114 of the California Vehicle Code. (This measure has reduction efficiency for PM$_{10}$ estimated at up to 14 percent.)

g. Sweep streets at the end of the day if visible soil material is carried over to adjacent roads (recommend water sweepers using reclaimed water if readily available). (This measure has reduction efficiency for PM$_{10}$ estimated at up to 60 percent.)

h. Install wheel washers where vehicles enter and exit unpaved roads onto paved roads, or wash off trucks and any equipment leaving the site each trip. (This measure has reduction efficiency for PM$_{10}$ estimated at up to 70 percent.)

i. Apply water three times daily or chemical soil stabilizers according to manufacturers’ specifications to all unpaved parking or staging areas or unpaved road surfaces. (This measure has reduction efficiency for PM$_{10}$ estimated at up to 85 percent.)

j. Enforce traffic speed limits of 15 miles per hour (mph) or less on all unpaved roads. (This measure has reduction efficiency for PM$_{10}$ estimated at up to 70 percent.)

k. Pave construction roads when the specific roadway path would be utilized for 120 days or more. (This measure has reduction efficiency for PM$_{10}$ estimated at up to 92.5 percent.)

These measures control fugitive dust PM$_{10}$ emissions and would also control PM$_{2.5}$ emissions. The effectiveness of these measures at reducing PM$_{10}$ emissions ranges from 7 to 92.5 percent. For the purposes of this impact analysis, and to be consistent with SCAQMD guidance, it is assumed that implementation of Rule 403 would reduce PM$_{2.5}$ and PM$_{10}$ emissions by a maximum of 61 percent per guidance from the SCAQMD.

Table IV.B-11, Estimated Project Construction Emissions, identifies the maximum daily emissions for each pollutant per year regardless of the phase. Construction emissions include all emissions associated with the proposed equipment, grading and demolition activities, worker trips, and on-road diesel trucks.

As shown, the significance thresholds for criteria pollutants would not be exceeded during construction of the proposed project. Therefore, construction emissions would result in a less than significant impact on air quality in the region.

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Localized Significance Threshold Analysis

As previously discussed, the City of Los Angeles and the SCAQMD list criteria indicating when a project may create potential air quality impacts. The relevant criterion is listed below along with an analysis of whether construction of the project meets it. If a project meets the criterion, the construction-related air quality impacts would be significant relative to that criterion.

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

As indicated in the discussion of the threshold of significance, the SCAQMD recommends that potential impacts on ambient air quality during the construction phase of a project be evaluated. The following analysis uses the thresholds based on LST lookup tables. Estimates of construction emissions of PM<sub>10</sub>, PM<sub>2.5</sub>, NO<sub>x</sub> and CO were presented in **Table IV.B-11**. That analysis determined the emission rates on the days with the highest estimated daily mass emission rates for the project site. The on-site contribution of these emission rates are compared to the localized significance thresholds in **Tables IV.B-12, Localized Significance Thresholds Analysis for Construction**.

As shown in **Table IV.B-12**, the construction of the proposed project would cause an exceedance of the localized significance thresholds for PM<sub>10</sub> and PM<sub>2.5</sub>; however, the NO<sub>x</sub> and CO thresholds would not be exceeded. Consequently, this analysis suggests that PM<sub>10</sub> emissions could exceed the limitations in...
SCAQMD Rule 403 and that there would be significant local air quality impacts for PM$_{10}$ and PM$_{2.5}$ during construction.

### Table IV.B-12

**Localized Significance Thresholds Analysis for Construction**

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Emissions lbs/day</th>
<th>LST1 lbs/day</th>
<th>Exceeds Threshold?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respirable Particulate Matter (PM$_{10}$)</td>
<td>17.7</td>
<td>9.3</td>
<td>YES</td>
</tr>
<tr>
<td>Fine Particulate Matter (PM$_{2.5}$)</td>
<td>5.0</td>
<td>4.9</td>
<td>YES</td>
</tr>
<tr>
<td>Nitrogen Dioxide (NO$_2$)</td>
<td>31.0</td>
<td>202</td>
<td>NO</td>
</tr>
<tr>
<td>Carbon Monoxide (CO)</td>
<td>14.8</td>
<td>1,139</td>
<td>NO</td>
</tr>
</tbody>
</table>


### Operational Impacts

#### Primary Effects

As indicated in the project traffic report, trip reductions related to the proposed project are expected to occur as a result of “multi-purpose” or “internal” trips within the site. These trip reductions will also result in a reduction in vehicle-miles traveled and air emissions otherwise associated with such trips. This type of trip reduction generally occurs at integrated mixed-use developments containing a variety of uses. It is generally recognized that residents or patrons of a site will utilize other on-site uses if they are conveniently located or provide useful services or amenities. The level of interaction is typically dependent upon the number of residents or patrons, service providers, accessibility, and other factors. For this particular project, some of the residents are expected to use the on-site retail and restaurant uses, thereby reducing some of the trips the retail and restaurant uses would otherwise generate. It was estimated that approximately 50 percent of the retail patronage and about 20 percent of the restaurant patronage would be the result of on-site residents.

