

IV.B AIR QUALITY

This chapter examines the degree to which the proposed project may cause significant adverse changes to air quality. Both short-term construction emissions occurring from activities, such as site grading and haul truck trips, and long-term effects related to the ongoing operation of the proposed project are discussed in this section. This analysis focuses on air pollution from two perspectives: daily emissions and pollutant concentrations. “Emissions” refer to the quantity of pollutants released into the air, measured in pounds per day (ppd). “Concentrations” refer to the amount of pollutant material per volumetric unit of air, measured in parts per million (ppm) or micrograms per cubic meter ($\mu\text{g}/\text{m}^3$). This chapter also includes an assessment of greenhouse gas emissions and global climate change.

EXISTING CONDITIONS

POLLUTANTS AND EFFECTS

Criteria air pollutants are defined as pollutants for which the federal and State governments have established ambient air quality standards for outdoor concentrations to protect public health. The federal and State standards have been set at levels above which concentrations could be harmful to human health and welfare. These standards are designed to protect the most sensitive persons from illness or discomfort. Pollutants of concern include carbon dioxide (CO), ozone (O_3), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter 2.5 microns or less in diameter ($\text{PM}_{2.5}$), particulate matter ten microns or less in diameter (PM_{10}), and lead (Pb). These pollutants are discussed below.

Carbon Monoxide. CO is a colorless and odorless gas formed by the incomplete combustion of fossil fuels. CO is emitted almost exclusively from motor vehicles, power plants, refineries, industrial boilers, ships, aircraft, and trains. In urban areas such as the project location, automobile exhaust accounts for the majority of CO emissions. CO is a non-reactive air pollutant that dissipates relatively quickly, so ambient CO concentrations generally follow the spacial and temporal distributions of vehicular traffic. CO concentrations are influenced by local meteorological conditions, primarily wind speed, topography, and atmospheric stability. CO from motor vehicle exhaust can become locally concentrated when surface-based temperature inversions are combined with calm atmospheric conditions, a typical situation at dusk in urban areas between November and February.¹ The highest levels of CO typically occur during the colder months of the year when inversion conditions are more frequent. In terms of health, CO competes with oxygen, often replacing it in the blood, thus reducing the blood’s ability to transport oxygen to vital organs. The results of excess CO exposure can be dizziness, fatigue, and impairment of central nervous system functions.

Ozone. O_3 is a colorless gas that is formed in the atmosphere when reactive organic gases (ROG), which includes volatile organic compounds (VOC), and nitrogen oxides (NO_x) react in the presence of ultraviolet sunlight. O_3 is not a primary pollutant; it is a secondary pollutant formed by complex interactions of two pollutants directly emitted into the atmosphere. The primary sources of ROG and NO_x , the components of O_3 , are automobile exhaust and industrial sources. Meteorology and terrain play major roles in O_3 formation. Ideal conditions occur during summer and early autumn, on days with low wind speeds or stagnant air, warm temperatures, and cloudless skies. The greatest source of smog-producing gases is the

¹ Inversion is an atmospheric condition in which a layer of warm air traps cooler air near the surface of the earth, preventing the normal rising of surface air.

automobile. Short-term exposure (lasting for a few hours) to O₃ at levels typically observed in Southern California can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes.

Nitrogen Dioxide. NO₂, like O₃, is not directly emitted into the atmosphere but is formed by an atmospheric chemical reaction between nitric oxide (NO) and atmospheric oxygen. NO and NO₂ are collectively referred to as NO_x and are major contributors to O₃ formation. NO₂ also contributes to the formation of PM₁₀. High concentrations of NO₂ can cause breathing difficulties and result in a brownish-red cast to the atmosphere with reduced visibility. There is some indication of a relationship between NO₂ and chronic pulmonary fibrosis. Some increase of bronchitis in children (two and three years old) has also been observed at concentrations below 0.3 ppm.

Sulfur Dioxide. SO₂ is a colorless, pungent gas formed primarily by the combustion of sulfur-containing fossil fuels. Main sources of SO₂ are coal and oil used in power plants and industries. Generally, the highest levels of SO₂ are found near large industrial complexes. In recent years, SO₂ concentrations have been reduced by the increasingly stringent controls placed on stationary source emissions of SO₂ and limits on the sulfur content of fuels. SO₂ is an irritant gas that attacks the throat and lungs. It can cause acute respiratory symptoms and diminished ventilator function in children. SO₂ can also yellow plant leaves and erode iron and steel.

Particulate Matter. Particulate matter pollution consists of very small liquid and solid particles floating in the air, which can include smoke, soot, dust, salts, acids, and metals. Particulate matter also forms when gases emitted from industries and motor vehicles undergo chemical reactions in the atmosphere. PM_{2.5} and PM₁₀ represent fractions of particulate matter. Fine particulate matter, or PM_{2.5}, is roughly 1/28 the diameter of a human hair. PM_{2.5} results from fuel combustion (e.g. motor vehicles, power generation, and industrial facilities), residential fireplaces, and wood stoves. In addition, PM_{2.5} can be formed in the atmosphere from gases such as SO₂, NO_x, and VOC. Inhalable particulate matter, or PM₁₀, is about 1/7 the thickness of a human hair. Major sources of PM₁₀ include crushing or grinding operations; dust stirred up by vehicles traveling on roads; wood burning stoves and fireplaces; dust from construction, landfills, and agriculture; wildfires and brush/waste burning; industrial sources; windblown dust from open lands; and atmospheric chemical and photochemical reactions.

PM_{2.5} and PM₁₀ pose a greater health risk than larger-size particles. When inhaled, these tiny particles can penetrate the human respiratory system's natural defenses and damage the respiratory tract. PM_{2.5} and PM₁₀ can increase the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infections. Very small particles of substances, such as lead, sulfates, and nitrates can cause lung damage directly. These substances can be absorbed into the blood stream and cause damage elsewhere in the body. These substances can transport absorbed gases, such as chlorides or ammonium, into the lungs and cause injury. Whereas PM₁₀ tends to collect in the upper portion of the respiratory system, PM_{2.5} is so tiny that it can penetrate deeper into the lungs and damage lung tissues. Suspended particulates also damage and discolor surfaces on which they settle, as well as produce haze and reduce regional visibility.

Lead. Pb in the atmosphere occurs as particulate matter. Sources of lead include leaded gasoline; the manufacturers of batteries, paint, ink, ceramics, and ammunition; and secondary lead smelters. Prior to 1978, mobile emissions were the primary source of atmospheric lead.

Between 1978 and 1987, the phase-out of leaded gasoline reduced the overall inventory of airborne lead by nearly 95 percent. With the phase-out of leaded gasoline, secondary lead smelters, battery recycling, and manufacturing facilities have become lead-emission sources of greater concern.

Prolonged exposure to atmospheric lead poses a serious threat to human health. Health effects associated with exposure to lead include gastrointestinal disturbances, anemia, kidney disease, and in severe cases, neuromuscular and neurological dysfunction. Of particular concern are low-level lead exposures during infancy and childhood. Such exposures are associated with decrements in neurobehavioral performance, including intelligence quotient performance, psychomotor performance, reaction time, and growth.

Toxic Air Contaminants. A substance is considered toxic if it has the potential to cause adverse health effects in humans. A toxic substance released into the air is considered a toxic air contaminant (TAC). TACs are identified by State and federal agencies based on a review of available scientific evidence. In the State of California, TACs are identified through a two-step process that was established in 1983 under the Toxic Air Contaminant Identification and Control Act. This two-step process of risk identification and risk management was designed to protect residents from the health effects of toxic substances in the air.

Greenhouse Gases. Greenhouse gas (GHG) emissions refer to a group of emissions that are generally believed to affect global climate conditions. The greenhouse effect compares the Earth and the atmosphere surrounding it to a greenhouse with glass panes. The glass panes in a greenhouse let heat from sunlight in and reduce the amount of heat that escapes. GHGs, such as carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O), keep the average surface temperature of the Earth close to 60 degrees Fahrenheit (°F). Without the greenhouse effect, the Earth would be a frozen globe with an average surface temperature of about 5°F.

In addition to CO₂, CH₄, and N₂O, GHGs include hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and water vapor. Of all the GHGs, CO₂ is the most abundant pollutant that contributes to climate change through fossil fuel combustion. CO₂ comprised 83.3 percent of the total GHG emissions in California in 2002.² The other GHGs are less abundant but have higher global warming potential than CO₂. To account for this higher potential, emissions of other GHGs are frequently expressed in the equivalent mass of CO₂, denoted as CO₂e. The CO₂e of CH₄ and N₂O represented 6.4 and 6.8 percent, respectively, of the 2002 California GHG emissions. Other high global warming potential gases represented 3.5 percent of these emissions.³ In addition, there are a number of human-made pollutants, such as CO, NO_x, non-methane VOC, and SO₂, that have indirect effects on terrestrial or solar radiation absorption by influencing the formation or destruction of other climate change emissions.

REGULATORY SETTING

The Federal Clean Air Act (CAA) governs air quality in the United States. In addition to being subject to the requirements of CAA, air quality in California is also governed by more stringent regulations under the California Clean Air Act (CCAA). At the federal level, CAA is administered by the United States Environmental Protection Agency (USEPA). In California, the CCAA is

² California Environmental Protection Agency, *Climate Action Team Report to Governor Schwarzenegger and the Legislature*, March 2006, p. 11.

³ *Ibid.*

administered by the California Air Resources Board (CARB) at the State level and by the air quality management districts and air pollution control districts at the regional and local levels.

United States Environmental Protection Agency. The Federal Clean Air Act (CAA) governs air quality in the United States. The United States Environmental Protection Agency (USEPA) is responsible for enforcing the CAA. USEPA is also responsible for establishing the National Ambient Air Quality Standards (NAAQS). NAAQS are required under the 1977 CAA and subsequent amendments. USEPA regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, and certain types of locomotives. USEPA has jurisdiction over emission sources outside State waters (e.g., beyond the outer continental shelf) and establishes various emission standards, including those for vehicles sold in States other than California. Automobiles sold in California must meet stricter emission standards established by CARB.

As required by the CAA, NAAQS have been established for seven major air pollutants: CO, NO₂, O₃, PM_{2.5}, PM₁₀, SO₂, and Pb. The CAA requires USEPA to designate areas as attainment, nonattainment, or maintenance (previously nonattainment and currently attainment) for each criteria pollutant based on whether the NAAQS have been achieved. The federal standards are summarized in **Table IV.B-1**. The USEPA has classified the Basin as maintenance for CO and nonattainment for O₃, PM_{2.5}, and PM₁₀.

California Air Resources Board. In addition to being subject to the requirements of CAA, air quality in California is also governed by more stringent regulations under the California Clean Air Act (CCAA). In California, the CCAA is administered by the California Air Resources Board (CARB) at the State level and by the air quality management districts and air pollution control districts at the regional and local levels. The CARB, which became part of the California Environmental Protection Agency in 1991, is responsible for meeting the State requirements of the CAA, administering the CCAA, and establishing the California Ambient Air Quality Standards (CAAQS). The CCAA, as amended in 1992, requires all air districts in the State to endeavor to achieve and maintain the CAAQS. CAAQS are generally more stringent than the corresponding federal standards and incorporate additional standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility reducing particles. CARB regulates mobile air pollution sources, such as motor vehicles. CARB is responsible for setting emission standards for vehicles sold in California and for other emission sources, such as consumer products and certain off-road equipment. CARB established passenger vehicle fuel specifications, which became effective in March 1996. CARB oversees the functions of local air pollution control districts and air quality management districts, which, in turn, administer air quality activities at the regional and county levels. The State standards are summarized in **Table IV.B-1**.

The CCAA requires CARB to designate areas within California as either attainment or non-attainment for each criteria pollutant based on whether the CAAQS have been achieved. Under the CCAA, areas are designated as non-attainment for a pollutant if air quality data shows that a State standard for the pollutant was violated at least once during the previous three calendar years. Exceedances that are affected by highly irregular or infrequent events are not considered violations of a State standard and are not used as a basis for designating areas as nonattainment. Under the CCAA, the Los Angeles County portion of the Basin is designated as a nonattainment area for O₃, PM_{2.5}, and PM₁₀.⁴

⁴ CARB, Area Designation Maps, available at <http://www.arb.ca.gov/desig/adm/adm.htm>, accessed June 1, 2010.

TABLE IV.B-1 State And National Ambient Air Quality Standards And Attainment Status For The South Coast Air Basin					
Pollutant	Averaging Period	California		Federal	
		Standards	Attainment Status	Standards	Attainment Status
Ozone (O ₃)	1-hour	0.09 ppm (180 µg/m ³)	Nonattainment	--	--
	8-hour	0.070 ppm (137 µg/m ³)	n/a	0.075 ppm (147 µg/m ³)	Nonattainment
Respirable Particulate Matter (PM ₁₀)	24-hour	50 µg/m ³	Nonattainment	150 µg/m ³	Nonattainment
	Annual Arithmetic Mean	20 µg/m ³	Nonattainment	--	--
Fine Particulate Matter (PM _{2.5})	24-hour	--	--	35 µg/m ³	Nonattainment
	Annual Arithmetic Mean	12 µg/m ³	Nonattainment	15.0 µg/m ³	Nonattainment
Carbon Monoxide (CO)	8-hour	9.0 ppm (10 mg/m ³)	Attainment	9 ppm (10 mg/m ³)	Maintenance
	1-hour	20 ppm (23 mg/m ³)	Attainment	35 ppm (40 mg/m ³)	Maintenance
Nitrogen Dioxide (NO ₂)	Annual Arithmetic Mean	0.030 ppm (57 µg/m ³)	Attainment	0.053 ppm (100 µg/m ³)	Attainment
	1-hour	0.18 ppm (338 µg/m ³)	Attainment	--	--
Sulfur Dioxide (SO ₂)	Annual Arithmetic Mean	--	--	0.030 ppm (80 µg/m ³)	Attainment
	24-hour	0.04 ppm (105 µg/m ³)	Attainment	0.14 ppm (365 µg/m ³)	Attainment
	3-hour	--	--	--	--
	1-hour	0.25 ppm (655 µg/m ³)	Attainment	--	--
Lead (Pb)	30-day average	1.5 µg/m ³	Attainment	--	--
	Calendar Quarter	--	--	0.15 µg/m ³	Attainment

Note: n/a means not available.
SOURCE: CARB, *Ambient Air Quality Standards*, January 27, 2010.

