4. ENVIRONMENTAL IMPACT ANALYSIS
2. AIR QUALITY

1. INTRODUCTION

This section examines the degree to which all phases of the Project may result in significant environmental impacts with respect to air quality. Both short-term construction emissions occurring from activities such as demolition, haul truck trips, site grading, building construction, and long-term effects related to the ongoing operation of the Project are discussed in this section. The analysis contained herein focuses on air pollution from two perspectives: daily emissions and pollutant concentrations. As used in this study, the term "emissions" refers to the actual quantity of pollutant measured in pounds per day (ppd). The term "concentrations" refers to the amount of pollutant material per volumetric unit of air as measured in parts per million (ppm) or micrograms per cubic meter ($\mu g/m^3$).

The potential for the Project to conflict with or obstruct implementation of the applicable air quality plan, to violate an air quality standard or contribute substantially to an existing or projected air quality violation, to result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is designated to be in non-attainment, to expose sensitive receptors to substantial pollutant concentrations, or to create objectionable odors affecting a substantial number of people are discussed. Documents used in the preparation of this section include, but are not limited to, the South Coast Air Quality Management District (SCAQMD) *CEQA Air Quality Handbook* (1993), the 2007 Air Quality Management Plan (AQMP), as amended, as well as federal and state regulations and guidelines.

2. ENVIRONMENTAL SETTING

The Project Site is located within the South Coast Air Basin (Basin). This Basin includes all of Orange County and the non-desert portions of Los Angeles, San Bernardino, and Riverside Counties. The regional climate within the Basin is considered semi-arid and is characterized by warm summers, mild winters, infrequent seasonal rainfall, moderate daytime onshore breezes, and moderate humidity. The air quality within the Basin is primarily influenced by a wide range of emissions sources such as dense population centers, heavy vehicular traffic, industry, and meteorology.

a. Air Pollutants

Air pollutant emissions within the Basin are generated by stationary and mobile sources. Stationary sources can be divided into two major subcategories: point and area sources. Point sources occur at an identified location and are usually associated with manufacturing and industry. Examples of point sources are boilers or combustion equipment that produce electricity or generate heat. Area sources are widely distributed and produce many small emissions. Examples of area sources include residential and commercial water heaters, painting operations, lawn mowers, agricultural fields, landfills, and consumer products such as lighter fluid and hair spray. Mobile sources are emissions from motor vehicles, including tailpipe and evaporative emissions, and are classified as either on-road or off-road. On-road sources may be legally operated on roadways and highways. Off-road sources include aircraft, ships, trains, racecars, and self-propelled construction equipment. Air pollutants can also be generated by the natural environment such as when fine dust particles are pulled off the ground surface and suspended in the air during high winds.

Both the federal and state governments have established ambient air quality standards for outdoor concentrations of various pollutants in order to protect public health and welfare. These pollutants are referred to as "criteria air pollutants" as a result of the specific standards, or criteria, that have been adopted for them. The national and state standards have been set at levels considered safe to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly with a margin of safety; and to protect public welfare, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings.

The criteria air pollutants that are most relevant to current air quality planning and regulation in the Basin include ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), respirable particulate matter (PM_{10}), fine particulate matter ($PM_{2.5}$), sulfur dioxide (SO_2), and lead (Pb). In addition, toxic air contaminants (TACs) are of concern in the Basin. The characteristics of each of these pollutants are briefly described below:

- O_3 is a highly reactive and unstable gas that is formed when reactive organic gases (ROGs) and nitrogen oxides (NO_x), both byproducts of internal combustion engine exhaust, undergo slow photochemical reactions in the presence of sunlight. O_3 concentrations are generally highest during the summer months when direct sunlight, light wind, and warm temperature conditions are favorable to the formation of this pollutant.

- *CO* is a colorless, odorless gas produced by the incomplete combustion of carbon-containing fuels, such as gasoline or wood. CO concentrations tend to be the highest during the winter morning, when little to no wind and surface-based inversions trap the pollutant at ground levels. Because CO is emitted directly from internal combustion engines, unlike O_3, motor vehicles operating at slow speeds are the primary source of CO in the Basin. The highest ambient CO concentrations are generally found near congested transportation corridors and intersections.

- PM_{10} and $PM_{2.5}$ consist of extremely small, suspended particles or droplets 10 microns and 2.5 microns or smaller in diameter, respectively. Some sources of particulate matter, like pollen and windstorms, are naturally occurring. However, in populated areas, most particulate matter is caused by road dust, diesel soot, combustion products, abrasion of tires and brakes, and construction activities.

- NO_2 is a nitrogen oxide compound that is produced by the combustion of fossil fuels, such as in internal combustion engines (both gasoline and diesel powered), as well as point sources, especially power plants. Of the seven types of NO_x compounds, NO_2 is the most abundant in the atmosphere. As ambient concentrations of NO_2 are related to traffic density, commuters in heavy traffic may be exposed to higher concentrations of NO_2 than those indicated by regional monitors.

- *SO_2* is a colorless, extremely irritating gas or liquid. It enters the atmosphere as a pollutant mainly as a result of burning high sulfur-content fuel oils and coal and from chemical processes occurring at chemical plants and refineries. When SO_2 oxidizes in the atmosphere, it forms sulfates (SO_4). Collectively, these pollutants are referred to as sulfur oxides (SO_x).
- *Pb* occurs in the atmosphere as particulate matter. The combustion of leaded gasoline is the primary source of airborne Pb in the Basin. The use of leaded gasoline is no longer permitted for on road motor vehicles, so the majority of such combustion emissions are associated with off-road vehicles such as racecars. However, because leaded gasoline was emitted in large amounts from vehicles when leaded gasoline was used for on-road motor vehicles, Pb is present in many urban soils and can be re-suspended in the air. Other sources of Pb include the manufacturing and recycling of batteries, paint, ink, ceramics, ammunition, and the use of secondary lead smelters.
- *TACs* refer to a diverse group of air pollutants that are capable of causing chronic (i.e., of long duration) and acute (i.e., severe but of short duration) adverse effects on human health. TACs include both organic and inorganic chemical substances that may be emitted from a variety of common sources including gasoline stations, motor vehicles, dry cleaners, industrial operations, painting operations, and research and teaching facilities. TACs are different than "criteria" pollutants in that ambient air quality standards have not been established for them, largely because there are hundreds of air toxics and their effects on health tend to be felt on a local scale rather than on a regional basis.

b. Health Effects of Criteria Pollutants

The health effects of the criteria pollutants (i.e., O_3, CO, PM_{10} and $PM_{2.5}$, NO_2, SO_2, and Pb) and TACs are described below.[1] In addition, a list of the harmful effects of each criteria pollutant is provided in Table 4.2.1, Summary of Health Effects of Criteria Pollutants.

(1) Ozone

Individuals exercising outdoors, children and people with preexisting lung disease such as asthma and chronic pulmonary lung disease are considered to be the most susceptible sub-groups for ozone effects. Short-term exposures (lasting for a few hours) to ozone 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. Elevated ozone levels are also associated with increased school absences. In recent years, a correlation between elevated ambient ozone levels and increases in daily hospital admission rates, as well as mortality, has also been reported.

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[1] *The descriptions of the health effects of the criteria pollutants are taken from Appendix C (Health Effects of Ambient Air Pollutants) of SCAQMD's "Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning" document.*

Table 4.2.1
Summary of Health Effects of Criteria Pollutants

Pollutants	Primary Health and Welfare Effects
Ozone (O_3)	• Aggravation of respiratory and cardiovascular diseases • Reduced lung function • Increased cough and chest discomfort
Carbon Monoxide (CO)	• Aggravation of some heart disease (angina) • Reduced tolerance for exercise • Impairment of mental function • Impairment of fetal development • Death at high levels of exposure
Fine Particulate Matter (PM_{10} and $PM_{2.5}$)	• Reduced lung function • Aggravation of respiratory and cardio-respiratory diseases • Increases in mortality rate • Reduced lung function growth in children
Nitrogen Dioxide (NO_2)	• Aggravation of respiratory illness
Sulfur Dioxide (SO_2)	• Aggravation of respiratory diseases (asthma, emphysema) • Reduced lung function
Lead (Pb)	• Behavioral and hearing disabilities in children • Nervous system impairment
Source: SCAQMD, Guidance Document for Air Quality Issues in General Plans and Local Planning, 2005.	

An increased risk for asthma has been found in children who participate in multiple sports and live in high ozone communities. Ozone exposure for persons under exercising conditions is known to increase the severity of the above mentioned observed responses. Animal studies suggest that exposures to a combination of pollutants that include ozone may be more toxic than exposure to ozone alone. Although lung volume and resistance changes observed after a single exposure diminish with repeated exposures, biochemical and cellular changes appear to persist, which can lead to subsequent lung structural changes.

(2) Carbon Monoxide

Individuals with a deficient blood supply to the heart are the most susceptible to the adverse effects of CO exposure. The effects observed include earlier onset of chest pain with exercise, and electrocardiograph changes indicative of worsening oxygen supply to the heart.

Inhaled CO has no direct toxic effect on the lungs, but exerts its effect on tissues by interfering with oxygen transport by competing with oxygen to combine with hemoglobin present in the blood to form carboxyhemoglobin (COHb). Hence, conditions with an increased demand for oxygen supply can be adversely affected by exposure to CO. Individuals most at risk include patients with diseases involving heart and blood vessels, fetuses, and patients with chronic hypoxemia (oxygen deficiency) as seen in high altitudes.

