

Fullerton - Roosevelt Residential Project Focused Air Quality Analysis

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1.0 Methodology

This air quality evaluation was prepared in accordance with the requirements of the California Environmental Quality Act (CEQA) to determine if significant air quality impacts are likely to occur in conjunction with the type and scale of development associated with the Fullerton - Roosevelt residential project to be located in the City of Fullerton, California. The impact analysis contained in this report was prepared in accordance with the methodologies provided by the South Coast Air Quality Management District (SCAQMD) as included in *CEQA Air Quality Handbook* (April 1993) (*Handbook*) as well as updates included on the SCAQMD Internet web site. The analysis makes use of the CalEEMod urban emissions model, screening tables included in the SCAQMD's *Final Localized Significance Threshold Methodology* (June 2003), and *Sample Construction Scenarios for Projects Less than Five Acres in Size*, (February 2005).

The Fullerton - Roosevelt residential project includes the demolition of existing on-site structures and the construction and the subsequent occupancy of 19 two-story, single-family residential units on approximately 1.79 acres of land.

Projected air emissions are calculated using the California Emissions Estimator Model (CalEEMod Version 2011.1.1) distributed by the SCAQMD. The CalEEMod model uses EMFAC2007 emissions factors for vehicle traffic and the OFFROAD2007 emissions factors for construction equipment. For the purposes of this analysis, construction is estimated to begin in January 2014 and follows the CalEEMod default construction schedule.

The subsequent occupation of the site is also based on the CalEEMod model using traffic-projections provided by TEP as used in the transportation analysis. In accordance with the transportation analysis, the existing land uses generate approximately 80 average daily trips (ADT). The project as proposed is expected to generate 181 ADT for a net increase of 101 ADT.

The calculated emissions of the project are compared to thresholds of significance for individual projects using the SCAQMD *Handbook* as well as their Internet updates. The analysis finds that all air quality emissions and localized concentrations would remain below their respective threshold values. Furthermore, the project is found to be consistent with the goals of the Air Quality and Climate Change Plans and no significant air quality impacts are projected.

2.0 Existing Conditions

2.1 Climate/Meteorology

The project area lies in the South Coast Air Basin (SCAB or Basin). The SCAB includes all of Orange County as well as the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties. The Basin is located in a coastal plain with connecting broad valleys and low hills, bounded by the Pacific Ocean in the southwest quadrant with high mountains forming the remainder of the perimeter. The general region lies in the semi-permanent high-pressure zone of the eastern Pacific. As a result, the climate is mild, tempered by cool sea breezes. This usually mild climatological pattern is infrequently interrupted by periods of extremely hot weather, winter storms, or Santa Ana winds.

The annual average temperature varies little throughout the Basin, ranging from the low to middle 60s, measured in degrees Fahrenheit (F). With a more pronounced oceanic influence, coastal areas show less variability in annual minimum and maximum temperatures than inland areas. The SCAQMD reports that the weather station located in Yorba Linda shows an annual average of 63°F. The average low is reported at 41°F in January while the average high is 88°F in July and August. All areas in the Basin have recorded temperatures above 100°F in recent years and temperatures as high as 114°F have been recorded at the Yorba Linda station. January is typically the coldest month in this area of the Basin, with minimum temperatures in the 30s.

In contrast to a very steady pattern of temperature, rainfall is seasonally and annually highly variable. Almost all rain falls from November through April. Summer rainfall is normally restricted to widely scattered thundershowers near the coast with slightly heavier shower activity in the east and over the mountains. Rainfall averages around 14.5 inches per year in the project area as measured in Yorba Linda.

Although the Basin has a semi-arid climate, the air near the surface is typically moist because of the presence of a shallow marine layer. Except for infrequent periods when dry, continental air is brought into the Basin by off-shore winds, the ocean effect is dominant. Periods of heavy fog, especially along the coast, are frequent; and low stratus clouds are a characteristic climatic feature. Annual average humidity is 70 percent at the coast and 57 percent in the east portions of the Basin.

Wind patterns across the region are characterized by easterly winds during the winter and westerly winds in the summer. Wind speed is somewhat greater during the spring months. Annually, typical winds in the project area average about 3.3 mph as measured in La Habra.

Between the periods of dominant air flow, periods of air stagnation may occur, both in the morning and evening hours. Whether such a period of stagnation occurs is one of the critical determinants of air quality conditions on any given day. During the winter and fall months, surface high pressure systems over the Basin, combined with other meteorological conditions, can result in very strong, downslope Santa Ana winds. These winds normally have a duration of a few days before predominant meteorological conditions are reestablished.

In conjunction with the two characteristic wind patterns that affect the rate and orientation of horizontal pollutant transport, there are two similarly distinct types of temperature inversions that control the vertical depth through which pollutants are mixed: marine/subsidence inversion and the radiation inversion. The height of the base of the inversion at any given time is known as the "mixing height." This mixing height can change under conditions when the top of the inversion does not change. In the project area, the combination of winds and inversions are critical determinants in leading to the highly degraded air quality in summer and the generally good air quality in the winter.

2.2 *Ambient Air Quality*

The following characterization of the baseline atmospheric environment includes an evaluation of the ambient air quality and applicable rules, regulations, and standards for the area. Because the project has the ability to release gaseous emissions of criteria pollutants and dust into the ambient air, it falls under the ambient air quality standards promulgated on the local, State, and federal levels.

2.2.1 *Affected Environment*

Topographical features that affect the transport and diffusion of pollutants in the project area include the mountain ranges to the northeast that prevent the transport of pollutants. Air quality in the SCAB generally ranges from fair to poor and is similar to air quality in most of coastal southern California. The entire region experiences heavy concentrations of air pollutants during prolonged periods of stable atmospheric conditions.

The quality of the ambient air is affected by pollutants emitted into the air from stationary and mobile sources. Stationary sources can be divided into two major subcategories: point sources and area sources. Point sources consist of one or more emission sources at a facility with an identified location and are usually associated with manufacturing and industrial processing plants. Area sources are widely distributed and produce many small emissions.

Mobile sources refer to emissions from motor vehicles (including tailpipe and evaporative emissions) and are classified as either on-road or off-road. On-road sources are a combination of emissions from automobiles, trucks, and indirect sources. Indirect sources are sources that, by themselves, may not emit air contaminants;

however, they indirectly cause the generation of air pollutants by attracting vehicle trips or consuming energy. Examples of indirect sources include a commercial center that generates vehicle trips and consumes energy resources through the use of natural gas for space and water heating. Indirect sources also include actions proposed by local governments, such as public and private development projects. In addition, indirect sources include those emissions created by the distance vehicles travel. Off-road sources include aircraft, ships, trains, and self-propelled construction equipment.

2.2.2 Criteria Air Pollutants

The air pollutants emitted into the ambient air by stationary and mobile sources are regulated by State and federal law. These regulated air pollutants are known as “criteria air pollutants” and are categorized as primary and secondary pollutants. Primary air pollutants are those that are emitted directly from sources. Carbon monoxide (CO), reactive organic gases (ROG), nitrogen oxides (NO_x), sulfur dioxide (SO₂), and most fine particulate matter (PM₁₀ and PM_{2.5}) including lead (Pb) and fugitive dust are primary air pollutants. Of these CO, SO₂, PM₁₀, and PM_{2.5} are criteria pollutants. ROG and NO_x are criteria pollutant precursors and go on to form secondary criteria pollutants through chemical and photochemical reaction in the atmosphere. Ozone (O₃) and nitrogen dioxide (NO₂) are the principal secondary pollutants.

Presented below is a description of each of these primary and secondary criteria air pollutants and their known health effects. Other pollutants, such as carbon dioxide (CO₂), a natural by-product of animal respiration that is also produced in the combustion process, have been linked to such phenomena as global warming. These emissions are now starting to be regulated and there are preliminary thresholds for their release. However, these pollutants do not jeopardize the attainment status of the SCAB.

Carbon monoxide (CO) is a colorless, odorless, toxic gas produced by incomplete combustion of carbon substances (e.g., gasoline or diesel fuel). The primary adverse health effect associated with CO is the interference of normal oxygen transfer to the blood, which may result in tissue oxygen deprivation.

Reactive organic gases (ROGs) are compounds comprised primarily of atoms of hydrogen and carbon. Internal combustion, associated with motor vehicle usage, is the major source of hydrocarbons. Other sources of ROG include the evaporative emissions associated with the use of paints and solvents, the application of asphalt paving, and the use of household consumer products such as aerosols. Adverse effects on human health are not caused directly by ROG but rather by reactions of ROG to form secondary pollutants. Note that for the purposes of this analysis ROG and **volatile organic compounds** (VOC), such as the emissions released from paint, are synonymous.

Nitrogen oxides (NO_x) serve as integral participants in the process of photochemical smog production. The two major forms of NO_x are nitric oxide (NO) and nitrogen dioxide (NO₂). NO is a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperature and/or high pressure. NO₂ is a reddish-brown irritating gas formed by the combination of NO and oxygen (O). NO_x acts as an acute respiratory irritant and increases susceptibility to respiratory pathogens.