The use of public transportation is another important consideration in the evaluation of the project’s trip generating potential. The project is well served by bus lines provided by various transit operators. These transit operators provide both local and regional routes that are easily accessible to project residents, visitors, and retail patrons. The local and regional public transportation air emissions have been accounted for air quality plans and the regional emissions inventory. Therefore, project-generated trips that utilize public transportation would already be included in the applicable air quality plan and would not constitute as an increase in emissions at the project level.
“Walk-in” trips are trips that are already occurring in the project vicinity, but which have other nearby attractions as their specified destinations. These trips account for “built-in” patronage and subsequent traffic reductions for both the project specifically and Wilshire Community Planning Area in general. These trips are expected to continue to occur with or without the development of the project. They are not directly site-oriented, but provide walk-in patronage from other nearby destinations, thereby reducing project-related motor vehicle trips. A 20 percent walk-in trip reduction was assumed for the retail use while a 20 percent walk-in trip reduction was assumed for restaurant use. Trip reduction factors for the proposed project also account for the presence of “pass-by” trips. A pass-by trip denotes a trip whose route passes the proposed project and stops to utilize one of its uses. Such activity is considered to be an interim stop along a trip that existed without development of the project; therefore, vehicles making these stops are not considered to be newly generated project-related traffic. However, for the purpose of this analysis, pass-by trips were considered to have a trip distance of 0.1 mile.\(^6\) \(^3\) URBEMIS2007 uses distance assumptions for pass-by and diverted trips in order to capture all vehicle miles traveled, and therefore motor vehicle emissions, associated with the proposed project. The Los Angeles Department of Transportation (LADOT) has developed a series of recommended pass-by trip reduction percentages for various development types and sizes. Based on these recommendations, it was assumed that the project retail use would experience 50 percent pass-by trips.

Operational emissions would be generated by both stationary and mobile sources as a result of normal day-to-day activity on the site after occupation. Stationary emissions would be generated by the consumption of natural gas for space and water heating devices, the operation of landscape maintenance equipment, and from consumer products. Mobile emissions would be generated by motor vehicles traveling to and from the project site. Table IV.B-13, Estimated Operational Emissions, identifies daily emissions associated with both stationary and mobile sources. Table IV.B-13 also shows the existing site emissions and the net change in emissions.

As shown in Table IV.B-13, the Wilshire and La Brea Project at buildout and in full operation would not generate net emissions that would exceed SCAQMD thresholds during the summer or the winter. Therefore, daily operational emissions generated by the proposed project would be considered a less than significant impact.

### Table IV.B-13
Estimated Operational Emissions

<table>
<thead>
<tr>
<th>Emissions Source</th>
<th>VOC</th>
<th>NOx</th>
<th>CO</th>
<th>SOx</th>
<th>PM10</th>
<th>PM2.5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Summertime Emissions</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operational (Mobile) Sources</td>
<td>21.64</td>
<td>22.50</td>
<td>205.06</td>
<td>0.21</td>
<td>34.94</td>
<td>6.83</td>
</tr>
<tr>
<td>Area/Stationary Sources</td>
<td>23.02</td>
<td>6.02</td>
<td>8.89</td>
<td>0.00</td>
<td>0.03</td>
<td>0.03</td>
</tr>
<tr>
<td><strong>Summertime Emissions Total</strong></td>
<td>44.66</td>
<td>28.52</td>
<td>213.95</td>
<td>0.21</td>
<td>34.97</td>
<td>6.86</td>
</tr>
<tr>
<td>Existent Emissions</td>
<td>8.46</td>
<td>8.81</td>
<td>76.81</td>
<td>0.06</td>
<td>9.38</td>
<td>1.84</td>
</tr>
<tr>
<td><strong>Net Change in Emissions</strong></td>
<td>36.20</td>
<td>19.71</td>
<td>137.14</td>
<td>0.15</td>
<td>25.59</td>
<td>5.02</td>
</tr>
<tr>
<td>SCAQMD Threshold</td>
<td>55</td>
<td>55</td>
<td>550</td>
<td>150</td>
<td>150</td>
<td>55</td>
</tr>
<tr>
<td>Exceeds Threshold?</td>
<td>NO</td>
<td>NO</td>
<td>NO</td>
<td>NO</td>
<td>NO</td>
<td>NO</td>
</tr>
<tr>
<td><strong>Wintertime Emissions</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operational (Mobile) Sources</td>
<td>22.37</td>
<td>27.04</td>
<td>200.61</td>
<td>0.18</td>
<td>34.94</td>
<td>6.83</td>
</tr>
<tr>
<td>Area/Stationary Sources</td>
<td>22.71</td>
<td>9.05</td>
<td>4.03</td>
<td>0.02</td>
<td>0.26</td>
<td>0.26</td>
</tr>
<tr>
<td><strong>Wintertime Emissions Total</strong></td>
<td>45.08</td>
<td>36.09</td>
<td>204.64</td>
<td>0.20</td>
<td>35.20</td>
<td>7.09</td>
</tr>
<tr>
<td>Existent Emissions</td>
<td>9.29</td>
<td>10.42</td>
<td>74.21</td>
<td>0.05</td>
<td>9.37</td>
<td>1.83</td>
</tr>
<tr>
<td><strong>Net Change in Emissions</strong></td>
<td>35.79</td>
<td>25.67</td>
<td>130.43</td>
<td>0.15</td>
<td>25.83</td>
<td>5.26</td>
</tr>
<tr>
<td>SCAQMD Threshold</td>
<td>55</td>
<td>55</td>
<td>550</td>
<td>150</td>
<td>150</td>
<td>55</td>
</tr>
<tr>
<td>Exceeds Threshold?</td>
<td>NO</td>
<td>NO</td>
<td>NO</td>
<td>NO</td>
<td>NO</td>
<td>NO</td>
</tr>
</tbody>
</table>


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).