Reduction in birth weight and impaired neurobehavioral development has been observed in animals chronically exposed to CO resulting in COHb levels similar to those observed in smokers. Recent studies have found increased risks for adverse birth outcomes with exposure to elevated CO levels. These include pre-term births and heart abnormalities. Additional research is needed to confirm these results.

(3) Particulate Matter

A consistent correlation between elevated ambient fine particulate matter (PM_{10} and $PM_{2.5}$) levels and an increase in mortality rates, respiratory infections, number and severity of asthma attacks and the number of hospital admissions has been observed in different parts of the United States and various areas around the world. In recent years, some studies have reported an association between long-term exposure to air pollution dominated by fine particles and increased mortality, reduction in life-span, and lung cancer.

Daily fluctuations in fine particulate matter concentration levels have also been related to hospital admissions for acute respiratory conditions in children, to school and kindergarten absences, to a decrease in respiratory lung volumes in normal children and to increased medication use in children and adults with asthma. Recent studies show that lung function growth in children is reduced with long-term exposure to particulate matter.

The elderly, people with pre-existing respiratory or cardiovascular disease and children appear to be more susceptible to the effects of PM_{10} and $PM_{2.5}$.

(4) Nitrogen Dioxide

Population-based studies suggest that an increase in acute respiratory illness, including infections and respiratory symptoms in children (not infants), is associated with long-term exposures to NO_2 at levels found in homes with gas stoves, which are higher than ambient levels found in Southern California. Increase in resistance to air flow and airway contraction is observed after short-term exposure to NO_2 in healthy individuals. Larger decreases in lung functions are observed in individuals with asthma or chronic obstructive pulmonary disease (e.g., chronic bronchitis, emphysema) than in healthy individuals, indicating a greater susceptibility of these sub-groups.

In animals, exposure to levels of NO_2 considerably higher than ambient concentrations results in increased susceptibility to infections, possibly due to the observed changes in cells involved in maintaining immune functions. The severity of lung tissue damage associated with high levels of ozone exposure increases when animals are exposed to a combination of O_3 and NO_2.

(5) Sulfur Dioxide

A few minutes exposure to low levels of SO_2 can result in airway constriction in some asthmatics, all of whom are sensitive to its effects. In asthmatics, increase in resistance to air flow, as well as reduction in breathing capacity leading to severe breathing difficulties, are observed after acute exposure to SO_2. In contrast, healthy individuals do not exhibit similar acute responses even after exposure to higher concentrations of SO_2.

Animal studies suggest that despite SO_2 being a respiratory irritant, it does not cause substantial lung injury at ambient concentrations. However, very high levels of exposure can cause lung edema (fluid accumulation), lung tissue damage, and sloughing off of cells lining the respiratory tract.

Some population-based studies indicate that the mortality and morbidity effects associated with fine particles show a similar association with ambient SO_2 levels. In these studies, efforts to separate the effects of SO_2 from those of fine particles have not been successful. It is not clear whether the two pollutants act synergistically or whether one pollutant alone is the predominant factor.

(6) Sulfates

Most of the health effects associated with fine particles and SO_2 at ambient levels are also associated with SO_4. Thus, both mortality and morbidity effects have been observed with an increase in ambient SO_4 concentrations. However, efforts to separate the effects of SO_4 from the effects of other pollutants generally have not been successful.

Clinical studies of asthmatics exposed to sulfuric acid suggest that adolescent asthmatics are possibly a subgroup susceptible to acid aerosol exposure. Animal studies suggest that acidic particles such as sulfuric acid aerosol and ammonium bisulfate are more toxic than non-acidic particles like ammonium sulfate. Whether the effects are attributable to acidity or to particles remains unresolved.

(7) Lead

Fetuses, infants, and children are more sensitive than others to the adverse effects of lead exposure. Exposure to low levels of lead can adversely affect the development and function of the central nervous system, leading to learning disorders, distractibility, inability to follow simple commands, and lower intelligence levels. In adults, increased lead levels are associated with increased blood pressure.

Lead poisoning can cause anemia, lethargy, seizures and death. It appears that there are no direct effects of lead on the respiratory system. Lead can be stored in the bone from early-age environmental exposure, and elevated blood lead levels can occur due to the breakdown of bone tissue during pregnancy, hyperthyroidism (increased secretion of hormones from the thyroid gland) and osteoporosis (breakdown of bony tissue). Fetuses and breast-fed babies can be exposed to higher levels of lead because of previous environmental lead exposure of their mothers.

(8) Toxic Air Contaminants

TACs are a broad class of compounds known to cause or contribute to cancer or non-cancer health effects such as birth defects, genetic damage, and other adverse health effects. As discussed previously, effects from TACs may be both chronic and acute on human health. Acute health effects are attributable to sudden exposure to high quantities of air toxics. These effects include nausea, skin irritation, respiratory illness, and, in some cases, death. Chronic health effects can result from low-dose, long-term exposure from routine releases of air toxics. The effect of major concern for this type of exposure is cancer, which typically requires a period of 10-30 years after exposure to develop.

TACs are found in ambient air, especially in urban areas, and are caused by industry, agriculture, fuel combustion, and commercial operations (e.g., dry cleaners). TACs are typically found in low concentrations, even near their source (e.g., benzene near a freeway). Because chronic exposure can result in adverse health effects, TACs are regulated at the regional, state, and federal level.

Diesel exhaust is the predominant TAC in urban air and is estimated to represent about two-thirds of the cancer risk from TACs (based on the statewide average). According to the California Air Resources Board (CARB), diesel exhaust is a complex mixture of gases, vapors, and fine particles. This complexity makes the evaluation of health effects of diesel exhaust a complex scientific issue. Some of the chemicals in diesel exhaust, such as benzene and formaldehyde, have been previously identified by the CARB as TACs, and are listed as carcinogens either under the State's Proposition 65 or under the federal Hazardous Air Pollutants programs. The United States Environmental Protection Agency (U.S. EPA) has adopted Ultra Low Sulfur Diesel (ULSD) fuel standards that went into effect in June 2006 in an effort to reduce diesel particulate matter. As of June 1, 2006, refiners and importers nationwide have been required by the U.S. EPA to ensure that at least 80 percent of the volume of the highway diesel fuel they produce or import would be ULSD-compliant. As of December 10, 2010, only ULSD fuel is available for highway use nationwide. In California, which was an early adopter of ULSD fuel and engine technologies, 100 percent of the diesel fuel sold – downstream from refineries, up to and including fuel terminals that store diesel fuel – was ULSD fuel since July 15, 2006. Since September 1, 2006, all diesel fuel offered for sale at retail outlets in California have been ULSD fuel.

c. Regulatory Framework

Air quality in the United States is governed by the Federal Clean Air Act (CAA). In addition to being subject to the requirements of the CAA, air quality in California is also governed by more stringent regulations under the California Clean Air Act (CCAA). At the federal level, the CAA is administered by the U.S. EPA. In California, the CCAA is administered by the CARB at the state level and by the Air Quality Management Districts at the regional and local levels.

Air quality within the Basin is addressed through the efforts of various federal, state, regional, and local government agencies. These agencies work jointly, as well as individually, to improve air quality through legislation, regulations, planning, policy-making, education, and a variety of programs. The agencies responsible for improving the air quality within the Basin are discussed below.

(1) Federal Standards

(a) Unites States Environmental Protection Agency (U.S. EPA)

The U.S. EPA is responsible for setting and enforcing the federal ambient air quality standards for atmospheric pollutants. It regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, and certain locomotives. The U.S. EPA also has jurisdiction over emissions sources outside state waters (outer continental shelf) and establishes various emissions standards for vehicles sold in states other than California.

As part of its enforcement responsibilities, the U.S. EPA requires each state with non-attainment areas to prepare and submit a State Implementation Plan (SIP) that demonstrates the means to attain the federal standards. The SIP must integrate federal, state, and local plan components and regulations to identify specific measures to reduce pollution, using a combination of performance standards and market-based programs within the timeframe identified in the SIP.

(2) State Standards

(a) California Air Resources Board (CARB)

The CARB, a part of the California Environmental Protection Agency, is responsible for the coordination and administration of both federal and state air pollution control programs within California. In this capacity, the CARB conducts research, sets California Ambient Air Quality Standards, compiles emission inventories, develops suggested control measures, and provides oversight of local programs. The CARB establishes emissions standards for motor vehicles sold in California, consumer products (such as hair spray, aerosol paints, and lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions.

Off-road diesel vehicles, which include construction equipment, are also regulated by the CARB for both in-use (existing) and new engines. Four sets of standards implemented by the CARB for new off-road diesel engines, known as Tiers. Tier 1 standards began in 1996. Tier 2 and 3 were adopted in 2000 and were more stringent than the first tier. Tier 2 and 3 standards were completely phased in by 2006 and 2008, respectively. On December 9, 2004, the CARB adopted the Tier 4 or fourth phase of emission standards for late model year engines. These emission standards are nearly identical to those finalized by the US EPA in May 2004. These standards will reduce PM and NO_X emissions 90 percent below current levels beginning in 2011.