Nitrogen dioxide (NO₂) is a byproduct of fuel combustion. The principal form of NO₂ produced by combustion is nitric oxide (NO). NO reacts to form NO₂, creating the mixture of NO and NO₂ commonly called NO_x. NO₂ acts as an acute irritant and, in equal concentrations, is more injurious than NO. At atmospheric concentrations, however, NO₂ is only potentially irritating. There is some indication of a relationship between NO₂ and chronic pulmonary fibrosis. Some increase in bronchitis in children (2-3 years old) has been observed at concentrations below 0.3 ppm. NO₂ absorbs blue light, resulting in a brownish-red cast to the atmosphere and reduced visibility. NO₂ also contributes to the formation of PM₁₀ (particulates having an aerodynamic diameter of 10 microns or 0.0004 inch or less in diameter).

Sulfur dioxide (SO₂) is a colorless, pungent, irritating gas formed by the combustion of sulfurous fossil fuels. Fuel combustion is the primary source of SO₂. At sufficiently high concentrations, SO₂ may irritate the upper respiratory tract. At lower concentrations, when combined with particulates, SO₂ may injure lung tissue.

Particulate matter (PM) consists of finely divided solids or liquids, such as soot, dust, aerosols, fumes, and mists. Two forms of fine particulate are now recognized. Course particles (PM₁₀) include that portion of the particulate matter with an aerodynamic diameter of 10 microns (i.e., 10 one-millionths of a meter or 0.0004 inch) or less. Fine particles (PM_{2.5}) have an aerodynamic diameter of 2.5 microns (i.e., 2.5 one-millionths of a meter or 0.0001 inch) or less. Particulate discharge into the atmosphere results primarily from industrial, agricultural, construction, and transportation activities. Wind action on the arid landscape also contributes substantially to the local particulate loading. Both PM₁₀ and PM_{2.5} may adversely affect the human respiratory system, especially in those people who are naturally sensitive or susceptible to breathing problems.

Fugitive dust poses primarily two public health and safety concerns. The first concern is that of respiratory problems attributable to the suspended particulates in the air. The second concern is that of motor vehicle accidents caused by reduced visibility during severe wind conditions. Fugitive dust may also cause significant property damage during strong windstorms by acting as an abrasive material agent. Fugitive dust can also result in a nuisance factor due to the soiling of proximate structures and vehicles.

Ozone (O₃) is one of a number of substances called photochemical oxidants that are formed when reactive organic compounds (ROC) and NO_x (both byproducts of the internal combustion engine) react with sunlight. O₃ is present in relatively high concentrations in the SCAB and the damaging effects of photochemical smog are generally related to the concentrations of O₃. O₃ may pose a health threat to those who already suffer from respiratory diseases as well as healthy people. O₃ has been tied to crop damage (typically in the form of stunted growth and pre-mature death) and acts as a corrosive (resulting in property damage such as the embitterment of rubber products).

2.2.3 Toxic Air Contaminants

The public's exposure to toxic air contaminants (TACs) is an environmental health issue in California. In 1983, the California Legislature enacted a program to identify the health effects of TACs and to reduce exposure to these contaminants to protect the public health. The H&SC defines a TAC as "an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health." A substance that is listed as a hazardous air pollutant (HAP), pursuant to Section 112(b) of the CAA (42 U.S.C. 7412[b]) is a TAC.

Under State law, the California Environmental Protection Agency (CalEPA), acting through the CARB, is authorized to identify a substance as a TAC if it determines the substance is an air pollutant which may cause or contribute to an increase in mortality or serious illness or which may pose a present or potential hazard to human health.

California regulates TACs primarily through Assembly Bills 1807 (Tanner Air Toxics Act) and 2588 (Air Toxics "Hot Spot" Information and Assessment Act of 1987). The Tanner Air Toxics Act sets forth a formal procedure for CARB to designate substances as TACs. Once a TAC is identified, CARB adopts an "airborne toxics control measure" for sources that emit designated TACs. If there is a safe threshold for a substance at which there is no toxic effect, the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate toxics best available control technology (T-BACT) to minimize emissions.

Air toxics from stationary sources are regulated in California under the Air Toxics "Hot Spot" Information and Assessment Act of 1987. Under AB 2588, TAC emissions from individual facilities are quantified and prioritized by the AQMD or APCD. High priority facilities are required to perform a health risk assessment and, if specific thresholds are exceeded, required to communicate the results to the public in the form of notices

and public meetings. To date, the CARB has designated nearly 200 compounds as TACs. Additionally, the CARB has implemented control measures for a number of compounds that pose high risks and show potential for effective control. The majority of the estimated health risks from TACs can be attributed to a relatively few compounds, the most important being particulate matter from diesel-fueled engines (diesel PM).

In 2000, the SCAQMD conducted a study on ambient concentrations of TACs and estimated the potential health risks from air toxics. The results showed that the overall risk for excess cancer from a lifetime exposure to ambient levels of air toxics was about 1,400 in a million. The largest contributor to this risk was diesel exhaust, accounting for 71 percent of the air toxics risk.

2.2.4 Other Effects of Air Pollution

Just as humans are affected by air pollution, so too are plants and animals. Animals must breathe the same air and are subject to the same types of negative health effects. Certain plants and trees may absorb air pollutants that can stunt their development or cause premature death, as well as interfere with their ability to convert CO₂ to oxygen. There are also numerous impacts to our economy including lost workdays due to illness, a desire on the part of business to locate in areas with a healthy environment, and increased expenses from medical costs. Pollutants may also lower visibility and cause damage to property. Certain air pollutants are responsible for discoloring painted surfaces, eating away at stones used in buildings, dissolving the mortar that holds bricks together, and cracking tires and other items made from rubber.

2.2.5 Greenhouse Gas Emissions

In 2005, in recognition of California's vulnerability to the effects of climate change, Governor Schwarzenegger established Executive Order S-3-05, which sets forth a series of target dates by which statewide emission of greenhouse gas would be progressively reduced, as follows:

- By 2010, reduce greenhouse gas emissions to 2000 levels;
- By 2020, reduce greenhouse gas emissions to 1990 levels; and
- By 2050, reduce greenhouse gas emissions to 80 percent below 1990 levels.

In 2006, California passed the California Global Warming Solutions Act of 2006 (AB 32; California Health and Safety Code Division 25.5, Sections 38500, et seq.), which requires CARB to design and implement emission limits, regulations, and other measures, such that feasible and cost-effective statewide greenhouse gas emissions are reduced to 1990 levels by 2020 (representing an approximate 25 percent reduction in emissions).

In June 2007, CARB directed staff to pursue 37 early actions for reducing greenhouse gas emissions under AB 32. The broad spectrum of strategies to be developed – including a Low Carbon Fuel Standard, regulations for refrigerants with high global warming potentials, guidance and protocols for local governments to facilitate greenhouse gas reductions, and green ports – reflects that the serious threat of climate change requires action as soon as possible.

In addition to approving the greenhouse gas reduction strategies, CARB directed staff to further evaluate early action recommendations made at the June 2007 meeting, and to report back to CARB within 6 months. The general sentiment of CARB suggested a desire to try to pursue greater greenhouse gas emissions reductions in California in the near-term. Since the June 2007 CARB hearing, CARB staff has evaluated all 48 recommendations submitted by several stakeholder and several internally-generated staff ideas and published the *Expanded List of Early Action Measures To Reduce Greenhouse Gas Emissions In California*, recommended for board consideration in October 2007. Based on its additional analysis, CARB staff is recommending the expansion of the early action list to a total of 44 measures. Nine of the strategies meet the AB 32 definition of discrete early action measures. Discrete early action measures are measures that will be in place and enforceable by January 1, 2010. The discrete early action items include: (1) a Low Carbon Fuel standards for ethanol, biodiesel, hydrogen, electricity, compressed natural gas, liquefied petroleum gas, and biogas; (2)

restrictions on High Global Warming Potential Refrigerants; (3) Landfill Methane Capture; (4) Smartway Truck Efficiency; (5) Port Electrification; (6) Reduction of perfluorocarbons from the semiconductor industry; (7) Reduction of propellants in consumer products; (8) Tire inflation; and (9) Sulfur Hexafluoride (SF6) reductions from non-electricity sector.

The 2020 target reductions are currently estimated to be 174 million metric tons of carbon dioxide (CO₂) equivalent (MMTCO_{2e}). In total, the recommended early actions have the potential to reduce greenhouse gas emissions by at least 42 MMTCO_{2e} emissions by 2020, representing about 25 percent of the estimated reductions needed by 2020. The CARB Board adopted Resolution 07-55 in December 2007, approving 427 MMTCO_{2e} as the statewide greenhouse gas emissions limit for 2020, which is equivalent to the 1990 emissions level. The measures are in the sectors of fuels, transportation, forestry, agriculture, education, energy efficiency, commercial, solid waste, cement, oil and gas, electricity, and fire suppression.

2.3 Ambient Air Quality Standards (AAQS)

The Clean Air Act Amendment of 1971 established national Ambient Air Quality Standards (AAQS) with states retaining the option to adopt more stringent standards or to include other pollution species. These standards are the levels of air quality considered safe, with an adequate margin of safety, to protect the public health and welfare. They are designed to protect those “sensitive receptors” most susceptible to further respiratory distress such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

Both the State of California and the federal government have established health based Ambient Air Quality Standards for six air pollutants. As shown in Table 1, these pollutants include ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, suspended particulate matter (PM₁₀, PM_{2.5}), and lead. In addition, the State has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety.

In addition to primary and secondary Ambient Air Quality Standards, the State of California has established a set of episode criteria for ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, and particulate matter. These criteria refer to episode levels representing periods of short-term exposure to air pollutants, which actually threaten public health.