### Secondary Effects

- *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.*

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

SCAQMD's CEQA Air Quality Handbook indicates that an air quality modeling analysis that identifies the project’s impact on ambient air quality would need to be performed. In order for a project to be found consistent, the analysis would have to demonstrate that the project’s emissions would not increase the.
frequency or the severity of existing air quality violations, or contribute to a new violation.\textsuperscript{65} The CO analysis for traffic emissions described below assesses the potential ambient air quality impacts with respect to this pollutant. URBEMIS2007 is used to calculate project emissions for comparison with thresholds addressing regional significance. The effect of the project’s VOC and NO\textsubscript{x} emissions on regional O\textsubscript{3} concentrations cannot be determined for a single project, that is, no model exists to estimate such impacts. However, the project emissions do not exceed the significance thresholds. Accordingly, the project emissions are not expected to violate ambient air quality standards or contribute considerably to an existing or projected air quality violation.

- \textit{Project could result in population increases within an area that would be in excess of that projected by SCAG in the AQMP, or increase the population in an area where SCAG has not projected that growth for the project’s build-out year.}

As discussed earlier in this analysis, the AQMP is designed 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 by the required deadlines and to minimize the impact on the economy. Projects that are considered to be consistent with the AQMP do not interfere with attainment and do not contribute to the exceedance of an existing air quality violation because this growth is included in the projections utilized in the formulation of the AQMP. Therefore, projects, uses, and activities that are consistent with the applicable assumptions used in the development of the AQMP would not jeopardize attainment of the air quality levels identified in the AQMP, even if they exceed the SCAQMD’s recommended thresholds. The following analysis discusses the project’s consistency with the AQMP.

Projects that are consistent with the projections of population forecasts identified in the Growth Forecast Reports are considered consistent with the AQMP growth projections. This is because the Growth Forecast Reports form the basis of the land use and transportation control portions of the AQMP.

As discussed in \textbf{Section IV.I, Population and Housing}, the project is consistent with the future population and employment figures projected in the area in which the project is located. The project would not increase population over those that have been planned for the area, would be consistent with the AQMP forecasts for this area, would be considered consistent with the air quality-related regional plans and should not jeopardize attainment of state and federal ambient air quality standards in the basin.

Another measurement tool in determining AQMP consistency is to determine how a project accommodates the expected increase in population and employment. Generally, if a project is planned in a way that results in the minimization of vehicle miles traveled (VMT) both within the project and in the community in which it is located and consequently the minimization of air pollutant emissions, that

\textsuperscript{65} Ibid.
project is consistent with the AQMP. This determination is further analyzed in the Cumulative Impacts section.

The project is designed to accommodate the demand for housing in this portion of the City while supporting commercial office and retail uses. Together, these objectives would minimize the need for or distance of some vehicle trips, thereby reducing motor vehicle emissions from such trips. In addition, the proximity of employment, commercial, and retail centers allows residents of the proposed project to walk or bike to these uses, further reducing motor vehicle emissions. This type of development is consistent with the goals of the AQMP for reducing motor vehicle emissions. In addition, the project site is located adjacent to an existing job center that provides employment opportunities in the Wilshire Community Planning Area. With these job centers, many local residents do not have to commute to distant employment centers. Additionally, the City of Los Angeles operates a transit system in the area that serves the site and its surroundings well. For example, the MTA operates four routes in the vicinity of the project. The routes are listed below in Table IV.B-14, LADOT Commuter Express Routes in the Project Vicinity.

<table>
<thead>
<tr>
<th>Route Number</th>
<th>Travel Street</th>
<th>Stops in Project Vicinity</th>
</tr>
</thead>
<tbody>
<tr>
<td>212/312</td>
<td>La Brea Avenue</td>
<td>Wilshire Boulevard and La Brea Avenue</td>
</tr>
<tr>
<td>20/21</td>
<td>Wilshire Boulevard</td>
<td>Wilshire Boulevard and La Brea Avenue</td>
</tr>
<tr>
<td>720 (Rapid)</td>
<td>Wilshire Boulevard</td>
<td>Wilshire Boulevard and La Brea Avenue</td>
</tr>
</tbody>
</table>


These routes operate on weekdays and weekends. Use of these facilities could reduce the need for some motor vehicle trips. As a result of reduced commutes and other vehicle trips, VMT and, consequently, air pollutant emissions could be further reduced. Therefore, no significant air quality impacts associated with population increases anticipated from the proposed project would occur.

- 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 or the incremental increase due to the project is equal or greater than 9.0 ppm for the California 1-hour CO standard, or 20 ppm for the 8-hour CO standard.