Since off-road vehicles that are used in construction and other related industries can last 30 years or longer, most of those that are in service today are still part of an older fleet that do not have emission controls. As such, the CARB approved, on July 26, 2007, a regulation to reduce emissions from existing (in-use) off-road diesel vehicles that are used in construction and other industries. This regulation was approved by the California Office of Administrative Law (OAL) on May 16, 2008 and became effective on June 15, 2008. This regulation includes an anti-idling limit of five minutes for all off-road vehicles 25 horsepower and up. The regulation also establishes emission rates targets for the off-road vehicles that decline over time to accelerate turnover to newer, cleaner engines and require exhaust retrofits to meet these targets. The regulation on the larger fleets started in 2010, while medium and small fleet requirements will achieve compliance in 2013 and 2015, respectively.

(3) Regional Standards

(a) Southern California Association of Governments

The Southern California Association of Governments (SCAG) is a council of governments for Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura Counties. It is a regional planning agency and serves as a forum for regional issues relating to transportation, the economy and community development, and the environment.

Although SCAG is not an air quality management agency, it is responsible for developing transportation, land use, and energy conservation measures that affect air quality. SCAG's Regional Comprehensive Plan and Guide (RCPG) provides growth forecasts that are used in the development of air quality-related land use and transportation control strategies by the SCAQMD. The RCPG is a framework for decision-making for local governments, assisting them in meeting federal and state mandates for growth management, mobility, and environmental standards, while maintaining consistency with regional goals regarding growth and changes through the year 2015, and beyond. Policies within the RCPG include consideration of air quality, land use, transportation, and economic relationships by all levels of government.

(b) South Coast Air Quality Management District (SCAQMD)

The SCAQMD is the agency principally responsible for comprehensive air pollution control in the Basin. To that end, the SCAQMD, a regional agency, works directly with SCAG, county transportation commissions and local governments, and cooperates actively with all State and federal government agencies. The SCAQMD develops rules and regulations, establishes permitting requirements, inspects emissions sources, and provides regulatory enforcement through such measures as educational programs or fines, when necessary.

The SCAQMD is directly responsible for reducing emissions from stationary (area and point), mobile, and indirect sources to meet federal and state ambient air quality standards. It has responded to this requirement by preparing a series of Air Quality Management Plans (AQMPs). The most recent of these was adopted by the Governing Board of the SCAQMD on June 1, 2007. This AQMP, referred to as the 2007 AQMP, was prepared to comply with the federal and State Clean Air Acts and amendments, to accommodate growth, to reduce the high levels of pollutants in the Basin, to meet federal and state air quality standards, and to minimize the fiscal impact that pollution control measures have on the local economy. The 2007 AQMP identifies the control measures that will be implemented over a 20-year horizon to reduce major sources of pollutants. Implementation of control measures established in the previous AQMPs has substantially decreased the population's exposure to unhealthful levels of pollutants, even while substantial population growth has occurred within the Basin. As discussed on pages 2 through 6 of the 2007 AQMP, levels of ambient pollutants monitored in the Basin have decreased substantially since 1985.

The future air quality levels projected in the 2007 AQMP are based on several assumptions. For example, the SCAQMD assumes that general new development within the Basin will occur in accordance with population growth and transportation projections identified by SCAG in its most current version of the RCPG. The 2007 AQMP also assumes that general development projects will include feasible strategies (i.e., mitigation measures) to reduce emissions generated during construction and operation in accordance with SCAQMD and local jurisdiction regulations, which are designed to address air quality impacts and pollution control measures.

The 2007 AQMP incorporates new scientific data, primarily in the form of updated emissions inventories, ambient measurements, new meteorological episodes, and new air quality modeling. General development projects would be affected in the form of any applicable rules and regulations – if any – that are adopted as a result of the 2007 AQMP.

The SCAQMD has prepared the *CEQA Air Quality Handbook* to assist lead agencies, as well as consultants, project proponents, and other interested parties, in evaluating potential air quality impacts of projects and plans proposed in the Basin.

(4) Local Standards

(a) City of Malibu General Plan

The City's General Plan was adopted in 1996 and last revised in 2004. The General Plan is primarily a policy document that sets goals and policies concerning the community and gives direction to growth and development. In addition, it outlines the programs that were developed to accomplish the goals and policies of the general plan. California Government Code Section 65302(g)(1) requires each local government to prepare and adopt a Safety Element as a component of its General Plan. This involves identifying and mapping natural hazards and the administration of zoning and subdivision regulations that account for the safety hazards. The purpose of the Safety Element is to create a cohesive guide consisting of specific policy-oriented implementation measures. The policies and implementation measures contained in this element provide direction and a course of possible future action for the various City departments. Below is a list of the City's goals, objectives, and policies related to air quality, as identified in the Safety Element of the City of Malibu General Plan.

- ***Safety Policy 1.1.6:*** The City shall reduce air pollution and improve Malibu's air quality;
- ***Implementation Measure 30:*** Work with regional agencies to implement the provisions of the South Coast Air Quality Management Plan;
- ***Implementation Measure 31:*** Promote public education and awareness of air quality;
- ***Implementation Measure 32:*** Work with other agencies to reduce local sources of air pollution such as dust, smoke, and vehicle emissions; and
- ***Implementation Measure 33:*** Evaluate impacts on air quality in connection with development proposals.

(b) Santa Monica Community College District

Local jurisdictions, such as the District, have the authority and responsibility to reduce air pollution through its police power and decision-making authority. Specifically, the District is responsible for the assessment and mitigation of air emissions resulting from its land use decisions.

d. Ambient Air Quality Conditions

(1) Existing Regional Air Quality

Ambient air quality is determined primarily by the type and amount of pollutants emitted into the atmosphere, as well as the size, topography, and meteorological conditions of a geographic area. The Basin has low mixing heights and light winds, which help to accumulate air pollutants. The most current average daily emissions inventory for the entire Basin and the Los Angeles County portion of the Basin is summarized in Table 4.2.2, 2012 Estimated Average Daily Regional Emissions.[2] As shown, exhaust emissions from mobile sources generate the majority of ROG, CO, NO_x, and SO_x in the Basin and the Los Angeles County portion of the Basin. Area-wide sources generate the most airborne particulates (i.e., PM_{10} and $PM_{2.5}$) in both the Basin and Los Angeles County.

Table 4.2.2
2012 Estimated Average Daily Regional Emissions

Emissions Source	Emissions in Tons per Day					
	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
South Coast Air Basin						
Stationary (Point) Sources	104.3	48.5	55.2	10.1	20.8	13.6
Area-wide Sources	122.4	21.8	102.2	1.0	96.1	32.4
Mobile Sources	239.8	441.8	2,114.40	6.6	36.7	22.4
Natural (non-anthropogenic)	164.5	4.4	301.1	2.3	30.1	25.5
Total Emissions	631.0	516.5	2,572.90	20.0	183.7	93.9
Los Angeles County - South Coast Air Basin						
Stationary (Point) Sources	61.5	35.8	40.9	9.2	12.6	9.3
Area-wide Sources	71.2	12.8	43.8	0.4	42.1	16.1
Mobile Sources	137.2	265.3	1,259.70	5.40	21.2	12.9
Natural (non-anthropogenic)	62.2	2.3	166	1.3	16.5	14.0
Total Emissions	332.1	316.2	1510.4	16.3	92.4	52.3

Sources: California Air Resources Board, Almanac Emission Projection Data (published in 2013), website: http://www.arb.ca.gov/ei/emissiondata.htm, accessed: November 2014.

Measurements of ambient concentrations of the criteria pollutants are used by the U.S. EPA and the CARB to assess and classify the air quality of each air basin, county, or, in some cases, a specific urbanized area. The classification is determined by comparing actual monitoring data with national and state standards. If a pollutant concentration in an area is lower than the standard, the area is classified as being in “attainment.” If the pollutant exceeds the standard, the area is classified as a “non-attainment” area. If there is not enough data available to determine whether the standard is exceeded in an area, the area is designated “unclassified.”

[2] *2012 data (published in 2013) is the most current estimated annual average emissions data published by CARB. website: http://www.arb.ca.gov/ei/emissiondata.htm, accessed November 2014.*

The U.S. EPA and the CARB use different standards for determining whether the Basin is in attainment. Federal and state standards are summarized in Table 4.2.3, Ambient Air Quality Standards. The attainment status for the Los Angeles County portion of the Basin with regard to the national ambient air quality standards (NAAQS) and California ambient air quality standards (CAAQS) is shown in Table 4.2.4, Attainment Status for the South Coast Air Basin (Los Angeles County Portion). The California Clean Air Act designates air basins as either in attainment or non-attainment for each state air quality standard.