**Table 1
AMBIENT AIR QUALITY STANDARDS FOR CRITERIA POLLUTANTS**

| Pollutant | Averaging Time | California Standard | Federal Primary Standard | Major Pollutant Sources |
|-------------------------------------|-----------------------|----------------------------|---------------------------------|--|
| Ozone (O ₃) | 1 hour | 0.09 ppm | * | Motor vehicles, paints, coatings, and solvents. |
| | 8 hours | 0.070 | 0.075 ppm | |
| Carbon Monoxide (CO) | 1 hour | 20 ppm | 35 ppm | Internal combustion engines, primarily gasoline-powered motor vehicles. |
| | 8 hours | 9.0 ppm | 9 ppm | |
| Nitrogen Dioxide (NO ₂) | Annual Average | 0.030 ppm | 0.053 ppm | Motor vehicles, petroleum-refining operations, industrial sources, aircraft, ships, and railroads. |
| | 1 hour | 0.18 ppm | * | |
| Sulfur Dioxide (SO ₂) | Annual Average | * | 0.03 ppm | Fuel combustion, chemical plants, sulfur recovery plants, and metal processing. |
| | 1 hour | 0.25 ppm | * | |
| | 24 hours | 0.04 ppm | 0.14 ppm | |

| Pollutant | Averaging Time | California Standard | Federal Primary Standard | Major Pollutant Sources |
|---|------------------------|----------------------------|---------------------------------|--|
| Suspended Particulate Matter (PM ₁₀) | Annual Arithmetic Mean | 20 µg/m ³ | * | Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g. wind-raised dust and ocean sprays). |
| | 24 hours | 50 µg/m ³ | 150 µg/m ³ | |
| Suspended Particulate Matter (PM _{2.5}) | Annual Arithmetic Mean | 12 µg/m ³ | 15 µg/m ³ | Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g. wind-raised dust and ocean sprays). |
| | 24 hours | * | 35 µg/m ³ | |
| Lead (Pb) | Monthly | 1.5 µg/m ³ | * | Present source: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline. |
| | Quarterly | * | 1.5 µg/m ³ | |
| Sulfates (SO ₄) | 24 hours | 25 µg/m ³ | * | Industrial processes. |

Notes:

ppm: parts per million; µg/m³: micrograms per cubic meter

* = standard is not applicable for this pollutant/duration by this entity.

Source: California Air Resources Board

2.4 Air Quality Management Planning

2.4.1 Local Planning Requirements

The SCAQMD and the Southern California Association of Governments (SCAG) are the agencies responsible for preparing the Air Quality Management Plan (AQMP) for the SCAB. Since 1979, a number of AQMPs have been prepared. The AQMP was designed to comply with State and federal requirements, reduce the high level of pollutant emissions in the SCAB, and ensure clean air for the region through various control measures. To accomplish its task, the AQMP relies on a multilevel partnership of governmental agencies at the federal, State, regional, and local level. These agencies (i.e., the USEPA, CARB, local governments, SCAG, and SCAQMD) are the cornerstones that implement the AQMP programs.

On December 7, 2012, the SCAQMD adopted the *2012 Air Quality Management Plan*. The purposes of the 2012 AQMP for the Basin are to set forth a comprehensive and integrated program that will lead the Basin into compliance with the federal 24-hour PM_{2.5} air quality standard, to satisfy the planning requirements of the federal Clean Air Act, and to provide an update to the Basin's commitments towards meeting the federal 8-hour ozone standards. It will also serve to satisfy the recent U.S. EPA proposed requirement for a new attainment demonstration of the revoked 1-hour ozone standard, as well as a VMT emissions offset demonstration. Specifically, the Plan will serve as the official SIP submittal for the federal 2006 24-hour PM_{2.5} standard, for which U.S. EPA has established a due date of December 14, 2012. In addition, the 2012 AQMP will update specific new control measures and commitments for emissions reductions to implement the attainment strategy for the 8-hour ozone SIP, and thus help to reduce reliance on CAA Section 182(e)(5) long-term measures. Once approved by the District Governing Board and CARB, the 2012 AQMP will be submitted to U.S. EPA as the 24-hour PM_{2.5} SIP addressing the 2006 PM_{2.5} NAAQS and as a limited update to the approved 8-hour ozone SIP. The 1-hour ozone attainment demonstration and VMT emissions offset demonstration will also be submitted through CARB to EPA.

The 2012 AQMP also includes an update on the air quality status of the Salton Sea Air Basin (SSAB) in the Coachella Valley, a discussion of the emerging issues of ultrafine particle and near-roadway exposures, a report

on the health effects of PM_{2.5}, and an analysis of the energy supply and demand issues that face the Basin and their relationship to air quality. Pursuant to statute, the public hearing will also discuss the report on health effects of PM_{2.5} (Health & Safety Code §40471).

The 2012 AQMP incorporates the most recent planning assumptions and the best available information including: revised stationary point and area source emissions inventories; on-road and off-road mobile source emissions inventories based on CARB’s latest EMFAC2011 and Off-Road Models; the use of new meteorological episodes for ozone and expanded air quality modeling analysis; and the latest demographic growth forecasts based on the approved 2012 Regional Transportation Plan (2012 RTP) developed by SCAG.

In addition to the agencies noted above, Chapter 9 of the City of Cerritos General Plan (January 2004) provides an Air Quality Element. The Element provides a background for the air quality in the area at its time of preparation. The Air Quality Element sets forth goals and policies to reduce emissions through cooperation with the SCAQMD and other interested agencies, to reduce mobile source emissions through improved vehicle circulation and ridesharing, and to reduce stationary and fugitive emissions through planting and conservation.

2.4.2 Air Quality Attainment Status

Areas that meet the ambient air quality standards are classified as “attainment” areas while areas that do not meet these standards are classified as “non-attainment” areas. The severity of the classifications for ozone non-attainment include and range in magnitude from: marginal, moderate, serious, severe, and extreme. The attainment status for the SCAB is included in Table 2.

**Table 2
ATTAINMENT STATUS FOR THE SOUTH COAST AIR BASIN**

| Pollutant | State Status | Federal Status |
|-------------------|------------------------|---|
| Ozone (1-hour) | Extreme Non-attainment | Extreme Non-attainment (under the prior standard) |
| Ozone (8-hour) | Extreme Non-Attainment | Severe-17 (may petition for Extreme) |
| PM ₁₀ | Serious Non-attainment | Serious Non-attainment |
| PM _{2.5} | Non-attainment | Non-attainment |
| CO | Attainment | Attainment/Maintenance |
| NO ₂ | Attainment | Attainment/Maintenance |

Source: California Air Resources Board

The Basin is also designated as attainment of the California Ambient Air Quality Standards (CAAQS) for SO₂, lead, and sulfates. Areas that are designated as Severe-17 for the ozone standard must meet attainment of the 8-hour standard by 2021 (2024 if reclassified to Extreme). Areas considered as serious non-attainment of the PM₁₀ standards must have reached attainment by the end of 2006, or as expeditiously as possible. To date, the Basin still does not meet this standard. The PM_{2.5} attainment date is to be met in the year 2015.

2.4.3 State Planning Requirements

Executive Order S-3-05

Under Executive Order S-3-05, as signed by Governor Arnold Schwarzenegger on June 1, 2005, the following greenhouse gas (GHG) emission reduction targets were established for California: (1) by 2010, reduce GHG emissions to 2000 levels; (2) by 2020, reduce GHG emissions to 1990 levels; and (3) by 2050, reduce GHG emissions to 80 percent below 1990 levels. In response, in March 2006, the California Environmental Protection Agency (CalEPA) published a Climate Action Team (CAT) report detailing how State agencies could implement a series of policies to meet the 2010 and 2020 goals. As indicated therein, among the policy actions

that are cited are “smart land use and intelligent transportation.” The CAT states that smart land use is an umbrella term for strategies that integrate transportation and land-use decisions. Such strategies generally encourage jobs/housing proximity, promote transit-oriented development, and encourage high-density residential/commercial development along transit corridors. These strategies develop more efficient land-use patterns within each jurisdiction or region to match population increases, workforce, and socioeconomic needs for the full spectrum of the population. Intelligent transportation systems (ITS) is the application of advanced technology systems and management strategies to improve operational efficiency of transportation systems and movement of people, goods, and service.¹

California Health and Safety Code

Section 41700 of the H&SC requires that "no person shall discharge from any source whatsoever such quantities of air contaminants or other material which causes injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, response, health, or safety of any such person or the public, or which causes, or have a natural tendency to cause, injury or damage to business or property." Section 39606(b) of the H&SC authorizes the California Air Resources Board (CARB) to adopt standards for ambient air quality “in consideration of public health and safety, and welfare, including but not limited to health, illness, irritation to the senses, aesthetic value, interference with visibility, and the effects of air pollution on the economy.” The objective of ambient air quality standards (AAQS) is to provide a basis for preventing or abating adverse health or welfare effects of air pollution (17 CCR 70101).

