

5.3 Air Quality



5.3 AIR QUALITY

This section addresses the air emissions generated by construction and operation of the proposed Project and the potential impacts to air quality. The analysis also addresses the Project's consistency with the air quality policies set forth within the South Coast Air Quality Management District's (SCAQMD) *2012 Air Quality Management Plan*. The analysis of Project-generated air emissions focuses on whether the Project would cause an exceedance of an ambient air quality standard or SCAQMD significance threshold. Air quality technical data is included as Appendix 10.4, *Air Quality/Greenhouse Gas Emissions Data*.

5.3.1 EXISTING REGULATORY SETTING

U.S. ENVIRONMENTAL PROTECTION AGENCY

The U.S. Environmental Protection Agency (EPA) is responsible for implementing the Federal Clean Air Act (FCAA), which was first enacted in 1955 and amended numerous times after. The FCAA established Federal air quality standards known as the National Ambient Air Quality Standards (NAAQS). These standards identify levels of air quality for "criteria" pollutants that are considered the maximum levels of ambient (background) air pollutants considered safe, with an adequate margin of safety, to protect the public health and welfare. The criteria pollutants are ozone (O₃), carbon monoxide (CO), nitrogen dioxide (NO₂), which is a form of nitrogen oxides (NO_x), sulfur dioxide (SO₂), which is a form of sulfur oxides (SO_x), particulate matter less than 10 microns in aerodynamic diameter (PM₁₀), particulate matter less than 2.5 microns in aerodynamic diameter (PM_{2.5}), and lead (Pb); refer to Table 5.3-1, *National and California Ambient Air Quality Standards*.

CALIFORNIA AIR RESOURCES BOARD

CARB administers the air quality policy in California. The California Ambient Air Quality Standards (CAAQS) were established in 1969 pursuant to the Mulford-Carrell Act. These standards, included with the NAAQS in Table 5.3-1, are generally more stringent and apply to more pollutants than the NAAQS. In addition to the criteria pollutants, CAAQS have been established for visibility reducing particulates, hydrogen sulfide, and sulfates. The California Clean Air Act (CCAA), which was approved in 1988, requires that each local air district prepare and maintain an Air Quality Management Plan (AQMP) to achieve compliance with CAAQS. These AQMPs also serve as the basis for preparation of the State Implementation Plan (SIP) for the State of California.

Like the EPA, the California Air Resources Board (CARB) also designates areas within California as either attainment or nonattainment for each criteria pollutant based on whether the CAAQS have been achieved. Under the CCAA, areas are designated as nonattainment for a pollutant if air quality data show that a state standard for the pollutant was violated at least once during the previous three calendar years. Exceedances that are affected by highly irregular or infrequent events are not considered violations of a state standard, and are not used as a basis for designating areas as nonattainment.



**Table 5.3-1
National and California Ambient Air Quality Standards**

Pollutant	Averaging Time	California ¹		Federal ²	
		Standard ³	Attainment Status	Standards ^{3,4}	Attainment Status
Ozone (O ₃)	1 Hour	0.09 ppm (180 µg/m ³)	Nonattainment	N/A	N/A ⁵
	8 Hours	0.070 ppm (137 µg/m ³)	Unclassified	0.075 ppm (147 µg/m ³)	Nonattainment
Particulate Matter (PM ₁₀)	24 Hours	50 µg/m ³	Nonattainment	150 µg/m ³	Attainment
	Annual Arithmetic Mean	20 µg/m ³	Nonattainment	N/A	Attainment
Fine Particulate Matter (PM _{2.5})	24 Hours	No Separate State Standard		35 µg/m ³	Nonattainment
	Annual Arithmetic Mean	12 µg/m ³	Nonattainment	12.0 µg/m ³	Nonattainment
Carbon Monoxide (CO)	8 Hours	9.0 ppm (10 mg/m ³)	Attainment	9 ppm (10 mg/m ³)	Attainment
	1 Hour	20 ppm (23 mg/m ³)	Attainment	35 ppm (40 mg/m ³)	Attainment
Nitrogen Dioxide (NO ₂) ⁵	Annual Arithmetic Mean	0.030 ppm (57 µg/m ³)	N/A	53 ppb (100 µg/m ³)	Attainment
	1 Hour	0.18 ppm (339 µg/m ³)	Attainment	100 ppb (188 µg/m ³)	N/A
Lead (Pb) ^{7,8}	30 days Average	1.5 µg/m ³	Attainment	N/A	N/A
	Calendar Quarter	N/A	N/A	1.5 µg/m ³	Attainment
	Rolling 3-Month Average	N/A	N/A	0.15 µg/m ³	Attainment
Sulfur Dioxide (SO ₂) ⁶	24 Hours	0.04 ppm (105 µg/m ³)	Attainment	0.14 ppm (for certain areas)	Attainment
	3 Hours	N/A	N/A	N/A	Attainment
	1 Hour	0.25 ppm (655 µg/m ³)	Attainment	75 ppb (196 µg/m ³)	N/A
	Annual Arithmetic Mean	N/A	N/A	0.30 ppm (for certain areas)	Attainment
Visibility-Reducing Particles ⁹	8 Hours (10 a.m. to 6 p.m., PST)	Extinction coefficient = 0.23 km@<70% RH	Unclassified	No Federal Standards	
Sulfates	24 Hour	25 µg/m ³	Attainment		
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m ³)	Unclassified		
Vinyl Chloride ⁷	24 Hour	0.01 ppm (26 µg/m ³)	N/A		

µg/m³ = micrograms per cubic meter; ppm = parts per million; ppb = parts per billion; km = kilometer(s); RH = relative humidity; PST = Pacific Standard Time; N/A = Not Applicable

- California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1- and 24-hour), nitrogen dioxide, and particulate matter (PM₁₀, PM_{2.5}, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
- National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM₁₀, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m³ is equal to or less than one. For PM_{2.5}, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard.
- Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
- National Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.
- To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national standards are in units of ppb. California standards are in units of ppm. To directly compare the national standards to the California standards the units can be converted from ppb to ppm. In this case, the national standards of 53 ppb and 100 ppb are identical to 0.053 ppm and 0.100 ppm, respectively.
- On June 2, 2010, a new 1-hour SO₂ standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO₂ national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved. Note that the 1-hour national standard is in units of ppb. California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.
- CARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.
- The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 µg/m³ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.
- In 1989, CARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

Source: California Air Resources Board and U.S. Environmental Protection Agency, *Ambient Air Quality Standards chart*, <http://www.arb.ca.gov/research/aaqs/aaqs2.pdf>, June 4, 2013.



SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

The SCAQMD is one of 35 air quality management districts that have prepared AQMP's to accomplish a five-percent annual reduction in emissions. On December 7, 2012, the SCAQMD Governing Board approved the *2012 Air Quality Management Plan (2012 AQMP)*, which outlines its strategies for meeting the NAAQS for PM_{2.5} and ozone. The *2012 AQMP* relies on a multi-level partnership of governmental agencies at the federal, state, regional, and local level. The *2012 AQMP* proposes policies and measures to achieve federal and state standards for improved air quality in the South Coast Air Basin and those portions of the Salton Sea Air Basin that are under SCAQMD jurisdiction.

The 2012 AQMP includes new information on key elements such as:

- Current air quality;
- Improved emission inventories, especially significant increase in mobile source emissions;
- An overall control strategy comprised of: Stationary and Mobile Source Control Measures, SCAQMD, state and federal Stationary and Mobile Source Control Measures, and the Southern California Association of Governments Regional Transportation Strategy and Control Measures;
- New attainment demonstration for PM_{2.5} and O₃;
- Milestones to the federal Reasonable Further Progress Plan; and
- Preliminary motor vehicle emission budgets for transportation conformity purposes.

In addition to the *2012 AQMP* and its rules and regulations, the SCAQMD published the *CEQA Air Quality Handbook*. The *SCAQMD CEQA Air Quality Handbook* provides guidance to assist local government agencies and consultants in developing the environmental documents required by CEQA. With the help of the *CEQA Air Quality Handbook*, local land use planners and other consultants are able to analyze and document how proposed and existing projects affect air quality and should be able to fulfill the requirements of the CEQA review process. The SCAQMD is in the process of developing an *Air Quality Analysis Guidance Handbook* to replace the current *CEQA Air Quality Handbook* approved by the SCAQMD Governing Board in 1993.