Table 4.2.3
Ambient Air Quality Standards

Air Pollutant	Averaging Time	State Standard	Federal Standard
Ozone (O_3)	1 Hour	0.09 ppm	--
	8 Hour	0.07 ppm	0.075 ppm
Carbon Monoxide (CO)	1 Hour	20.0 ppm	35.0 ppm
	8 Hour	9.0 ppm	9.0 ppm
Nitrogen Dioxide (NO_2)	1 Hour	0.18 ppm	0.10 ppm
	Annual	0.030 ppm	0.053 ppm
Sulfur Dioxide (SO_2)	1 Hour	0.25 ppm	0.075 ppm [a]
	24 Hour	0.04 ppm	-- [b]
Lead	30 Day	1.5 $\mu g/m^3$	--
	Calendar Quarter Year	--	1.5 $\mu g/m^3$
	Rolling 3-Month Average	--	0.15 $\mu g/m^3$
Particulate Matter 10 (PM_{10})	24 Hour	50 $\mu g/m^3$	150 $\mu g/m^3$
	Annual	20 $\mu g/m^3$	--
Particulate Matter 2.5 ($PM_{2.5}$)	24 Hour	--	35 $\mu g/m^3$
	Annual	12 $\mu g/m^3$	15 $\mu g/m^3$

[a] *An hourly air quality standard for sulfur dioxide at 0.075 parts per million was established by the USEPA in June 2010.*

[b] *The previous 24-hour air quality standard for sulfur dioxide of 0.14 parts per million has been revoked by the USEPA effective August 23, 2010.*

Source: California Air Resources Board, Ambient Air Quality Standards, website: http://www.arb.ca.gov/research/aaqs/aaqs2.pdf, accessed November 2014.

Table 4.2.4
Attainment Status for the South Coast Air Basin (Los Angeles County Portion)

Pollutant	Attainment Status	
	NAAQS	CAAQS
Carbon Monoxide	Attainment	Attainment
Nitrogen Dioxide	Unclassified/Attainment	Non-attainment
Ozone	Non-attainment	Non-attainment
PM_{10}	Non-attainment	Non-attainment
$PM_{2.5}$	Non-attainment	Non-attainment
Sulfur Dioxide [a]	Attainment	Attainment
Lead	Attainment [b]	Non-attainment

[a] *As of June 2010, the USEPA has established an hourly air quality standard for sulfur dioxide and revoked the previous 24-hour air quality standard. With these changes, the U.S. EPA expects to identify or designate areas not meeting the new standard by June 2012.*

[b] *The U.S. EPA is considering a non-attainment designation for lead in the LA County portion of the Basin.*

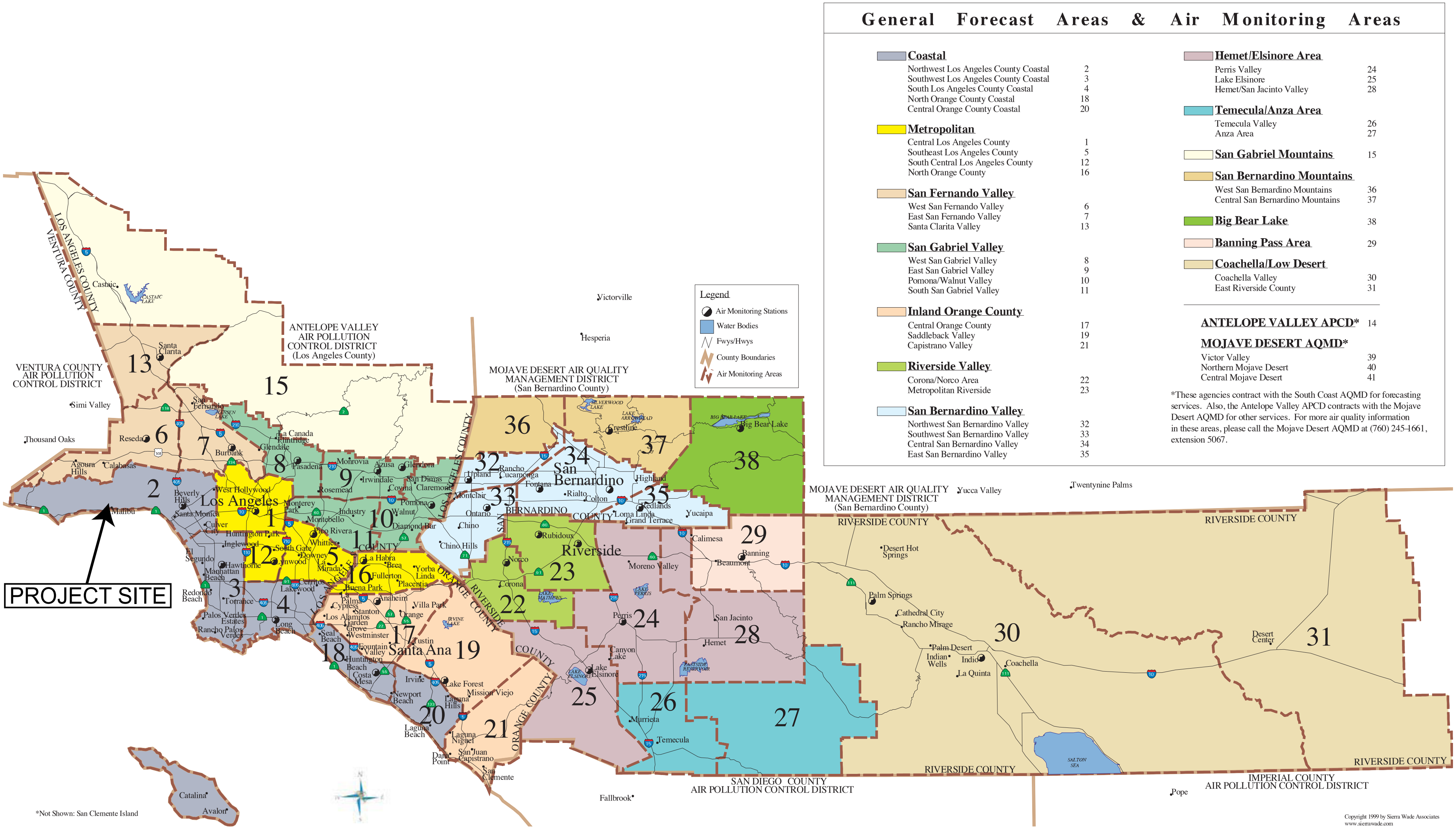
Source: California Air Resources Board: State Area Designation Maps, December 2009, website: http://www.arb.ca.gov/desig/adm/adm.htm, accessed November 2014.

(2) Existing Local Air Quality

The SCAQMD divides the Basin into 38 source receptor areas (SRAs) in which 38 monitoring stations operate to monitor the various concentrations of air pollutants in the region. As shown in Figure 4.2.1, SRA Location Map, the Project Site is located within SRA 2, which covers the Northwest Los Angeles County Coastal area. SCAQMD Station No. 091 collects ambient air quality data for SRA 2. This station currently monitors emission levels of O_3, CO, NO_2, Total Suspended Particulates (TSP), and Sulfates. Station No. 91 does not monitor for PM_{10}, $PM_{2.5}$, Lead, and SO_2. Table 4.2.5, Summary of Ambient Air Quality in the Project Vicinity, identifies the national and state ambient air quality standards for the relevant air pollutants, along with the ambient pollutant concentrations that were measured at the SCAQMD Station No. 91 from 2008 to 2010 (2010 is the latest year for available data).[3]

According to the air quality data shown in Table 4.2.5, the national 1-hour ozone standard was last exceeded for 1 day in the past five years (in 2009). The state 1-hour ozone standard was exceeded 10 days in the past five years (6 days in 2009, 2 days in 2010 and 2 days in 2011). The state 1-hour ozone standard was not exceeded in 2012 or 2013. The national 8-hour ozone standard (0.075 ppm) was exceeded on 4 days in the past five years (3 days in 2009 and 1 day in 2010). The national 8-hour ozone standard was not exceeded on any day in 2011, 2012, or 2013. The state 8-hour ozone standard has been exceeded on 11 days in the past five years (5 days in 2009, 4 days in 2010, 0 days in 2011, 1 day in 2012, and 1 day in 2013). The annual national (0.0534 ppm) or state (0.030 ppm) standards for NO_2 have not been exceeded in any of the past five years (from 2009 to 2013).

[3] *The most current air quality data available pertaining to ambient pollutant concentrations over a three-year period provided by the SCAQMD is from 2008 to 2010.*



Source: South Coast Air Quality Management District.

PARKER ENVIRONMENTAL CONSULTANTS

Figure 4.2.1

SCAQMD Source Receptor Areas

Table 4.2.5
Summary of Ambient Air Quality in the Project Vicinity

Air Pollutants Monitored Within SRA 2 (Northwest Los Angeles County Coastal)	Year				
	2009	2010	2011	2012	2013
Ozone (O_3)					
Maximum 1-hour concentration measured	0.131 ppm	0.099 ppm	0.098 ppm	0.093 ppm	0.088 ppm
Number of days exceeding national 0.124 ppm 1-hour standard	1	0	0	0	0
Number of days exceeding State 0.09 ppm 1-hour standard	6	2	2	0	0
Maximum 8-hour concentration measured	0.094 ppm	0.078 ppm	0.068 ppm	0.073 ppm	0.075 ppm
Number of days exceeding national 0.075 ppm 8-hour standard (revised 8-hour ozone standard effective May 27, 2008)	3	1	0	0	0
Number of days exceeding State 0.07 ppm 8-hour standard (established effective May 17, 2006)	5	4	0	1	1
Carbon Monoxide (CO)					
Maximum 1-hour concentration measured	2.0 ppm	2.0 ppm	n/a	n/a	n/a
Maximum 8-hour concentration measured	1.5 ppm	1.4 ppm	1.3 ppm	1.9 ppm	1.3 ppm
Nitrogen Dioxide (NO_2)					
Maximum 1-hour concentration measured	0.17 ppm	0.0708 ppm	0.0813 ppm	0.0613 ppm	.0512 ppm
Annual average	0.0170 ppm	0.0156 ppm	0.0139 ppm	0.0137 ppm	.0145 ppm
Does measured annual average exceed national 0.0534 ppm annual average standard?	No	No	No	No	No
Does measured annual average exceed State 0.030 ppm annual average standard?	No	No	No	No	No
Total Suspended Particulates (TSP)					
Maximum 24-hour concentration measured	99 $\mu g/m^3$	82 $\mu g/m^3$	155 $\mu g/m^3$	128 $\mu g/m^3$	--
Annual Arithmetic Mean (AAM)	50.8 $\mu g/m^3$	40.8 $\mu g/m^3$	49.3 $\mu g/m^3$	47.0 $\mu g/m^3$	--

Note: ppm = Parts by volume per million of air.
$\mu g/m^3$=Micrograms per cubic meter.
n/a = Data not available or not collected by the District.
-- = Pollutant not monitored.
Source: South Coast Air Quality Management District, Historical Data by Year, website: http://www.aqmd.gov/smog/historicaldata.htm, November 2014. Note: SRA 2 (Station No. 091) does not monitor for PM_{10}, $PM_{2.5}$, Lead, and SO_2.