Section 39607(e) requires that the CARB establish and periodically review area designation criteria. The CARB makes area designations for the following nine criteria pollutants: ozone (O₃), carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), particulate matter less than 10 microns (PM₁₀), sulfates (SO₄), lead (Pb), hydrogen sulfide (H₂S), and visibility-reducing particles. Assembly Bill 2595, known as the California Clean Air Act (CCAA), divided non-attainment areas into categories with progressively more stringent requirements (Sections 40918-40920.5, H&SC). As specified, it is the responsibility of each air pollution control district (APCD) and air quality management district (AQMD) within the State to attain and maintain California Ambient Air Quality Standards (CAAQS).² The CCAA requires that an attainment plan be developed by all non-attainment districts for O₃, CO, sulfur oxides (SO_x), and nitrogen oxides (NO_x) that are either receptors or contributors of transported air pollutants. The CAAQS are listed in Table 1.³ Areas meeting CAAQS are classified as attainment; areas not meeting CAAQS are classified as non-attainment.

Assembly Bill 32 (California Global Warming Solutions Act of 2006), codified in Section 38500 *et seq.* of the H&SC, established a comprehensive program to reduce GHG by 2020 and identifies several major requirements that CARB is required to implement, including: (1) adoption and implementation of a list of discrete and early action GHG reduction measures; (2) approval of a Statewide 1990 emission level that becomes the Statewide 2020 emissions limits; (3) adoption of mandatory GHG reporting rules for significant GHG sources; and (4) adoption of regulations to achieve the maximum technologically feasible and cost-effective reductions. As defined in Section 38505 of the H&SC, greenhouse gases include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆).

2.4.4 Federal Clean Air Act Requirements

^{1/} California Environmental Protection Agency, Climate Action Team Report to Governor Schwarzenegger and the Legislature, March 2006, p. 58.

^{2/} The CARB considers an area to be non-attainment of a CAAQS for a particular pollutant if the standards for O₃, CO (except Lake Tahoe), SO₂ (1 hour and 24 hour), NO₂, PM₁₀, and visibility-reducing particles are exceeded.

^{3/} These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety. In addition to primary and secondary ambient air quality standards, the State has established a set of episode criteria for ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, and particulate matter. These criteria refer to episode levels representing periods of short-term exposure to air pollutants which threaten public health.

The Federal Clean Air Act of 1970 (42 U.S.C. Section 7401 *et seq.*) (CAA) requires any new major stationary sources of air pollution and any major modifications to major stationary sources to obtain an air pollution permit before commencing construction. New Source Review (NSR) requirements (42 U.S.C. 7411) differ depending on the attainment status of the area where the major facility is to be located. Prevention of Significant Deterioration (PSD) requirements (42 U.S.C. 7470-7491) apply in areas that are in attainment of the National Ambient Air Quality Standards (NAAQS). Non-attainment area NSR requirements apply to areas that have not been able to demonstrate compliance with the NAAQS.

Section 108 of the CAA directs the United States Environmental Protection Agency (USEPA) to list pollutants that may reasonably be anticipated to endanger public health and welfare and to issue air quality criteria for those pollutants. The USEPA has set NAAQS for the following pollutants: carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO₂), ozone (O₃), particulate matter (PM), and sulfur dioxide (SO₂). The NAAQS for those primary pollutants are listed in Table 1. Section 176(c) prohibits federal agencies from taking actions in NAAQS non-attainment or maintenance areas that do not conform to the State Implementation Plan (SIP) for the attainment and maintenance of NAAQS pursuant to Section 110(a).⁴

2.5 Baseline Air Quality

Existing levels of ambient air quality and historical trends and projections in the project area are best documented by measurements made by the SCAQMD. The project is located within Source Receptor Area (SRA) 16 (North Orange County). The SCAQMD maintains an air quality monitoring station in La Habra located north of the project area. The La Habra station does not monitor particulate matter and these data are inferred from the Central Orange County monitoring station (SRA 17) located in Anaheim. Data from these stations are summarized in Table 3. La Habra measurements have shown that while ozone levels continue to exceed the California and national hourly standards, and values appear to have declined over the last 5 years, as well as from the historical numbers of earlier years.

**Table 3
AIR QUALITY MONITORING SUMMARY FOR THE
LA HABRA/ANAHEIM MONITORING STATIONS**

(Number Of Days Standards Were Exceeded And Maximum Levels During Such Violations¹)

| <i>State and Federal Pollutant/Standard</i> | <i>2007</i> | <i>2008</i> | <i>2009</i> | <i>2010</i> | <i>2011</i> |
|---|-------------|----------------|-------------|-------------|-----------------|
| Ozone (O ₃) | | | | | |
| State 1-hour > 0.09 ppm | 7 | 7 | 4 | 2 | 1 |
| State 8-hour >0.07 ppm | 9 | 15 | 9 | 4 | 3 |
| Federal 1-hour > 0.12 ppm | 1 | 0 | 0 | 0 | 0 |
| Federal 8-hour > 0.08 ppm ² | 2 | 5 ² | 3 | 1 | 0 |
| Max. 1-hour conc. (ppm) | 0.152 | 0.104 | 0.115 | 0.118 | 0.095 |
| Max. 8-hour conc. (ppm) | 0.107 | 0.084 | 0.082 | 0.096 | 0.074 |
| Carbon Monoxide (CO) | | | | | |
| State 8-hour ≥ 9.1 ppm | 0 | 0 | 0 | 0 | 0 |
| State 1-hour > 20 ppm | 0 | 0 | 0 | 0 | 0 |
| Federal 8-hour ≥ 9.5 ppm | 0 | 0 | 0 | 0 | 0 |
| Federal 1-hour > 35 ppm | 0 | 0 | 0 | 0 | 0 |
| Max. 1-hour conc. (ppm) | 6 | 5 | 4 | 3 | NR ³ |
| Max. 8-hour conc. (ppm) | 3.3 | 2.9 | 2.3 | 1.8 | 2.1 |
| Nitrogen Dioxide (NO ₂) | | | | | |
| State 1-hour > 0.25 (ppm) | 0 | 0 | 0 | 0 | 0 |
| Max. 1-hour conc. (ppm) | 0.08 | 0.08 | 0.10 | 0.08 | 0.07 |

^{4/} The purpose of conformity is to ensure federal activities do not interfere with the budgets in the SIPs, ensure actions do not cause or contribute to new violations, and ensure attainment and maintenance of the NAAQS.

| <i>State and Federal Pollutant/Standard</i> | <i>2007</i> | <i>2008</i> | <i>2009</i> | <i>2010</i> | <i>2011</i> |
|--|-------------|-------------|-------------|-------------|-------------|
| Inhalable Particulates (PM ₁₀) ⁴ | | | | | |
| State 24-hour > 50 µg/m ³ | 5/59 | 3/58 | 1/56 | 0/57 | 2/60 |
| Federal 24-hour > 150 (µg/m ³) | 0/59 | 0/58 | 0/56 | 0/57 | 0/60 |
| Max. 24-hour conc. (µg/m ³) | 75 | 61 | 63 | 43 | 53 |
| Inhalable Particulates (PM _{2.5}) ⁴ | | | | | |
| Federal 24-Hour > 35 µg/m ³ | 14/336 | 13/336 | 4/334 | 0/331 | 2/352 |
| Max. 24-Hour Conc. (µg/m ³) | 79.4 | 67.9 | 64.9 | 31.7 | 39.2 |

¹ Ozone, carbon monoxide, and nitrogen dioxide are as measured at the La Habra Monitoring Station, Inhalable particulates are as monitored at the Anaheim Monitoring Station. With the exception of inhalable particulates (PM₁₀ and PM_{2.5}), all values are based on 365 days per year.

² In 2008 this standard was reduced from 0.08 ppm to 0.075 ppm. The presented 2008 and later values represent compliance with the newer 0.075 ppm standard.

³ NR – No Longer Reported

⁴ Violations per number of samples.

Although NO₂ measurements indicate that no standards were exceeded, NO₂ is a precursor to O₃ formation, which continually does exceed the standards. Hydrocarbons and NO₂ are emitted by both mobile and stationary sources, with the greater portion emanating from mobile sources in the Basin. Pollutants emitted from upwind cities react during their transport downwind to produce the oxidant concentrations measured at the La Habra monitoring station. Therefore, all upwind areas within the SCAB contribute to the O₃ production. These concentrations increase during the summer, with concentrations increasing from the late morning through the afternoon.

With regard to particulate matter, no trend is readily apparent. The State standard for PM₁₀ was exceeded 11 of the 290 times (3.8 percent) in the last 5 years that it was monitored. The federal standard has not been violated in the last 5 years. However, the federal standard for PM_{2.5} was exceeded 33 of the 1,689 times (2.0 percent) in the last 5 years since the standard had been reduced from 65 µg/m³ to 35 µg/m³. Suspended particulate matter (both total suspended particulates [TSP] and PM₁₀ and PM_{2.5}) is a mixture of natural and manmade materials that include soil particles, biological materials, sulfates, nitrates, organic compounds, and lead. Smaller particles (PM₁₀, PM_{2.5}) are created by the combustion of fossil fuels, but are also given off from tire wear and brake dust.

2.6 Standard Conditions and Uniform Codes

All projects constructed in the SCAB are subject to standard conditions and uniform codes. Compliance with these provisions is mandatory and as such, does not constitute mitigation under CEQA. Those conditions specific to air quality are included below.

- Adherence to SCAQMD Rule 403, which sets requirements for dust control associated with grading and construction activities.
- Adherence to SCAQMD Rules 431.1 and 431.2, which require the use of low sulfur fuel for stationary construction equipment.
- Adherence to SCAQMD Rule 1108, which sets limitations on ROG content in asphalt.
- Adherence to SCAQMD Rule 1113, which sets limitations on ROG content in architectural coatings.
- Adherence to SCAQMD Rule 1143, which sets limitations on ROG content in consumer paint thinners and multipurpose solvents.