EL SEGUNDO MUNICIPAL CODE CHAPTER 15-16, DEVELOPER TRANSPORTATION DEMAND MANAGEMENT

El Segundo Municipal Code (ESMC) Chapter 15-16 sets forth requirements for major new developments to provide facilities that encourage and accommodate the use of ridesharing, transit, pedestrian, and bicycle commuting as alternatives to single occupant motor vehicle trips. According to ESMC § 15-16-2, before approval of any development project, the Applicant must provide for, at a minimum, all of the applicable transportation demand management (TDM) and trip reduction measures, as specified in ESMC § 15-16-3: *Development Standards*, which include, without limitation, the following:

- A. Development of 25,000 square feet or more: a bulletin board, display case or kiosk displaying transportation information located where the greatest number of employees are likely to see it (ESMC includes specific requirements regarding content);



- B. Development of 50,000 square feet or more: the measures in subsection A above; preferential parking (not less than 15 percent of employee parking areas; high occupancy vehicle (HOV) loading area; vanpool access; on site amenities or shuttle; bicycle facilities; shower and lockers (optional); transit support facilities (optional): Projects may provide facilities which will promote transit use.
- C. Development of 100,000 square feet or more: the measures in subsections A and B above; sidewalks or other designated pathways; bus stop improvements (if deemed necessary by the City); and access from external circulation system to onsite bicycle parking facilities.

5.3.2 EXISTING ENVIRONMENTAL SETTING

SOUTH COAST AIR BASIN

Geography

The City is located in the South Coast Air Basin (Basin), a 6,600-square mile area bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino and San Jacinto Mountains to the north and east. The Basin includes all of Orange County and the nondesert portions of Los Angeles, Riverside, and San Bernardino Counties, in addition to the San Geronio Pass area of Riverside County.

The extent and severity of the air pollution problem in the Basin is a function of the area's natural physical characteristics (weather and topography), as well as man-made influences (development patterns and lifestyle). Factors such as wind, sunlight, temperature, humidity, rainfall, and topography all affect the accumulation and/or dispersion of air pollutants throughout the Basin.

Climate

The general region lies in the semipermanent high-pressure zone of the eastern Pacific. As a result, the climate is mild, tempered by cool sea breezes. The climate consists of a semiarid environment with mild winters, warm summers, moderate temperatures, and comfortable humidity. Precipitation is limited to a few winter storms. The usually mild climatological pattern is interrupted infrequently by periods of extremely hot weather, winter storms, or Santa Ana winds. The average annual temperature varies little throughout the Basin, averaging 75 degrees Fahrenheit (°F). However, with a less-pronounced oceanic influence, the eastern inland portions of the Basin show greater variability in annual minimum and maximum temperatures. All portions of the Basin have recorded temperatures over 100°F in recent years.

Although the Basin has a semi-arid climate, the air near the surface is moist due to the presence of a shallow marine layer. Except for infrequent periods when dry, continental air is brought into the Basin by offshore winds, the ocean effect is dominant. Periods with heavy fog are frequent, and low stratus clouds, occasionally referred to as "high fog," are a characteristic climate feature. Annual average relative humidity is 70 percent at the coast and 57 percent in the eastern part of the Basin. Precipitation in the Basin is typically 9 to 14 inches annually and is rarely in the form of snow or hail due to typically warm weather. The frequency and amount of rainfall is greater in the coastal areas of the Basin.



The height of the inversion is important in determining pollutant concentration. When the inversion is approximately 2,500 feet above sea level, the sea breezes carry the pollutants inland to escape over the mountain slopes or through the passes. At a height of 1,200 feet, the terrain prevents the pollutants from entering the upper atmosphere, resulting in a settlement in the foothill communities. Below 1,200 feet, the inversion puts a tight lid on pollutants, concentrating them in a shallow layer over the entire coastal basin. Usually, inversions are lower before sunrise than during the day. Mixing heights for inversions are lower in the summer and more persistent, being partly responsible for the high levels of ozone (O₃) observed during summer months in the Basin. Smog in southern California is generally the result of these temperature inversions combining with coastal day winds and local mountains to contain the pollutants for long periods of time, allowing them to form secondary pollutants by reacting with sunlight. The Basin has a limited ability to disperse these pollutants due to typically low wind speeds.

The Project area offers clear skies and sunshine, yet is still susceptible to air inversions. These inversions trap a layer of stagnant air near the ground, where it is then further loaded with pollutants. These inversions cause haziness, which is caused by moisture, suspended dust, and a variety of chemical aerosols emitted by trucks, automobiles, furnaces, and other sources.

The local climate is typically warm during summer when temperatures tend to be in the mid-70s and cool during winter when temperatures tend to be in the 60s. The warmest month of the year is August with an average maximum temperature of 75 degrees Fahrenheit, while the coldest month of the year is December with an average minimum temperature of 49 degrees Fahrenheit. Temperature variations between night and day tend to be moderate during summer with a difference that can reach 16 degrees Fahrenheit, and moderate during winter with a difference of approximately 11 degrees Fahrenheit. The annual average precipitation in El Segundo is 12.92 inches. Rainfall occurs most frequently in February, with an average rainfall of 3.35 inches.¹

LOCAL AMBIENT AIR QUALITY

The SCAQMD monitors air quality at 37 monitoring stations throughout the Basin. Each monitoring station is located within a Source Receptor Area (SRA). The communities within an SRA are expected to have similar climatology and ambient air pollutant concentrations. The Project is located in the Southwest Coastal Los Angeles County SRA (SRA 3). The monitoring station representative of the Project area is the Los Angeles-Westchester Parkway monitoring station, which is located approximately 3.0 miles north of the Project site and also located within SRA 3. The air pollutants measured at the Los Angeles-Westchester Parkway monitoring station site include O₃, CO, NO₂, SO₂, and PM₁₀. PM_{2.5} is not measured at the Los Angeles-Westchester Parkway station. The nearest station to the Project site measuring PM_{2.5} is the Compton monitoring station, which is located approximately 10 miles east of the Project site (within SRA 12). The air quality data monitored at the Los Angeles-Westchester Parkway and Compton stations from 2011 to 2013 are presented in Table 5.3-2, Measured Air Quality Levels.

The following air quality information briefly describes the various types of pollutants monitored at the Los Angeles-Westchester Parkway and Compton monitoring stations (nearest representative monitoring stations to the Project site).

¹ The Weather Channel, *Average Weather for El Segundo, CA*, <http://www.weather.com/weather/wxclimatology/monthly/graph/USCA0341>, Accessed October 14, 2013.



Table 5.3-2
Measured Air Quality Levels

Pollutant	Primary Standard		Year	Maximum Concentration ¹	Number of Days State/Federal Std. Exceeded
	California	Federal			
Carbon Monoxide (CO) ² (8-Hour)	9.0 ppm for 8 hours	9.0 ppm for 8 hours	2011	1.79 ppm	0/0
			2012	1.73	0/0
			2013	N/A	0/0
Carbon Monoxide (CO) ² (1-Hour)	20 ppm for 1 hour	35 ppm for 1 hour	2011	2.33 ppm	0/0
			2012	2.82	0/0
			2013	3.07	0/0
Ozone (O ₃) ² (1-Hour)	0.09 ppm for 1 hour	N/A	2011	0.078 ppm	0/0
			2012	0.106	1/0
			2013	0.105	1/0
Ozone (O ₃) ² (8-Hour)	0.07 ppm for 8 hours	0.075 ppm for 8 hours	2011	0.067 ppm	0/0
			2012	0.075	1/0
			2013	0.081	1/1
Nitrogen Dioxide (NO _x) ²	0.18 ppm for 1 hour	0.100 ppm	2011	0.098 ppm	0/NA
			2012	0.077	0/NA
			2013	0.077	0/NA
Sulfur Dioxide (SO _x) ²	0.25 ppm for 1 hour	0.075 ppm for 1 hour	2011	0.002 ppm	N/A
			2012	0.002	N/A
			2013	0.002	N/A
Particulate Matter (PM ₁₀) ^{2, 4, 5}	50 µg/m ³ for 24 hours	150 µg/m ³ for 24 hours	2011	41.0 µg/m ³	0/0
			2012	31.0	0/0
			2013	38.0	0/0
Fine Particulate Matter (PM _{2.5}) ^{3,5}	No Separate State Standard	35 µg/m ³ for 24 hours	2011	35.3 µg/m ³	NM/0
			2012	51.2	NM/1
			2013	52.1	NM/1
ppm = parts per million PM ₁₀ = particulate matter 10 microns in diameter or less µg/m ³ = micrograms per cubic meter PM _{2.5} = particulate matter 2.5 microns in diameter or less NM = Not Measured NA = Not Applicable					
Notes: 1. Maximum concentration is measured over the same period as the California Standard. 2. Measurements taken at the Los Angeles-Westchester Parkway Monitoring Station located at 7201 West Westchester Parkway, Los Angeles, California 90045. 3. Measurements taken at the Compton Monitoring Station located at 700 North Bullis Road, Compton, California 90221. 4. PM ₁₀ exceedances are based on State thresholds established prior to amendments adopted on June 20, 2002. 5. PM ₁₀ and PM _{2.5} exceedances are derived from the number of samples exceeded, not days.					
Source: California Air Resources Board, <i>Aerometric Data Analysis and Measurement System (ADAM) Air Quality Data Statistics</i> , http://www.arb.ca.gov/adam/welcome.html , accessed on May 13, 2014.					