(a) Existing Toxic Air Contaminants (TACs)

The SCAQMD released the final report of the third round of its Basin-wide Multiple Air Toxics Exposure Study (MATES III) in September 2008. The study was aimed at estimating the cancer risk from TAC emissions throughout the Basin by conducting a monitoring program, an updated emissions inventory of TACs, and a modeling effort to characterize health risks in the Basin. MATES III focused on carcinogenic risk from TACs, and did not estimate other health effects from particulate exposures.[4]

[4] *Mortality and other health effects form particulate exposure were conducted as part of the 2007 Air Quality Management Plan.*

Based on average measurements at ten fixed monitoring sites, the study estimated 70-year lifetime carcinogenic risk from TACs in the Basin to be approximately 1,200 in one million, with estimates at individual monitoring sites ranging from 870 to 1,400 in a million. Mobile sources (e.g., cars, trucks, trains, ships, aircraft, etc.) represented approximately 94 percent of the cancer risk with the remaining 6 percent attributed to toxics emitted from stationary sources including industries and businesses such as dry cleaners and chrome plating operations. Approximately 84 percent of the overall cancer risk was attributed to diesel particulate emissions.

As part of MATES III, the SCAQMD prepared an interactive map that shows estimates of cancer risks in the Basin from ambient levels of TACs based on the modeling effort to provide insight into relative risks. The map reports estimated cancer risks for discrete two-kilometer-by-two-kilometer grid cells. The cancer risk estimates reported here should not be interpreted as actual rates of disease in the exposed population, but rather as estimates of potential risk, based on a number of conservative assumptions. In general, the MATES III Study indicates that the highest cancer risks from TACs are found near shipping ports, goods movement sources, and near freeways and other transportation corridors.[5] According to the MATES III Carcinogenic Risk Map, the Project Site is in a grid cell with a modeled estimated risk of 363 in one million.

(b) Existing Project Site Emissions

The Project Site is currently improved with the former Los Angeles County Sheriff's Station, which was decommissioned in the early 1990s. The existing Sheriff's Station building includes approximately 23,882 square feet of developed floor area, of which approximately 7,279 square feet is located below grade in a basement level and approximately 16,603 square feet is located at-grade. Because the former Sheriff's Station has been decommissioned for more than 20 years and the building is currently vacant, the existing Project Site is considered to have zero existing air quality emissions for purposes of this analysis.

3. ENVIRONMENTAL IMPACTS

a. Methodology

This analysis focuses on the nature and magnitude of the change in the air quality environment due to implementation of the Project. Air pollutant emissions associated with the Project would result from Project operations and from Project-related traffic volumes. Construction activities would also generate air pollutant emissions at the Project Site and on roadways resulting from construction-related traffic. The net increase in Project Site emissions generated by these activities and other secondary sources have been quantitatively estimated and compared to thresholds of significance recommended by the SCAQMD (see Project Impacts subheading, below).

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[5] *The MATES III study focuses on the carcinogenic risk from exposure to air toxics, and does not estimate mortality or other health effects from particulate exposures.*

(1) Construction Emissions

The regional construction emissions associated with the Project were calculated using the California Emissions Estimator Model (CalEEMod Version 2013.2.2). CalEEMod was developed in collaboration with the air districts of California as a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and greenhouse gas (GHG) emissions associated with both construction and operations from a variety of land use projects.

Construction activities associated with demolition, site preparation, grading, and building construction would generate pollutant emissions. Specifically, these construction activities would temporarily create emissions of dusts, fumes, equipment exhaust, and other air contaminants. These construction emissions were compared to the thresholds established by the SCAQMD as shown in Table 4.2.6. It was assumed that all of the construction equipment used would be diesel-powered.

In addition to the SCAQMD's regional significance thresholds, the SCAQMD has established localized significance criteria in the form of ambient air quality standards for criteria pollutants (Table 4.2.6). To minimize the need for detailed air quality modeling to assess localized impacts, SCAQMD developed mass-based localized significance thresholds (LSTs) that are the amount of pounds of emissions per day that can be generated by a project that would cause or contribute to adverse localized air quality impacts. These localized thresholds, which are found in the mass rate look-up tables in the "Final Localized Significance Threshold Methodology" document prepared by the SCAQMD,[6] apply to projects that are less than or equal to five acres in size and are only applicable to the following criteria pollutants: NO_x, CO, PM_{10}, and $PM_{2.5}$. LSTs represent the maximum emissions from a project that are not expected to cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standards, and are developed based on the ambient concentrations of that pollutant for each SRA. In terms of NO_x emissions, the two principal species of NO_x are nitric oxide (NO) and nitrogen dioxide (NO_2), with the vast majority (95 percent) of the NO_x emissions being comprised of NO. However, because adverse health effects are associated with NO_2, the analysis of localized air quality impacts associated with NO_x emissions is focused on NO_2 levels. NO is converted to NO_2 by several processes, the two most important of which are (1) the reaction of NO with ozone, and (2) the photochemical reaction of NO with hydrocarbons. When modeling NO_2 emissions from combustion sources, the SCAQMD assumes that the conversion of NO to NO_2 is complete at a distance of 5,000 meters from the source. For PM_{10} LSTs, the thresholds were derived based on requirements in SCAQMD Rule 403 — Fugitive Dust. For $PM_{2.5}$ LSTs, the thresholds were derived based on a general ratio of $PM_{2.5}$ to PM_{10} for both fugitive dust and combustion emissions.

The Project Site is approximately 2.94 acres in size and thus the resulting on-site construction emissions generated for each construction phase were analyzed against the applicable LST for each phase.

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6 *SCAQMD, Final Localized Significance Threshold Methodology, June 2003, Revised July 2008.*

The SCAQMD considers a sensitive receptor to be a receptor where it is possible that an individual could remain for 24 hours. Thus, according to the SCAQMD, the LSTs for PM_{10} and $PM_{2.5}$, which are based on a 24-hour averaging period, would be appropriate to evaluate the localized air quality impacts of a project on nearby sensitive receptors. Additionally, since a sensitive receptor is considered to be present onsite for 24 hours, LSTs based on shorter averaging times, such as the one-hour NO_2 or the 1-hour and 8-hour CO ambient air quality standards, would also apply when evaluating localized air quality impacts on sensitive receptors. However, LSTs based on shorter averaging periods, such as the NO_2 and CO LSTs, are applied to receptors such as industrial or commercial facilities since it is reasonable to assume that workers at these sites could be present for periods of one to eight hours.[7] Therefore, this analysis evaluates localized air quality impacts from construction activities associated with the Project on sensitive receptors for NO_2, CO, PM_{10}, and $PM_{2.5}$, and on "non-sensitive" receptors (e.g., industrial or commercial facilities) for NO_2 and CO.

(2) Operational Emissions

Operational emissions associated with the Project were calculated using CalEEMod Version 2013.2.2 and the information provided in the traffic study prepared for the Project. Operational emissions associated with the Project would be comprised of mobile source emissions and area source emissions. Mobile source emissions are generated by the increase in motor vehicle trips to and from the Project Site associated with operation of the Project. Area source emissions are generated by natural gas consumption for space and water heating, and landscape maintenance equipment. To determine if a regional air quality impact would occur, the increase in emissions would be compared with the SCAQMD's recommended regional thresholds for operational emissions as shown in Table 4.2.6.

As discussed above, the SCAQMD has developed LSTs that are based on the amount of pounds of emissions per day that can be generated by a project that would cause or contribute to adverse localized air quality impacts. However, because the LST methodology is applicable to projects where emission sources occupy a fixed location, LST methodology would typically not apply to the operational phase of this Project because emissions are primarily generated by mobile sources traveling on local roadways over potentially large distances or areas. LSTs would apply to the operational phase of a project, if the project includes stationary sources or attracts mobile sources that may spend long periods queuing and idling at the site. For example, the LST methodology could apply to operational projects such as warehouse/transfer facilities.[8] Because the Project would not include these types of uses, an operational analysis against the LST methodology is not applicable and thus has not been included in this analysis.