South Coast Air Quality Management District. The 1977 Lewis Air Quality Management Act created the SCAQMD to coordinate air quality planning efforts throughout Southern California. This Act merged four county air pollution control agencies into one regional district to better address the issue of improving air quality in Southern California. Under the Act, renamed the Lewis-Presley Air Quality Management Act in 1988, the SCAQMD is the agency principally responsible for comprehensive air pollution control in the region. Specifically, the SCAQMD is responsible for monitoring air quality, as well as planning, implementing, and enforcing

programs designed to attain and maintain State and federal ambient air quality standards in the district. Programs that were developed include air quality rules and regulations that regulate stationary sources, area sources, point sources, and certain mobile source emissions. The SCAQMD is also responsible for establishing stationary source permitting requirements and for ensuring that new, modified, or relocated stationary sources do not create net emission increases.

The SCAQMD monitors air quality within the project area. The SCAQMD has jurisdiction over an area of 10,743 square miles, consisting of Orange County; the non-desert portions of Los Angeles, Riverside, and San Bernardino counties; and the Riverside County portion of the Salton Sea Air Basin and Mojave Desert Air Basin. The Basin is a subregion of the SCAQMD and covers an area of 6,745 square miles. The Basin includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties. The Basin is bounded by the Pacific Ocean to the west; the San Gabriel, San Bernardino and San Jacinto mountains to the north and east; and the San Diego County line to the south (**Figure IV.B-1**).

Global Climate Change. In response to growing scientific and political concern with global climate change, California has recently adopted a series of laws to reduce emissions of GHGs into the atmosphere. In September 2002, Assembly Bill (AB) 1493 was enacted, requiring the development and adoption of regulations to achieve “the maximum feasible reduction of greenhouse gases” emitted by noncommercial passenger vehicles, light-duty trucks, and other vehicles used primarily for personal transportation in the State. California Governor Arnold Schwarzenegger announced, on June 1, 2005, through Executive Order S-3-05, the following GHG emission reduction targets: by 2010, reduce GHG emissions to 2000 levels; by 2020, reduce GHG emissions to 1990 levels; and by 2050, reduce GHG emissions to 80 percent below 1990 levels.

In response to the Executive Order, the Secretary of the California Environmental Protection Agency created the Climate Action Team (CAT), which, in March 2006, published the *Climate Action Team Report to Governor Schwarzenegger and the Legislature* (2006 CAT Report). The 2006 CAT Report identifies a recommended list of strategies that the State could pursue to reduce climate change GHG emissions. These are strategies that could be implemented by various State agencies to ensure that the Governor’s targets are met and can be met with existing authority of the State agencies.

Assembly Bill 32. In September 2006, Governor Arnold Schwarzenegger signed the California Global Warming Solutions Act of 2006, also known as AB 32, into law. AB 32 focuses on reducing GHG emissions in California, and requires the CARB to adopt rules and regulations that would achieve greenhouse gas emissions equivalent to statewide levels in 1990 by 2020. To achieve this goal, AB 32 mandates that the CARB establish a quantified emissions cap, institute a schedule to meet the cap, implement regulations to reduce statewide GHG emissions from stationary sources, and develop tracking, reporting, and enforcement mechanisms to ensure that reductions are achieved. Because the intent of AB 32 is to limit 2020 emissions to the equivalent of 1990, and the present year (2009) is near the midpoint of this timeframe, it is expected that the regulations would affect many existing sources of GHG emissions and not just new general development projects. Senate Bill (SB) 1368, a companion bill to AB 32, requires the California Public Utilities Commission and the California Energy Commission to establish GHG emission performance standards for the generation of electricity. These standards will also apply to power that is generated outside of California and imported into the State.



LEGEND:

- South Coast Air Basin
- State of California

SOURCE: California Air Resources Board, State and Local Air Monitoring Network Plan, May 2008



AB 32 charges the CARB with the responsibility to monitor and regulate sources of GHG emissions in order to reduce those emissions. On June 1, 2007, the CARB adopted three discrete early action measures to reduce GHG emissions. These measures involved complying with a low carbon fuel standard, reducing refrigerant loss from motor vehicle air conditioning maintenance, and increasing methane capture from landfills.⁵ On October 25, 2007, the CARB tripled the set of previously approved early action measures. The approved measures include improving truck efficiency (i.e., reducing aerodynamic drag), electrifying port equipment, reducing perfluorocarbons from the semiconductor industry, reducing propellants in consumer products, promoting proper tire inflation in vehicles, and reducing sulfur hexafluoride emission from the non-electricity sector. The CARB has determined that the total statewide aggregated greenhouse gas 1990 emissions level and 2020 emissions limit is 427 million metric tons of CO₂e. The 2020 target reductions are currently estimated to be 174 million metric tons of CO₂e.

The CARB AB 32 Scoping Plan contains the main strategies to achieve the 2020 emissions cap. The Scoping Plan was developed by the CARB with input from the Climate Action Team and proposes a comprehensive set of actions designed to reduce overall carbon emissions in California, improve the environment, reduce oil dependency, diversify energy sources, and enhance public health while creating new jobs and improving the State economy. The GHG reduction strategies contained in the Scoping Plan include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms such as a cap-and-trade system. The measures in the Scoping Plan adopted by the Board will be developed and put in place by 2012.

The CARB has also developed the greenhouse gas mandatory reporting regulation, which required reporting beginning on January 1, 2008 pursuant to requirements of AB 32. The regulations require reporting for certain types of facilities that make up the bulk of the stationary source emissions in California. The regulation language identifies major facilities as those that generate more than 25,000 metric tons of CO₂ per year. Cement plants, oil refineries, electric generating facilities/providers, co-generation facilities, and hydrogen plants and other stationary combustion sources that emit more than 25,000 metric tons of CO₂ per year, make up 94 percent of the point source CO₂ emissions in California.

CEQA Guideline Amendments. California Senate Bill (SB) 97 required the Governor's Office of Planning and Research (OPR) to develop CEQA guidelines "for the mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions." The CEQA Guideline amendments provide guidance to public agencies regarding the analysis and mitigation of the effects of GHG emissions in CEQA documents. Noteworthy revisions to the CEQA Guidelines include:

- Lead agencies should quantify all relevant GHG emissions and consider the full range of project features that may increase or decrease GHG emissions as compared to the existing setting;
- Consistency with the CARB Scoping Plan is not a sufficient basis to determine that a project's GHG emissions would not be cumulatively considerable;
- A lead agency may appropriately look to thresholds developed by other public agencies, including the CARB's recommended CEQA thresholds;

⁵ California Air Resources Board, *Proposed Early Action Measures to Mitigate Climate Change in California*, April 20, 2007.

- To qualify as mitigation, specific measures from an existing plan must be identified and incorporated into the project. General compliance with a plan, by itself, is not mitigation;
- The effects of GHG emissions are cumulative and should be analyzed in the context of CEQA's requirements for cumulative impact analysis; and
- Given that impacts resulting from GHG emissions are cumulative, significant advantages may result from analyzing such impacts on a programmatic level. If analyzed properly, later projects may tier, incorporate by reference, or otherwise rely on the programmatic analysis.

Senate Bill 375. California Senate Bill (SB) 375, passed September 30, 2008, provides a means for achieving AB 32 goals through regulation of cars and light trucks. SB 375 aligns three critical policy areas of importance to local government: (1) regional long-range transportation plans and investments; (2) regional allocation of the obligation for cities and counties to zone for housing; and (3) a process to achieve greenhouse gas emissions reductions targets for the transportation sector. SB 375 establishes a process for CARB to develop the GHG emissions reductions targets for each region (as opposed to individual local governments or households). CARB must take certain factors into account before setting the targets, such as considering the likely reductions that will result from actions to improve the fuel efficiency of the Statewide fleet and regulations related to the carbon content of fuels (low carbon fuels). CARB must also convene a Regional Targets Advisory Committee, which includes representation from the League of California Cities, California State Association of Counties, metropolitan planning organizations, developers, planning organizations and other stakeholder groups. Furthermore, before setting the targets for each region, CARB is required to exchange technical information with the Metropolitan Planning Organizations (MPOs) for that region and with the affected air district. SB 375 provides that the MPOs may recommend a target for its region.

SB 375 relies upon regional planning processes already underway in the 17 MPOs in the State to accomplish its objectives. The provisions related to GHG emissions only apply to the MPOs in the State, which includes 37 of the 58 counties. Most notably, the measure requires the MPO to prepare a Sustainable Communities Strategy (SCS) within the Regional Transportation Plan (RTP), which sets forth a vision for growth for the region taking into account the transportation, housing, environmental, and economic needs of the region. The SCS is the blueprint by which the region will meet its GHG emissions reductions target if there is a feasible way to do so.

SB 375 indirectly addresses another longstanding issue: single purpose State agencies. The new law will require the cooperation of CARB, the California Transportation Commission (CTC), the California Department of Transportation (Caltrans) and the State Department of Housing and Community Development (HCD). For example, SB 375 takes a first step to counter this problem by connecting the Regional Housing Needs Allocation (RHNA) to the transportation planning process. While these State agencies will be involved in setting the targets and adopting new guidelines, local governments and the MPOs will not only provide input into setting the targets, but will serve as the lead on implementation. Member cities and counties working through their MPOs are tasked with development of the new integrated regional planning and transportation strategies designed to meet the GHG targets.

SB 375 also includes a provision that applies to all regional transportation planning agencies in the State that recognizes the rural contribution towards reducing GHGs. More specifically, the bill requires regional transportation agencies to consider financial incentives for cities and

counties that have resource areas or farmland, for the purposes of, for example, transportation investments for the preservation and safety of the city street or county road system, farm to market, and interconnectivity transportation needs. An MPO or county transportation agency shall also consider financial assistance for counties to address countywide service responsibilities in counties that contribute towards the GHG emissions reductions targets by implementing policies for growth to occur within their cities.

CARB Guidance. The CARB has published draft guidance for setting interim GHG significance thresholds (October 24, 2008). The guidance is the first step toward developing the recommended Statewide interim thresholds of significance for GHG emissions that may be adopted by local agencies for their own use. The guidance does not attempt to address every type of project that may be subject to CEQA, but instead focuses on common project types that are responsible for substantial GHG emissions (i.e., industrial, residential, and commercial projects). The CARB believes that thresholds in these important sectors will advance climate objectives, streamline project review, and encourage consistency and uniformity in the CEQA analysis of GHG emissions throughout the State.

California Air Pollution Control Officers Association (CAPCOA) Guidance. CAPCOA published a white paper to provide a common platform of information and tools to address climate change in CEQA analyses, including the evaluation and mitigation of GHG emissions from proposed projects and identifying significance thresholds options. The white paper addresses issues inherent in establishing CEQA thresholds, evaluates tools, catalogues mitigation measures, and provides air districts and lead agencies with options for incorporating climate change into their programs.

SCAQMD Guidance. The SCAQMD has convened a GHG CEQA Significance Threshold Working Group to provide guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents. Members of the working group include government agencies implementing CEQA and representatives from various stakeholder groups that will provide input to the SCAQMD staff on developing GHG CEQA significance thresholds. On December 5, 2008, the SCAQMD Governing Board adopted the staff proposal for an interim GHG significance threshold for projects where the SCAQMD is lead agency. The SCAQMD has not adopted guidance for CEQA projects under other lead agencies.

Green Building Program. Early in the design process the entire life-cycle of the building and its components are considered, as well as the economic and environmental impact and performance. The City of Pasadena recognizes that building construction, maintenance and operations consume resources which have a direct impact on the public welfare and the natural environment. It is with that recognition that the City of Pasadena approved the Green Building Practices Ordinance on April 15, 2006, in order to:⁶

- Enhance public welfare and assure that civic and private sector development is consistent with the city's desire to create a more sustainable community by incorporating green building measures into the design, construction, and maintenance of buildings;
- Improve the health of residents, visitors, and workers by counteracting negative environmental impacts associated with building construction and occupation; and

⁶ City of Pasadena, *Pasadena Municipal Code, Chapter 14.90 – Green Building Practices*, April 15, 2006.

- Promote development that fosters sustainable sites, improves energy and resource efficiency, decreases waste and pollution generation, and improves the health and productivity of a building's occupants over the life of the building.

The Program identifies objectives and actions designed to make the City a leader in confronting global climate change. The measures would reduce emissions directly from municipal facilities and operations, and create a framework to address City-wide GHG emissions. The Program lists various focus areas in which to implement GHG reduction strategies.

The City adopted an ordinance to establish a green building program in April 2008. The ordinance establishes green building requirements for buildings that meet the following criteria:

- New municipal buildings must achieve Leadership in Energy and Environmental Design (LEED) Silver at a minimum.
- Municipal renovations of 15,000 square feet or more must achieve LEED Silver at a minimum.
- Commercial type buildings of over 50,000 square feet or more must meet the intent of LEED Silver at a minimum.
- All projects subject to the ordinance must achieve LEED credit 3.1 Water Efficiency (exceed the baseline water projection by 20 percent).