Furthermore, the project shall comply with Title 24 energy-efficient design requirements as well as the provision of window glazing, wall insulation, and efficient ventilation methods in accordance with the requirements of the Uniform Building Code (UBC).

During construction, the project would be subject to SCAQMD Rule 403 (Fugitive Dust). SCAQMD Rule 403 does not require a permit for construction activities but sets forth general and specific requirements for all construction sites (as well as other fugitive dust sources) in the Basin. The general requirement prohibits a person from causing or allowing emissions of fugitive dust from construction (or other fugitive dust source) such that the presence of such dust remains visible in the atmosphere beyond the property line of the emissions source. SCAQMD Rule 403 also prohibits a construction site from causing an incremental PM₁₀ concentration impact at the property line of more than 50 µg/m³ as determined through PM₁₀ high-volume sampling. The concentration standard and associated PM₁₀ sampling do not apply if specific measures identified in the rule are implemented and appropriately documented.

In accordance with Rule 403, the SCAQMD requires that contractors implement Best Available Control Technology (BACT) for construction activities. Rule 403 identifies two sets of specific measures, one for projects less than 50 acres and another set of conditions for projects that exceed 50 acres. The requirements applicable to the project are included in Table 4. Note that these measures are regulatory requirements and as such, do not constitute mitigation under CEQA.

Table 4
SCAQMD REQUIRED BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

| Source Category | Control Measures | Guidance |
|-----------------------|---|---|
| Backfilling | Stabilize backfill material when not actively handling; and Stabilize backfill material during handling; and Stabilize soil at completion of activity | Mix backfill soil with water prior to moving; and Dedicate water truck or high capacity hose to backfilling equipment; and Empty loader bucket slowly so that no dust plumes are generated; and Minimize drop height from loader bucket. |
| Clearing and Grubbing | Maintain stability of soil through prewatering of site prior to clearing and grubbing; and Stabilize soil during clearing and grubbing activities; and Stabilize soil immediately after clearing and grubbing activities. | Maintain live perennial vegetation where possible; and Apply water in sufficient quantity to prevent generation of dust plumes. |
| Clearing Forms | Use water spray to clear forms; or Use sweeping and water spray to clear forms; or Use vacuum system to clear forms. | Use of high pressure air to clear forms may cause exceedance of Rule requirements. |
| Crushing | Stabilize surface soils prior to operation of support equipment; and Stabilize material after crushing. | Follow permit conditions for crushing equipment; and Pre-water material prior to loading into crusher; and Monitor crusher emissions opacity; and Apply water to crushed material to prevent dust plumes. |
| Cut and Fill | Pre-water soils prior to cut and fill activities; and Stabilize soil during and after cut and fill activities. | For large sites, pre-water with sprinklers or water trucks and allow time for penetration; and Use water trucks/pulls to water soils to depth of cut prior to subsequent cuts. |

| | | |
|--|---|---|
| Demolition Mechanical/Manual | Stabilize wind erodible surfaces to reduce dust; and Stabilize surface soil where support equipment and vehicles will operate; and Stabilize loose soil and demolition debris; and Comply with Rule 1403. | Apply water in sufficient quantities to prevent the generation of visible dust plumes. |
| Disturbed Soil | Stabilize disturbed soil throughout the construction site; and Stabilize disturbed soil between structures | Limit vehicular traffic and disturbances on soils where possible; and If interior block walls are planned, install as early as possible; and Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes. |
| Earth-Moving Activities | Pre-apply water to depth of proposed cuts; and Re-apply water as necessary to maintain soils in a damp condition and to ensure that visible emissions do not exceed 100 feet in any direction; and Stabilize soils once earth-moving activities are complete. | Grade each project phase separately, timed to coincide with construction phase; and Upwind fencing can prevent material movement on site; and Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes. |
| Importing/Exporting of Bulk Materials | Stabilize material while loading to reduce fugitive dust emissions; and Maintain at least six inches of freeboard on haul vehicles; and Stabilize material while transporting to reduce fugitive dust emissions; and Stabilize material while unloading to reduce fugitive dust emissions; and Comply with CVC Section 23114. | Use tarps or other suitable enclosures on haul trucks; and Check belly-dump truck seals regularly and remove any trapped rocks to prevent spillage; and Comply with track-out prevention/mitigation requirements; and Provide water while loading and unloading to reduce visible dust plumes. |
| Landscaping | Stabilize soils, materials, slopes | Apply water to materials to stabilize; and Maintain materials in a crusted condition; and Maintain effective cover over materials; and Stabilize sloping surfaces using soil binders until vegetation or ground cover can effectively stabilize the slopes; and Hydroseed prior to rain season. |
| Road Shoulder Maintenance | Apply water to unpaved shoulders prior to clearing; and Apply chemical dust suppressants and/or washed gravel to maintain a stabilized surface after completing road shoulder maintenance. | Installation of curbing and/or paving of road shoulders can reduce recurring maintenance costs; and Use of chemical dust suppressants can inhibit vegetation growth and reduce future road shoulder maintenance costs. |
| Screening | Pre-water material prior to screening; and Limit fugitive dust emissions to opacity and plume length standards; and Stabilize material immediately after screening. | Dedicate water truck or high capacity hose to screening operation; and Drop material through the screen slowly and minimize drop height; and Install wind barrier with a porosity of no more than 50% upwind of screen to the height of the drop point. |
| Staging Areas | Stabilize staging areas during use; and Stabilize staging area soils at project completion. | Limit size of staging area; and Limit vehicle speeds to 15 miles per hour; and Limit number and size of staging area entrances/exits. |

| | | |
|---|---|--|
| Stockpiles/Bulk Material Handling | Stabilize stockpiled materials, and stockpiles within 100 yards of off-site occupied buildings must not be greater than eight feet in height; or must have a road bladed to the top to allow water truck access or must have an operational water irrigation system that is capable of complete stockpile coverage. | Add or remove material from the downwind portion of the storage pile; and Maintain storage piles to avoid steep sides or faces. |
| Traffic Areas for Construction Activities | Stabilize all off-road traffic and parking areas; and Stabilize all haul routes; and Direct construction traffic over established haul routes. | Apply gravel/paving to all haul routes as soon as possible to all future roadway areas; and Barriers can be used to ensure vehicles are only used on established parking areas/haul routes. |
| Trenching | Stabilize surface soils where trencher or excavator and support equipment will operate; and Stabilize soils at the completion of trenching activities. | Pre-watering of soils prior to trenching is an effective preventive measure. For deep trenching activities, pre-trench to 18 inches soak soils via the pre-trench and resuming trenching; and Washing mud and soils from equipment at the conclusion of trenching activities can prevent crusting and drying of soil on equipment. |
| Truck Loading | Pre-water material prior to loading; and Ensure that freeboard exceeds six inches (CVC 23114) | Empty loader bucket such that no visible dust plumes are created; and Ensure that the loader bucket is close to the truck to minimize drop height while loading. |
| Turf Overseeding | Apply sufficient water immediately prior to conducting turf vacuuming activities to meet opacity and plume length standards; and Cover haul vehicles prior to exiting the site. | Haul waste material immediately off-site. |
| Unpaved Roads/Parking Lots | Stabilize soils to meet the applicable performance standards; and Limit vehicular travel to established unpaved roads (haul routes) and unpaved parking lots. | Restricting vehicular access to established unpaved travel paths and parking lots can reduce stabilization requirements. |
| Vacant Land | In instances where vacant lots are 0.10 acre or larger and have a cumulative area of 500 square feet or more that are driven over and/or used by motor vehicles and/or off-road vehicles, prevent motor vehicle and/or off-road vehicle trespassing, parking and/or access by installing barriers, curbs, fences, gates, posts, signs, shrubs, trees or other effective control measures. | |

2.7 *Sensitive Receptors*

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. Sensitive population groups include children, the elderly, the acutely ill, and the chronically ill, especially those with cardio-respiratory diseases.

Residential areas are considered to be sensitive to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Schools are also considered as sensitive since children are present for extended durations and engage in regular outdoor activities. Recreational land uses are considered moderately sensitive to air pollution. Although exposure periods are generally short, exercise places a high demand on respiratory functions, which can be impaired by air pollution. In addition, noticeable air pollution can detract from the enjoyment of recreation. Industrial and commercial areas are considered the least sensitive to air pollution since exposure periods are relatively short and intermittent, as the majority of the workers tend to stay indoors most of the time. In addition, the working population is generally the healthiest segment of the public.

The project is a residential land use and is sensitive in nature. The project site is located along the northeast side of Fullerton Relief Channel with town home residential units currently under construction of the west side of the channel. Commercial land uses are located to the west along Euclid Street north of the channel. Single-family residential units are located immediately to the north and to the east across Rosslenn Avenue to the east.

3.0 *Threshold of Significance Criteria*

Presented below are the threshold of significance criteria identified by the SCAQMD relative to this topical issue. In accordance therewith, the proposed project would normally be deemed to produce a significant land use impact if the project or if project-related activities were to:

- Conflict with or obstruct implementation of the applicable air quality plan.
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation.
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standards.
- Expose sensitive receptors to substantial air pollutant concentrations.
- Create objectionable odors affecting a substantial number of people.
- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.
- Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

As indicated in Section 15064(i)(1) of the State CEQA Guidelines, “cumulatively considerable” is defined to mean “that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.”