[7] *Ibid.*

[8] *SCAQMD, Sample Construction Scenarios for Projects Less than Five Acres in Size, February 2005, page 1-3.*

b. Thresholds of Significance

(1) Appendix G of the State CEQA Guidelines

In accordance with guidance provided in Appendix G to the State CEQA Guidelines, the Project would have a significant impact on air quality if it would cause any of the following to occur:

(a) Conflict with or obstruct implementation of the applicable air quality plan;

(b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation;

(c) 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 standard (including release in emissions which exceed quantitative thresholds for ozone precursors);

(d) Expose sensitive receptors to substantial pollutant concentrations; or

(e) Create objectionable odors affecting a substantial number of people.

(2) Consistency with the Applicable AQMP

The SCAQMD has adopted criteria for consistency with regional plans and the regional AQMP in its CEQA Air Quality Handbook. Specifically, the indicators of consistency are: 1) whether the project would increase the frequency or severity of existing air quality violations or cause or contribute to new air quality violations; and 2) whether the project would exceed the assumptions utilized in preparing the AQMP.

(3) Violation of Standards or Substantial Contribution to Air Quality Violations

As the agency principally responsible for comprehensive air pollution control in the Basin, the SCAQMD recommends that projects should be evaluated in terms of air pollution control thresholds established by the SCAQMD and published in the CEQA *Air Quality Handbook*. These thresholds were developed by the SCAQMD to provide quantifiable levels to which projects can be compared. The most current significance thresholds are shown in Table 4.2.6, SCAQMD Air Quality Significance Thresholds and are used in this analysis.

(4) Cumulatively Considerable Net Increase of Criteria Pollutants

The SCAQMD's *CEQA Air Quality Handbook* identifies several methods to determine the cumulative significance of land use projects (i.e., whether the contribution of a project is cumulatively considerable). However, the SCAQMD no longer recommends the use of these methodologies. Instead, the SCAQMD recommends that any construction-related emissions and operational emissions from individual development projects that exceed the project-specific mass daily emissions thresholds identified above also be considered cumulatively considerable.[9] The SCAQMD neither recommends quantified analyses of the emissions generated by a set of cumulative development projects nor provides thresholds of significance to be used to assess the impacts associated with these emissions.

(5) Exposure of Sensitive Receptors to Substantial Pollutant Concentrations

The SCAQMD currently recommends that impacts to sensitive receptors be considered significant when a project generates localized pollutant concentrations of NO_2, CO, PM_{10}, or $PM_{2.5}$ at sensitive receptors near a Project Site that exceed the localized pollutant concentration thresholds or when a project's traffic causes CO concentrations at sensitive receptors located near congested intersections to exceed the national or state ambient air quality standards. The roadway CO thresholds would also apply to the contribution of emissions associated with cumulative development.

(6) Exposure to Objectionable Odors

A significant impact may occur if objectionable odors occur that would adversely impact sensitive receptors. Odors are typically associated with industrial projects involving the use of chemicals, solvents, petroleum products, and other strong-smelling elements used in manufacturing processes, as well as sewage treatment facilities and landfills.

c. Project Impacts

As discussed in Section 2.0, Project Description, the Proposed Project will include the demolition of the existing Sheriff's Station building, and the new construction of a 2-story above-grade, approximately 25,310 square foot educational facility including an approximately 5,640 square foot Community Sheriff's Substation and Emergency Operations and Planning Center on the ground floor. The Proposed Project would yield a net increase of 1,428 square feet as compared to the size of the existing Sheriff's Station building.

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9 *White Paper on Regulatory Options for Addressing Cumulative Impacts from Air Pollution Emissions, SCAQMD Board Meeting, September 5, 2003, Agenda No. 29, Appendix D, p. D-3.*

Table 4.2-6
SCAQMD Air Quality Significance Thresholds

Mass Daily Thresholds a		
Pollutant	**Construction** [b]	**Operation** [c]
NOx	100 pounds/day	55 pounds/day
VOC	75 pounds/day	55 pounds/day
PM_{10}	150 pounds/day	150 pounds/day
$PM_{2.5}$	55 pounds/day	55 pounds/day
SO_x	150 pounds/day	150 pounds/day
CO	550 pounds/day	550 pounds/day
Pb	3 pounds/day	3 pounds/day
Toxic Air Contaminants and Odor Thresholds		
TACs (including carcinogens and non-carcinogens)	Maximum Incremental Cancer Risk ≥ 10 in 1 million Cancer Burden > 0.5 excess cancer cases (in areas ≥ 1 in 1 million) Hazard Index ≥ 1.0 (project increment)	
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402	
GHG	10,000 MT/yr CO2eq for industrial facilities	
Ambient Air Quality for Criteria Pollutants [d]		
NO_2 1-hour average annual arithmetic mean	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 0.18 ppm (state) 0.03 ppm (state) and 0.534 ppm (federal)	
PM_{10} 24-hour average annual average	10.4 $\mu g/m^3$ (construction)[e] & 2.5 $\mu g/m^3$ (operation) 1.0 $\mu g/m^3$	
$PM_{2.5}$ 24-hour average	10.4 $\mu g/m^3$ (construction)[e] & 2.5 $\mu g/m^3$ (operation)	
SO_2 1-hour average 24-hour average	0.25 ppm (state) & 0.075 ppm federal – 99th percentile) 0.04 $\mu g/m^3$ (State)	
Sulfate 24-hour average	25 $\mu g/m^3$ (state)	
CO 1-hour average 8-hour average	SCAQMD is in attainment; project is significant if it causes or Contributes to an exceedance of the following attainment standards: 20 ppm (state) and 35 ppm (federal) 9.0 ppm (state/federal)	
Lead 30-day Average Rolling 3-Month Average	1.5 $\mu g/m^3$ (state) 0.15 $\mu g/m^3$ (federal)	

Notes: ppm = parts per million by volume; $\mu g/m^3$ = micrograms per cubic meter
[a] Source: SCAQMD CEQA Handbook (SCAQMD, 1993).
[b] Construction thresholds apply to both the South Coast Air Basin and Coachella Valley (Salton Sea and Mojave Desert Air Basins).
[c] For Coachella Valley, the mass daily thresholds for operation are the same as the construction thresholds.
[d] Ambient air quality thresholds for criteria pollutants based on SCQMD Rule 1303, Table A-2 unless otherwise stated.
[e] Ambient air quality threshold based on SCAQMD Rule 403.
Source: SCAQMD Air Quality Significance Thresholds, website: http://www.aqmd.gov/ceqa/handbook/signthres.pdf, Revision March 2015.

(1) AQMP Consistency

This analysis evaluates the two criteria for consistency with regional plans and the regional AQMP adopted by the SCAQMD:

1) Will the Project increase the frequency or severity of existing air quality violations or cause or contribute to new air quality violations? and

2) Will the Project exceed the assumptions utilized in preparing the AQMP?

According to the SCAQMD CEQA Air Quality Handbook, the consistency criteria for the first criterion pertains to pollutant concentrations rather than to total regional emissions.[10] As such, an analysis of the Proposed Project's pollutant emissions relative to localized pollutant concentrations is used as the basis for evaluating Project consistency with the first criterion. As discussed below, the SCAQMD's localized thresholds for NO_x, CO, PM_{10}, and $PM_{2.5}$ would not be exceeded during Proposed Project construction. In addition, the Project would not have the potential to cause or contribute to a localized CO hotspot at local intersections. Overall, as none of the criteria pollutant emissions would exceed the SCAQMD's significance thresholds, the Proposed Project meets the first criterion for determining project consistency with the 2012 AQMP.

With regards to the second criterion, projects that are consistent with the regional population, housing, and employment forecasts identified by SCAG are considered to be consistent with the AQMP growth projections, since the forecast assumptions by SCAG forms the basis of the land use and transportation control portions of the AQMP. The Proposed Project would include the development of 19,670 square feet of community college uses and a 5,640 square foot Sheriff's Substation and thus would have no impact with respect population and housing. Therefore, the Project would not have the potential to be inconsistent with SCAG projections nor would it have the potential to exceed the assumptions utilized in the preparation of the AQMP. Because the Proposed Project would be consistent with the underlying assumptions of the SCAQMD's 2012 AQMP and does not cause or worsen an exceedance of an ambient air quality standard, the Proposed Project is concluded to be consistent with the AQMP and these impacts are less than significant.

(2) Regional Construction Air Quality Impacts

For analytical purposes, it is assumed the construction of the Proposed Project would occur over an approximate 17-month period. The construction process would be divided into the following phases: (1) Demolition, (2) Grading/Site Preparation, and (3) Structural Framing/Building/Coating.

[10] *South Coast Air Quality Management District, CEQA Air Quality Handbook, p. 12-3, 1993.*

Construction of the Proposed Project would require the demolition of approximately 23,882 square feet of existing uses. It is estimated the demolition process would occur over one month. This analysis assumes daily on-site demolition activities would require the following equipment: one concrete/industrial saw, one rubber-tired dozer, and three tractors/loaders/backhoes. For purposes of modeling the emissions associated with this equipment fleet, it was conservatively estimated that each piece of equipment would be operated for 8 hours each day.

The grading and site preparation phase is anticipated to occur over a one-month period immediately following the demolition phase. The Proposed Project would not require the export of soil. This analysis assumes daily grading and site preparation activities would require the following equipment: one grader, one rubber tired dozer, and two tractors/loaders/backhoes. For purposes of modeling the emissions associated with this equipment fleet, it was conservatively estimated that each piece of equipment would be operated for 8 hours each day.