In order for a project to comply with the Program, these specific actions must be taken:

1. All applicable projects are required to retain the services of a Leadership in Energy and Environmental Design (LEED) accredited professional and complete LEED project registration prior to issuance of a building permit.
2. All applicable projects shall submit a LEED checklist and supporting documentation indicating points meeting at a minimum LEED "Certified" level incorporated into documentation for a building permit. Projects as described in Section 14.90.040(A)(2) of 50,000 square feet or more of new gross square footage shall meet LEED "Silver" level. These projects would include typical office, retail, medical, and academic buildings with occupied and conditioned spaces. The LEED checklist shall be prepared, signed, and dated by the project LEED accredited professional. All building documents shall indicate in the general notes and/or individual detail drawings, where feasible, the green building measures employed to attain the applicable LEED rating.
3. Applicable city buildings are required to attain LEED certification and meet, at a minimum, LEED "Silver" rating.
4. Building commissioning, although specified as a prerequisite for LEED certification, is not required for applicable projects under this chapter except for city buildings. Applicants are encouraged to verify that fundamental building systems are designed, installed, and calibrated to operate as intended.
5. All applicable projects shall meet the applicable LEED water use reduction credit that requires applicants to employ strategies that, in aggregate, use 20% less water than a

standard building using the Energy Policy Act of 1992 fixture performance requirements for interior water usage.

Greenhouse Gas Inventory and Reduction Plan. The City has developed a Greenhouse Gas Inventory and Reduction Plan in response to recent state legislation and to inform the General Plan update process that is currently underway. The goals of this report are to:

- Provide a list of specific actions that will aggressively reduce GHG emissions, giving the highest priority to actions that provide the greatest reduction in GHG emissions and benefits to the community at least cost;
- Reduce emissions attributable to the City of Pasadena to levels at or below 1990 GHG emissions by year 2020 consistent with the target reductions of AB 32 and to begin to further reduce GHG emissions toward the ultimate goal of 80 percent below 1990 GHG emissions by year 2050 consistent with the Kyoto Protocol and Executive Order S-3-05;
- Provide estimated GHG reductions associated with the City's sustainability efforts;
- Integrate the City's sustainability efforts into the specific actions of this plan; and
- Establish thresholds of significance for GHG emissions within CEQA thereby creating a legally defensible foundation to use with the environmental analysis of future development projects subject to City review.

The City had not adopted the Greenhouse Gas Inventory and Reduction Plan when this analysis was completed. In addition, the Plan does not establish a significance threshold for assessing projects under CEQA.

EXISTING AIR QUALITY

Air Pollution Climatology

The project site is located within the Los Angeles County portion of the Basin. Ambient pollution concentrations recorded in Los Angeles County are among the highest in the four counties comprising the Basin.

The Basin is in an area of high air pollution potential due to its climate and topography. The general region lies in the semi-permanent high pressure zone of the eastern Pacific, resulting in a mild climate tempered by cool sea breezes with light average wind speeds. The Basin experiences warm summers, mild winters, infrequent rainfalls, light winds, and moderate humidity. This usually mild climatological pattern is interrupted infrequently by periods of extremely hot weather, winter storms, or Santa Ana winds. The Basin is a coastal plain with connecting broad valleys and low hills, bounded by the Pacific Ocean to the west and high mountains around the rest of its perimeter. The mountains and hills within the area contribute to the variation of rainfall, temperature, and winds throughout the region.

The Basin experiences frequent temperature inversions. Temperature typically decreases with height. However, under inversion conditions, temperature increases as altitude increases, thereby preventing air close to the ground from mixing with the air above it. As a result, air pollutants are trapped near the ground. During the summer, air quality problems are created

due to the interaction between the ocean surface and the lower layer of the atmosphere. This interaction creates a moist marine layer. An upper layer of warm air mass forms over the cool marine layer, preventing air pollutants from dispersing upward. Additionally, hydrocarbons and NO₂ react under strong sunlight, creating smog. Light, daytime winds, predominantly from the west, further aggravate the condition by driving air pollutants inland, toward the mountains. During the fall and winter, air quality problems are created due to CO and NO₂ emissions. CO concentrations are generally worse in the morning and late evening (around 10:00 p.m.). In the morning, CO levels are relatively high due to cold temperatures and the large number of cars traveling. High CO levels during the late evenings are a result of stagnant atmospheric conditions trapping CO in the area. Since CO emissions are produced almost entirely from automobiles, the highest CO concentrations in the Basin are associated with heavy traffic. NO₂ concentrations are also generally higher during fall and winter days.

Local Climate

The mountains and hills within the Basin contribute to the variation of rainfall, temperature, and winds throughout the region. Within the project site and its vicinity, the average wind speed, as recorded at the Azusa Wind Monitoring Station, is 4.5 miles per hour, with calm winds occurring less than 0.01 percent of the time. Wind in the vicinity of the project site predominately blows from the southwest.⁷

The annual average temperature in the project area is 63.8°F. The project area experiences an average winter temperature of approximately 55.1°F and an average summer temperature of approximately 72.5°F. Total precipitation in the project area averages approximately 20 inches annually. Precipitation occurs mostly during the winter and relatively infrequently during the summer. Precipitation averages approximately 12 inches during the winter, approximately five inches during the spring, approximately three inches during the fall, and less than one inch during the summer.⁸

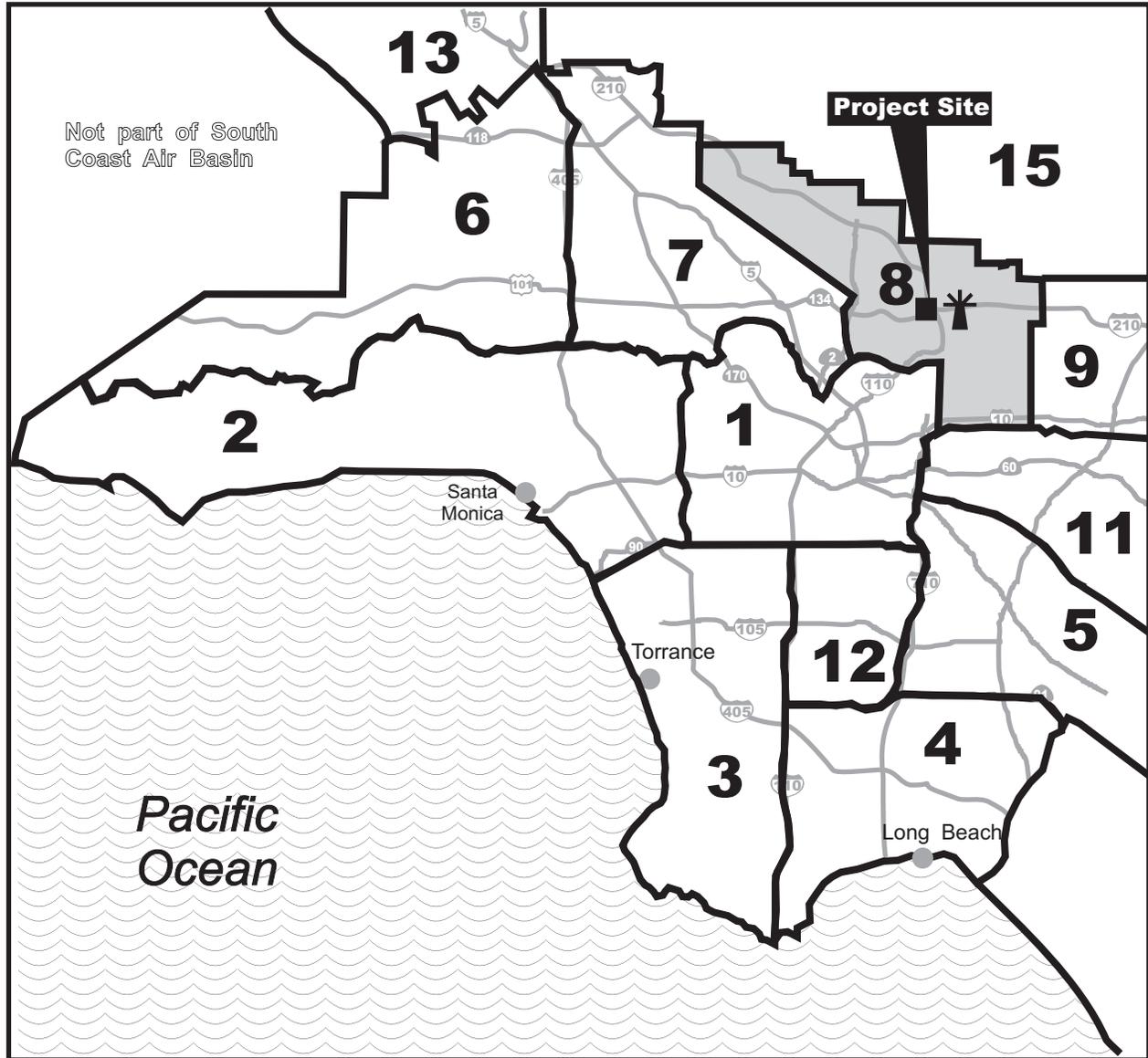
Air Monitoring Data

The SCAQMD monitors air quality conditions at 38 locations throughout the Basin. The project site is located in SCAQMD's West San Gabriel Valley Air Monitoring Subregion, which is served by the Pasadena Monitoring Station, is located approximately one miles northwest of the project site in the City of Pasadena (**Figure IV.B-2**). Historical data from the Pasadena Monitoring Station were used to characterize existing conditions in the vicinity of the project area. Criteria pollutants monitored at the Pasadena Monitoring Station include O₃, CO, NO₂, and PM_{2.5}. Historical data from the Downtown Los Angeles Station was used to characterize existing SO₂ levels, and historical data from the Azusa Monitoring Station was used to characterize existing PM₁₀ levels. The SCAQMD has only provided information through 2008.

Table IV.B-2 shows pollutant levels, the State and federal standards, and the number of exceedances recorded at the Pasadena Monitoring Station compared to the San Gabriel Valley General Forecast Area (Forecast Area) from 2006 to 2008.

⁷ SCAQMD, Meteorological Data, available at <http://www.aqmd.gov/smog/metdata/MeteorologicalData.html>, accessed August 6, 2009.

⁸ Western Regional Climate Center, Historical Climate Information, available at <http://www.wrcc.dri.edu>, accessed June 1, 2010.



LEGEND: Pasadena Monitoring Station

Air Monitoring Areas in Los Angeles County:

- | | |
|---------------------------------|--------------------------------------|
| 1. Central Los Angeles | 9. East San Gabriel Valley |
| 2. Northwest Coastal | 10. Pomona/Walnut Valley (not shown) |
| 3. Southwest Coastal | 11. South San Gabriel Valley |
| 4. South Coastal | 12. South Central Los Angeles |
| 5. Southeast Los Angeles County | 13. Santa Clarita Valley |
| 6. West San Fernando Valley | 15. San Gabriel Mountains |
| 7. East San Fernando Valley | |
| 8. West San Gabriel Valley | |

SOURCE: South Coast Air Quality Management District Air Monitoring Areas Map, 1999

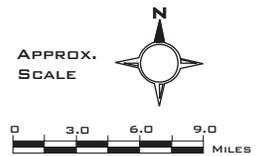


TABLE IV.B-2 2006-2008 Ambient Air Quality Data In Project Vicinity							
Pollutant	Pollutant Concentration & Standards	Project Vicinity Monitoring Stations			San Gabriel Valley General Forecast Area ^{1,2}		
		Number of Days Above State Standard					
		2006	2007	2008	2006	2007	2008
Ozone	Maximum 1-hr Concentration (ppm) Days > 0.09 ppm (State 1-hr standard)	0.15 25	0.15 13	0.12 16	0.15 22	0.15 15	0.15 15
	Maximum 8-hr Concentration (ppm) Days > 0.07 ppm (State 8-hr standard)	0.12 24	0.10 21	0.10 26	0.12 20	0.11 21	0.11 21
Carbon Monoxide	Maximum 1-hr concentration (ppm) Days > 20 ppm (State 1-hr standard)	4 0	3 0	n/a n/a	3 0	4 0	4 0
	Maximum 8-hr concentration (ppm) Days > 9.0 ppm (State 8-hr standard)	2.8 0	2.4 0	2.3 0	2.3 0	2.4 0	2.4 0
Nitrogen Dioxide	Maximum 1-hr Concentration (ppm) Days > 0.18 ppm (State 1-hr standard)	0.06 0	0.09 0	0.09 0	0.11 0	0.11 0	0.11 0
PM ₁₀	Maximum 24-hr concentration (µg/m ³) Estimated Days > 50 µg/m ³ (State 24-hr standard)	81 7	83 11	96 12	81 7	83 11	83 11
PM _{2.5}	Annual Arithmetic Mean (µg/m ³) Exceed State Standard (12 µg/m ³)?	13 Yes	14 Yes	n/a	15 Yes	16 Yes	16 Yes
Sulfur Dioxide ³	Maximum 24-hr Concentration (ppm) Days > 0.04 ppm (State 24-hr standard)	0.01 0	<0.01 0	<0.01 0	n/a	n/a	n/a

¹ The San Gabriel Valley General Forecast Area includes the West San Gabriel Valley, East San Gabriel Valley, Pomona/Walnut Valley and South San Gabriel Valley air monitoring areas of the SCAQMD.

² An average of the maximum concentration of each criteria pollutant of the air monitoring areas of the San Gabriel Valley General Forecast Area was used to represent maximum concentrations in the San Gabriel Valley General Forecast Area.

³ Sulfur Dioxide is not measured within the San Gabriel Valley General Forecast Area. The values listed for Sulfur Dioxide in the Pasadena, Azusa, and Downtown Los Angeles Monitoring Stations columns are from the Downtown Los Angeles Monitoring Station.

Note: n/a means not available.

SOURCE: SCAQMD, Historical Data by Year, available at <http://www.aqmd.gov/smog/historicaldata.htm>, accessed June 1, 2010.