Motor vehicles are a primary source of pollutants with in the project vicinity. Traffic congested roadways and intersections have the potential to generate localized high levels of CO. Localized are where ambient concentrations exceed state and/or federal standards are termed CO “hotspots.” Such hotspots are

defined as locations where the ambient CO concentrations exceed the state or federal ambient air quality standards. CO is produced in greatest quantities from vehicle combustion and is usually concentrated at or near ground level because it does not readily disperse into the atmosphere. As a result, potential air quality impacts to sensitive receptors are assessed through an analysis of localized CO concentrations.

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 one meter per second and extreme atmospheric stability) and provides a screening of maximum, worst-case, CO concentrations. This method is acceptable to the SCAQMD as long as it is used consistently with the BAAQMD Guidelines.67 This model is utilized to predict 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. These intersections were determined in the project traffic study to operate at a level of service (LOS) below D. Intersections operating at a LOS of E or F are considered have to have the potential to create a CO hotspot. However, for the purposes of this analysis, all intersections operating at a LOS D or below were analyzed. Post-project maximum future CO concentrations were calculated for peak hour traffic volumes. The results of these CO concentration calculations are presented in Table IV.B-15, Predicted Future Carbon Monoxide Concentrations –With Project, for representative receptors located 0 and 25 feet from the intersection.

67 Personal communication with Steve Smith, Program Supervisor, South Coast Air Quality Management District, Diamond Bar, California, May 12, 2004.
Table IV.B-15
Predicted Future Carbon Monoxide Concentrations – With Project

<table>
<thead>
<tr>
<th>Intersection</th>
<th>0 Feet</th>
<th>25 Feet</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1-Hour1</td>
<td>8-Hour2</td>
</tr>
<tr>
<td>Fairfax Avenue and Wilshire Boulevard</td>
<td>7.4</td>
<td>4.9</td>
</tr>
<tr>
<td>Highland Avenue and 3rd Street</td>
<td>8.0</td>
<td>5.3</td>
</tr>
<tr>
<td>Highland Avenue and 8th Street</td>
<td>6.8</td>
<td>4.5</td>
</tr>
<tr>
<td>Highland Avenue and Olympic Boulevard</td>
<td>7.4</td>
<td>4.9</td>
</tr>
<tr>
<td>Highland Avenue and Wilshire Boulevard</td>
<td>7.7</td>
<td>5.1</td>
</tr>
<tr>
<td>La Brea Avenue and 3rd Street</td>
<td>7.6</td>
<td>5.0</td>
</tr>
<tr>
<td>La Brea Avenue and 6th Street</td>
<td>7.9</td>
<td>5.2</td>
</tr>
<tr>
<td>La Brea Avenue and 8th Street</td>
<td>7.1</td>
<td>4.7</td>
</tr>
<tr>
<td>La Brea Avenue and Olympic Boulevard</td>
<td>7.7</td>
<td>5.1</td>
</tr>
<tr>
<td>La Brea Avenue and Wilshire Boulevard</td>
<td>7.6</td>
<td>5.0</td>
</tr>
</tbody>
</table>

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. Emissions calculations are provided in Appendix IV.B.

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.

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 the development of the proposed project. No significant CO hotspot impacts would occur to sensitive receptors in the vicinity of these intersections. As a result, no significant project-related impacts would occur relative to future carbon monoxide concentrations.

It should be noted that the CO concentration results presented in Table IV.B-15 are based on the intersection analysis contained in the May 2007 traffic report for the project. Since that time, the project has been redesigned as currently proposed and analyzed in the draft EIR. A supplemental traffic assessment was prepared for the revised project by Overland Traffic Consultants in May 2008. The supplemental traffic assessment determined that trip generation for the revised project would be reduced when compared to the original project analyzed in the traffic study prepared in May 2007. Therefore, Table IV.B-15 presents a reasonably conservative estimate of the project’s impacts to this criterion.

- The project could create objectionable odors that could impact sensitive receptors and could subject new residents to objectionable odors in the area.
The residential uses associated with the Wilshire and La Brea Apartments are not expected to be a source of persistent odors. The adjacent land uses are such that the project residents would not be subjected to substantial sources of objectionable odors from any surrounding land use. The proposed project would include a restaurant, which could potentially be a significant source of odors to the residents of the proposed project and adjacent land uses. Airborne odors associated with the proposed restaurant would result primarily from cooking activities within any food services and eating establishments that may occur in these areas. Food-related odors would be typical of food service businesses and are not considered objectionable by most individuals. Food wastes can, however, putrefy if left on site in dumpsters for long periods of time without frequent disposal and can generate objectionable odors. In each case, such odors would be controlled in accordance with County Department of Health Services permit requirements for proper air filtration and food storage and disposal, and SCAQMD Rule 402, which prohibits persons from discharging quantities of air contaminants, which cause nuisance to any considerable number of persons. Consequently, no significant impacts from such odors are anticipated.

- The consumer products used by residents of the project or generated by the proposed restaurant could emit toxic air contaminants regulated by SCAQMD rules or on federal or state air toxic lists.