The building construction and finishing phase is estimated to occur over an approximate 16-month period immediately following the completion of the grading and site preparation phase. Upon completion of the proposed structure, architectural coating, finishing, and paving would occur as soon as possible. It is estimated that architectural coatings would occur over the final two months of the building construction phase, and paving would occur during the final month of construction. This analysis assumes the most intensive worst-case maximum daily construction activities would require the following equipment: one crane, two forklifts, one generator, one tractor/loader/backhoe, three welders, one air compressor, one cement/mortar mixer, one paver, one piece of paving equipment, and one roller. For purposes of modeling the emissions associated with this equipment fleet, it was conservatively estimated that each piece of equipment would be operated for 8 hours each day

The analysis of regional daily construction emissions has been prepared utilizing the CalEEMod computer model recommended by the SCAQMD. Table 4.2.7, Estimated Peak Daily Construction Emissions, identifies daily emissions that are estimated to occur on the peak construction day for each of the construction phases, although construction time frames and day-to-day construction activities may vary. These calculations assume that appropriate dust control measures would be implemented as part of the Proposed Project during each phase of development, as required by SCAQMD Rule 403—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. As shown in Table 4.2.7, the peak daily emissions generated during the construction of the Proposed Project would not exceed any of the regional emission thresholds recommended by the SCAQMD. Therefore, regional air quality impacts associated with the Project-related construction emissions would be considered less than significant.

(3) Localized Construction Air Quality Impacts

The daily on-site construction emissions generated by the Project are analyzed against SCAQMD's localized significance thresholds to determine whether the emissions would cause or contribute to adverse localized air quality resulting in impacts to sensitive receptors. The Project Site is located within the 9.18-acre Los

Table 4.2.7
Estimated Peak Daily Construction Emissions

Emissions Source	Emissions in Pounds per Day					
	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Demolition Phase						
On-Site	3.07	29.68	22.06	0.02	3.04	1.92
Off-Site	0.18	1.88	2.29	0.00	0.27	0.92
Total Emissions	***3.25***	***31.56***	***24.35***	***0.02***	***3.31***	***2.84***
SCAQMD Thresholds	75.00	100.00	550.00	150.00	150.00	55.00
Significant Impact?	No	No	No	No	No	No
Site Preparation Phase						
On-Site	2.82	32.47	18.68	0.02	1.92	1.50
Off-Site	0.04	0.06	0.58	0.00	0.09	0.02
Total Emissions	***2.86***	***32.53***	***19.26***	***0.02***	***2.01***	***1.52***
SCAQMD Thresholds	75.00	100.00	550.00	150.00	150.00	55.00
Significant Impact?	No	No	No	No	No	No
Grading Phase						
On-Site	2.97	31.26	20.20	0.02	7.82	4.93
Off-Site	0.33	4.38	3.97	0.01	0.60	0.20
Total Emissions	***3.30***	***35.64***	***24.17***	***0.03***	***8.42***	***5.13***
SCAQMD Thresholds	75.00	100.00	550.00	150.00	150.00	55.00
Significant Impact?	No	No	No	No	No	No
Building Construction Phase						
On-Site	3.70	24.63	16.71	0.02	1.63	1.55
Off-Site	0.35	1.79	4.84	0.00	0.60	0.18
Total Emissions	***3.30***	***35.64***	***24.17***	***0.03***	***8.42***	***5.13***
SCAQMD Thresholds	75.00	100.00	550.00	150.00	150.00	55.00
Significant Impact?	No	No	No	No	No	No
Paving						
On-Site	2.04	17.93	12.14	0.02	1.13	1.04
Off-Site	0.07	0.09	0.98	0.00	0.17	0.05
Total Emissions	***2.11***	***18.02***	***13.12***	***0.02***	***1.30***	***1.09***
SCAQMD Thresholds	75.00	100.00	550.00	150.00	150.00	55.00
Significant Impact?	No	No	No	No	No	No
Architectural Coatings						
On-Site	14.52	2.19	1.87	0.00	0.17	0.17
Off-Site	0.03	0.05	0.47	0.00	0.09	0.02
Total Emissions	***14.55***	***2.24***	***2.34***	***0.00***	***0.26***	***0.19***
SCAQMD Thresholds	75.00	100.00	550.00	150.00	150.00	55.00
Significant Impact?	No	No	No	No	No	No

Source: CalEEMod 2013.2.2, Parker Environmental Consultants.
Calculation sheets are provided in Appendix D to this EIR.

Angeles County-owned and operated Civic Center complex. Thus, the Project Site is surrounded by the existing Los Angeles Superior Court building (which is currently vacant), the Los Angeles County Waterworks building, the helipad, the newly renovated library, and associated parking and maintenance areas. The SCAQMD defines the following land uses as sensitive receptors: residences, schools, playgrounds, child care facilities, long-term health care facilities, rehabilitation centers, convalescent centers, retirement homes, and outdoor athletic facilities. The Project Site is located across the street from Legacy Park, an outdoor recreation area, and is adjacent to the library building within the existing Civic Center complex. While libraries are not specifically called out as a sensitive receptor in the SCAQMD CEQA Air Quality Handbook, the elderly and young patrons visiting the library would be exposed to the Project's construction emissions on a short term and intermittent basis while accessing the library. Additional off-site receptors evaluated in this localized air quality impacts analysis include all existing surrounding uses because, as discussed previously, LSTs based on shorter averaging periods, such as NO_2 and CO, should be applied to receptors such as industrial or commercial facilities based on the SCAQMD's recommendation.[11] These calculations assume that appropriate dust control measures would be implemented as part of the Proposed Project during each phase of development, as required by SCAQMD Rule 403—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.

The closest receptor distance provided in the SCAQMD's Mass Rate LST Look-up Tables is 82 feet (25 meters), which is the approximate distance between the Project Site and Legacy Park. Although persons accessing the Library building during the construction period could potentially be closer to the active construction area, the SCAQMD's LST methodology states that projects with boundaries located closer than 82 feet (25 meters) from the nearest receptor should use the LSTs for receptors located at 82 feet. As shown in Table 4.2.8, Localized On-Site Peak Daily Construction Emissions, on-site emissions generated by the Project would not exceed any of the established SCAQMD localized thresholds. Therefore, the localized air quality impacts resulting from construction emissions associated with the Project would be less than significant.

(4) Regional Operational Air Quality Impacts

Operational emissions generated by both stationary and mobile sources would result from normal day-to-day activities on the Project Site after occupancy. As stated previously, emissions would be generated by motor vehicles traveling to and from the Project Site, energy use, architectural coatings (paint re-application once every 10 years) and consumer products. The analysis of daily operational emissions from the Project has been prepared utilizing the CalEEMod computer model recommended by the SCAQMD. The results of these calculations, and associated SCAQMD thresholds, are presented in Table 4.2.9, Estimated Daily Operational Emissions. As shown in Table 4.2.9, the operational emissions associated with the Project would not exceed the established SCAQMD threshold levels during the summertime (smog season) or wintertime (non-smog season). Therefore, impacts associated with regional operational emissions from the Project would be less than significant.

[11] *SCAQMD, Final Localized Significance Threshold Methodology, June 2003, Revised July 2008.*

Table 4.2.8
Localized On-Site Peak Daily Construction Emissions

Construction Phase [a]	Total On-site Emissions (Pounds per Day)			
	NO_x [b]	CO	PM_{10}	$PM_{2.5}$
Demolition Emissions	**29.68**	**22.06**	**3.04**	**1.92**
SCAQMD Localized Thresholds	91.53	1,039.07	8.29	4.53
Potentially Significant Impact?	*No*	*No*	*No*	*No*
Grading/Site Preparation	**32.47**	**20.20**	**7.82**	**4.93**
SCAQMD Localized Thresholds	91.53	1,039.07	8.29	4.53
Potentially Significant Impact?	*No*	*No*	*No*	*Yes*
Building Construction & Finishing Emissions	**14.52**	**24.63**	**1.63**	**1.55**
SCAQMD Localized Thresholds	91.53	1,039.07	8.29	4.53
Potentially Significant Impact?	*No*	*No*	*No*	*No*

[a] *The localized thresholds for all phases are based on a receptor distance of 82 feet in SCAQMD's SRA 2 for a Project Site of 2.94 acres. Thresholds were calculated based on the linear regression methodology recommended by the SCAQMD.*

[b] *The localized thresholds listed for NO_x in this table takes into consideration the gradual conversion of NO_x to NO_2, and are provided in the mass rate look-up tables in the "Final Localized Significance Threshold Methodology" document prepared by the SCAQMD. As discussed previously, the analysis of localized air quality impacts associated with NO_x emissions is focused on NO_2 levels as they are associated with adverse health effects.*

Source: CalEEMod 2013.2.2, Parker Environmental Consultants.
Calculation sheets are provided in Appendix D to this EIR.