The CAAQS for the criteria pollutants are also shown in the table. As **Table IV.B-2** indicates, criteria pollutants CO, NO₂, and SO₂ did not exceed the CAAQS during the 2006 to 2008 period. The one-hour State standard for O₃ was exceeded 13 to 25 times during this period, and the eight-hour State standard for O₃ was exceeded 12 to 26 times. Additionally, the 24-hour State standard for PM₁₀ was exceeded seven to 12 times and the annual State standard for PM_{2.5} was exceeded in during year 2006 to 2008 period. When compared to the Forecast area the Project Vicinity Monitoring Stations recorded concentrations of averages of the CO were higher than the Forecast Area concentrations. NO₂ concentrations were higher than the Forecast Area concentrations during 2005, and but lower than the average in 2006 and 2007. O₃ concentrations were higher than the Forecast Area's average during 2005, and equivalent to the Forecast Area's average during 2006 and 2007. PM₁₀ concentrations were equivalent to the Forecast Area concentrations during the 2006 to 2008 period, and PM_{2.5} concentrations were lower than the Forecast Area concentrations during the 2006 to 2008 period.

Existing Carbon Monoxide Concentrations at Project Area Intersections

There is a direct relationship between traffic/circulation congestion and CO impacts since exhaust fumes from vehicular traffic are the primary source of CO. CO is a localized gas that dissipates very quickly under normal meteorological conditions. Therefore, CO concentrations decrease substantially as distance from the source (intersection) increases. The highest CO concentrations are typically found in areas directly adjacent to congested roadway intersections.

SCAQMD defines the ambient CO level as the highest reading over the past three years. A review of data from the Pasadena Monitoring Station for the 2005 to 2007 period indicates that the one- and eight-hour background concentrations are approximately 4 and 2.8 ppm, respectively. Accordingly, the existing background concentrations do not exceed the State one- and eight-hour CO standards of 20 and 9.0 ppm, respectively.

Air Quality Sensitive Receptors

Some land uses are considered more sensitive to changes in air quality than others, depending on the population groups and the activities involved. CARB has identified the following typical groups who are most likely to be affected by air pollution: children under 14, the elderly over 65 years of age, athletes, and people with cardiovascular and chronic respiratory diseases. According to the SCAQMD, sensitive receptors include residences, schools, playgrounds, child care centers, athletic facilities, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes.

As shown in **Figure IV.B-3**, sensitive receptors within one-quarter mile (1,320 feet) of the project site include the following:

- A multi-family residential building approximately 65 feet east of the project site
- Multi-family residences approximately 580 feet south of the project site
- Multi-family residences approximately 675 feet northeast of the project site
- Multi-family residences approximately 750 feet southeast of the project site
- Multi-family residences approximately 1,150 feet southwest of the project site

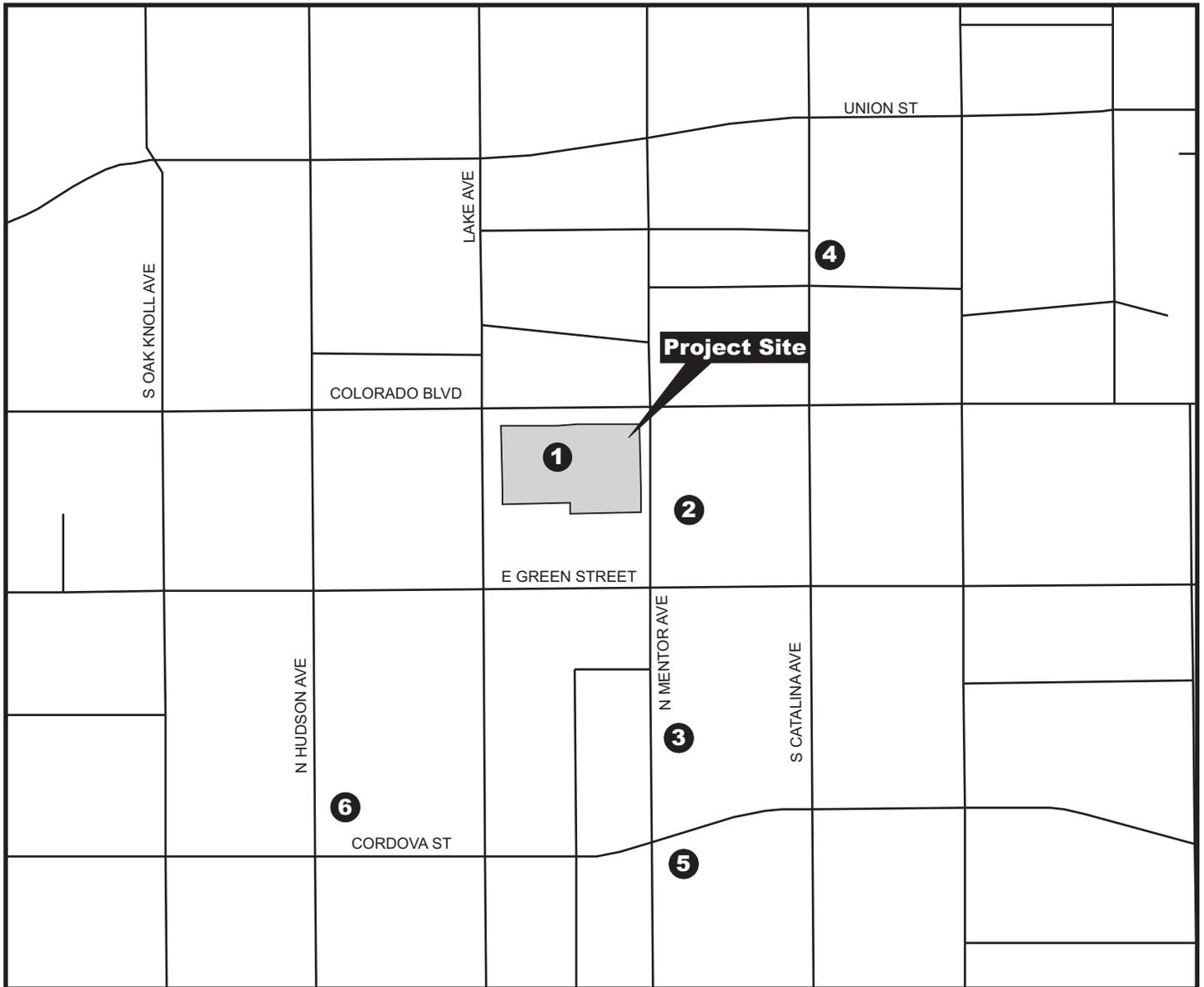
The above sensitive receptors represent the nearest sensitive receptors with the potential to be impacted by the proposed project. Additional sensitive receptors are located in the surrounding community within one-quarter mile of the project site and may be impacted by the proposed project.

ENVIRONMENTAL IMPACTS

METHODOLOGY

This air quality analysis is consistent with the methods described in the SCAQMD *CEQA Air Quality Handbook* (1993 edition), as well as the updates to the CEQA Air Quality Handbook, as provided on the SCAQMD website.⁹

⁹ SCAQMD, available at <http://www.aqmd.gov/ceqa/hdbk.html>, accessed April 28, 2008.



LEGEND:

-  Project Site
-  Sensitive Receptor Locations

- 1. Project Site
- 2. Multi-Family Residences
- 3. Multi-Family Residences
- 4. Multi-Family Residences
- 5. Multi-Family Residences
- 6. Multi-Family Residences

SOURCE: TAHA, 2010

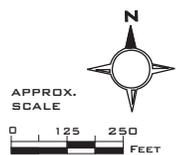


FIGURE IV.B-3

Construction

Construction emissions (i.e., demolition, site preparation, and building construction) were calculated using the URBEMIS2007 model. URBEMIS (Urban Emissions Model) is a computer program used to estimate construction and operational emissions associated with land development projects in California. Regional emissions were compared to the SCAQMD regional thresholds to determine project impact significance. The localized construction analysis followed guidelines published by the SCAQMD in the Localized Significance Methodology for CEQA Evaluations (SCAQMD Localized Significance Threshold (LST) Guidance Document).¹⁰ In January 2005, the SCAQMD supplemented the SCAQMD LST Guidance Document with Sample Construction Scenarios for Projects Less than Five Acres in Size.¹¹

The proposed project would be built in three nonoverlapping construction phases. During Phase 1, the vacant, former hotel building would undergo interior renovation and exterior restoration. The hotel would be converted into 136 hotel rooms and 2,681 square feet of bar/restaurant space, and 200 square feet of retail space. Conversion of existing hotel rooms on the uppermost floors into five condominium units is also proposed during Phase 1. Phase 2 development would include demolition of 11,011 square feet of retail space and the existing parking structure, surface parking and circulation area. New construction would include a 22,810-square-foot building south of the hotel with 20 additional hotel rooms, 8,010 square feet of retail space and 2,920 square feet of outdoor restaurant space. A rooftop pool would also be built with the hotel addition. An additional 20,290 square feet of open space would be provided, most of which would be in a second level courtyard extending into the site from Colorado Boulevard, adjacent to the hotel. The ground and second levels of the courtyard would provide approximately 14,830 square feet of outdoor area and feature public amenities such as terraces and gardens. The remaining 5,460 square feet of open space would be provided by the rooftop pool. Phase 3 would include construction of the remainder of the subterranean parking, ground floor retail and the office building. Specifically, new construction would include a 153,435-square-foot office building. New indoor and outdoor restaurant space would total 32,260 square feet and would largely be located on a second (terrace) level that would link with the courtyard constructed in Phase 2. Ground floor and second level retail space would total 14,200 square feet. Open space with terraces and balconies for the new building would total 15,470 square feet. Specific construction assumptions for each phase include:

Phase 1

Demolition

- Duration: 2 weeks
- Haul Trucks: 10 trips per day
- Equipment: 5 pieces of equipment

Grading/Excavation

- Duration: 1 month
- Excavation Amount: 200 cubic yards export and 200 cubic yards import
- Grading Amount: 2,000 square feet graded per day

¹⁰ SCAQMD, *Localized Significance Methodology*, June 2003, revised July 2008.

¹¹ SCAQMD, *Sample Construction Scenarios for Projects Less than Five Acres in Size*, February 2005.

- Haul Trucks: 5 trips per day
- Equipment: 4 pieces of equipment

Building/Finishing (includes Building Construction, Paving and Architectural Coating phases)

- Duration: 10 months
- Area to be Paved: 2,000 square feet
- Equipment: 12 pieces of equipment

Phase 2

Demolition

- Duration: 2 weeks
- Haul Trucks: 20 trips per day
- Equipment: 8 pieces of equipment

Grading/Excavation

- Duration: 1.5 months
- Excavation Amount: 40,000 cubic yards export and 2,000 cubic yards import
- Grading Amount: 30,593 square feet graded per day
- Haul Trucks: 70 trips per day
- Equipment: 8 pieces of equipment

Building/Finishing (includes Building Construction, Paving and Architectural Coating phases)

- Duration: 10 months
- Area to be Paved: 16,000 square feet
- Equipment: 12 pieces of equipment

Phase 3

Demolition

- Duration: 4 weeks
- Haul Trucks: 20 trips per day
- Equipment: 10 pieces of equipment

Grading/Excavation

- Duration: 2 months
- Excavation Amount: 105,000 cubic yards export and 3,000 cubic yards import
- Grading Amount: 43,000 square feet graded per day
- Haul Trucks: 126 trips per day
- Equipment: 9 pieces of equipment

Building/Finishing (includes Building Construction, Paving and Architectural Coating phases)

- Duration: 13 months
- Area to be Paved: 7,000 square feet
- Equipment: 22 pieces of equipment

Operations

URBEMIS2007 was also used to calculate operational emissions (i.e., mobile and area sources). Localized CO emissions were calculated utilizing USEPA's CAL3QHC dispersion model and CARB's EMFAC2007 model. EMFAC2007 is the latest emission inventory model for motor vehicles operating on roads in California. This model reflects the CARB's current understanding of how vehicles travel and how much they pollute. The EMFAC2007 model can be used to show how California motor vehicle emissions have changed over time and are projected to change in the future. CAL3QHC is a model developed by USEPA to predict CO and other pollutant concentrations from motor vehicle emissions at roadway intersections. The model uses a traffic algorithm for estimating vehicular queue lengths at signalized intersections.

Greenhouse Gas Emissions

Greenhouse gas emissions were calculated for on-road mobile vehicle operations, general electricity consumption, electricity consumption associated with the use and transport of water, natural gas consumption, and solid waste decomposition. Mobile source emissions were based on trip volumes identified in the traffic study and obtained from URBEMIS2007. Phase 1 would generate 1,273 daily vehicle trips and 1,294 off-site valet parking daily trips, 81 additional daily vehicle trips after Phase 2, and 3,560 additional daily vehicle trips after Phase 3.¹²

Natural gas emissions were obtained from two sources. CO₂ emissions were obtained from URBEMIS2007. URBEMIS does not estimate CH₄ and N₂O emissions associated with natural gas consumption. The California Climate Action Registry (CCAR) published version 3.1 of its General Reporting Protocol (Protocol) in January 2009 as a means for businesses, government agencies, and non-profit organizations to calculate GHG emissions from a number of general and industry-specific activities and participate in the CCAR. This Protocol is not intended for CEQA purposes, but it does provide methods that can be used to quantify the GHG emissions. Natural gas demand factors derived from the SCAQMD's *CEQA Air Quality Handbook* were used to project fuel consumption rates. The GHG emission factors from the CCAR Protocol for natural gas were then applied to the respective consumption rates, to calculate annual GHG emissions in metric tons.