The proposed project would consist of residential units and commercial uses, which are not expected to emit significant quantities of toxic air contaminants (TAC). A potential source of toxic air contaminants from the proposed project would be consumer products that contain TACs. However, the amount of TACs emitted, assuming they are present in consumer products, would be negligible considering the size of the proposed project. The proposed restaurant could generate TACs due to its operational activities. Charbroilers are not typically considered substantial sources of TACs and are regulated by the SCAQMD. Therefore, any charbroiler operated in association with the proposed restaurant would not be expected to emit TACs that would exceed the SCAQMD’s recommended toxics’ thresholds of significance. Furthermore, all regulated point sources, if the proposed restaurant were require a permit, must use Best Available Control Technology for Toxics (T-BACT) before they can receive a permit. Compliance with the permit requirements would minimize TACs to a less than significant level. Therefore, impacts with respect to TACs would be less than significant.

- The project could be occupied by sensitive receptors that could be exposed to air toxics, as identified in SCAQMD Rule 1401.

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The proposed project would be adjacent to multi-family residential buildings, single-family homes, and general commercial buildings. None of these land uses produce or process significant quantities of toxic air contaminants as a result of their day-to-day activities. As mentioned above, all TAC generated by the proposed restaurant would be controlled to a less than significant level. Therefore, residents of the proposed project would not be located within one-quarter mile of an existing TAC-emitting facility and would be compliant with Rule 1401.

- The project could emit carcinogenic or toxic air contaminants that individually or cumulatively increase individual cancer risk. It is not anticipated that these emissions would exceed the maximum individual cancer risk of 10 in one million and impacts would be considered less than significant.

The proposed land uses of the Wilshire and La Brea Apartments are not anticipated to use hazardous materials or emit toxic air contaminants in appreciable quantities. Adjacent land uses would not subject project site residents, employees, or visitors to substantial toxic air emissions. Accordingly, no significant impacts with respect to the criteria listed above are expected to occur.

**Global Climate Change**

The project would result in direct emissions of GHGs due to fuel combustion from construction equipment, motor vehicles, and building heating systems associated with the project and would contribute to the global GHG inventory. Building and motor vehicle air conditioning systems may use HFCs (and HCFCs and CFCs to the extent that they have not been completely phased out at later dates), which may result in emissions through leaks. The other primary GHGs (perfluorocarbons and sulfur hexafluoride) are associated with specific industrial sources and are not expected to be associated with the proposed project.

The emissions of CO$_2$, the primary greenhouse gas associated with operation of the project and existing uses were estimated using URBEMIS2007 with the following adjustments to convert CO$_2$ emissions to GHG emissions on a carbon dioxide equivalent (CO$_2$E) basis:

- Construction diesel trucks and equipment: No adjustment was made to the CO$_2$ emissions because the GHGs in the exhaust from diesel engines are almost entirely CO$_2$ (less than 1 percent CH$_4$ and N$_2$O on a CO$_2$ equivalent basis).

- 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$_2$E emissions associated
with passenger vehicles, which account for most of the project-related trips, and by 365 operational days per year.\textsuperscript{70}

- Area sources (natural gas combustion): The CO\textsubscript{2} emissions from natural gas consumption for the project were adjusted based on emission factors for CO\textsubscript{2}, CH\textsubscript{4}, and N\textsubscript{2}O for natural gas combustion from the US EPA’s Compilation of Air Pollutant Emission Factors;\textsuperscript{71} the global warming potential for each GHG; and 365 days per year.

The project would also result in indirect GHG emissions due to the electricity demands of the project. Emission factors for GHGs due to electrical demand from the project’s land uses were obtained from the SCE 2006 Power/Utility Protocol (PUP) Report to the California Climate Action Registry.\textsuperscript{72} The 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. CCAR members voluntarily measure, verify, and publicly report their GHG emissions. The GHG emission factor due to electrical generation from the SCE 2006 PUP Report is provided as metric tons of CO\textsubscript{2}E per megawatt-hour (MW-hr), which was converted to metric tons per million kilowatt-hours (10\textsuperscript{6} kW-hr). This emission factor takes into account the current mix of energy sources used to generate electricity for SCE and the relative carbon intensities of these sources, and includes natural gas, coal, nuclear, large hydroelectric, and other renewable sources of energy. The estimated annual electrical demand for the project was obtained from factors in the CEQA Air Quality Handbook.

In addition to electrical demand, the project would also result in indirect GHG emissions due to water demand, wastewater treatment, and solid waste generation. GHG emissions from water demand are due to the electricity needed to convey, treat, and distribute potable water. GHG emissions from wastewater are due to the electricity needed to treat wastewater and the treatment process itself, which releases CH\textsubscript{4} and N\textsubscript{2}O into the atmosphere. GHG emissions from solid waste generation are due to the decomposition of organic material, which releases CH\textsubscript{4} into the atmosphere. The annual electrical demand factor for water demand\textsuperscript{73} was obtained from the California Energy Commission. GHG emission factors for wastewater treatment\textsuperscript{74} and solid waste generation\textsuperscript{75} were obtained from the US EPA.

\begin{thebibliography}{9}
\end{thebibliography}
The estimated GHG emissions associated with construction and operation of the project are shown in Table IV.B-16, Estimated Construction Greenhouse Gas Emissions and Table IV.B-17, Estimated Operational Greenhouse Gas Emissions. These estimates are based on conservative data and do not include GHG reductions that would occur due to meeting the City’s green building ordinance standards and other energy reduction measures incorporated into the project by design. Items that may be incorporated in the project identified in the City’s green building ordinance include a cool roof and recycled content in construction materials, both of which contribute to GHG reduction.