Carbon Monoxide (CO). CO is an odorless, colorless toxic gas that is emitted by mobile and stationary sources as a result of incomplete combustion of hydrocarbons or other carbon-based fuels. In cities, automobile exhaust can cause as much as 95 percent of all CO emissions.

Among other things, CO replaces oxygen in the human body's red blood cells. Individuals with a deficient blood supply to the heart, patients with diseases involving heart and blood vessels, fetuses (unborn babies), and patients with chronic hypoxemia (oxygen deficiency) as seen in high altitudes are most susceptible to the adverse effects of CO exposure. People with heart disease are also more susceptible to developing chest pains when exposed to low levels of carbon monoxide. Exposure to high levels of carbon monoxide can slow reflexes and cause drowsiness, and result in death in confined spaces at very high concentrations.



Ozone (O₃). O₃ occurs in two layers of the atmosphere. The layer surrounding the earth's surface is the troposphere. The troposphere extends approximately 10 miles above ground level, where it meets the second layer, the stratosphere. The stratospheric (the "good" ozone layer) extends upward from about 10 to 30 miles and protects life on earth from the sun's harmful ultraviolet rays.

"Bad" ozone is a photochemical pollutant, and needs volatile organic compounds (VOCs), NO_x, and sunlight to form; therefore, VOCs and NO_x are ozone precursors. To reduce ozone concentrations, it is necessary to control the emissions of these ozone precursors. Significant ozone formation generally requires an adequate amount of precursors in the atmosphere and a period of several hours in a stable atmosphere with strong sunlight. High ozone concentrations can form over large regions when emissions from motor vehicles and stationary sources are carried hundreds of miles from their origins.

While ozone in the upper atmosphere (stratosphere) protects the earth from harmful ultraviolet radiation, high concentrations of ground-level ozone (in the troposphere) can adversely affect the human respiratory system and other tissues. Ozone is a strong irritant that can constrict the airways, forcing the respiratory system to work hard to deliver oxygen. Individuals exercising outdoors, children, and people with pre-existing lung disease such as asthma and chronic pulmonary lung disease are considered to be the most susceptible to the health effects of ozone. Short-term exposure (lasting for a few hours) to ozone at levels typically observed in Southern California can result in aggravated respiratory diseases such as emphysema, bronchitis and asthma, shortness of breath, increased susceptibility to infections, inflammation of the lung tissue, increased fatigue, as well as chest pain, dry throat, headache, and nausea.

Nitrogen Dioxide (NO₂). Nitrogen oxides (NO_x) are a family of highly reactive gases that are a primary precursor to the formation of ground-level ozone, and react in the atmosphere to form acid rain. NO₂ (often used interchangeably with NO_x) is a reddish-brown gas that can cause breathing difficulties at high levels. Peak readings of NO₂ occur in areas that have a high concentration of combustion sources (e.g., motor vehicle engines, power plants, refineries, and other industrial operations).

NO₂ can irritate and damage the lungs, and lower resistance to respiratory infections such as influenza. The health effects of short-term exposure are still unclear. However, continued or frequent exposure to NO₂ concentrations that are typically much higher than those normally found in the ambient air may increase acute respiratory illnesses in children and increase the incidence of chronic bronchitis and lung irritation. Chronic exposure to NO₂ may aggravate eyes and mucus membranes and cause pulmonary dysfunction.

Coarse Particulate Matter (PM₁₀). PM₁₀ refers to suspended particulate matter, which is smaller than 10 microns or ten one-millionths of a meter. PM₁₀ arises from sources such as road dust, diesel soot, combustion products, construction operations, and dust storms. PM₁₀ scatters light and significantly reduces visibility. In addition, these particulates penetrate into lungs and can potentially damage the respiratory tract.

Fine Particulate Matter (PM_{2.5}). Due to recent increased concerns over health impacts related to fine particulate matter (particulate matter 2.5 microns in diameter or less), both State and Federal PM_{2.5} standards have been created. Particulate matter impacts primarily affect infants, children, the elderly, and those with pre-existing cardiopulmonary disease.



Per Title 40 of the Code of Federal Regulations (CFR) § 81.305, the Basin is designated as a nonattainment area for Federal PM_{2.5} standards. Per Title 17 § 60201 of the California Code of Regulations, the Basin is designated as a nonattainment area for State standards.

Sulfur Dioxide (SO₂). SO₂ is a colorless, irritating gas with a rotten egg smell; it is formed primarily by the combustion of sulfur-containing fossil fuels. Sulfur dioxide is often used interchangeably with SO_x and lead. Exposure of a few minutes to low levels of SO₂ can result in airway constriction in some asthmatics.

SENSITIVE RECEPTORS

Sensitive human populations are more susceptible to the effects of air pollution than the general population. Sensitive populations (sensitive receptors) that are in proximity to localized sources of toxics and CO are of particular concern. Some land uses are considered more sensitive to changes in air quality than others, depending on the population groups and the activities involved. The following types of people are most likely to be adversely affected by air pollution, as identified by CARB: children under 14; elderly over 65; athletes; and people with cardiovascular and chronic respiratory diseases. Locations that may contain a high concentration of these sensitive population groups are called sensitive receptors and include residential areas, hospitals, day-care facilities, elder-care facilities, elementary schools, and parks. Sensitive uses within the immediate Project area include residential uses located approximately 2,800 feet to the northwest (northwest of the Grand Avenue and Kansas Street intersection), 3,500 feet to the south/southwest (south of Rosecrans Avenue), and 2,100 feet to the east (east of Aviation Boulevard); refer to Table 5.3-3, Sensitive Receptors.

5.3.3 IMPACT THRESHOLDS AND CRITERIA SIGNIFICANCE

REGIONAL AIR QUALITY

Under CEQA, the Southern California Air Quality Management District (“SCAQMD”) is an expert commenting agency on air quality within its jurisdiction or impacting its jurisdiction. Under the FCAA, the SCAQMD has adopted federal attainment plans for O₃ and PM₁₀. The SCAQMD reviews projects to ensure that they would not: (1) cause or contribute to any new violation of any air quality standard; (2) increase the frequency or severity of any existing violation of any air quality standard; or (3) delay timely attainment of any air quality standard or any required interim emission reductions or other milestones of any federal attainment plan.



**Table 5.3-3
Surrounding Off-Site Sensitive Receptors**

Type	Name	Distance from Project Site (feet)	Orientation from Project Site
Residential	Residential Uses	3,010	Northwest
		2,112	East
		3,802	South/Southwest
Schools	El Segundo Middle School	3,696	Northwest
	Saint Anthony Catholic School	3,950	Northwest
	Center Street Elementary School	4,246	Northwest
	Webster University	2,482	Northeast
	Juan de Anza Elementary School	5,016	Northeast
	Richard Henry Dana Middle School	3,010	Southeast
	Peter Burnett Elementary School	3,538	Southeast
	Vistamar School	2,534	Southeast
Daycares/Preschools	Beach Babies, LLC	1,385	North
	Beach Babies, LLC	750	East
	Wondertree Kids	1,065	South
Places of Worship	Oceanside Christian Fellowship	Adjacent	East
	Saint John's Lutheran Church	5,227	North/Northwest
	Hilltop Community Church	5,016	Northwest
	Saint Anthony Catholic Church	3,950	Northwest
	Church of Jesus Christ of Latter-Day Saints	4,646	Northwest
Libraries	Charles C. Lauritsen Library	1,214	East
	Wiseburn Library	3,802	East
Parks	Campus El Segundo	3,168	North
	Del Aire Park	3,274	Northeast
	Glasglow Park	4,382	East
	Holly Glen Park	4,277	East/Southeast
	Marine Avenue Park	5,174	South
	Manhattan Village Park	3,590	South
	The Lakes at El Segundo Golf Course	Adjacent	West
	Veterans Parkway	4,963	Southwest
	Hilltop Park	4,699	Northwest
	Washington Park	4,224	Northwest
	Kansas Park	3,379	Northwest

Source: Google Earth, 2013.

Note: Distances are measured within a one-mile radius from the exterior project boundary only and not from individual construction projects/areas within the interior of the project site.



SCAQMD's *CEQA Air Quality Handbook* also provides significance thresholds to assess the impact of project related air pollutant emissions. Table 5.3-4, *SCAQMD Regional Pollutant Emission Thresholds of Significance*, presents these significance thresholds. There are separate thresholds for short-term construction and long-term operational emissions. A project with daily emission rates below these thresholds is considered to have a less than significant effect on regional air quality. The SCAQMD is in the process of updating the thresholds.