In order to determine whether or not the proposed project would cause a significant effect on the environment, the impact of the project must be determined by examining the types and levels of emissions generated and its impacts on factors that affect air quality. To accomplish this determination of significance, the SCAQMD has established air pollution thresholds against which a proposed project can be evaluated and assist lead agencies in determining whether or not the proposed project is significant. If the thresholds are exceeded by a proposed project, then it should be considered significant.

While the final determination of whether or not a project is significant is within the purview of the lead agency, the SCAQMD recommends that the following air pollution thresholds be used in determining whether the construction or operational phase of a proposed project is significant. As recommended by the SCAQMD, if the lead agency finds that the proposed project has the potential to exceed any of these air pollution thresholds, the project should be considered significant.

3.1 Construction Phase - Thresholds of Significance

The following significance thresholds for air quality have been established by the SCAQMD on a daily basis for construction emissions:

- 75 pounds per day for ROG
- 100 pounds per day for NO_x
- 550 pounds per day for CO
- 150 pounds per day of SO_x
- 150 pounds per day for PM₁₀
- 55 pounds per day for PM_{2.5}

During construction, if any of the identified daily air pollutant thresholds are exceeded by the proposed project, then the project's air quality impacts may be considered significant.

3.2 Operational Phase - Thresholds of Significance

Specific criteria air pollutants have been identified by the SCAQMD as pollutants of special regional concern. Based upon this categorization, the following significance thresholds have been established by the SCAQMD for project operations:

- 55 pounds per day of ROG
- 55 pounds per day of NO_x
- 550 pounds per day of CO
- 150 pounds per day of SO_x
- 150 pounds per day of PM₁₀
- 55 pounds per day for PM_{2.5}

Projects within the SCAB with daily operation-related emissions that exceed any of the above emission thresholds may be considered significant. The SCAQMD indicates in Chapter 6 of their *Handbook* that they consider a project to be mitigated to a level of insignificance if its primary effects are mitigated below the thresholds provided above.

In addition to the criteria pollutants, the SCAQMD Working Group has established a tentative threshold of 3,000 metric tons (Mtons) per year for CO₂e emissions for residential and commercial projects, and a threshold of 10,000 Mtons per year for industrial projects.

3.3 Local Emission Standards

In addition to the mass daily threshold values presented above, projects that have the ability to exceed or add measurably to an existing excess of the ambient concentrations presented in Table 1 may be considered significant. The following localized significance thresholds have been established by the SCAQMD for individual projects:

- California State 1-hour CO standard of 20.0 ppm
- California State 8-hour CO standard of 9.0 ppm
- California State 1-hour NO₂ standard of 0.18 ppm
- SCAQMD 24-hour construction PM₁₀ and PM_{2.5} standards of 10.4 µg/m³
- SCAQMD 24-hour operational PM₁₀ and PM_{2.5} standards of 2.5 µg/m³

If ambient levels already exceed a State or federal standard, then project emissions are considered significant if they increase ambient concentrations by a measurable amount. In the case of CO, the SCAQMD defines a

measurable amount as 1.0 ppm or more for the 1-hour CO concentration or 0.45 ppm or more for the 8-hour CO concentrations. The SCAQMD indicates that they consider a project to be mitigated to a level of insignificance if its secondary effects are mitigated below these thresholds.

4.0 Environmental Impacts and Mitigation Measures

This project includes the demolition of approximately 8,704 square feet of existing structures including approximately 4,500 square feet of sanctuary, 424 square feet of office space, and 3,780 square feet of classrooms, and approximately 36,500 square feet of paving, and the subsequent construction and operation of 19 single-family residential units on approximately 1.79 acres of land.

To best calculate construction emissions and stationary source emissions associated with site occupancy, it is necessary to delineate the work effort and assumptions used in the analysis. Projected air emissions are calculated using the CalEEMod model (CalEEMod 2011.1.1) released in February 2011. The CalEEMod model uses EMFAC2007 emissions factors for vehicle traffic. For the purposes of this analysis, construction is estimated to begin on January 2, 2014 and follow the default construction schedule, phased in accordance with the CalEEMod model timeframe. Equipment use and timing for the construction effort are based on model default values.

The subsequent occupation of the site is also based on the CalEEMod model using traffic-projections from the traffic analysis. In accordance with both the model and the traffic analysis projections, the project would add 101 average daily trips (ADT) on a weekday with 9 trips during the AM peak hour and 18 trips during the PM peak hour above the existing land use. The project's calculated emissions are compared to thresholds of significance for individual projects using the SCAQMD Handbook and Internet web site updates.

For ease of the reader, the analysis follows the format included in the California CEQA Guidelines, Appendix G: Environmental Checklist Form for Section III. AIR QUALITY and Section VII. GREENHOUSE GAS EMISSIONS addressing each issue included in those sections, respectively.

4.1 Project Consistency With the Applicable Air Quality Plan

Less than Significant Impact. CEQA requires that projects be consistent with the AQMP. A consistency determination plays an essential role in local agency project review by linking local planning and unique individual projects to the AQMP in the following ways: (1) it fulfills the CEQA goal of fully informing local agency decision-makers of the environmental costs of the project under consideration at a stage early enough to ensure that air quality concerns are fully addressed; and (2) it provides the local agency with ongoing information assuring local decision-makers that they are making real contributions to clean air goals contained in the AQMP.

Only new or amended general plan elements, specific plans, and regionally significant projects need to undergo a consistency review. This is because the AQMP strategy is based on projections from local general plans. Projects that are consistent with the local general plan are, therefore, considered consistent with the air quality management plan.

As proposed, the Applicant seeks approval for a 19 residential units on 1.79 acres of land. The existing land use includes 8,704 square feet of religious use including classroom space. The transportation analysis indicates that the existing use would generate 101 ADT beyond the existing land use.

Neither the construction (Table 5) nor the operation (Table 6) of the project are projected to exceed the daily threshold values suggested by the SCAQMD. Additionally, the project would not result in significant localized air quality impacts. Finally, the project will go beyond Title 24 requirements for energy efficiency and will be LEED-certified reducing greenhouse gas emissions. As such, the project is consistent with the goals of 2012 AQMP and, in that respect, does not present a significant air quality impact.

4.2 *Project Potential to Violate or Add to a Violation of an Air Quality Standard*

4.2.1 *Construction Impacts*

Less than Significant Impact. The potential air quality impacts associated with and attributable to construction (including demolition) and operation are addressed separately below.

Air quality impacts may occur during demolition, site preparation, and construction activities required to implement the proposed land uses. Major sources of emissions during construction include exhaust emissions, fugitive dust generated as a result of soil and material disturbance during demolition, site preparation, and grading activities, and the emission of ROGs during the painting of the structures.

As noted, the project involves the demolition of approximately 8,704 square feet of existing structure and approximately 36,500 square feet of paving and the subsequent construction of 19 single-family residential units. Based on the proposed land use, by default the CalEEMod model allocates the demolition and construction over 246 working days and this schedule was retained for the analysis. Construction is assumed to begin on January 2, 2014 and end on December 11, 2014.

With respect to demolition, the 8,704 square feet of structure were assumed to be demolished using the model's default settings for structures. The removal of the asphalt and concrete are not specifically addressed by the model so the volume of this material was calculated and the haul trucks assigned accordingly. Asphaltic concrete has a weight of about 140 pounds per cubic foot. If we assume that the existing approximately 36,500 square feet of asphalt and concrete has a typical thickness of 6 inches:

$$36,500 \text{ sq ft} \times 6 \text{ in} / 12 \text{ in/ft} = 18,250 \text{ cu ft}$$

$$18,250 \text{ cu ft} \times 140 \text{ lb/cu ft} = 2,555,000 \text{ lb} / 2,000 \text{ lb/ton} = 1,278 \text{ tons}$$

The CalEEMod User Manual notes that the model is based on 16 tons of material per haul trip.

$$1,278 \text{ tons} / 16 \text{ tons/trip} = 80 \text{ trips}$$

These were then added to the 40 trips projected by the model for the demolition of the structures and the 120 trucks were allocated over the 20 day demolition period (i.e., six trucks per day), also as projected by the model.

SCAQMD's Rule 403 governs fugitive dust emissions from construction projects. This rule sets forth a list of control measures that must be undertaken for all construction projects to ensure that no dust emissions from the project are visible beyond the property boundaries. Adherence to Rule 403 is mandatory and as such, does not denote mitigation under CEQA. The following analysis assumes the use of the minimal measures specified in Rule 403 that overlap between the rule and the CalEEMod model. These include: (1) soil stabilizers shall be applied to unpaved roads; (2) ground cover shall be quickly applied in all disturbed areas; and (3) the active construction site shall be watered twice daily. The model assigns a control efficiency of 55 percent for twice daily watering and a similar efficiency was assumed for other controlled dust-producing, heavy equipment activities. In actuality, Rule 403 specifies several measures that the CalEEMod model does not consider so the modeled PM₁₀ and PM_{2.5} emissions associated with fugitive dust are considered conservative.

Table 5 includes the daily emissions projected for site construction. Note that all values are within their respective thresholds and the impact is less than significant.