### Table IV.B-16
Estimated Construction Greenhouse Gas Emissions

<table>
<thead>
<tr>
<th>Construction Year</th>
<th>GHG Emissions (Metric Tons CO2E Per Year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>29</td>
</tr>
<tr>
<td>2010</td>
<td>874</td>
</tr>
<tr>
<td>2011</td>
<td>1,012</td>
</tr>
<tr>
<td>2012</td>
<td>1,061</td>
</tr>
</tbody>
</table>


### Table IV.B-17
Estimated Operational Greenhouse Gas Emissions

<table>
<thead>
<tr>
<th>Emissions Source</th>
<th>GHG Emissions (Metric Tons CO2E Per Year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct GHG Emissions</td>
<td></td>
</tr>
<tr>
<td>Proposed Project</td>
<td>4,810</td>
</tr>
<tr>
<td>Existing Land Uses</td>
<td>1,080</td>
</tr>
<tr>
<td><strong>Net Project GHG Emissions (Direct)</strong></td>
<td><strong>3,730</strong></td>
</tr>
<tr>
<td>Indirect GHG Emissions</td>
<td></td>
</tr>
<tr>
<td>Electricity Generation</td>
<td>1,172</td>
</tr>
<tr>
<td>Water Demand</td>
<td>28</td>
</tr>
<tr>
<td>Wastewater Treatment</td>
<td>111</td>
</tr>
<tr>
<td>Solid Waste Generation</td>
<td>157</td>
</tr>
<tr>
<td><strong>Total Proposed Project (Indirect)</strong></td>
<td><strong>1,468</strong></td>
</tr>
</tbody>
</table>


---

While the proposed project would result in emissions of GHGs, no guidance exists to indicate what level of GHG emissions would be considered substantial enough to result in a significant adverse impact on global climate. 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. GHG impacts are recognized as exclusively cumulative impacts; there are no non-cumulative GHG emission impacts from a climate change perspective. Accordingly, further discussion of the project’s greenhouse gas emissions and their impact on global climate are addressed in the Cumulative Impacts section.

c. Cumulative Impacts

Regional Impacts

The SCAQMD’s CEQA Air Quality Handbook identifies methodology to determine the cumulative significance of land use projects. The SCAQMD has not identified thresholds to which the total emissions of all cumulative development can be compared. Instead, the SCAQMD’s methods are based on performance standards and emission reduction targets necessary to attain the federal and state air quality standards identified in the AQMP. The SCAQMD CEQA Air Quality Handbook identifies three possible methods to determine the cumulative significance of land use projects. However, one method is no longer recommended and supported by the SCAQMD and another method is not applicable as the SCAQMD repealed the underlying regulation after the CEQA Air Quality Handbook was published. Therefore, the only remaining SCAQMD method is based on whether the rate of growth in average daily trips or vehicle miles traveled exceeds the rate of growth in population.

As discussed above, air emissions generated by the project would not exceed the thresholds of significance established by the SCAQMD during project operation as shown in Table IV.B-13. Thus, the proposed project’s operational emissions would not have cumulatively considerable impacts to air quality. Construction emissions would not exceed any of the SCAQMD thresholds of significance for construction, but would exceed the LSTs for PM_{10} and PM_{2.5}, which represent local impacts only. Also discussed above, the proposed project is consistent with the population growth projections of the SCAG Growth Forecast. The control strategy of the AQMP is based on projections contained in local general plans. Projects that are consistent with local general plans are considered consistent with air quality-

77 CEQA Air Quality Handbook, 9-12.
78 Ibid., 9-12; Written communication with Steve Smith, Program Supervisor, South Coast Air Quality Management District, November 20, 2003.
related regional plans such as the AQMP.\textsuperscript{79} 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 thresholds. According to the methodology described in the \textit{SCAQMD CEQA Air Quality Handbook}, if an individual project reduces the rate of growth of VMT and is consistent with the AQMP, then the project’s cumulative impact could be considered less than significant.\textsuperscript{80}

As shown in Table IV.B-18, \textit{Comparison of Growth of VMT to Population Growth}, this criterion has been met and the project would be considered consistent with AQMP. The ratio of VMT from the project to VMT from the County (0.000078) is less than the ratio of project population to the anticipated County population (0.00013). Consequently, there is no potential for significant cumulative air quality impacts under this criterion.

<table>
<thead>
<tr>
<th>Vehicle Miles Traveled</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wilshire and La Brea\textsuperscript{1}</td>
<td>16,702</td>
</tr>
<tr>
<td>Los Angeles County\textsuperscript{2,3}</td>
<td>213,255,000</td>
</tr>
<tr>
<td>Ratio of Project to Los Angeles County</td>
<td>0.000078</td>
</tr>
</tbody>
</table>

\textsuperscript{1} Estimated VMT for project residents as determined by URBEMIS\textsuperscript{2007}.