**Table 5.3-4
SCAQMD Regional Pollutant Emission Thresholds of Significance**

Phase	Pollutant (lbs/day)					
	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Construction	75	100	550	150	150	55
Operation	55	55	550	150	150	55
<small>CO = carbon monoxide; VOC = volatile organic compounds; NO_x = nitrogen oxides; PM₁₀ = particulate matter smaller than 10 microns; PM_{2.5} = particulate matter smaller than 2.5 microns</small>						
<small>Source: South Coast Air Quality Management District, <i>CEQA Air Quality Handbook</i>, November 1993.</small>						

LOCAL AIR QUALITY

Localized Significance Thresholds

Localized Significance Thresholds (LSTs) were developed in response to the SCAQMD Governing Boards' Environmental Justice Enhancement Initiative (I-4). The SCAQMD provided the *Final Localized Significance Threshold Methodology* (revised July 2008) for guidance. The LST methodology assists lead agencies in analyzing localized impacts associated with project-specific level analyses. The SCAQMD provides the LST lookup tables for one, two, and five acre projects emitting CO, NO_x, PM₁₀, and PM_{2.5}. The LST methodology and associated mass rates are not designed to evaluate localized impacts from mobile sources traveling over the roadways. The SCAQMD recommends that any project over 5.0 acres perform air quality dispersion modeling to assess impacts to nearby sensitive receptors.

Localized CO

Additionally, a project would result in a local air quality impact if it results in increased traffic volumes and/or decreased Levels of Service (LOS) that would result in an exceedance of the CO ambient air quality standards of 20 ppm for 1-hour CO concentration levels, and 9 ppm for 8-hour CO concentration levels. If the CO concentrations at potentially impacted intersections with a project are lower than the standards, then there is no significant impact. If future CO concentrations with a project are above the standard, then the project would have a significant local air quality impact.

Cumulative Emissions

The SCAQMD's 2012 AQMP was prepared to accommodate growth, meet state and federal air quality standards, and minimize the fiscal impact that pollution control measures have on the local economy. According to the SCAQMD *CEQA Air Quality Handbook*, project-related



emissions that fall below the established construction and operational thresholds should be considered less than significant unless there is pertinent information to the contrary.

If a project exceeds these emission thresholds, the SCAQMD *CEQA Air Quality Handbook* states that the significance of a project's contribution to cumulative impacts should be determined based on whether the rate of growth in average daily trips exceeds the rate of growth in population.

CEQA SIGNIFICANCE CRITERIA

The environmental analysis in this section is patterned after the Initial Study Checklist recommended by Appendix G of the *CEQA Guidelines*, as amended, and used by the City of El Segundo in its environmental review process. The Initial Study Checklist includes questions relating to air quality. The issues presented in the Initial Study Checklist have been utilized as thresholds of significance in this section. Accordingly, a project may create a significant adverse environmental impact if it would:

- 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 standard (including releasing emissions that exceed quantitative thresholds for ozone precursors);
- Expose sensitive receptors to substantial pollutant concentrations;
- Create objectionable odors affecting a substantial number of people; refer to Section 8.0, Effects Found Not To Be Significant.

Based on these standards/criteria, the Project's effects have been categorized as either a "less than significant impact" or a "potentially significant impact." If a potentially significant impact cannot be reduced to a less than significant level through the application of goals, policies, standards, or mitigation, it is categorized as a significant and unavoidable impact. The standards used to evaluate the significance of impacts are often qualitative rather than quantitative because appropriate quantitative standards are either not available for many types of impacts or are not applicable for some types of projects.

5.3.4 IMPACTS AND MITIGATION MEASURES

AIR QUALITY STANDARDS – SHORT-TERM

- **THE PROJECT COULD VIOLATE AN AIR QUALITY STANDARD OR CONTRIBUTE SUBSTANTIALLY TO AN EXISTING OR PROJECTED AIR QUALITY VIOLATION.**

Impact Analysis: Temporary impacts would result from Project construction activities. Short-term air emissions would result from the following activities:



- Particulate (fugitive dust) emissions from grading and building construction; and
- Exhaust emissions from the construction equipment and the motor vehicles of the construction crew.

The Project site currently consists of 2,089,090 square feet of office, manufacturing and warehouse uses. The Project proposes removal of 19,142 square feet of office and warehouse uses and development of an additional 2,142,457 square feet of office, commercial, warehouse, and light industrial uses. For the purposes of this analysis, the Project is assumed to begin construction in 2015 and occur over several years. The estimated earthwork for the Project is proposed to occur in two phases (Phase II consists of Phases II and III identified on the proposed Vesting Tentative Map). Phase 1 would require 18,400 cubic yards of soil import and 12,800 cubic yards of soil export. Phase 2 would require approximately 192,600 cubic yards of import and 96,000 cubic yards of export.

Project construction would require excavators, graders, scrapers, and tractors during grading and clearing; pavers, rollers, and paving equipment during paving; tractors, and forklifts during building construction; and air compressors during architectural coating. Emissions for each construction phase have been quantified based upon the phase durations and equipment types. The analysis of daily construction emissions has been prepared utilizing the California Emissions Estimator Model (CalEEMod). Refer to [Appendix 10.4, *Air Quality/Greenhouse Gas Emissions Data*](#), for the CalEEMod outputs and results. [Table 5.3-5, *Maximum Daily Pollutant Emissions During Construction*](#), presents the anticipated daily short-term construction emissions.

Fugitive Dust Emissions

Fugitive dust (PM₁₀ and PM_{2.5}) from grading and construction is expected to be short-term and would cease following Project completion. Most of this material is composed of inert silicates, which are less harmful to health than the complex organic particulates released from combustion sources. These particles are either directly emitted or are formed in the atmosphere from the combustion of gases such as NO_x and SO_x combining with ammonia. The greatest amount of fugitive dust generated is expected to occur during site grading and excavation. Dust generated by such activities usually becomes more of a local nuisance than a serious health problem. Of particular concern is the amount of PM₁₀ generated as a part of fugitive dust emissions.

CalEEMod calculates PM₁₀ and PM_{2.5} fugitive dust as part of the site earthwork activity emissions; refer to [Table 5.3-5](#). Maximum particulate matter emissions would occur during the initial stages of construction, when grading activities would occur. Mitigation Measure AQ-1 requires that construction activities comply with SCAQMD Rule 403, such that excessive fugitive dust emissions shall be controlled by regular watering or other dust prevention measures. In addition, SCAQMD Rule 402 is required for implementation of dust suppression techniques to prevent fugitive dust from creating a nuisance off-site and after implementation would reduce short-term fugitive dust impacts on nearby sensitive receptors. With adherence to Mitigation Measures AQ-1, AQ-2, and other dust control techniques, the maximum mitigated particulate matter concentration would be 21.41 pounds per day (lbs/day) for PM₁₀ and 8.08 lbs/day for PM_{2.5} in construction Year 1. Therefore, emissions in each year would be below SCAQMD thresholds of 150 lbs/day for PM₁₀ and 55 lbs/day for PM_{2.5}. Although the unmitigated particulate matter levels are below the SCAQMD thresholds absent of specific dust reduction measures, Mitigation Measures AQ-1 and AQ-2 are recommended to ensure impacts remain at less than significant levels, as the Basin is nonattainment for PM₁₀ and PM_{2.5}.



**Table 5.3-5
Maximum Daily Pollutant Emissions During Construction**

Emissions Source	Daily Pollutant Emissions (lbs/day) ¹					
	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Phase I Year 1 (2015)						
Unmitigated	71.02	80.25	120.66	0.22	22.51	13.32
Mitigated ²	71.02	80.25	120.66	0.22	12.03	7.58
SCAQMD Construction Thresholds	75	100	550	150	150	55
Mitigated Emissions Exceed Thresholds?	No	No	No	No	No	No
Phase 2 Year 2 (2016)						
Unmitigated	9.44	115.23	100.24	0.20	25.79	14.53
Mitigated ²	6.70	80.05	99.54	0.20	12.70	6.91
SCAQMD Construction Thresholds	75	100	550	150	150	55
Mitigated Emissions Exceed Thresholds?	No	No	No	No	No	No
Phase 2 Year 3 (2017)						
Unmitigated	8.56	57.43	93.76	0.19	12.08	4.77
Mitigated ²	6.13	45.19	93.44	0.19	9.06	3.47
SCAQMD Construction Thresholds	75	100	550	150	150	55
Mitigated Emissions Exceed Thresholds?	No	No	No	No	No	No
Phase 2 Year 4 (2018)						
Unmitigated	72.37	54.35	96.67	0.21	13.48	5.05
Mitigated ²	70.14	44.61	96.93	0.21	10.34	3.88
SCAQMD Construction Thresholds	75	100	550	150	150	55
Mitigated Emissions Exceed Thresholds?	No	No	No	No	No	No
CO = carbon monoxide; VOC = volatile organic compounds; NO _x = nitrogen oxides; PM ₁₀ = particulate matter smaller than 10 microns; PM _{2.5} = particulate matter smaller than 2.5 microns						
Notes:						
1. Emissions were calculated using CalEEMod, as recommended by the SCAQMD.						
2. The reduction/credits for construction emission mitigations are based on mitigation included in the CalEEMod model and as typically required by the SCAQMD through Rule 403. The mitigation includes the following: properly maintain mobile and other construction equipment; replace ground cover in disturbed areas quickly; water exposed surfaces twice daily; cover stock piles with tarps; water all haul roads twice daily; limit speeds on unpaved roads to 15 miles per hour; and use CARB certified Tier 3 engines.						
Refer to Appendix 10.4, <i>Air Quality/Greenhouse Gas Emissions Data</i> , for assumptions used in this analysis.						