(5) Localized Operational CO Impacts

The SCAQMD suggests conducting a CO hotspots analysis for any intersection where a project would worsen the LOS to any level below C (D or worse), and for any intersection rated D or worse where the project would increase the V/C ratio by two percent or more. Based on a review of the Project Traffic Study, the Proposed Project would meet the analysis criteria at only one of the eleven studied intersections, at intersection No. 5, Stuart Ranch Road-Webb Way & Civic Center Way during the PM peak hour. Using the simplified CALINE4 screening procedure, the future 2017 with project scenario CO concentrations were calculated for this study intersection. The results of these calculations are included in Appendix D to this EIR. As shown in Appendix D, future 1-hour CO concentrations would be 5.0 during the PM Peak hour and 3.2 ppm during the 8-hour CO concentration period. Thus, the localized CO concentrations would not exceed their respective national or state ambient air quality standards (i.e., the national 1-hour CO ambient air quality standard is 35.0 ppm, and the state 1-hour CO ambient air quality standard is 20.0 ppm; the 8-hour national and state standards for localized CO concentrations are 9.0 ppm). Therefore, implementation of the Project would not expose any possible sensitive receptors (such as residential uses, schools, hospitals) located in close proximity to the studied intersections to substantial localized pollutant CO concentrations. Thus, impacts with respect to exposure of sensitive receptors to substantial pollutant CO concentrations would be less than significant.

Table 4.2.9
Estimated Daily Operational Emissions

Emissions Source	Emissions in Pounds per Day					
	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Wintertime (Non-Smog Season) Emissions						
Project Emissions						
Mobile (Vehicle) Sources	2.55	7.11	27.66	0.07	4.60	1.29
Energy (Natural Gas)	0.01	0.11	0.09	0.00	0.01	0.01
Area Sources [a]	2.18	0.00	0.00	0.00	0.00	0.00
Total Net Project Emissions	**4.74**	**7.22**	**27.75**	**0.07**	**4.61**	**1.30**
SCAQMD Thresholds	55.00	55.00	550.00	150.00	150.00	55.00
Potentially Significant Impact?	No	No	No	No	No	No
Summertime (Smog Season) Emissions						
Project Emissions						
Mobile (Vehicle) Sources	2.43	6.75	27.53	0.69	4.60	1.29
Energy (Natural Gas)	0.01	0.10	0.00	0.00	0.00	0.00
Area Sources [a]	2.17	0.00	0.00	0.00	0.00	0.00
Total Net Project Emissions	**4.61**	**6.85**	**27.53**	**0.69**	**4.60**	**1.29**
SCAQMD Thresholds	55.00	55.00	550.00	150.00	150.00	55.00
Potentially Significant Impact?	No	No	No	No	No	No

Notes:
[a] *Area sources include architectural coatings, consumer products and landscaping equipment.*
Source: CalEEMod 2013.2.2, Parker Environmental Consultants.
Calculation sheets are provided in Appendix D to this EIR.

(6) TAC Impacts

The Project would not include the operations of any land uses routinely involving the use, storage, or processing of carcinogenic or non-carcinogenic toxic air contaminants. Thus, no appreciable operational-related toxic airborne emissions would result from Project implementation. With respect to construction, the construction activities associated with the Project would be typical of other similar development projects, and would be subject to the regulations and laws relating to toxic air pollutants at the regional, state, and federal levels that would protect sensitive receptors from substantial concentrations of these emissions. Therefore, impacts associated with the release of toxic air contaminants would be less than significant.

(7) Odor Impacts

The Project does not include any of the uses identified by the SCAQMD as being associated with odors (such as agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding). In addition, SCAQMD Rule 402 (Nuisance), and SCAQMD Best Available Control Technology Guidelines would limit potential objectionable odor impacts during the Project's long-term operations phase.

Potential sources that may emit odors during construction activities include the use of architectural coatings and solvents as well as asphalt paving. SCAQMD Rules 1108 and 1113 limit the amount of volatile organic compounds from cutback asphalt and architectural coatings and solvents, respectively.

Based on mandatory compliance with SCAQMD Rules, no construction activities or materials that would create a significant level of objectionable odors are proposed.

The Project would not create objectionable odors affecting a substantial number of people during construction or long-term operation. Therefore, a less than significant impact would occur with respect to the creation of objectionable odors.

4. CUMULATIVE IMPACTS

(1) AQMP Consistency

Cumulative development can affect implementation of the 2012 AQMP. The 2012 AQMP was prepared to accommodate growth, to reduce pollutants within the areas under the jurisdiction of SCAQMD, to improve the overall air quality of the region, and to minimize the impact on the economy. Growth considered to be consistent with the 2012 AQMP would not interfere with attainment because this growth is included in the projections utilized in the formulation of the AQMP. Consequently, as long as growth in the Basin is within the projections for growth identified by SCAG, implementation of the 2012 AQMP will not be obstructed by such growth and cumulative impacts would be less than significant. Additionally, since the Proposed Project is consistent with SCAG's growth projections, it would not have a cumulatively considerable contribution to an impact regarding a potential conflict with or obstruction of the implementation of the applicable air quality plan. Thus, cumulative impacts related to conformance with the 2012 AQMP would be less than significant.

(2) Construction Impacts

Because the Basin is currently in non-attainment for ozone, PM_{10}, and $PM_{2.5}$, cumulative development could violate an air quality standard or contribute to an existing or projected air quality violation. This would be considered to be a significant cumulative impact. According to the SCAQMD, individual construction projects that exceed the SCAQMD recommended daily thresholds for project-specific impacts would cause a cumulatively considerable increase in emissions for those pollutants for which the Basin is in non-attainment. As discussed previously, construction emissions associated with the Proposed Project would not exceed any of the SCAQMD's regional or localized thresholds of significance. Therefore, the cumulative impact of the Proposed Project for construction emissions would be considered less than significant.

(3) Operational Impacts

Due to the non-attainment of ozone, PM_{10}, and $PM_{2.5}$ standards in the Basin, the generation of daily operational emissions associated with cumulative development would result in a cumulative significant impact associated with the cumulative net increase of any criteria pollutant for which the region is in non-attainment. With respect to operational emissions, the SCAQMD has indicated that if an individual project results in air emissions of criteria pollutants (CO, ROG, NO_x, SO_x, PM_{10}, and $PM_{2.5}$) that exceed the SCAQMD recommended daily thresholds for project-specific impacts, then it would also result in a cumulatively considerable net increase of these criteria pollutants for which the Proposed Project region is in non-attainment under an applicable federal or state ambient air quality standard. As discussed previously, operational emissions associated with the Proposed Project would not exceed any of the SCAQMD's thresholds of significance. Therefore, the cumulative impact of the Proposed Project for operational emissions would be considered less than significant.

(4) Localized CO Impacts

As discussed previously, the Proposed Project would meet the CO Hotspot analysis criteria at only one of the eleven studied intersections, at intersection No. 5, Stuart Ranch Road-Webb Way & Civic Center Way during the PM peak hour. As previously discussed, under the future 2017 with project scenario (cumulative impact scenario), future cumulative 1-hour and 8-hour CO concentrations near the study intersections would not exceed their respective national or state ambient air quality standards (i.e., the national 1-hour CO ambient air quality standard is 35.0 ppm, and the state 1-hour CO ambient air quality standard is 20.0 ppm; the 8-hour national and state standards for localized CO concentrations are 9.0 ppm). Therefore, CO hotspots would not occur near the studied intersections in the future and this cumulative impact would be less than significant.

5. MITIGATION MEASURES

a. Construction

(1) Code-Required Measures

AQ-1 The Project applicant shall include in construction contracts the control measures required and/or recommended by the SCAQMD at the time of development, including but not limited to the following:

Rule 403 - Fugitive Dust

- Use watering to control dust generation during demolition of structures or break-up of pavement;
- Water active grading/excavation sites and unpaved surfaces at least three times daily;
- Cover stockpiles with tarps or apply non-toxic chemical soil binders;
- Limit vehicle speed on unpaved roads to 15 miles per hour;
- Sweep daily (with water sweepers) all paved construction parking areas and staging areas;
- Provide daily clean-up of mud and dirt carried onto paved streets from the Site;
- Suspend excavation and grading activity when winds (instantaneous gusts) exceed 15 miles per hour over a 30-minute period or more; and,
- An information sign shall be posted at the entrance to each construction site that identifies the permitted construction hours and provides a telephone number to call and receive information about the construction project or to report complaints

regarding excessive fugitive dust generation. Any reasonable complaints shall be rectified within 24 hours of their receipt if feasible.

AQ-2 The Applicant shall comply with SCAQMD Rule 402 (Nuisance), and SCAQMD Best Available Control Technology Guidelines to limit potential objectionable odor impacts during the Project's long-term operations phase.

AQ-3 The Applicant shall ensure all construction contractors comply with SCAQMD Rules 1108 and 1113, which include control measures to limit the amount of volatile organic compounds from cutback asphalt and architectural coatings and solvents.

6. LEVEL OF SIGNIFICANCE AFTER MITIGATION

The Proposed Project's regional construction and regional operational air quality impacts would be less than significant prior to mitigation. With mitigation, the Project's regional construction and regional operational air quality impacts would be further reduced and would be less than significant.

Prior to mitigation the Proposed Project's construction emissions would exceed the SCAQMD's Localized On-Site Peak Daily Construction Emissions for $PM_{2.5}$ emissions by less than 0.4 ppd. The estimated unmitigated localized (on-site) emissions for $PM_{2.5}$ are estimated to be 4.93 ppd, while the threshold for a significant localized air quality impact to occur is 4.53 ppd. After mitigation, the estimated on-site $PM_{2.5}$ emissions are estimated to be reduced to 3.10 ppd, which would be below the significance criteria. Thus after mitigation, the Proposed Project's localized construction emissions would be less than significant.