Table 5
COMPARISON OF PROJECTED CONSTRUCTION EMISSIONS
AND DAILY CRITERIA VALUES
(pounds/day)

| Source | ROG | NOx | CO | SO ₂ | PM ₁₀ Dust | PM ₁₀ Exhaust | PM ₁₀ Total | PM _{2.5} Dust | PM _{2.5} Exhaust | PM _{2.5} Total |
|--|-------|-------|-------|-----------------|--------------------------|-----------------------------|---------------------------|---------------------------|------------------------------|----------------------------|
| Demolition (20 Days) (1 concrete saw @ 8 hr, 1 rubber-tired dozer @ 8 hr, 3 tractor/loader/backhoes @ 8 hr, 6 haul truck trips) | | | | | | | | | | |
| Fugitive Dust | 0.00 | 0.00 | 0.00 | 0.00 | 0.09 | 0.00 | 0.09 | 0.00 | 0.00 | 0.00 |
| Off Road Diesel | 4.75 | 35.99 | 22.84 | 0.04 | 0.00 | 2.08 | 2.08 | 0.00 | 2.08 | 2.08 |
| On-Road Diesel | 0.27 | 2.84 | 1.77 | 0.00 | 2.81 | 0.11 | 2.92 | 0.02 | 0.11 | 0.12 |
| Worker Trips | 0.08 | 0.08 | 0.80 | 0.00 | 0.20 | 0.01 | 0.21 | 0.01 | 0.01 | 0.01 |
| Totals | 5.10 | 38.91 | 25.41 | 0.04 | 3.01 | 2.20 | 5.30 | 0.03 | 2.20 | 2.21 |
| Site Preparation (2 Days) (1 grader @ 8 hr, 1 rubber-tired dozer @ 7 hr, 1 tractor/loader/backhoe @ 8 hr) | | | | | | | | | | |
| Fugitive Dust | 0.00 | 0.00 | 0.00 | 0.00 | 1.17 | 0.00 | 1.17 | 0.59 | 0.00 | 0.59 |
| Off Road Diesel | 3.75 | 29.67 | 17.95 | 0.03 | 0.00 | 1.47 | 1.47 | 0.00 | 1.47 | 1.47 |
| Worker Trips | 0.05 | 0.05 | 0.49 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 |
| Totals | 3.80 | 29.72 | 18.44 | 0.03 | 1.17 | 1.47 | 2.65 | 0.59 | 1.47 | 2.07 |
| Grading (4 Days) (1 grader @ 6 hr, 1 rubber-tired dozer @ 6 hr, 1 tractor/loader/backhoe @ 7 hr) | | | | | | | | | | |
| Fugitive Dust | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 0.50 | 0.00 | 0.50 |
| Off Road Diesel | 3.11 | 24.59 | 14.80 | 0.03 | 0.00 | 1.21 | 1.21 | 0.00 | 1.21 | 1.21 |
| Worker Trips | 0.05 | 0.05 | 0.49 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 |
| Totals | 3.16 | 24.64 | 15.29 | 0.03 | 1.00 | 1.21 | 2.22 | 0.50 | 1.21 | 1.72 |
| Building Construction (200 Days) (1 crane @ 6 hr, 1 forklift @ 6 hr, 1 generator @ 8 hr, 1 tractor/loader/backhoe @ 6 hr, 3 welders @ 8 hr) | | | | | | | | | | |
| Off Road Diesel | 4.15 | 21.74 | 15.92 | 0.03 | 0.00 | 1.46 | 1.46 | 0.00 | 1.46 | 1.46 |
| Vendor Trips | 0.03 | 0.29 | 0.21 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | 0.01 | 0.01 |
| Worker Trips | 0.04 | 0.04 | 0.43 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 |
| Totals | 4.22 | 22.07 | 16.56 | 0.03 | 0.00 | 1.47 | 1.48 | 0.00 | 1.47 | 1.48 |
| Asphalt Paving (10 days) (1 mixer @ 6 hr, 1 paver @ 6 hr, 1 paving equipment @ 8 hr, 1 roller @ 7 hr, 1 tractor/loader/backhoe @ 8 hr) | | | | | | | | | | |
| Off-Gas | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Off Road Diesel | 2.80 | 17.55 | 11.98 | 0.02 | 0.00 | 1.46 | 1.46 | 0.00 | 1.46 | 1.46 |
| Worker Trips | 0.08 | 0.08 | 0.80 | 0.00 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
| Asphalt Totals | 2.88 | 17.63 | 12.78 | 0.02 | 0.01 | 1.47 | 1.47 | 0.01 | 1.47 | 1.47 |
| Coating (10 Days) (1 compressor @ 6 hr) | | | | | | | | | | |
| Off-Gas | 25.98 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Off Road Diesel | 0.45 | 2.77 | 1.92 | 0.00 | 0.00 | 0.24 | 0.24 | 0.00 | 0.24 | 0.24 |
| Worker Trips | 0.02 | 0.02 | 0.18 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Coating Totals | 26.45 | 2.79 | 2.10 | 0.00 | 0.00 | 0.24 | 0.24 | 0.00 | 0.24 | 0.24 |
| Daily Threshold | 75 | 100 | 550 | 150 | → | → | 150 | → | → | 55 |

Notes:

The CalEEMod model projects summer and winter emissions and the higher of the two values was included in the table.

4.2.2 Operational Impacts

Less than Significant Impact. The major source of long-term air quality impacts is that associated with the emissions produced from project-generated vehicle trips. Stationary sources add only minimally to these values.

Mobile Source Emissions

The major source of long-term air quality impacts for criteria pollutants is that associated with the emissions produced from project-generated vehicle trips, though stationary sources add to the total. In accordance with the transportation analysis, the existing land uses generate approximately 80 average daily trips (ADT). The project is expected to generate 181 ADT for a net increase of 101 ADT. This net increase was used in the prediction of air quality emissions associated with vehicle travel.

Emissions associated with project-related trips are based on the CalEEMod computer model and assume occupancy in 2015. Since emissions per vehicle are reduced each year due to tightening emissions restrictions and the replacement of older vehicles from the road, the use of 2015 emission factors presents a worst-case analysis with regards to operational air quality impacts.

Again, both summer and winter scenarios were modeled and the higher of the two values are included in Table 6. Note that all emissions are within their respective threshold values and the impact is less than significant.

Stationary Source Emissions

With regards to stationary source emissions, in addition to vehicle trips, the occupants would produce emissions from on-site sources, including the combustion of natural gas for space and water heating. Additionally, the structures would be maintained and this requires repainting over time, thus resulting in the release of additional VOC (ROG) emissions. Also, the use of consumer aerosol products, such as cleaners, are associated with the project. Finally, the landscape would require maintenance and this equipment produces emissions.

The project includes the operation of 19 single-family residential units comprising approximately 33,249 square feet. The existing land uses comprise about 8,704 square feet. As such the project represents an increase of 24,545 square feet to be heated, cooled, maintained, etc. However, in this case stationary source emissions values are relatively small and no emissions “credit” was taken for the removal of the existing land uses.

The project would be LEED-certified and constructed using energy efficient design. The Applicant would include a number of conservation features and exceed Title 24 requirements by at least 15 percent. As such, an “exceeds Title 24 requirements by 15 percent” factor was used in the modeling.

The resultant emissions are projected by the CalEEMod computer model and included in Table 6. Note that all emissions are within their respective criteria and the impact is less than significant.

**Table 6
COMPARISON OF PROJECTED DAILY OPERATIONAL EMISSIONS
AND DAILY CRITERIA VALUES
(pounds/day)**

| Source | ROG | NO_x | CO | SO₂ | PM₁₀ | PM_{2.5} |
|------------------------|------------|-----------------------|-----------|-----------------------|------------------------|-------------------------|
| Mobile Sources | 1.02 | 1.95 | 9.55 | 0.02 | 2.20 | 0.16 |
| Natural Gas | 0.02 | 0.18 | 0.08 | 0.00 | 0.01 | 0.01 |
| Structural Maintenance | 0.07 | --- | --- | --- | --- | --- |
| Consumer Products | 0.66 | --- | --- | --- | --- | --- |
| Hearth | 2.02 | 0.12 | 8.28 | 0.02 | 1.32 | 1.32 |
| Landscape Maintenance | 0.05 | 0.02 | 1.62 | 0.00 | 0.01 | 0.01 |

| | | | | | | |
|--------------------|------|------|-------|------|------|------|
| Operational Total | 3.84 | 2.27 | 19.53 | 0.04 | 3.54 | 1.54 |
| Threshold | 55 | 55 | 550 | 150 | 150 | 55 |
| Exceeds Threshold? | No | No | No | No | No | No |

Notes:

The CalEEMod model projects summer and winter emissions. These differ for mobile sources and the higher of the two values were included in the table.

4.3 Project Potential to Result in a Cumulatively Considerable Increase in Criteria Pollutants

Less than Significant Impact. In accordance with SCAQMD methodology, projects that do not exceed or can be mitigated to less than the daily threshold values do not add significantly to a cumulative impact. As shown in Tables 5 and 6, criteria pollutants are all within the recommended SCAQMD threshold levels and this impact is less than significant.

4.4 Project Potential to Expose Sensitive Receptors to Substantial Pollutant Concentrations

4.4.1 Short-Term Localized Impacts

Less than Significant Impact. In addition to the mass daily threshold standards discussed above, project construction has the potential to raise localized ambient pollutant concentrations. This could present a significant impact if these concentrations were to exceed the ambient air quality standards included in Table 1 at receptor locations.