ROG Emissions

In addition to gaseous and particulate emissions, the application of asphalt and surface coatings creates ROG emissions, which are O₃ precursors. In accordance with the methodology prescribed by the SCAQMD, the ROG emissions associated with paving and architectural coating have been quantified with the CalEEMod model. As required by SCAQMD Regulation XI, Rule 1113 – *Architectural Coating*, all architectural coatings for the proposed structures would comply with specifications on painting practices as well as regulation on the ROG content of paint.² In addition to Rule 1113, Mitigation Measure AQ-3 requires the use of high-pressure-low-volume (HPLV) paint applicators with a minimum transfer efficiency of at least 50 percent and using pre-painted construction materials. Mitigation Measure AQ-3 also limits the ROG/VOC content of architectural coatings (paints) to 35 grams per liter or less. Compliance with Mitigation Measure AQ-3 would ensure that ROG emissions would be at less than significant levels.

² South Coast Air Quality Management District, <http://www.aqmd.gov/rules/reg/reg11/r1113.pdf>.



Construction Exhaust Emissions

Exhaust emissions from construction activities include emissions associated with the transport of machinery and supplies to and from the Project site, emissions produced on-site as the equipment is used, and emissions from trucks transporting materials to/from the site. The majority of construction equipment and vehicles would be diesel powered, which tends to be more efficient than gasoline-powered equipment. Diesel-powered equipment produces lower carbon monoxide and hydrocarbon emissions than gasoline equipment, but produces greater amounts of NO_x, SO_x, and particulates per hour of activity. The transportation of machinery, equipment and materials to and from the Project site, as well as construction worker trips, would also generate vehicle emissions during construction. As presented in [Table 5.3-5](#), construction-related unmitigated NO_x emissions during construction Year 2 would result in a significant impact due to its contribution in forming ozone. As generation of NO_x emissions during construction is almost entirely due to engine combustion in construction equipment, haul trucks, and employee commuting, requiring the use of newer construction equipment with better emissions controls would reduce short-term NO_x emissions. Therefore, Mitigation Measure AQ-4 would be required to ensure that the development associated with proposed El Segundo South Campus Specific Plan (ESSCSP) utilizes diesel construction equipment that complies with at least Tier 3-level emissions standards during all construction phases. Adherence to Mitigation Measure AQ-4 would reduce construction equipment and worker vehicle exhaust emissions to below SCAQMD thresholds.

Asbestos

Pursuant to guidance issued by the Governor's Office of Planning and Research, State Clearinghouse, lead agencies are encouraged to analyze potential impacts related to naturally occurring asbestos (NOA). Asbestos is a term used for several types of naturally occurring fibrous minerals that are a human health hazard when airborne. The most common type of asbestos is chrysotile, but other types such as tremolite and actinolite are also found in California. Asbestos is classified as a known human carcinogen by State, Federal, and international agencies and is a toxic air contaminant identified by CARB.

Asbestos can be released from serpentinite and ultramafic rocks when the rock is broken or crushed. At the point of release, the asbestos fibers may become airborne, causing air quality and human health hazards. These rocks have been commonly used for unpaved gravel roads, landscaping, fill projects, and other improvement projects in some localities. Asbestos may be released to the atmosphere due to vehicular traffic on unpaved roads, during grading for development projects, and at quarry operations. All of these activities may have the effect of releasing potentially harmful asbestos into the air. Natural weathering and erosion processes can act on asbestos bearing rock and make it easier for asbestos fibers to become airborne if such rock is disturbed.

Serpentinite and/or ultramafic rock are known to be present in 44 of California's 58 counties. These rocks are particularly abundant in the counties of the Sierra Nevada foothills, the Klamath Mountains, and Coast Ranges. According to the Department of Conservation Division of Mines and Geology, *A General Location Guide for Ultramafic Rocks in California – Areas More Likely to Contain Naturally Occurring Asbestos Report* (dated August 2000), the Project is not located in an area where NOA is likely to be present. Therefore impacts would be considered less than significant.



Total Daily Construction Emissions

In accordance with the SCAQMD Guidelines, CalEEMod was utilized to model construction emissions for ROG, NO_x, CO, SO_x, PM₁₀, and PM_{2.5}. Construction would occur over several years, with the greatest emissions being generated during the first year of construction. CalEEMod allows the user to input mitigation measures such as watering the construction area to limit fugitive dust and applying soil stabilizers to the Project area. Mitigation measures selected within CalEEMod allow for certain reduction credits and result in a decrease of pollutant emissions. Reduction credits are based upon studies developed by CARB, SCAQMD, and other air quality management district's throughout California, and were programmed within the CalEEMod model. As indicated in [Table 5.3-5](#), CalEEMod calculates the reduction associated with recommended mitigation measures.

Implementation of Mitigation Measures AQ-1 through AQ-4 would lessen construction-related impacts by requiring measures to reduce air pollutant emissions from construction activities. These measures call for the maintenance of construction equipment, use of non-polluting and non-toxic building equipment, and minimizing fugitive dust. Although the unmitigated pollutant levels are below SCAQMD thresholds in some instances, implementation of Mitigation Measures AQ-1 through AQ-4 are recommended to ensure emissions from future development and infrastructure projects associated with Project implementation would remain below SCAQMD thresholds. Additionally, compliance with standard regulations and SCAQMD rules are included in these mitigation measures in order to ensure compliance and provide a verification method through the CEQA process (i.e., the Mitigation Monitoring Program). Therefore, construction emissions can be mitigated to less than significant levels.

Mitigation Measures:

AQ-1 Before the City issues a Grading Permit, the Director of Public Works and Director of Planning and Building Safety must approve Grading Plan, Building Plans, and specifications that comply with SCAQMD Rule 403, excessive fugitive dust emissions must be controlled by regular watering or other dust prevention measures, and Rule 402, which requires implementation of dust suppression techniques to prevent fugitive dust from creating a nuisance off-site as specified in the SCAQMD's Rules and Regulations. Implementation of the following measures would reduce short-term fugitive dust impacts on nearby sensitive receptors:

- All active portions of the construction site must be watered every three hours during daily construction activities and when dust is observed migrating from the Project site to prevent excessive amounts of dust.
- Appoint a construction relations officer to act as a community liaison concerning on-site construction activity including resolution of issues related to particulate matter generation.
- Pave or apply water every three hours during daily construction activities or apply non-toxic soil stabilizers on all unpaved access roads, parking areas, and staging areas. More frequent watering must occur if dust is observed migrating from the site during site disturbance.
- Any on-site stockpiles of debris, dirt, or other dusty material must be enclosed, covered, watered twice daily, or non-toxic soil binders shall be applied.
- All grading and excavation operations must be suspended when wind speeds exceed 25 miles per hour.



- Disturbed areas must be replaced with ground cover or paved immediately after construction is completed in the affected area.
- Track-out devices such as gravel bed track-out aprons (3 inches deep, 25 feet long, 12 feet wide per lane and edged by rock berm or row of stakes) are required to reduce mud/dirt trackout from unpaved truck exit routes. Alternatively a wheel washer must be used at truck exit routes.
- On-site vehicle speed must be limited to 15 miles per hour.
- All material transported off-site must be either sufficiently watered or securely covered to prevent excessive amounts of dust before departing the job site.
- Reroute construction trucks away from congested streets or sensitive receptor areas.

AQ-2 During construction, all trucks hauling excavated or graded material on-site must comply with Vehicle Code § 23114 (Spilling Loads on Highways) regulating the manner for preventing material spilling onto public streets and roads. Before the City issues Grading Permits, the Project Applicant must demonstrate to the Director of Public Works how operations comply with Vehicle Code § 23114 during hauling activities, as applicable.

AQ-3 The following measures must be implemented by the contractor to reduce ROG emissions resulting from application of architectural coatings:

- Use high-pressure-low-volume (HPLV) paint applicators with a minimum transfer efficiency of at least 50 percent;
- Use pre-painted construction materials; and
- VOC content of architectural coatings cannot exceed 35 grams per liter.

AQ-4 Before the City issues a Grading Permit, the construction contractor must provide evidence to the Public Works Director that the following measures are implemented during construction:

- Provide temporary traffic controls such as a flag person, during all phases of construction to maintain smooth traffic flow.
- Provide dedicated turn lanes for movement of construction trucks and equipment on- and off-site.
- Improve traffic flow by signal synchronization, and ensure that all vehicles and equipment will be properly tuned and maintained according to manufacturers' specifications.
- Require the use of electricity from power poles rather than temporary diesel or gasoline power generators.
- Require the use of 2010 and newer diesel haul trucks (e.g., material delivery trucks and soil import/export) and if the Director determines that 2010 model year or newer diesel trucks cannot be obtained then trucks that meet EPA 2007 model year NOx emissions requirements may be used.
- During Project construction, all internal combustion engines/construction, equipment operating on the project site must meet EPA-Certified Tier 3 emissions standards, or higher according to the following:
 - Project start, to December 31, 2014: All off-road diesel-powered construction equipment greater than 50 horsepower must meet Tier 3 off-road emissions standards. In addition, all construction equipment must be outfitted with



BACT devices certified by CARB. Any emissions control device used by the contractor must achieve emissions reductions that are not less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine as defined by CARB regulations.