The consumption of fossil fuels to generate electricity and to provide heating and hot water for the proposed project has the potential to create GHG emissions. The future fuel consumption rates for the proposed project by these sources are estimated based on the amount of proposed development. Electricity demand factors derived from the SCAQMD's *CEQA Air Quality Handbook* were used to project fuel consumption rates. The GHG emission factors from the CCAR Protocol for electricity were then applied to the respective consumption rates, to calculate annual GHG emissions in metric tons.

California's water infrastructure uses energy to collect, move, and treat water; dispose of wastewater; and power the large pumps that move water throughout the State. California

¹² RAJU Associates, *Transportation Study for the Lake at Colorado Project DEIR*, May 24, 2010.

consumers also use energy to heat, cool, and pressurize the water they use in their homes and businesses. Together these water-related energy uses annually account for roughly 20 percent of the State's electricity consumption, one-third of non-power plant natural gas consumption, and about 88 million gallons of diesel fuel consumption. The California Energy Commission has reported that the energy intensity of the water use cycle in Southern California is 12,700 kilowatt-hours per million gallons.¹³ Water use was obtained from Section IV.F.1 and IV.F.2 of the Environmental Impact Report.

Solid waste was estimated using generation rates provided by the California Department of Resources Recycling and Recovery. USEPA has stated that solid waste decomposition generates 3.1 metric tons of CO₂e per ton of waste.¹⁴

The proposed project does not contain lead emissions sources. Therefore, emissions and concentrations related to this pollutant are not analyzed in this report.¹⁵

THRESHOLDS OF SIGNIFICANCE

Construction Phase Significance Criteria

The proposed project would have a significant impact if:

- Daily regional and localized construction emissions were to exceed SCAQMD construction emissions thresholds for VOC, NO_x, CO, SO_x, PM_{2.5}, or PM₁₀, as presented in **Table IV.B-3**;
- The proposed project would generate significant emissions of TACs; and/or
- The proposed project would create an odor nuisance.

Criteria Pollutant	Regional Emissions (Pounds Per Day)	Localized Emissions (Pounds Per Day) ¹
Volatile Organic Compounds (VOC)	75	--
Nitrogen Oxides (NO _x)	100	69
Carbon Monoxide (CO)	550	535
Sulfur Oxides (SO _x)	150	--
Fine Particulates (PM _{2.5})	55	3
Particulates (PM ₁₀)	150	4

¹ The project site is 1.95 acres in size but the applicant has stated that they would not disturb more than 43,000 square feet in one day. Therefore, the localized significance thresholds were developed using a one-acre project site and a 25-meter (82-foot) receptor distance.
SOURCE: SCAQMD, 2010.

¹³ California Energy Commission, *2005 Integrated Energy Policy Report*, November 2005.

¹⁴ USEPA, Waste Reduction Model (WARM), (Step 5: View Emission/Energy Factors), 2009.

¹⁵ Prior to 1978, mobile emissions were the primary source of lead resulting in air concentrations. Between 1978 and 1987, the phase-out of leaded gasoline reduced the overall inventory of airborne lead by nearly 95 percent. Currently, industrial sources are the primary source of lead resulting in air concentrations. Since the proposed project does not contain an industrial component, lead emissions are not analyzed in this report.

Operational Phase Significance Criteria

The proposed project would have a significant impact if:

- Daily operational emissions were to exceed SCAQMD operational emissions thresholds for VOC, NO_x, CO, SO_x, PM_{2.5}, or PM₁₀, as presented in **Table IV.B-4**;

TABLE IV.B-4 SCAQMD Daily Operational Emissions Thresholds	
Criteria Pollutant	Pounds Per Day
Volatile Organic Compounds (VOC)	55
Nitrogen Oxides (NO _x)	55
Carbon Monoxide (CO)	550
Sulfur Oxides (SO _x)	150
Fine Particulates (PM _{2.5})	55
Particulates (PM ₁₀)	150

SOURCE: SCAQMD, 2010.

- Project-related traffic causes CO concentrations at study intersections to violate the CAAQS for either the one- or eight-hour period. The CAAQS for the one- and eight-hour periods are 20 ppm and 9.0 ppm, respectively;
- The proposed project would generate significant emissions of TACs;
- The proposed project would create an odor nuisance; and/or
- The proposed project would not be consistent with the AQMP.

Greenhouse Gas Significance Criteria

The significance threshold is based on the methodologies recommended by the CAPCOA January 2008 *CEQA and Climate Change* white paper. CAPCOA conducted an analysis of various approaches and significance thresholds, ranging from a zero threshold (all projects are cumulatively considerable) to a high of 40,000 to 50,000 metric tons of CO₂e per year. For example, an approach assuming a zero threshold and compliance with AB 32 2020 targets would require all discretionary projects to achieve a 33 percent reduction from projected “business-as-usual” emissions to be considered less than significant. A zero threshold approach could be considered on the basis that climate change is a global phenomenon, and not controlling small source emissions would potentially neglect a major portion of the GHG inventory. However, the CEQA Guidelines also recognize that there may be a point where a project’s contribution, although above zero, would not be a considerable contribution to the cumulative impact (CEQA Guidelines, Section 15130 (a)). Therefore, a threshold of greater than zero is considered more appropriate for the analysis of GHG emissions under CEQA.

Another method would use a quantitative threshold of greater than 900 metric tons CO₂e per year based on a market capture approach that requires mitigation for greater than 90 percent of

likely future discretionary development. This threshold would generally correspond to office projects of approximately 35,000 square feet, retail projects of approximately 11,000 square feet, or supermarket space of approximately 6,300 square feet. Another potential threshold would be the 10,000 metric tons standard used by the Market Advisory Committee for inclusion in a GHG Cap and Trade System in California. A 10,000 metric ton significance threshold would correspond to the GHG emissions of approximately 550 residential units, 400,000 square feet of office space, 120,000 square feet of retail, and 70,000 square feet of supermarket space. This threshold would capture roughly half of new residential or commercial development. The basic concepts for the various approaches suggested by CAPCOA are used herein to determine whether or not the proposed project's GHG emissions are "cumulatively considerable."

The City of Pasadena is in the process of adopting a Greenhouse Gas Inventory and Reduction Plan that would include a CEQA significance threshold. However, no City threshold has been proposed at this time. The SCAQMD has adopted GHG significance thresholds for projects where the SCAQMD is lead agency but not for general development. The Bay Area Air Quality Management District (BAAQMD) has adopted a threshold of 1,100 metric tons of CO₂e per year or 4.6 metric tons of CO₂e per service population (residents and employees) per year. These thresholds were specifically developed based on the meteorological and transit characteristics of the BAAQMD region (e.g., higher transit than the SCAQMD region). The BAAQMD thresholds are not considered representative of the SCAQMD region.

CAPCOA's suggested quantitative thresholds are generally more applicable to development on sites at the periphery of metropolitan areas, also known as "greenfield" sites, where there would be an increase in vehicle miles traveled (VMT) and associated GHG emissions than to infill development, which would generally reduce regional VMT and associated emissions. As the City of Pasadena is generally built out, most commercial development within the City is infill or redevelopment and would be expected to generally reduce VMT and reliance on the drive-alone automobile use as compared to further suburban growth at the periphery of the region. A reduction in vehicle use and vehicle miles traveled can result in a reduction in fuel consumption and in air pollutant emissions, including GHG emissions. Recent research indicates that infill development reduces VMT and associated air pollutant emissions, as compared to greenfield sites. For example, a 1999 simulation study conducted for the USEPA, comparing infill development to greenfield development, found that infill development results in substantially fewer VMT per capita (39 percent to 52 percent) and generates fewer emissions of most air pollutants and greenhouse gases.

For this reason, the most conservative (i.e., lowest) thresholds, suggested by CAPCOA, would not be appropriate for the proposed project given that it is located in a community that is highly urbanized. Similarly, the 900-ton threshold was also determined to be too conservative for general development in the South Coast Air Basin. Consequently, the threshold of 10,000 metric tons CO₂e is used as a quantitative benchmark for significance. A project's contribution to cumulative impacts to global climate change is considered cumulatively considerable if the project would generate 10,000 metric tons CO₂e per year. In addition, the impact would be considered cumulatively considerable if the project would be inconsistent with one or more of the CAT reduction strategies, Attorney General's GHG reduction strategies, or the City's 2009 Green City Action Plan.

CONSTRUCTION IMPACTS

Regional Impacts

Construction of the proposed project has the potential to create air quality impacts through the use of heavy-duty construction equipment and through vehicle trips generated by construction workers traveling to and from the project site. Fugitive dust emissions would primarily result from demolition and site preparation (e.g., excavation) activities. NO_x emissions would primarily result from the use of construction equipment. During the finishing phase, paving operations and the application of architectural coatings (e.g., paints) and other building materials would release VOC. The assessment of construction air quality impacts considers each of these potential sources. Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation and, for dust, the prevailing weather conditions.

It is mandatory for all construction projects in the Basin to comply with SCAQMD Rule 403 for Fugitive Dust. Specific Rule 403 control requirements include, but are not limited to, applying water in sufficient quantities to prevent the generation of visible dust plumes, applying soil binders to uncovered areas, reestablishing ground cover as quickly as possible, utilizing a wheel washing system to remove bulk material from tires and vehicle undercarriages before vehicles exit the project site, and maintaining effective cover over exposed areas. Compliance with Rule 403 would reduce PM_{2.5} and PM₁₀ emissions associated with construction activities by approximately 61 percent.

URBEMIS2007 was used to calculate daily construction emissions. **Tables IV.B-5, IV.B-6, and IV.B-7** shows the estimated daily emissions associated with each Phase I, Phase II, and Phase III of construction.

Phase I Unmitigated Regional Construction Emissions

As shown in **Table IV.B-5**, Phase 1 daily construction emissions for NO_x, CO, SO₂, PM_{2.5} and PM₁₀ would not exceed the SCAQMD regional thresholds. However, daily construction emissions for VOC would exceed the SCAQMD regional thresholds, and Phase 1 regional construction emissions would result in a significant impact without mitigation.

Phase II Unmitigated Regional Construction Emissions

As shown in **Table IV.B-6**, daily construction emissions would not exceed the SCAQMD regional thresholds. Phase 2 regional construction emissions would result in a less-than-significant impact without mitigation.

Phase III Unmitigated Regional Construction Emissions

As shown in **Table IV.B-7**, Phase 3 daily construction emissions for NO_x, CO, SO₂, PM_{2.5} and PM₁₀ would not exceed the SCAQMD regional thresholds. However, daily construction emissions for VOC would exceed the SCAQMD regional thresholds, and Phase 3 regional construction emissions would result in a significant impact without mitigation.

TABLE IV.B-5 Estimated Daily Construction Emissions For Phase I - Unmitigated						
Construction Phase	Pounds Per Day					
	VOC	NO _x	CO	SO _x	PM _{2.5} ¹	PM ₁₀ ¹
Demolition						
On-Site Emissions	2	15	9	<1	2	2
Off-Site Emissions	1	10	6	<1	<1	1
<i>Total Emissions</i>	3	25	15	<1	2	3
Grading						
On-Site Emissions	2	13	8	<1	1	2
Off-Site Emissions	1	4	3	<1	<1	<1
<i>Total Emissions</i>	3	17	11	<1	1	2
Buildings Construction						
On-Site Emissions	5	33	18	<1	3	3
Off-Site Emissions	1	1	5	<1	<1	<1
<i>Total Emissions</i>	6	34	23	<1	3	3
Paving						
On-Site Emissions	2	16	6	<1	1	1
Off-Site Emissions	<1	<1	2	<1	<1	<1
<i>Total Emissions</i>	2	16	8	<1	1	1
Architectural Coating						
On-Site Emissions	88	<1	<1	<1	<1	<1
Off-Site Emissions	<1	<1	1	<1	<1	<1
<i>Total Emissions</i>	88	<1	1	<1	<1	<1
Maximum Regional Total²	96	50	32	<1	4	4
Regional Significance Threshold	75	100	550	150	55	150
Exceed Threshold?	Yes	No	No	No	No	No
<i>Maximum On-Site Total</i>	95	49	24	<1	4	4
Localized Significance Threshold^{2,3}	--⁴	69	535	--⁴	3	4
Exceed Threshold?	-- ⁴	No	No	-- ⁴	Yes	Yes
¹ URBEMIS2007 emissions for fugitive dust were adjusted to account for a 61 percent control efficiency associated with SCAQMD Rule 403. ² Maximum regional and localized emissions would occur when emissions from the Building Construction, Paving and Architectural Coating phases overlap. ³ The Applicant indicated that Phase 1 construction activity would disturb 0.05 acres in one day. The localized thresholds were based in the smallest project site used in the SCAQMD guidelines (one-acre) and a 25-meter (82-foot) receptor distance. ⁴ SCAQMD has not developed localized significance methodology for VOC or SO _x at this time. SOURCE: Terry A. Hayes Associates LLC, <i>Air Quality and Noise Impact Report</i> , June 29, 2010.						