\textsuperscript{3} Estimated population for Los Angeles County in 2011.

\textsuperscript{4} Estimated VMT for Los Angeles County in 2011 as determined by EMFAC\textsuperscript{2007}.

### Global Climate Change

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. The project would generate GHG emissions, which would contribute to potential cumulative impacts of GHG emissions on global climate.

Under Section 15064(h)(1) of the \textit{State CEQA Guidelines}, a project must be assessed to determine if it would have a cumulatively considerable effect on a resource, where cumulatively considerable is defined as “…the incremental effects of an individual project are significant when viewed in connection with the

\textsuperscript{79} \textit{CEQA Air Quality Handbook}, 12-2.

\textsuperscript{80} SCAQMD, \textit{CEQA Air Quality Handbook}, 9-12.
effects of past projects, the effects of other current projects, and the effects of probable future projects.”81

Section 15064(h)(4) further states, “The mere existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the proposed project’s incremental effects are cumulatively considerable.”82 Therefore, the fact that the proposed project would result in emissions of GHGs (chiefly carbon dioxide), and that global GHGs emissions contribute to the greenhouse effect and the resultant impacts on global climate, does not mean that the project would have a cumulatively considerable impact on global climate. In the absence of adopted significance thresholds, the potential contribution of the project to this cumulative impact is evaluated under the following criterion:

- The project could impede or conflict with the emissions reduction targets and strategies prescribed in or developed to implement AB 32.

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

In its report to the governor and the legislature, the Climate Action Team recommended strategies that could be implemented by various state boards, departments, commissions, and other agencies to reduce GHG emissions.83 In addition, CARB has approved a list of early action measures that can be implemented by January 1, 2010. The Climate Action Team strategies and early action measures that are relevant to the proposed project’s design features and mitigation measures that would be consistent with these strategies and measures are listed in Table IV.B-19, Project Features and Mitigation Measures Consistent with Climate Action Team Strategies and Table IV.B-20, Project Features and Mitigation Measures Consistent with Early Action Measures. Based on the analysis in Table IV.B-19 and Table IV.B-20, the proposed project would reduce its contribution to GHG emissions and global climate due to its consistency with these strategies and measures.

81 California Environmental Quality Act (CEQA) Guidelines, California Code of Regulations (CCR), Title 14, Division 6, Chapter 3, Section 15064.
82 Ibid.
### Table IV.B-19
**Project Features and Mitigation Measures to Achieve Climate Action Team Strategies**

<table>
<thead>
<tr>
<th>CAT Strategy</th>
<th>Implementing Agency</th>
<th>Project Feature/Mitigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicle Climate Change Standards</td>
<td>Air Resources Board</td>
<td>The project would be consistent with this strategy to the extent that new passenger vehicle and light trucks are purchased by the project’s users starting in the 2009 model year.¹</td>
</tr>
<tr>
<td>HFC Reduction Strategies</td>
<td>Air Resources Board</td>
<td>Project air conditioning systems would comply with the latest standards for new systems. Use of consumer products using HFCs would comply with ARB regulations, when adopted.</td>
</tr>
<tr>
<td>Building Energy Efficiency Standards and Appliance Energy Efficiency Standards in Place</td>
<td>Energy Commission</td>
<td>The project will meet or exceed California energy standards and energy efficient lighting requirements.</td>
</tr>
<tr>
<td>Water Use Efficiency</td>
<td>Department of Water Resources</td>
<td>The project will meet or exceed California water use and conservation standards.</td>
</tr>
</tbody>
</table>

¹ The US EPA has denied the waiver that would allow these standards to be implemented; however, the state has filed a lawsuit to overturn this decision and Senate Bill 2555 that would essentially bypass the US EPA’s decision and grant California the waiver is progressing through the United States Congress. The implementation of these standards and the time schedule for the introduction of compliance passenger vehicles and light trucks are in question at this time.


### Table IV.B-20
**Project Features and Mitigation Measures Consistent with Early Action Measures**

<table>
<thead>
<tr>
<th>Early Action Measure</th>
<th>Project Feature/Mitigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low-Carbon Fuel Standard</td>
<td>The project would be consistent with this measure because motor vehicles driven by project staff and residents would use compliance fuels in the future.</td>
</tr>
<tr>
<td>“Do-it-yourself” Automotive Refrigerants</td>
<td>The project would be consistent with this measure because the project’s vehicles would be serviced by repair shops that capture and recycle automotive refrigerants.</td>
</tr>
<tr>
<td>Consumer Product Propellants</td>
<td>The project would be consistent with this measure because the project staff and residents would use compliant consumer products.</td>
</tr>
</tbody>
</table>

In addition to consistency with the above, the proposed project includes several project objectives that would result in decreased GHG emissions. These objectives are

- to promote the use of public transportation by providing housing, retail shopping and dining opportunities adjacent to a major public transit corridor,
- to promote walkability by providing housing, retail shopping and dining opportunities in close proximity to adjacent commercial and residential uses, and
- to meet the City’s green building ordinance which will enhance the City’s sustainability goals.