- Post-January 1, 2015: All off-road diesel-powered construction equipment greater than 50 horsepower must meet the Tier 4 emission standards, where available. In addition, all construction equipment must be outfitted with BACT devices certified by CARB. Any emissions control device used by the contractor must achieve emissions reductions that are not less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine as defined by CARB regulations.
- A copy of each unit's certified tier specification, BACT documentation, and CARB or SCAQMD operating permit must be provided at the time of mobilization of each applicable unit of equipment.

Level of Significance: Less Than Significant Impact with Mitigation.

AIR QUALITY STANDARDS – LONG-TERM

- **THE PROJECT COULD VIOLATE AN AIR QUALITY STANDARD OR CONTRIBUTE SUBSTANTIALLY TO AN EXISTING OR PROJECTED AIR QUALITY VIOLATION.**

Impact Analysis: Operational emissions generated by both stationary and mobile sources would result from normal daily activities on the Project site after occupancy (i.e., increased concentrations of O₃, PM₁₀, and CO). Stationary area source emissions would be generated by consumption of natural gas for space and water heating devices, operation of landscape maintenance equipment, and use of consumer products. Stationary energy emissions would result from energy consumption associated with the Project. Mobile emissions would be generated by the motor vehicles traveling to and from the Project site. Emissions associated with each of these sources were calculated and are discussed below.

Mobile Source Emissions

Mobile sources are emissions from motor vehicles, including tailpipe and evaporative emissions. Depending upon the pollutant being discussed, the potential air quality impact may be of either regional or local concern. For example, ROG, NO_x, SO_x, PM₁₀, and PM_{2.5} are all pollutants of regional concern (NO_x and ROG react with sunlight to form O₃ [photochemical smog], and wind currents readily transport SO_x, PM₁₀, and PM_{2.5}). However, CO tends to be a localized pollutant, dispersing rapidly at the source.

Project-generated vehicle emissions have been estimated using CalEEMod. This model predicts ROG, NO_x, PM₁₀, and PM_{2.5} emissions from motor vehicle traffic associated with new or modified land uses; refer to [Appendix 10.4, Air Quality/Greenhouse Gas Emissions Data](#). According to the Project *Traffic Impact Analysis* (Appendix 10.3), the Project would generate 26,585 new daily trips at buildout. [Table 5.3-6, Long-Term Operational Air Emissions](#), presents the anticipated mobile source emissions.



**Table 5.3-6
Long-Term Operational Air Emissions**

Emissions Source	Pollutant (pounds/day) ^{1,2}					
	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Proposed Unmitigated Net Emissions						
Area	56.04	0.00	0.22	0.00	0.00	0.00
Energy	0.62	5.65	4.75	0.03	0.43	0.43
Mobile	72.46	175.72	748.48	2.45	174.42	48.77
Total Proposed Unmitigated Emissions	129.13	181.37	753.45	2.48	174.85	49.20
Proposed Mitigated Net Emissions						
Area	56.04	0.00	0.22	0.00	0.00	0.00
Energy	0.54	4.90	4.11	0.03	0.37	0.37
Mobile	64.30	118.43	551.39	1.52	106.05	29.71
Total Proposed Mitigated Emissions	120.88	123.33	555.72	1.55	106.42	30.08
SCAQMD Threshold	55	55	550	150	150	55
Is Threshold Exceeded? (Significant Impact?)	Yes	Yes	Yes	No	No	No
Notes:						
1. Based on CalEEMod results, worst-case seasonal emissions for area and mobile emissions have been modeled.						
2. Refer to Appendix 10.4, <i>Air Quality/Greenhouse Gas Emissions Data</i> , for assumptions used in this analysis.						

Stationary Source Emissions

Electrical service to the Project would be provided via extension of the existing customer dedicated substation and electrical line, along with a proposed second customer dedicated substation (an anticipated electrical load of approximately 68,240 kWh/yr).

Stationary source emissions would be generated due to increased demands for electrical energy and natural gas with Project implementation; refer to [Table 5.3-6](#). This assumption is based on the supposition that power plants supplying electricity to the site are utilizing fossil fuels. Electric power generating plants are distributed throughout the Basin and western United States, and their emissions contribute to the total regional pollutant burden. The primary use of natural gas by the proposed land uses would be for combustion to produce space heating, water heating, other miscellaneous heating, or air conditioning, consumer products, and landscaping.

Impact Conclusion

Mobile source emissions would be reduced as the Project would increase diversity of land uses (the Project includes office, warehousing, light industrial, and retail/restaurant uses) and employment/population density based on number of jobs per acre, and since a portion of the Project site is located within 0.25 miles of the Green Line light rail station. Additionally, the Project would improve the pedestrian network on-site and provide connections to the off-site network. These land use attributes that are inherent in the Project's location and design were incorporated into the CalEEMod mitigation module. It is noted that although the CalEEMod



results depict these emissions as “mitigated” emissions, they are part of the Project Design features.

All future development within the ESSCSP area must comply with ESMC Chapter 15-16, which sets forth requirements for major new developments to provide facilities that encourage and accommodate the use of ridesharing, transit, pedestrian, and bicycle commuting as alternatives to single occupant motor vehicle trips. Before approval of any development project, the Applicant would be required to provide, at a minimum, all of the applicable TDM and trip reduction measures specified in ESMC § 15-16-3. A reduction in such trips can be expected to reduce traffic congestion, with resultant reductions in air emissions and energy consumption related to employment growth generated by new developments. According to ESMC 15-16-4, *Monitoring*, physical facilities would be verified through the City's existing development review process. Initial enforcement would consist of verification during plan check and field inspection prior to release of utilities/Certificate of Occupancy (to ensure that measures are implemented, installed, etc.). Subsequent enforcement would be in accordance with established Zoning Code procedures.

The proposed ESSCSP sets forth goals and objectives for sustainable development practices that would further reduce area and mobile source emissions, such as using sustainable building materials, water conservation, energy efficient lighting, reclaimed landscape water, and designing roof structures to support future solar panels. Although the ESSCSP establishes a minimum exceedance of the California Green Building Standards Code (CALGreen) by 5 percent, Mitigation Measure GHG-1 requires that the Project exceed CALGreen by 15 percent. Mitigation Measure GHG-1 also requires that the Project implement various energy efficiency, water conservation/efficiency, and solid waste reduction measures to further reduce emissions.

The mitigated emissions in [Table 5.3-6](#) include reductions from the Project Design Features identified above and ESMC Chapter 15-16 TDM and trip reduction measures, as well as the measures required by Mitigation Measure GHG-1. As shown in [Table 5.3-6](#), despite implementation of the Project Design Features, ESMC Chapter 15-16 TDM and trip reduction measures, and Mitigation Measure GHG-1, the operational mitigated emissions would remain above SCAQMD thresholds for ROG, NO_x, and CO. Therefore, impacts in this regard would be significant and unavoidable. Impacts related to SO_x, PM₁₀, and PM_{2.5} emissions are below the SCAMD thresholds and are concluded to be less than significant.

Mitigation Measures: Refer to Mitigation Measure GHG-1. No additional feasible mitigation measures are available.

Level of Significance: Significant Unavoidable Impact for ROG, NO_x, and CO emissions. Less Than Significant Impact for SO_x, PM₁₀, and PM_{2.5}.



LOCALIZED EMISSIONS

- **DEVELOPMENT ASSOCIATED WITH THE PROJECT COULD RESULT IN LOCALIZED EMISSIONS IMPACTS OR EXPOSE SENSITIVE RECEPTORS TO SUBSTANTIAL POLLUTANT CONCENTRATIONS.**

Impact Analysis:

Localized Significance Thresholds

Localized Significance Thresholds (LSTs) were developed in response to SCAQMD Governing Boards' Environmental Justice Enhancement Initiative (I-4). The SCAQMD provided the *Final Localized Significance Threshold Methodology* (dated June 2003 [revised July 2008]) for guidance. The LST methodology assists lead agencies in analyzing localized impacts associated with project-specific level proposed projects. The SCAQMD provides the LST lookup tables based on distance from the project (meters) for one, two, and five acre projects emitting CO, NO_x, PM_{2.5}, or PM₁₀. The LST methodology and associated mass rates are not designed to evaluate localized impacts from mobile sources traveling over the roadways. The SCAQMD recommends that any project over five acres perform air quality dispersion modeling to assess impacts to nearby sensitive receptors. The project site is located within Sensitive Receptor Area (SRA) 3, Southwest Coastal LA County.