TABLE IV.B-6 Estimated Daily Construction Emissions For Phase II - Unmitigated						
Construction Phase	Pounds Per Day					
	VOC	NO _x	CO	SO _x	PM _{2.5} ¹	PM ₁₀ ¹
Demolition						
On-Site Emissions	4	26	14	<1	2	4
Off-Site Emissions	1	17	9	<1	1	1
<i>Total Emissions</i>	5	43	23	<1	3	5
Grading						
On-Site Emissions	6	47	23	<1	4	10
Off-Site Emissions	4	51	23	<1	1	2
<i>Total Emissions</i>	10	98	46	<1	5	12
Buildings Construction						
On-Site Emissions	5	32	17	<1	2	2
Off-Site Emissions	<1	1	3	<1	<1	<1
<i>Total Emissions</i>	5	33	20	<1	2	2
Paving						
On-Site Emissions	2	15	6	<1	1	1
Off-Site Emissions	<1	1	1	<1	<1	<1
<i>Total Emissions</i>	2	16	7	<1	1	1
Architectural Coating						
On-Site Emissions	46	<1	<1	<1	<1	<1
Off-Site Emissions	<1	<1	1	<1	<1	<1
<i>Total Emissions</i>	46	<1	1	<1	<1	<1
Maximum Regional Total²						
	53	98	46	<1	5	12
Regional Significance Threshold						
	75	100	550	150	55	150
Exceed Threshold?	No	No	No	No	No	No
Maximum On-Site Total						
	53	47	23	<1	4	10
Localized Significance Threshold^{2,3}						
	-- ⁴	69	535	-- ⁴	3	4
Exceed Threshold?	-- ⁴	No	No	-- ⁴	Yes	Yes
¹ URBEMIS2007 emissions for fugitive dust were adjusted to account for a 61 percent control efficiency associated with SCAQMD Rule 403. ² Maximum regional and localized emissions for VOC would occur when the Building Construction, Paving and Architectural Coating phases overlap. Maximum regional and localized emissions for NO _x , CO, SO _x , PM _{2.5} , and PM ₁₀ occurred during the Grading phase. ³ The Applicant indicated that Phase 2 construction activity would disturb 0.7 acres in one day. The localized thresholds were based in the smallest project site used in the SCAQMD guidelines (one-acre) project site and a 25-meter (82-foot) receptor distance. ⁴ SCAQMD has not developed localized significance methodology for VOC or SO _x at this time. SOURCE: Terry A. Hayes Associates LLC, <i>Air Quality and Noise Impact Report</i> , June 29, 2010.						

TABLE IV.B-7 Estimated Daily Construction Emissions For Phase III - Unmitigated						
Construction Phase	Pounds Per Day					
	VOC	NO _x	CO	SO _x	PM _{2.5} ¹	PM ₁₀ ¹
Demolition						
On-Site Emissions	4	28	16	<1	2	4
Off-Site Emissions	1	14	6	<1	<1	1
<i>Total Emissions</i>	5	42	24	<1	2	5
Grading						
On-Site Emissions	5	40	22	<1	4	12
Off-Site Emissions	3	36	16	<1	1	2
<i>Total Emissions</i>	8	76	38	<1	5	14
Buildings Construction						
On-Site Emissions	7	49	30	<1	3	4
Off-Site Emissions	1	1	9	<1	<1	<1
<i>Total Emissions</i>	8	50	39	<1	3	4
Paving						
On-Site Emissions	2	12	5	<1	1	1
Off-Site Emissions	<1	1	2	<1	<1	<1
<i>Total Emissions</i>	2	13	7	<1	1	1
Architectural Coating						
On-Site Emissions	214	<1	<1	<1	<1	<1
Off-Site Emissions	<1	<1	2	<1	<1	<1
<i>Total Emissions</i>	214	<1	2	<1	<1	<1
Maximum Regional Total²	224	76	48	<1	5	14
Regional Significance Threshold	75	100	550	150	55	150
Exceed Threshold?	Yes	No	No	No	No	No
<i>Maximum On-Site Total</i>	223	61	35	<1	4	12
Localized Significance Threshold³	--⁴	69	535	--⁴	3	4
Exceed Threshold?	-- ⁴	No	No	-- ⁴	Yes	Yes
¹ URBEMIS2007 emissions for fugitive dust were adjusted to account for a 61 percent control efficiency associated with SCAQMD Rule 403. ² Maximum regional emissions for VOC would occur when the Building Construction, Paving and Architectural Coating phases overlap. Maximum regional emissions for NO _x , CO, SO _x , PM _{2.5} , and PM ₁₀ would occur during the Grading phase. ³ The Applicant indicated that Phase 3 construction activities would disturb 1.0 acres per day. The localized thresholds were based in the smallest project site used in the SCAQMD guidelines (one-acre) project site and a 25-meter (82-foot) receptor distance. ⁴ SCAQMD has not developed localized significance methodology for VOC or SO _x at this time. SOURCE: Terry A. Hayes Associates LLC, <i>Air Quality and Noise Impact Report</i> , June 29, 2010.						

Localized Impacts

Emissions for the localized construction air quality analysis of PM_{2.5}, PM₁₀, CO, and NO₂ were compiled using LST methodology required by the SCAQMD. Localized on-site emissions were calculated using similar methodology to the regional emission calculations. LSTs were developed based upon the size or total area of the emissions source, the ambient air quality in each source receptor area, and the distance to the sensitive receptor. LSTs for CO and NO₂ were derived by using an air quality dispersion model to back-calculate the emissions per day that would cause or contribute to a violation of any ambient air quality standard for a particular source receptor area. Construction PM_{2.5} and PM₁₀ LST was derived using a dispersion model to back-calculate the emissions necessary to exceed a concentration equivalent to 50 µg/m³ over five hours, which is the SCAQMD Rule 403 control requirement.

Tables IV.B-5, IV.B-6, and IV.B-7 show the estimated daily localized emissions associated with each construction phase.

Phase I Unmitigated Localized Construction Emissions

As shown in **Table IV.B-5**, Phase 1 localized construction emissions for NO_x and CO would not exceed the SCAQMD regional thresholds. However, daily construction emissions for PM_{2.5} and PM₁₀ would exceed the SCAQMD localized thresholds (primarily from construction equipment emissions), and Phase 1 would result in a significant impact without mitigation.

Phase II Unmitigated Localized Construction Emissions

As shown in **Table IV.B-6**, Phase 2 localized construction emissions for NO_x and CO would not exceed the SCAQMD regional thresholds. However, daily construction emissions for PM_{2.5} and PM₁₀ would exceed the SCAQMD localized thresholds (from both construction equipment emissions and grading), and Phase 2 would result in a significant impact without mitigation.

Phase III Unmitigated Localized Construction Emissions

As shown in **Table IV.B-7**, Phase 3 localized construction emissions for NO_x and CO would not exceed the SCAQMD regional thresholds. However, daily construction emissions for PM_{2.5} and PM₁₀ would exceed the SCAQMD localized thresholds (from both construction equipment emissions and grading), and Phase 3 would result in a significant impact without mitigation.

Toxic Air Contaminant Impacts

The greatest potential for TAC emissions during construction would be diesel particulate emissions associated with heavy equipment operations. According to SCAQMD methodology, health effects from carcinogenic air toxics are usually described in terms of individual cancer risk. "Individual Cancer Risk" is the likelihood that a person continuously exposed to concentrations of TACs over a 70-year lifetime will contract cancer based on the use of standard risk assessment methodology. Given the short-term construction schedule of approximately 38 months, the proposed project would not result in a long-term (i.e., 70 years) source of TAC emissions. No residual emissions and corresponding individual cancer risk are anticipated after construction. Because there is such a short-term exposure period (38 out of 840 months), project-related construction TAC emission would result in a less-than-significant impact.

Odors

Potential sources that may emit odors during construction activities include equipment exhaust and architectural coatings. Odors from these sources would be localized and generally confined to the immediate area surrounding the project site. The proposed project would utilize typical construction techniques, and the odors would be typical of most construction sites and temporary in nature. Proposed project construction would not cause an odor nuisance. Construction odors would result in a less-than-significant impact.

OPERATIONAL IMPACTS

Regional Impacts

Operational emissions were estimated for each of the three phases and each phase was compared to the SCAQMD significance thresholds for informational purposes. The final conclusion of significance is based on total development of all three phases.

Long-term project emissions would be generated by mobile sources and area sources, such as natural gas combustion. Motor vehicles that access the project site would be the predominate source of long-term project emissions. Phase 1 would generate 1,273 daily vehicle trips and 1,294 off-site valet parking daily trips, 81 additional daily vehicle trips after Phase 2, and 3,560 additional daily vehicle trips after Phase 3.¹⁶ The three phases would combine to generate 4,914 daily vehicle trips after build-out. As shown in Table IV.B-8, regional operational emissions associated with total development would not exceed the significance thresholds, and would result in a less-than-significant impact.

Localized Impacts

CO concentrations in future years are expected to be lower than existing conditions due to stringent State and federal mandates for lowering vehicle emissions. Although traffic volumes would be higher in the future both without and with the implementation of the proposed project, CO emissions from mobile sources are expected to be much lower due to technological advances in vehicle emissions systems, as well as from normal turnover in the vehicle fleet. Accordingly, increases in traffic volumes are expected to be offset by increases in cleaner-running cars as a percentage of the entire vehicle fleet on the road.¹⁷

The State one- and eight-hour CO standards may potentially be exceeded at congested intersections with high traffic volumes. An exceedance of the State CO standards at an intersection is referred to as a CO hotspot. The SCAQMD recommends a CO hotspot evaluation of potential localized CO impacts when V/C ratios are increased by two percent at intersections with a LOS of D or worse. SCAQMD also recommends a CO hotspot evaluation when an intersection decreases in LOS by one level beginning when LOS changes from C to D. The traffic study displays the LOS and V/C ratio for Cumulative without Project Conditions and Cumulative Plus Project Conditions for Phases 1, 2, and 3. All Phase 1 and 2 intersections would operate at an acceptable level of service according to the SCAQMD screening guidance, and further analysis is not necessary. The Lake Avenue/Walnut Street intersection would degrade from LOS E to LOS F in Phase 3 and a detailed CO hotspot analysis is required.

¹⁶ RAJU Associates, *Transportation Study for the Lake at Colorado Project DEIR*, May 24, 2010.

¹⁷ Consistent with CARB's vehicle emissions inventory.

TABLE IV.B-8
Estimated Daily Operations Emissions¹

Emission Source	Pounds per Day					
	VOC	NO _x	CO	SO _x	PM _{2.5}	PM ₁₀
Phase 1 (2012) ²	9	15	108	<1	20	20
SCAQMD Threshold	55	55	550	150	55	150
Exceed Threshold?	No	No	No	No	No	No
Phase 2 (2014)	1	<1	9	<1	<1	1
SCAQMD Threshold	55	55	550	150	55	150
Exceed Threshold?	No	No	No	No	No	No
Phase 3 (2015)	19	31	230	<1	11	57
SCAQMD Threshold	55	55	550	150	55	150
Exceed Threshold?	No	No	No	No	No	No
Total Project Emissions (2015) ³	28	44	319	<1	16	80
SCAQMD Threshold	55	55	550	150	55	150
Exceed Threshold?	No	No	No	No	No	No

¹ Emissions were obtained from URBEMIS2007 and include mobile and area sources (e.g., natural gas combustion and consumer products).
² Phase 1 emissions include 1,294 off-site valet parking daily trips estimated using EMFAC2007.
³ Total project emissions were not estimated by summing Phase 1, 2, and 3 emissions. A separate model run was completed for total development in 2015 because emission factors change by year. For example, the same number of vehicles would result in different emissions in 2012 and 2015.
SOURCE: TAHA, 2010.

The USEPA CAL3QHC micro-scale dispersion model was used to calculate the CO concentrations. The one-hour CO concentration at the Lake Avenue/Walnut Street intersection would be 5 ppm at worst-case sidewalk receptors. The eight-hour CO concentration would be 3.7 ppm. The State one- and eight-hour standards of 20 and 9.0 ppm, respectively, would not be exceeded at the analyzed intersections. Localized CO concentrations would result in a less-than-significant impact.

Toxic Air Contaminant Impacts

The SCAQMD recommends that health risk assessments be conducted for substantial sources of diesel particulate emissions (e.g., truck stops and warehouse distribution facilities) and has provided guidance for analyzing mobile source diesel emissions.¹⁸ The proposed project would develop a mix of land uses including residential, retail, and commercial space. These typical urban land uses are not anticipated to generate a substantial number of daily truck trips. The primary source of potential TACs associated with project operations is diesel particulate from delivery trucks (e.g., truck traffic on local streets and on-site truck idling). Generally, less than five heavy-duty trucks (e.g., delivery trucks) would access the project site on a daily basis, and the trucks that do visit the site would not idle on-site for extended periods of time. Based on the limited activity of these TAC sources, the proposed project would not warrant the need for a

¹⁸ SCAQMD, *Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Emissions*, December 2002.

health risk assessment associated with on-site activities, and potential TAC impacts are expected to be less than significant.

Typical sources of acutely and chronically hazardous TACs include industrial manufacturing processes and automotive repair facilities. The proposed project would not include any of these potential sources, although minimal emissions may result from the use of consumer products (e.g., aerosol sprays). It was expected that the proposed project would not release substantial amounts of TACs, and no significant impact on human health would occur.

Odor Impacts

According to the SCAQMD *CEQA Air Quality Handbook*, land uses and industrial operations that are associated with odor complaints include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies and fiberglass molding. The project site would not be developed with land uses that are typically associated with odor complaints. On-site trash receptacles would have the potential to create adverse odors. Trash receptacles would be located and maintained in a manner that promotes odor control and no adverse odor impacts are anticipated from these types of land uses. Therefore, the proposed project would not result in activities that create objectionable odors. No significant impacts would occur.

The proposed project would include restaurant space. Most restaurants generally do not produce adverse odors, as this would not be conducive to having a successful business. Notwithstanding, restaurants do have the potential for the generation of odors from the operation of char-broilers and deep fat fryers. While there is a potential for odors to occur, compliance with industry standard odor control practices, SCAQMD Rule 402 (Nuisance), and SCAQMD Best Available Control Technology Guidelines would limit potential restaurant objectionable odor impacts to a less-than-significant level.

Consistency with the Air Quality Management Plan

The SCAQMD has indicated that a project is consistent with the 2007 AQMP if the proposed project is consistent with the applicable General Plan's land use zoning. The Central District Specific Plan, approved by the City Council on November 8, 2004, contains the recommended heights, setbacks, floor area ratios and residential densities for projects in the Central District. These development standards are implemented by the Zoning Code. The purpose of the Specific Plan is to encourage a diverse mix of land uses designed to create the primary business, financial, retailing and government center of the City. The proposed project is well within the permitted densities and allowable uses for the site under Zoning Code, and would not require a general plan amendment. Consistency with the AQMP would result in a less-than-significant impact.