Based on a conservative estimate, operation of the project would result in direct net GHG emissions of approximately 3,730 metric tons per year (0.00373 million metric tons). Compared to the estimated GHG for all sources in California (423 million metric tons, excluding out-of-state electrical generation), the project’s contribution to global climate would be imperceptible. Based on these calculations, the project would add approximately 0.0009 percent to the State of California GHG emissions inventory.

As stated above, no quantitative emission thresholds or similar criteria have been established to evaluate the cumulative impact of a single project on global climate, and based on the above findings the contribution of the project to cumulative GHG emissions would most likely not be cumulatively considerable if such a threshold were to be established. However, in the absence of an established threshold and understanding that the proposed project would result in the emission of some GHGs, the proposed project’s impact will be considered cumulatively considerable. Therefore, mitigation measures to reduce GHG emissions to the extent feasible will be applied.

6. **MITIGATION MEASURES**

In order to address significant impacts to air quality resulting from construction of the proposed project, the following mitigation measures are recommended.

**a. Construction Impacts**

**MM-AQ-1.** Construction emissions generated by the proposed project would exceed the localized significance threshold for PM_{10} and PM_{2.5} during project demolition and would be considered a significant impact without mitigation. In addition to the requirements of Rule 403, the applicant shall implement the following mitigation measures that would help reduce emissions of PM_{10} and PM_{2.5} during construction activities.

a. Configure construction parking to minimize traffic interference. (The emission reduction efficiency for this measure is not quantified.)
b. Provide temporary traffic controls during all phases of construction activities to maintain traffic flow (e.g., flag person). (The emission reduction efficiency for this measure is not quantified.)

c. Schedule construction activities that affect traffic flow on the arterial system to off peak hours to the degree practicable. (The emission reduction efficiency for this measure is not quantified.)

d. Re-route construction trucks away from congested streets. (The emission reduction efficiency for this measure is not quantified.)

e. Consolidate truck deliveries, when possible. (The emission reduction efficiency for this measure is not quantified.)

f. Provide dedicated turn lanes for movement of construction trucks and equipment on and off site. (The emission reduction efficiency for this measure is not quantified.)

g. Maintain equipment and vehicle engines in good condition and in proper tune as per manufacturers’ specifications and per SCAQMD rules, to minimize exhaust emissions. (The emission reduction efficiency for this measure is not quantified.)

h. Apply water to demolition materials to reduce the emissions of fugitive dust during demolition operations. (The emission reduction efficiency for this measure is not quantified.)

b. **Operational Impacts**

Project operations would not generate emissions of any criteria pollutant in excess of the SCAQMD daily thresholds; therefore, no mitigation measures are required.

c. **Cumulative Impacts**

Cumulative impacts are not considered significant; therefore, no mitigation measures are required.

d. **Global Climate Change Impacts**

Mitigation measures to reduce the cumulatively considerable effects of GHG emissions on global climate are required. In addition to the strategies recommended by the Climate Action Team, described above, the project will further reduce GHG emissions by creating a mixed-use development along a major transit corridor that will promote alternatives to vehicle travel and efficient delivery of services and goods. Furthermore, project design and implementation would meet the City’s green building ordinance standards, which would also reduce GHG emissions. Therefore, the following mitigation measure shall be applied to reduce these emissions to the extent feasible:
MM-AQ-2. In the absence of an established threshold and understanding that the proposed project would result in the emission of some GHGs, the proposed project’s impact shall be cumulatively considerable. Therefore, the following mitigation measure is included to help reduce GHG emissions:

a. The proposed project shall meet the City’s green building ordinance standards for all residences. Items that may be incorporated in the project identified in the City’s green building ordinance include low flow plumbing fixtures, dual flush toilets, a cool roof, separate recycling trash chutes and recycled content in construction materials such as carpet. The inclusion of such items as required by the Green Building Ordinance will improve the energy efficiency of the project and reduce GHG emissions associated with the project.

e. Adverse Effects

Construction of the proposed project would generate emissions of PM$_{10}$ and PM$_{2.5}$ that exceed the LSTs. The mitigation measures listed in MM-AQ-1 would help reduce emissions of PM$_{10}$ and PM$_{2.5}$; however, the reductions achieved through implementation of the measures cannot be quantified. Therefore, following implementation of mitigation, construction emissions would still cause a significant impact on air quality and would be considered an unavoidable significant impact.

Project operations would not generate emissions of any criteria pollutant in excess of the SCAQMD daily thresholds. If a project’s emissions are considered less than significant, no mitigation measures are required. The proposed project’s operational emissions would be considered a less than significant impact on air quality in the region.

While the basin is in nonattainment of the state and federal O$_3$ and PM$_{10}$ standards, the construction and operation of project does not create individually significant air quality impacts on a regional level, and based on other SCAQMD criteria, it would not contribute to cumulatively significant air quality impacts. Thus, the proposed project would have a less than significant cumulative air quality impact.

The proposed project would result in the emission of some GHGs, and therefore the proposed project’s impact is considered cumulatively considerable. The mitigation measure listed in MM-AQ-2 would help reduce emissions of GHGs caused by the project; however, in the absence of an established threshold, it is not possible to determine whether the reductions achieved through implementation of the measure will reduce such impacts to a less than significant level. Therefore, the project’s contribution to GHG emissions would still result in a cumulatively significant and unavoidable impact on global climate.