The closest sensitive receptors to the ESSCSP area are the institutional uses that are located within 25 meters (82 feet) of the area's eastern boundary. If receptors are within 25 meters (82 feet) of the site, the methodology document states that the threshold for the 25-meter (82 feet) distance should be used. Table 5.3-7, *Localized Significance of Emissions*, depicts the localized unmitigated and mitigated construction-related emissions for NO_x, CO, PM₁₀, and PM_{2.5} compared to the LSTs for SRA 3, Southwest Coastal LA County. It is noted that Table 5.3-7 uses the 5-acre LST threshold for screening purposes. As shown in Table 5.3-7, with implementation of Mitigation Measures AQ-1 through AQ-4, project-related mitigated on-site construction emissions would not exceed the LSTs and localized significance impacts for Project construction would be less than significant.

Additionally, for Project operations, the five-acre threshold was conservatively used for receptors of 25 meters (82 feet) away. The LST analysis only includes on-site sources; therefore, the operational emissions shown include area sources. As shown in Table 5.3-7, project-related unmitigated operational area source emissions would be negligible and would not exceed the LSTs for SRA 3. Therefore, localized significance impacts for Project operations would be less than significant.



**Table 5.3-7
Localized Significance of Emissions**

On-Site Sources	Pollutant (pounds/day)			
	NO _x	CO	PM ₁₀	PM _{2.5}
CONSTRUCTION				
Phase I Year 1 (2015)				
Total Unmitigated On-Site Emissions	79.05	50.84	21.15	12.77
Total Mitigated On-Site Emissions	79.05	50.84	10.81	7.09
<i>Localized Significance Threshold</i>	197	1,796	15	8
Thresholds Exceeded?	No	No	No	No
Phase 2 Year 2 (2016)				
Total Unmitigated On-Site Emissions	74.81	49.14	21.00	12.63
Total Mitigated On-Site Emissions	29.78	37.94	8.68	5.21
<i>Localized Significance Threshold</i>	197	1,796	15	8
Thresholds Exceeded?	No	No	No	No
Phase 2 Year 3 (2017)				
Total Unmitigated On-Site Emissions	26.41	18.13	1.78	1.67
Total Mitigated On-Site Emissions	14.17	17.82	0.90	0.90
<i>Localized Significance Threshold</i>	197	1,796	15	8
Thresholds Exceeded?	No	No	No	No
Phase 2 Year 4 (2018)				
Total Unmitigated On-Site Emissions	23.26	17.53	1.49	1.40
Total Mitigated On-Site Emissions	14.17	17.82	0.90	0.90
<i>Localized Significance Threshold</i>	197	1,796	15	8
Thresholds Exceeded?	No	No	No	No
OPERATIONS				
Total Unmitigated Area Source Emissions	0.00	0.22	0.00	0.00
Total Mitigated Area Source Emissions	0.00	0.22	0.00	0.00
<i>Localized Significance Threshold</i>	197	1,796	4	2
Thresholds Exceeded?	No	No	No	No
Note:				
1. The Localized Significance Threshold was determined using Appendix C of the SCAQMD <i>Final Localized Significant Threshold Methodology</i> guidance document for pollutants NO _x , CO, PM ₁₀ , and PM _{2.5} . The Localized Significance Threshold conservatively uses the 5 acre threshold, the distance to sensitive receptors (25 meters), and the source receptor area (SRA 3).				

Carbon Monoxide Hotspots

CO emissions are a function of vehicle idling time, meteorological conditions, and traffic flow. Under certain extreme meteorological conditions, CO concentrations near a congested roadway or intersection may reach unhealthy levels (i.e., adversely affecting residents, school children, hospital patients, the elderly, etc.).

The SCAQMD requires a quantified assessment of CO hotspots when a project increases the volume-to-capacity ratio (also called the intersection capacity utilization) by two percent for any intersection with an existing level of service LOS D or worse. Because traffic congestion is highest at intersections where vehicles queue and are subject to reduced speeds, these hot spots are typically produced at intersections.



The South Coast Air Basin is designated as an attainment/maintenance area for the Federal CO standards and an attainment area for State standards. There has been a decline in CO emissions even though vehicle miles traveled on U.S. urban and rural roads have increased. On-road mobile source CO emissions have declined 24 percent between 1989 and 1998, despite a 23 percent rise in motor vehicle miles traveled over the same 10 years. California trends have been consistent with national trends; CO emissions declined 20 percent in California from 1985 through 1997 while vehicle miles traveled increased 18 percent in the 1990s. Three major control programs have contributed to the reduced per-vehicle CO emissions: exhaust standards, cleaner burning fuels, and motor vehicle inspection/maintenance programs.

A detailed CO analysis was conducted in the *Federal Attainment Plan for Carbon Monoxide* (CO Plan) for the SCAQMD's 2003 Air Quality Management Plan. The locations selected for microscale modeling in the CO Plan are worst-case intersections in the Basin, and would likely experience the highest CO concentrations. Thus, CO analysis within the CO Plan is utilized in a comparison to the Project, since it represents a worst-case scenario with heavy traffic volumes within the Basin.

Of these locations, the Wilshire Boulevard/Veteran Avenue intersection in Los Angeles experienced the highest CO concentration (4.6 parts per million [ppm]), which is well below the 35-ppm 1-hr CO Federal standard. The Wilshire Boulevard/Veteran Avenue intersection is one of the most congested intersections in Southern California with an average daily traffic (ADT) volume of approximately 100,000 vehicles per day. Based on the Project *Traffic Impact Analysis*, none of the study intersections would have an average daily traffic volume greater than 100,000 vehicles per day. As a CO hotspot would not be experienced at the Wilshire Boulevard/Veteran Avenue intersection, it can be reasonably inferred that CO hotspots would not be experienced at any study intersection. Therefore, impacts would be less than significant in this regard.

Mitigation Measures: Refer to Mitigation Measures AQ-1 through AQ-4.

Level of Significance: Less Than Significant Impact with Mitigation.

AIR QUALITY MANAGEMENT PLAN

● THE PROJECT COULD CONFLICT WITH OR OBSTRUCT IMPLEMENTATION OF THE 2012 AIR QUALITY MANAGEMENT PLAN.

Impact Analysis: On December 7, 2012, the SCAQMD Governing Board approved the 2012 AQMP, which outlines its strategies for meeting the NAAQS for PM_{2.5} and ozone. According to the SCAQMD's 2012 AQMP, two main criteria must be addressed.

Criterion 1

With respect to the first criterion, SCAQMD methodologies require that an air quality analysis for a project include forecasts of project emissions in relation to contributing to air quality violations and delay of attainment.



- a) *Would the project result in an increase in the frequency or severity of existing air quality violations?*

Since the consistency criteria identified under the first criterion pertain to pollutant concentrations, rather than to total regional emissions, an analysis of a project's pollutant emissions relative to localized pollutant concentrations is used as the basis for evaluating project consistency.

As previously discussed, localized concentrations of CO, NO_x, PM₁₀, and PM_{2.5} would be less than significant during Project operations. Therefore, the Project would not result in an increase in the frequency or severity of existing air quality violations. Because ROG_s are not a criteria pollutant, there is no ambient standard or localized threshold for ROG_s. Due to the role ROG plays in ozone formation, it is classified as a precursor pollutant and only a regional emissions threshold has been established.

- b) *Would the project cause or contribute to new air quality violations?*

As previously discussed, Project operations would result in emissions that would exceed the SCAQMD operational thresholds. Therefore, the Project would have the potential to cause or affect a violation of the ambient air quality standards.

- c) *Would the project be consistent with the land use planning strategies set forth in the AQMP?*

The Project would result in less than significant impacts with regard to localized concentrations during operations. As such, the Project would not delay the timely attainment of air quality standards or 2012 AQMP emissions reductions.

Criterion 2

With respect to the second criterion for determining consistency with SCAQMD and SCAG air quality policies, it is important to recognize that air quality planning within the Basin focuses on attainment of ambient air quality standards at the earliest feasible date. Projections for achieving air quality goals are based on assumptions regarding population, housing, and growth trends. Thus, the SCAQMD's second criterion for determining project consistency focuses on whether or not the Project exceeds the assumptions utilized in preparing the forecasts presented in the 2012 AQMP. Determining whether or not a project exceeds the assumptions reflected in the 2012 AQMP involves the evaluation of the three criteria outlined below. The following discussion provides an analysis of each of these criteria.

- a) *Would the project be consistent with the population, housing, and employment growth projections utilized in the preparation of the AQMP?*

In the case of the 2012 AQMP, three sources of data form the basis for the projections of air pollutant emissions: the *City of El Segundo General Plan* (General Plan), SCAG's *Growth Management Chapter of the Regional Comprehensive Plan* (RCP), and SCAG's *2012-2035 Regional Transportation Plan/Sustainable Communities Strategy* (RTP/SCS). The RTP/SCS also provides socioeconomic forecast projections of regional population growth.