MITIGATION MEASURES

CONSTRUCTION

Mitigation Measures **IV.B-1** through **IV.B-7** would ensure compliance with SCAQMD Rule 403. These mitigation measures shall be implemented for all areas (both on-site and off-site) of construction activity.

- IV.B-1 The construction area and all accessible areas (public streets, sidewalks, etc.) within 100 feet of the project site shall be swept (preferably with water sweepers) and watered at least twice daily.
- IV.B-2 The construction contractor shall utilize at least one of the following measures at each vehicle egress from the project site to a paved public road:
- Install a pad consisting of washed gravel maintained in clean condition to a depth of at least six inches and extending at least 30 feet wide and at least 50 feet long;
 - Pave the surface extending at least 100 feet and at least 20 feet wide;
 - Utilize a wheel shaker/wheel spreading device consisting of raised dividers at least 24 feet long and 10 feet wide to remove bulk material from tires and vehicle undercarriages; or
 - Install a wheel washing system to remove bulk material from tires and vehicle undercarriages.
- IV.B-3 Site access points shall be swept/washed within thirty minutes of visible dirt deposition. Street sweepers that comply with SCAQMD Rule 1186 and 1186.1 shall be used to sweep site access points or reclaimed water shall be used to wash site access points.
- IV.B-4 All haul trucks hauling soil, sand, and other loose materials shall be covered (e.g., with tarps or other enclosures that would reduce fugitive dust emissions).
- IV.B-5 Construction activity on unpaved surfaces shall be suspended when winds exceed 25 miles per hour.
- IV.B-6 Heavy-duty equipment operations shall be suspended during first and second stage smog alerts.
- IV.B-7 Ground cover in disturbed areas shall be replaced as quickly as possible.
- IV.B-8 The construction contractor shall utilize super-compliant architectural coatings as defined by the SCAQMD (VOC standard of less than ten grams per liter¹⁹).
- IV.B-9 The construction contractor shall utilize materials that do not require painting, as feasible.
- IV.B-10 The construction contractor shall use pre-painted construction materials, as feasible.
- IV.B-11 All diesel-powered construction equipment in use shall require control equipment that meets Tier III emissions requirements. In the event Tier III equipment is not available, diesel powered construction equipment in use shall require emissions control equipment with a minimum of Tier II diesel standards.

¹⁹ SCAQMD, Super-Compliant Architectural Coatings Manufacturers and Industrial Maintenance Coatings List, <http://www.aqmd.gov/prdas/Coatings/super-compliantlist.htm>.

IV.B-12 The construction contractor shall utilize electricity from power poles rather than temporary gasoline or diesel power generators.

OPERATION

Operational air quality impacts would be less than significant, and no mitigation measures are required.

LEVEL OF SIGNIFICANCE AFTER MITIGATION

CONSTRUCTION

Implementation of Mitigation Measures **IV.B-1** through **IV.B-7** would ensure that fugitive dust emissions would be reduced by approximately 61 percent (already included in Tables **IV.B-5**, **IV.B-6**, and **IV.B-7**).

Phase 1 Mitigated Emissions

Unmitigated Phase 1 emissions would result in a regional VOC impact and localized PM_{2.5} and PM₁₀ impacts. The SCAQMD has identified super-compliant architectural coatings that have a VOC standard of less than ten grams per liter.²⁰ Mitigation Measure **IV.B-8** would reduce project-related architectural coating emissions by 96 percent.²¹ Phase 1 architectural coating emissions would be reduced to 12 pounds per day, which would be less than the 75 pounds per day significance threshold. Mitigation Measures **IV.B-9** and **IV.B-10** would also reduce VOC emissions. Mitigation Measures **IV.B-11** and **IV.B-12** would reduce localized particulate matter emissions from fuel combustion.²² However, particulate matter emissions would remain above the significance thresholds. Mitigated Phase 1 emissions would result in a less-than-significant regional VOC impact but significant and unavoidable localized PM_{2.5} and PM₁₀ impacts.

Phase 2 Mitigated Emissions

Unmitigated Phase 2 emissions would result in localized PM_{2.5} and PM₁₀ impacts. Mitigation Measures **IV.B-11** and **IV.B-12** would reduce localized particulate matter emissions from fuel combustion. However, particulate matter emissions would remain above the significance thresholds. Mitigated Phase 2 emissions would result in a less-than-significant regional VOC impact but significant and unavoidable localized PM_{2.5} and PM₁₀ impacts.

Phase 3 Mitigated Emissions

Unmitigated Phase 3 emissions would result in a regional VOC impact and localized PM_{2.5} and PM₁₀ impacts. Mitigation Measure **IV.B-8** would reduce Phase 3 architectural coating emissions to 19 pounds per day, which would be less than the 75 pounds per day significance threshold. Mitigation Measures **IV.B-9** and **IV.B-10** would also reduce VOC emissions. Mitigation

²⁰ SCAQMD, Super-Compliant Architectural Coatings Manufacturers and Industrial Maintenance Coatings List, <http://www.aqmd.gov/prdas/Coatings/super-compliantlist.htm>.

²¹ The URBEMIS2007 model assumes a VOC content of 250 grams per liter.

²² In 1998, the USEPA adopted emission standards ("Tier 2" and "Tier 3") for NO_x, hydrocarbons (HC), and PM from new nonroad diesel engines. This program included the first set of standards for nonroad diesel engines less than 37 kilowatts (phasing in between 1999 and 2000). It also phases in more stringent "Tier 2" emission standards from 2001 to 2006 for all engine sizes and adds more stringent "Tier 3" standards for engines between 37 and 560 kW (50 and 750 hp) from 2006 to 2008.

Measures **IV.B-11** and **IV.B-12** would reduce localized particulate matter emissions from fuel combustion. However, particulate matter emissions would remain above the significance thresholds. Mitigated Phase 3 emissions would result in a less-than-significant regional VOC impact but significant and unavoidable localized PM_{2.5} and PM₁₀ impacts.

OPERATION

The project-related operational emissions would result in a less-than-significant impact without mitigation.

CUMULATIVE IMPACTS

SCAQMD METHODOLOGY

Construction

The related projects include the development of hundreds of thousands of square feet of commercial and residential uses, a number that is many times greater than the proposed project. As the proposed project results in a localized significant impact during construction relative to PM_{2.5} and PM₁₀, it is anticipated that related project development would also result in significant regional impacts. While SCAQMD-required mitigation measures would reduce air quality impacts, construction emissions would contribute to a significant short-term cumulative impact.

Operations

In developing thresholds of significance for air pollutants, SCAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions. The proposed project would not result in significant VOC, PM_{2.5}, PM₁₀, NO_x, CO or SO_x emissions. Therefore, the proposed project would not contribute to a cumulatively considerable impact.

GLOBAL CLIMATE CHANGE

Greenhouse gas emissions were calculated for on-road mobile vehicle operations, general electricity consumption, electricity consumption associated with the use and transport of water, natural gas consumption, and solid waste decomposition. Based on SCAQMD guidance, the emissions summary also includes construction emissions amortized over a 30-year span. As shown in Table IV.B-9, the proposed project would result in 9,087 metric tons of CO_{2e} per year. Estimated GHG emissions would be less than the 10,000 metric tons of CO_{2e} per year quantitative significance threshold.

The proposed project must also show compliance with the applicable greenhouse gas reduction plans. Table IV.B-10 shows compliance with the CAT Greenhouse Gas Reduction Strategies, Table IV.B-11 shows compliance with the Attorney General Greenhouse Gas Reduction Measures, and Table IV.B-12 shows compliance with the City's 2009 Green City Action Plan.

The proposed project would be required to comply with LEED standards that exceed standard building and construction practices. The estimation of GHG emissions was based on standard

electricity consumption, natural gas consumption, and average daily trips did not account for reductions that would be associated with a LEED design. It would be speculative to assign additional reductions without a method of quantifying reductions for the project; however it is plausible that the project's estimated GHG emissions would be further reduced due to LEED design enhancements.

TABLE IV.B-9 Estimated Annual Greenhouse Gas Emissions ¹	
Scenario	Carbon Dioxide Equivalent (Metric Tons per Year)
Phase 1 Development	2,527
Phase 2 Development	1,366
Phase 2 Existing Removed	1,098
Net Phase 2	268
Phase 3 Development	7,972
Phase 3 Existing Removed	1,757
Net Phase 3	6,215
Total Operational Emissions ²	9,010
Construction Emissions Amortized ³	77
Total Project Emissions	9,087
¹ Greenhouse gas emissions were calculated for on-road mobile vehicle operations, general electricity consumption, electricity consumption associated with the use and transport of water, natural gas consumption, and solid waste decomposition. ² Total operational emissions are based on Phase I, II, and III emissions. ³ The SCAQMD recommends accounting for construction emissions by averaging them over a 30-year project lifetime. SOURCE: Terry A. Hayes Associates LLC, <i>Air Quality and Noise Impact Report</i> , June 29, 2010.	

TABLE IV.B-10 Project Consistency With Climate Action Team Greenhouse Gas Emission Reduction Strategies	
Strategy	Project Consistency
California Air Resources Board	
Vehicle Climate Change Standards: AB 1493 (Pavley) required the state to develop and adopt regulations that achieve the maximum feasible and cost-effective reduction of climate change emissions emitted by passenger vehicles and light duty trucks. Regulations were adopted by the CARB in September 2004.	Consistent: The vehicles that travel to and from the project site on public roadways would be in compliance with CARB vehicle standards that are in effect at the time of vehicle purchase.
Diesel Anti-Idling: The CARB adopted a measure to limit diesel-fueled commercial motor vehicle idling in July 2004.	Consistent: Current State law restricts diesel truck idling to five minutes or less. Diesel trucks making deliveries to the project site are subject to this State-wide law. Construction vehicles are also subject to this regulation.

TABLE IV.B-10	
Project Consistency With Climate Action Team Greenhouse Gas Emission Reduction Strategies	
Strategy	Project Consistency
<p>Hydrofluorocarbon Reduction</p> <p>1) Ban retail sale of HFC in small cans. 2) Require that only low GWP refrigerants be used in new vehicular systems. 3) Adopt specifications for new commercial refrigeration. 4) Add refrigerant leak-tightness to the pass criteria for vehicular inspection and maintenance programs. 5) Enforce federal ban on releasing HFCs.</p>	<p>Consistent: This strategy applies to consumer products. All applicable products would comply with the regulations that are in effect at the time of manufacture.</p>
<p>Alternative Fuels: Biodiesel Blends: CARB would develop regulations to require the use of 1 to 4 percent biodiesel displacement of California diesel fuel.</p>	<p>Consistent: The diesel vehicles that travel to and from the project site on public roadways could utilize this fuel once it is commercially available.</p>
<p>Alternative Fuels: Ethanol: Increased use of E-85 fuel.</p>	<p>Consistent: Employees/patrons of the project site could choose to purchase flex-fuel vehicles and utilize this fuel once it is commercially available in the region and local vicinity.</p>
<p>Heavy-Duty Vehicle Emission Reduction Measures: Increased efficiency in the design of heavy duty vehicles and an education program for the heavy duty vehicle sector.</p>	<p>Consistent: The heavy-duty vehicles that travel to and from the project site on public roadways would be subject to all applicable CARB efficiency standards that are in effect at the time of vehicle manufacture.</p>
<p>Achieve 50 Percent Statewide Recycling Goal: Achieving the State's 50 percent waste diversion mandate as established by the Integrated Waste Management Act of 1989, (AB 939, Sher, Chapter 1095, Statutes of 1989), will reduce climate change emissions associated with energy intensive material extraction and production as well as methane emission from landfills. A diversion rate of 48 percent has been achieved on a statewide basis. Therefore, a 2 percent additional reduction is needed.</p>	<p>Consistent: The City of Pasadena exceeds the 50 percent diversion rate. The City has implemented several programs including a construction demolition recycling program and a pay as you go residential collection program. These programs in association with other efforts have resulted in waste diversion of 54 to 62 percent between the years of 2003 and 2006. The 2006 data indicates that the City diverted 58 percent of the City's total waste stream. It is anticipated that the project would similarly divert at least 50 percent of its solid waste.</p>
<p>Zero Waste – High Recycling: Efforts to exceed the 50 percent goal would allow for additional reductions in climate change emissions.</p>	<p>Consistent: The City of Pasadena solid waste diversion rate was 58 percent in 2006. It is anticipated that the project would similarly divert at least 50% of its solid waste. The project would also be subject to all applicable State and City requirements for solid waste reduction as they change in the future.</p>
Department of Forestry	
<p>Urban Forestry: A new statewide goal of planting 5 million trees in urban areas by 2020 would be achieved through the expansion of local urban forestry programs.</p>	<p>Consistent: The project would include terraces and gardens. The City also has an urban forestry program, a tree protection ordinance, a master street tree plan, all of which promote conservation and enhancement of urban forestry resources.</p>
Department of Water Resources	
<p>Water Use Efficiency: Approximately 19 percent of all electricity, 30 percent of all natural gas, and 88 million gallons of diesel are used to convey, treat, distribute and use water and wastewater. Increasing the efficiency of water transport and reducing water use would reduce greenhouse gas emissions.</p>	<p>Consistent: The City of Pasadena has water conservation programs in place, including rebate programs for commercial customers. Rebates are available for low-flow fixtures, irrigation controllers, synthetic turf, HVAC equipment, landscape equipment, cleaning equipment, medical/dental equipment and food service equipment. In addition, the City has implemented mandatory water conservation measures that prohibit water waste and restrict exterior watering to select days. The project would also be required to conserve an additional 20 percent beyond baseline water usage pursuant to the PMC.</p>