The SCAQMD has developed screening tables for the construction of projects up to five acres in size. These tables are included in the SCAQMD's *Final Localized Significance Threshold Methodology* (June 2003) and are periodically updated on the SCAQMD Internet web site. The most current update was in 2008 and these data are use in the analysis. The emissions values included in the screening tables are based on the emissions produced at the site and do not include mobile source emissions (i.e., trucks and worker vehicles) spread over a much larger area. The project is estimated to disturb about 1.79 acres.

Screening level allowable emissions are calculated from the "mass-rate look-up tables" included in the *Final Localized Significance Threshold Methodology* (Appendix C). Rather than using the entirety of the site, the CalEEMod emissions model bases the area of disturbance on equipment use. Dozers, graders, and tractors are estimated to disturb an area of 0.5 acre while scrapers are estimated to disturb 1.0 acre over an 8-hour work day.

The highest level of on-site CO and NOx emissions are produced during demolition and the model assumes that the effort requires one dozer (0.5 acre) and three tractor/loader/backhoes (0.5 acre each) for a total disturbance of 2.0 acres per day. In those cases where the projected area of disturbance is larger than the entirety of the site (i.e., 1.79 acres), the size of the site is to be used in the screening procedure. Site sizes and receptor distances that lie between those included in the screening manual may be determined by linear interpolation.

The site is 1.79 acres and lies between the 1-and 2-acre sizes included in the manual. The most proximate sensitive receptors are the adjacent residents and those across Rossl Lynn Avenue and the minimal screening distance of 25 meters is used in the analysis.

In the cases of CO and NOx, construction emission levels are so far below the screening values that the project may be compared at the minimal size (i.e., 1 acre). In this case, the screening levels for CO and NOx are 522 and 103 pounds per day, respectively. At peak values of 22.84 and 35.99 pounds per day for CO and NOx, respectively, during demolition, construction emissions would not create localized impacts.

Because the Basin is a non-attainment area for particulate matter, the thresholds for both PM₁₀ and PM_{2.5} are much more stringent than those for CO and NOx. In the case of PM₁₀, the screening tables show and allowable

value of 4 pounds per day for a 1-acre site with receptors at 25 meters. Again, a larger site would have a higher allowable emissions level. However, at just 2.17 pounds per day, PM₁₀ would net exceed the 4-pound-per-day threshold for a 1-acre site and this impact is less than significant.

Similarly, the threshold for PM_{2.5} for a 1-acre site with receptors at 25 meters is 3 pounds per day and with a peak value of 2.08 pounds per day during demolition, any localized impact would be less than significant.

4.4.2 Long-Term Localized Impacts

Less than Significant Impact. Long-term effects of the proposed project could also be significant if they exceed the CAAQS. As noted for construction, these criteria only apply to CO, NO₂, PM₁₀, and PM_{2.5}. CO and NO₂ would be significant if the project were to raise existing levels above those values included in the CAAQS. Again, because the Basin is a non-attainment area for particulate matter, the operational thresholds for both PM₁₀ and PM_{2.5} are set at a measurable increase of 2.5 µg/m³.

Unlike construction equipment that generates exhaust and dust in a set area, the primary source of emissions from project operations is due to the addition of vehicles on the roadway system. These emissions are then spread over a vast area and do not result in localized concentrations in proximity to the project site. As such, localized modeling for the project operations is not prepared for residential, limited commercial, or light industrial development that does not include a truck terminal.

Because CO is the criteria pollutant that is produced in greatest quantities from vehicle combustion and does not readily disperse into the atmosphere, long-term adherence to AAQS is typically demonstrated through an analysis of localized CO concentrations. In the past, areas of vehicle congestion had the potential to create “pockets” of CO called “hot spots.” However, the SCAB has now been designated as an Attainment area of both the State and federal CO standards, and no hot spots have been reported in any of the Orange County Receptor Areas in more than the last 5 years. CO is no longer a localized pollutant of concern near roadways and as such this analysis are no longer necessary. Furthermore, the project would add just 18 trips distributed over the roadway during the PM peak hour and these trips would not add measurably to local CO levels in the project area.

4.5 Project Potential to Create Objectionable Odors

Less than Significant Impact. Project construction would involve the use of heavy equipment creating exhaust pollutants from on-site earth movement and from equipment bringing concrete and other building materials to the site. With regards to nuisance odors, any air quality impacts will be confined to the immediate vicinity of the equipment itself. By the time such emissions reach any sensitive receptor sites away from the project site, they will be diluted to well below any level of air quality concern. An occasional “whiff” of diesel exhaust from passing equipment and trucks accessing the site from public roadways may result. Such brief exhaust odors are an adverse but less-than-significant, air quality impact. Additionally, some odor would be produced from the application of asphalt, paints, and coatings. Any exposure to these common odors would be of short-term duration and, while potentially adverse, are less than significant.

Operational odors could be produced from on-site food preparation. These odors are common in the environment and would not constitute a significant impact.

4.6 Project Potential to Generate Greenhouse Gas Emissions, Either Directly or Indirectly, that may have a Significant Impact on the Environment

Less than Significant Impact. To provide guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents, the SCAQMD has convened a GHG CEQA Significance Threshold Working Group. The SCAQMD is in the process of establishing a threshold for GHG emissions to determine a project’s regional contribution toward global climate change impacts for California. On December 5, 2008,

SCAQMD adopted a threshold of 3,000 metric tons (MTons) of CO₂e per year for residential and commercial projects for which it is the lead agency under CEQA.

Construction

Construction activities would consume fuel and result in the generation of greenhouse gases. Construction CO₂e emissions are as projected using the CalEEMod computer model and included in Table 7. Note that all emissions are within the threshold value and the impact is less than significant.

**Table 7
CONSTRUCTION-RELATED GREENHOUSE GAS EMISSION BY YEAR
(Mtons/year)**

| Year | CO ₂ | CH ₄ | N ₂ O | Total CO ₂ e ¹ |
|--------------------|-----------------|-----------------|------------------|--------------------------------------|
| 2014 | 303.88 | 0.04 | 0.00 | 304.73 |
| Threshold | --- | --- | --- | 3,000 |
| Exceeds Threshold? | --- | --- | --- | No |

¹ Because different gases have different conversion factors, totals may not equal.

Site Operations

The Fullerton - Roosevelt residential project includes a number of greenhouse gas related requirements that are design features of the project. The project is to be LEED-certified and the Applicant proposes to exceed Title 24 requirements by at least 15 percent.

In the case of site operations, the majority of greenhouse gas emissions, and specifically CO₂, is due to vehicle travel and energy consumption. As shown in Table 8, CalEEMod projects that combined, mobile, area source, energy, waste, and water conveyance generates 290.22 Mtons of CO₂e on an annual basis. This value is under the suggested threshold of 3,000 Mtons per year and the impact is less than significant.

**Table 8
YEARLY OPERATIONAL GREENHOUSE GAS EMISSIONS
(Mtons/year)**

| Source | CO ₂ | CH ₄ | N ₂ O | Total CO ₂ e ¹ |
|--------------------|-----------------|-----------------|------------------|--------------------------------------|
| Mobile Sources | 184.25 | 0.01 | 0.00 | 184.41 |
| Energy | 72.60 | 0.00 | 0.00 | 73.04 |
| Area | 7.22 | 0.04 | 0.00 | 8.35 |
| Water Use | 7.22 | 0.04 | 0.00 | 8.35 |
| Waste Disposal | 4.49 | 0.27 | 0.00 | 10.07 |
| Operational Total | 282.69 | 0.33 | 0.00 | 290.22 |
| Threshold | --- | --- | --- | 3,000 |
| Exceeds Threshold? | | | | No |

Notes:

Includes 15% energy reduction for exceedance of Title 24 construction standards but does not include any reductions for LEED-certification or energy efficient design.

¹ Because different gases have different conversion factors, totals may not equal.

4.7. Project potential to conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Less than Significant Impact. An impact can also be potentially significant if the project does not comply with the applicable plans necessary for the reduction of greenhouse gases. Like air quality impacts, projects that generate de minimus levels (i.e., less than 3,000 Mtons per year) and don't result in a significant impact or can be mitigated to less than significant would be deemed to be in compliance of the local policies with respect to GHG. Even so, the project is subject to the requirements of State Assembly Bill 32 and any requirements set forth therein. Like adherence to SCAQMD requirements (e.g., Rule 403 for dust control), adherence to SB32, and any measures outlined therein, would be requisite and as such, are not mitigation under CEQA.

Construction

With respect to construction, the Applicant has specified that a portion of the construction material shall be recycled. As demonstrated above, the worst-case construction year is estimated to average about 312.08 Mtons of CO₂e. This value is below the 3,000-Mton threshold value and the cumulative impact to climate change is less than significant. As such, construction would not conflict with existing plans and policies.

Site Operations

The project represents an infill development that is walkable to several local amenities. As discussed above, the project would be LEED-certified and building construction would exceed Title 24 standards by 15 percent or more. Furthermore, the Applicant would specify energy efficient appliances and tankless water heaters. The exterior would include drought tolerant plant materials and efficient irrigation. With only the inclusion of 15 percent beyond Title 24 requirements, the project represents an increase of 380.14 Mtons of CO₂e on an annual basis and is less than the 3,000-Mton per year threshold suggested by the SCAQMD. As such, the impact is less than significant.

5.0 References

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Appendices

Appendix A CalEEMod Model Results for Winter Emissions

Appendix B CalEEMod Model Results for Summer Emissions

Appendix C CalEEMod Model Results for Annual Emissions