The ESSCSP includes a land use plan, description of existing and proposed utilities and infrastructure, design guidelines, development standards, and administrative provisions. To implement the proposed ESSCSP, the Project proposes General Plan and General Plan Map Amendments (No. GPA 11-01), among other entitlements, which would change the existing land use designations from Light Industrial (122 acres), Open Space (16 acres), and Public Facilities (4 acres), to ESSCSP. The proposed ESSCSP would also establish a link between the General Plan's implementing policies (i.e., strategies) and the individual development proposals in a defined area. Additionally, as described in Section 5.9, *Population and Housing*, the Project would be consistent with SCAG's growth projections for the City.

The Project proposes to change the site's *General Plan* designation to ESSCSP with a mix of office, commercial, warehouse, and light industrial uses. However, as demonstrated in Table 5.1-1, *General Plan Policy Consistency Analysis*, the proposed ESSCSP is determined to be consistent with the relevant General Plan Policies. Thus, the Project is consistent with the types, intensity, and patterns of land use envisioned for the site vicinity in the *RCP*. The population, housing, and employment forecasts, which are adopted by SCAG's Regional Council, are based on the local plans and policies applicable to the City; these are used by SCAG in all phases of implementation and review. As concluded in Section 6.3, *Growth Inducing Impacts*, the forecast population and household growth attributed to the Project is considered less than significant, since the growth within the City is considered unlikely. Additionally, Project implementation would not cause SCAG's 2022 employment forecast for the City to be exceeded or conflict with SCAG's employment forecasts. As the SCAQMD has incorporated these same projections into the *2012 AQMP*, it can be concluded that the Project would be consistent with the projections.

b) *Would the project implement all feasible air quality mitigation measures?*

The Project would be required to comply with applicable emission reduction measures identified by the SCAQMD. These measures have been included as Mitigation Measures AQ-1 through AQ-4 and GHG-1. The Project thus meets this AQMP consistency criterion.

c) *Would the project be consistent with the land use planning strategies set forth in the AQMP?*

The Project would serve to implement various City and SCAG policies. The Project is located within a developed portion of the City and is considered an infill development. The Project site is located in the vicinity of a mix of uses including offices, manufacturing, and warehousing.

In conclusion, the determination of *2012 AQMP* consistency is primarily concerned with a project's long-term influence on the Basin's air quality. The Project would be consistent with the AQMP's goals and policies for control of fugitive dust. As discussed above, the Project's long-term influence would also be consistent with the SCAQMD and SCAG's goals and policies and is, therefore, considered consistent with the *2012 AQMP*. However, because the Project would potentially result in a long-term impact on the region's ability to meet State and Federal air quality standards due to the exceedance of operational ROG, NO_x, and CO thresholds, impacts associated with compliance with the *2012 AQMP* would be significant and unavoidable with



respect to ROG, NO_x, and CO emissions, and less than significant for all other pollutant criterion emissions.

Mitigation Measures: Refer to Mitigation Measures AQ-1 through AQ-4 and GHG-1. No additional mitigation measures are available.

Level of Significance: Significant and Unavoidable Impact.

5.3.5 CUMULATIVE IMPACTS

Table 4-1, Cumulative Projects List – City of El Segundo, and Table 4-2, Cumulative Projects List – Other Jurisdictions, identifies the related projects and other possible development in the area determined as having the potential to interact with the Project to the extent that a significant cumulative effect may occur. The following discussions are included per topic area to determine whether a significant cumulative effect would occur.

SHORT-TERM CONSTRUCTION AIR EMISSIONS

- **SHORT-TERM CONSTRUCTION ACTIVITIES ASSOCIATED WITH IMPLEMENTATION OF THE PROPOSED PROJECT AND OTHER RELATED CUMULATIVE PROJECTS WOULD RESULT IN AIR POLLUTANT EMISSION IMPACTS OR EXPOSE SENSITIVE RECEPTORS TO SUBSTANTIAL POLLUTANT CONCENTRATIONS.**

Impact Analysis: The SCAQMD neither recommends quantified analyses of cumulative construction or operational emissions, nor does it provide separate methodologies or thresholds of significance to be used to assess cumulative construction or operational impacts. Instead, the SCAQMD recommends that a project's potential contribution to cumulative impacts should be assessed using the same significance criteria as those for project-specific impacts. Therefore, individual development projects that generate construction-related or operational emissions that exceed the SCAQMD recommended daily thresholds for project-specific impacts would also cause a cumulative considerable increase in emissions for those pollutants for which the Basin is nonattainment.

Of the projects that have been identified within the Project study area, there are a number of related projects that have not been built or are currently under construction. Since the Project Applicant has no control over the timing or sequencing of the related projects, any quantitative analysis to ascertain the daily construction emissions that assumes multiple, concurrent construction would be speculative. Based on the projects identified in Tables 4-1 and 4-2, several development projects are anticipated.

With respect to the Project's construction-period air quality emissions and cumulative Basin conditions, the SCAQMD has developed strategies to reduce criteria pollutant emissions outlined in the 2012 AQMP pursuant to FCAA mandates. The Project is required to comply with SCAQMD Rule 403 requirements and implement all feasible mitigation measures. In addition, the Project would comply with adopted 2012 AQMP emissions control measures. Per SCAQMD rules and mandates, as well as the CEQA requirement that significant impacts be mitigated to the extent feasible, these same requirements (i.e., Rule 403 compliance, the implementation of all feasible mitigation measures, and compliance with adopted 2012 AQMP emissions control



measures) would also be imposed on construction projects throughout the Basin, which would include each of the related projects identified in Tables 4-1 and 4-2.

Compliance with SCAQMD rules and regulations and Mitigation Measures AQ-1 through AQ-4 would reduce construction-related impacts to a less than significant level during construction. Thus, it can be reasonably inferred that the Project-related construction activities, in combination with those from other projects in the area, would not significantly deteriorate the local air quality. Cumulative construction-related impacts would be less than significant.

Mitigation Measures: Refer to Mitigation Measures AQ-1 through AQ-4. No additional mitigation measures are required.

Level of Significance: Less Than Significant Impact.

LONG-TERM OPERATIONAL AIR EMISSIONS

● DEVELOPMENT ASSOCIATED WITH IMPLEMENTATION OF THE PROPOSED PROJECT AND OTHER RELATED CUMULATIVE PROJECTS COULD RESULT IN SIGNIFICANT IMPACTS PERTAINING TO OPERATIONAL AIR EMISSIONS.

Impact Analysis: Due to the Basin's nonattainment status for O₃, PM_{2.5}, and PM₁₀, additional emissions in excess of SCAQMD thresholds under a long-term condition for ROG, NO_x, PM_{2.5}, and PM₁₀ would be considered significant and unavoidable for cumulative impacts. ROG, NO_x, and CO emissions are projected to be above the significance thresholds for Project buildout conditions. Despite the fact that the Project is an infill project with a mix of uses in an urban area, Project-related operational emissions would still be significant and unavoidable for regional ROG, NO_x, and CO. Thus, it can be reasonably inferred that Project-related operational activities, combined with those from other projects in the area, would deteriorate the local air quality and lead to cumulative operational-related significant and unavoidable impacts.

Mitigation Measures: No feasible mitigation measures are available.

Level of Significance: Significant Unavoidable Impact for ROG, NO_x, and CO emissions. Less Than Significant Impact for SO_x, PM₁₀, and PM_{2.5}.

5.3.6 SIGNIFICANT UNAVOIDABLE IMPACTS

With implementation of the proposed ESSCSP, significant unavoidable impacts would occur for:

- **Project-Related Operational Emissions.** Despite implementation of Project Design Features and Mitigation Measure GHG-1, the Project's operational mitigated emissions would remain above SCAQMD thresholds for ROG, NO_x, and CO resulting in a significant and unavoidable impact.
- **AQMP Consistency.** Although, the Project's long-term influence would be consistent with the AQMP and SCAG's goals and policies, the Projects exceedance of operational ROG, NO_x, and CO thresholds would potentially result in a long-term impact on the



region's ability to meet State and Federal air quality standards. Therefore, impacts associated with AQMP compliance would be significant and unavoidable.

- *Cumulative Emissions.* Operational activities would create a significant and unavoidable impact due to exceedances of SCAQMD thresholds for ROG, NO_x, and CO. Implementation of recommended Mitigation Measures GHG-1 would reduce impacts; however, a significant and unavoidable impact would remain.

All other air quality impacts associated with Project implementation are either at less than significant levels or can be mitigated to less than significant levels.

In order to approve the proposed ESSCSP, the City Council must cite its findings in accordance with *CEQA Guidelines* § 15091 and adopt a Statement of Overriding Considerations in accordance with *CEQA Guidelines* § 15093.

5.3.7 SOURCES CITED

California Air Resources Board, *Aerometric Data Analysis and Measurement System (ADAM) Air Quality Data Statistics*, <http://www.arb.ca.gov/adam/welcome.html>, accessed October 15, 2013.

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