TABLE IV.B-10	
Project Consistency With Climate Action Team Greenhouse Gas Emission Reduction Strategies	
Strategy	Project Consistency
Energy Commission (CEC)	
Building Energy Efficiency Standards in Place and in Progress: Public Resources Code 25402 authorizes the CEC to adopt and periodically update its building energy efficiency standards (that apply to newly constructed buildings and additions to and alterations to existing buildings).	Consistent: The project will comply with Title 24 standards that are in effect at the time of development. In addition, the project will be designed consistent with LEED standards pursuant to the requirements of Municipal Code 14.90.040. The project would be designed to maximize energy efficiency and the site specific microclimate has been accounted for in the environmental systems of the building.
Appliance Energy Efficiency Standards in Place and in Progress: Public Resources Code 25402 authorizes the Energy Commission to adopt and periodically update its appliance energy efficiency standards (that apply to devices and equipment using energy that are sold or offered for sale in California).	Consistent: Under State law, appliances that are purchased for the project - both pre- and post-development – would be consistent with energy efficiency standards that are in effect at the time of manufacture.
Fuel-Efficient Replacement Tires & Inflation Programs: State legislation established a statewide program to encourage the production and use of more efficient tires.	Consistent: Employees/patrons of the project site could purchase tires for their vehicles that comply with State programs for increased fuel efficiency.
Municipal Utility Energy Efficiency Programs/Demand Response: Includes energy efficiency programs, renewable portfolio standard, combined heat and power, and transitioning away from carbon-intensive generation.	Consistent: Pasadena Water and Power (PWP) has a number of energy efficiency programs including an Energy Efficiency Rebate Program, a Pasadena Solar Initiative Program, a Green Power Program, a High Performance Building Program, and a Pasadena LEED Certification Program. These programs serve to increase the efficiency of structures and to increase the amount of power derived from renewable sources. The project would be designed in accordance with LEED requirements.
Municipal Utility Renewable Portfolio Standard: California's Renewable Portfolio Standard (RPS), established in 2002, requires that all load serving entities achieve a goal of 20 percent of retail electricity sales from renewable energy sources by 2017, within certain cost constraints.	Consistent: The PWP has purchased a six megawatt share in wind power from the High Winds Generation Facility in Solano County. In addition, the City has also instituted the Pasadena Solar Initiative, which waives permitting fees for solar installations and offers guidance to PWP customers that are interested in owning solar arrays. PWP has a goal of helping its customers install a total of 14,000 kilowatts by 2017. These programs are helping the PWP to meet California's Renewable Portfolio Standards.
Municipal Utility Combined Heat and Power: Cost effective reduction from fossil fuel consumption in the commercial and industrial sector through the application of on-site power production to meet both heat and electricity loads.	Consistent: The project will be designed in accordance with LEED standards and will adhere to the City's requirements for energy efficient development.
Alternative Fuels: Non-Petroleum Fuels: Increasing the use of non-petroleum fuels in California's transportation sector, as recommended as recommended in the CEC's 2003 and 2005 Integrated Energy Policy Reports.	Consistent: Employees/patrons of the project site could purchase alternative fuel vehicles and utilize these fuels once they are commercially available in the region and local vicinity.
Business, Transportation, and Housing	
Measures to Improve Transportation Energy Efficiency: Builds on current efforts to provide a framework for expanded and new initiatives including incentives, tools and information that advance cleaner transportation and reduce climate change emissions.	Consistent: The proposed project is an urban infill development; the proposed land uses would have readily available access to public transportation, which could incrementally reduce the number of regional vehicle trips.
Smart Land Use and Intelligent Transportation Systems (ITS): Smart land use strategies encourage	Consistent: The project traffic study provides a list of the 26 bus stops and existing amenities that are within

TABLE IV.B-10	
Project Consistency With Climate Action Team Greenhouse Gas Emission Reduction Strategies	
Strategy	Project Consistency
<p>jobs/housing proximity, promote transit-oriented development, and encourage high-density residential/commercial development along transit corridors.</p> <p>ITS is the application of advanced technology systems and management strategies to improve operational efficiency of transportation systems and movement of people, goods and services.</p> <p>The Governor is finalizing a comprehensive 10-year strategic growth plan with the intent of developing ways to promote, through state investments, incentives and technical assistance, land use, and technology strategies that provide for a prosperous economy, social equity and a quality environment.</p> <p>Smart land use, demand management, ITS, and value pricing are critical elements in this plan for improving mobility and transportation efficiency. Specific strategies include: promoting jobs/housing proximity and transit-oriented development; encouraging high density residential/commercial development along transit/rail corridor; valuing and congestion pricing; implementing intelligent transportation systems, traveler information/traffic control, incident management; accelerating the development of broadband infrastructure; and comprehensive, integrated, multimodal/intermodal transportation planning.</p>	<p>approximately 1,300 feet of the project site. In addition to these bus lines, the Metro Gold Line is located approximately ½ miles from the project site and the project is in close proximity to residential, shopping, civic and employment opportunities.</p>
State and Consumer Service Agency (Department of General Services)	
<p>Green Buildings Initiative: Green Building Executive Order, S-20-04 (CA 2004), sets a goal of reducing energy use in public and private buildings by 20 percent by the year 2015, as compared with 2003 levels. The Executive Order and related action plan spell out specific actions state agencies are to take with state-owned and -leased buildings. The order and plan also discuss various strategies and incentives to encourage private building owners and operators to achieve the 20 percent target.</p>	<p>Consistent: PWP has a number of energy efficiency programs including an Energy Efficiency Rebate Program, a Pasadena Solar Initiative Program, a Green Power Program, a High Performance Building Program, and a Pasadena LEED Certification Program. These programs serve to increase the efficiency of structures and to increase the amount of power derived from renewable sources. The Project would be designed to comply with LEED standards as required by the City's Green Building Program.</p>
Public Utilities Commission (PUC)	
<p>Accelerated Renewable Portfolio Standard: The Governor has set a goal of achieving 33 percent renewable in the State's resource mix by 2020. The joint PUC/Energy Commission September 2005 Energy Action Plan II (EAP II) adopts the 33 percent goal.</p>	<p>Consistent: The PWP has purchased a six megawatt share in wind power from the High Winds Generation Facility in Solano County. In addition, the City has also instituted the Pasadena Solar Initiative, which waives permitting fees for solar installations and offers guidance to PWP customers that are interested in owning solar arrays. PWP has a goal of helping its customers install a total of 14,000 kilowatts by 2017. These programs are helping the PWP to meet California's Renewable Portfolio Standards. The project would be designed to comply with LEED standards as required by the City's Green Building Program.</p>
<p>California Solar Initiative: The solar initiative includes installation of 1 million solar roofs or an equivalent</p>	<p>Consistent: Although solar roofs are not as of yet proposed as part of the project, the project would not</p>

TABLE IV.B-10 Project Consistency With Climate Action Team Greenhouse Gas Emission Reduction Strategies	
Strategy	Project Consistency
3,000 megawatt by 2017 on homes and businesses, increased use of solar thermal systems to offset the increasing demand for natural gas, use of advanced metering in solar applications, and creation of a funding source that can provide rebates over 10 years through a declining incentive schedule.	preclude the implementation of this strategy by building operators or energy providers. In addition, as noted above, the City has its own Pasadena Solar Initiative Program.
SOURCE: Terry A. Hayes Associates LLC, <i>Air Quality and Noise Impact Report</i> , June 29, 2010.	

TABLE IV.B-11 Project Consistency With Applicable Attorney General Greenhouse Gas Reduction Measures	
Strategy	Project Consistency
Transportation-Related Emissions	
Diesel Anti-Idling: Set specific limits on idling time for commercial vehicles, including delivery vehicles.	Consistent: CARB's Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling restricts diesel truck idling to five minutes or less. Diesel trucks making deliveries to the project site are subject to this state-wide law. Construction vehicles are also subject to this regulation.
Transportation Emissions Reduction: The project applicant shall promote ride sharing program by designating a certain percentage of parking spaces for high-occupancy vehicles, providing larger parking spaces to accommodate vans used for ride-sharing, and designating adequate passenger loading and unloading waiting areas.	Consistent: The project traffic study provides a list of the 26 bus stops and existing amenities that are within approximately 1,300 feet of the project site. In addition to these bus lines, the Metro Gold Line is located approximately ½ miles from the project site. In addition, the project is in close proximity to residential, shopping, civic and employment opportunities.
Transportation Emissions Reduction: Contribute transportation impact fees per residential and commercial unit to the City, to facilitate and increase public transit service.	Consistent: The project applicant would be required to pay applicable fees. The City has a Trip Reduction ordinance, which requires submittal of a Transportation System Management (TSM) Program for review and approval, along with fee payments. In addition, the City's Traffic Reduction and Transportation Improvement Fee (TR-TIF) program funds improvements to manage traffic on designated multimodal corridors and funds public transit improvements to encourage non-automobile travel in the City.
Transportation Emissions Reduction: Provide shuttle service to public transportation.	Consistent: Shuttle service to public transportation would be unnecessary as the proposed project is within 1,300 feet of 26 bus stops. In addition to these bus lines, the Metro Gold Line is located approximately ½ miles from the project site.
Transportation Emissions Reduction: Incorporate bike lanes into the project circulation system.	Not applicable: The proposed project would use the existing City of Pasadena circulation system. However, the project would not preclude the addition of bike lanes to City streets.
Transportation Emissions Reduction: Provide on-site bicycle and pedestrian facilities (showers, bicycle parking, etc.) for commercial uses, to encourage employees to bicycle or walk to work.	Consistent: The project is required to provide bicycle parking racks. Moreover, as discussed above, the project is in close proximity to several mass transit options as well as being centrally located to residential development.
Solid Waste and Energy Emissions	
Solid Waste Reduction Strategy: Project construction shall require reuse and recycling of construction and demolition waste.	Consistent: Chapter 8.62 of the Pasadena Municipal Code requires a minimum of 50 percent diversion for demolition and construction waste.

TABLE IV.B-11 Project Consistency With Applicable Attorney General Greenhouse Gas Reduction Measures	
Strategy	Project Consistency
Water Use Efficiency: Require measures that reduce the amount of water sent to the sewer system. (Reduction in water volume sent to the sewer system means less water has to be treated and pumped to the end user, thereby saving energy.	Consistent: The project would be required to conserve an additional 20 percent beyond baseline water. Thus the project would be required to reduce water sent to the sewer system.
Land Use Measures, Smart Growth Strategies and Carbon Offsets	
Smart Land Use and Intelligent Transportation Systems: Encourage mixed-use and high density development to reduce vehicle trips, promote alternatives to vehicle travel and promote efficient delivery of services and goods.	Consistent: The proposed project is an urban infill development located in a high densely developed area. Additionally, the proposed project is located along a public transit corridor.
Smart Land Use and Intelligent Transportation Systems: Require pedestrian-only streets and plazas within the project site and destinations that may be reached conveniently by public transportation, walking or bicycling.	Consistent: The project includes terraces and gardens. The site is privately owned, but will be accessible to the public as patrons of the church. The proposed project is within 1,300 feet of 26 bus stops. In addition to these bus lines, the Metro Gold Line is located approximately ½ miles from the project site.
SOURCE: Terry A. Hayes Associates LLC, <i>Air Quality and Noise Impact Report</i> , June 29, 2010.	

TABLE IV.B-12 Project Consistency With Applicable Green City Action Plan Measures	
Strategy	Project Consistency
UEA 1 Climate Change: Reduce greenhouse gas emissions by 25 percent by 2030.	Consistent: As discussed above, the proposed project includes a number of measures that would reduce greenhouse gas emissions. The project would be designed to meet LEED standards and is located near transit options.
UEA 4 Zero Waste: Achieve zero waste to landfills and incinerators by 2040.	Consistent: Chapter 8.62 of the Pasadena Municipal Code requires a minimum of 50 percent diversion for demolition and construction waste.
UEA 8 Urban Planning: Advance higher density, mixed use, walkable, bikeable and disabled-accessible neighborhoods which coordinate land use and transportation with open space systems for recreation and ecological restoration.	Consistent: The project includes terraces and gardens. The proposed project is within 1,300 feet of 26 bus stops. In addition to these bus lines, the Metro Gold Line is located approximately ½ miles from the project site.
UEA 10 Green Space Access: Ensure that there is an accessible public park or recreational open space within ½ kilometer of all residents by 2015.	Consistent: The project includes terraces and gardens.
UEA 15 Traffic Congestion: Implement a policy to reduce the percentage of commute trips by single occupancy vehicles by 10 percent by 2012.	Consistent: The proposed project is within 1,300 feet of 26 bus stops. In addition to these bus lines, the Metro Gold Line is located approximately ½ miles from the project site.
UEA 18 Air Quality: Establish an Air Quality Index (AQI) to measure the level of air pollution and set the goal of reducing by 10 percent by 2012 the number of days categorized in the AQI range as “unhealthy” or “hazardous.”	Consistent: Estimates of project emissions are shown in Table IV.B-8 . As indicated, overall emissions would not exceed SCAQMD thresholds for VOC, NO _x , CO, PM ₁₀ or PM _{2.5} .
UEA 19 Potable Water Conservation: Reduce per capita water consumption by 10 percent by 2015.	Consistent: The project would be required to conserve an additional 20 percent beyond baseline water usage.
SOURCE: Terry A. Hayes Associates LLC, <i>Air Quality and Noise Impact Report</i> , June 29, 2010.	

It should also be noted that the global climate change would not be expected to have a substantial impact on the project. The project location would not be affected by minor changes in sea level and the project would not require a substantial volume of water resources so any changes in available water resources (resulting from climate change) would not have a substantial effect on the viability of the project.

The proposed project would not exceed 10,000 metric tons of CO₂e per year and would be consistent with applicable greenhouse gas reduction plans. The proposed project would not contribute to a cumulative considerable greenhouse gas and climate change impact.