5.3 Air Quality

5.3 AIR QUALITY

This section focuses on potential short-term air quality impacts associated with project construction activities, and long-term local and regional air quality impacts associated with the project operation. Information in this section is based on the air quality modeling data provided in Appendix 13.4, *Air Quality/Greenhouse Gas Data*, for the proposed project.

5.3.1 EXISTING SETTING

SOUTH COAST AIR BASIN

Geography

The City of Azusa 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 Gorgonio 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 semi-permanent 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 had 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 nine 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 (O_3) 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 area in which the project is located 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.

Azusa experiences average high temperatures of up to 87 degrees (°) Fahrenheit (F) during the month of August, and average low temperatures of 44 °F during the month of December. The City experiences approximately 17.32 inches of precipitation per year, with the most precipitation occurring in the month of February.[1]

LOCAL AMBIENT AIR QUALITY

Air quality at any site is dependent on the regional air quality and local pollutant sources. Regional air quality is determined by the release of pollutants throughout the Basin. Estimates for the Basin have been made for existing emissions.[2] The data indicate that on-road (e.g., automobiles, buses, and trucks) and off-road mobile sources (e.g., trains, ships, and construction equipment) are the major source of current emissions in the Basin. Mobile sources account for approximately 64 percent of volatile organic compounds (VOC) emissions, 92 percent of nitrogen oxides (NO_X) emissions, 39 percent of direct particulate matter smaller than 2.5 microns ($PM_{2.5}$) emissions, 59 percent of sulfur oxides (SO_X) emissions, and 98 percent of carbon monoxide (CO) emissions. Area sources (e.g., architectural coatings, residential water heaters, and consumer products) account for approximately 30 percent of VOC emissions and 32 percent of direct $PM_{2.5}$ emissions. Point sources (e.g., chemical manufacturing, petroleum production, and electric utilities) account for approximately 38 percent of SO_X emissions. Entrained road dust account for approximately 20 percent of direct $PM_{2.5}$ emissions.

The South Coast Air Quality Management District (SCAQMD) has divided its jurisdiction into 38 source receptor areas (SRA) with a designated ambient air monitoring station in most areas. The project is located in the East San Gabriel Valley SRA (SRA 9). The monitoring station representative of this area is the Azusa station, which is located approximately 0.23-mile south-southeast of the project site. The air pollutants measured at the Azusa station site include O_3, CO, particulates (PM_{10} and $PM_{2.5}$), and nitrogen dioxide (NO_2). Sulfur dioxide (SO_2) is not measured at

1 The Weather Channel, Monthly Averages for Azusa, CA, http://www.weather.com/weather/wxclimatology/monthly/USCA0059, accessed on January 24, 2014.
2 South Coast Air Quality Management District, *2012 Air Quality Management Plan*, December 2012.

the Azusa site. Sulfur dioxide levels in the Basin have been well below State and Federal standards for many years. The air quality data monitored at the Azusa station from 2010 to 2012 are presented in Table 5.3-1, *Air Quality Levels Measured at the Azusa Monitoring Station*.

Table 5.3-1
Air Quality Levels Measured at the Azusa Monitoring Station

Pollutant	California Standard	Federal Primary Standard	Year	Maximum Concentration[3]	Days (Samples) State/Federal Std. Exceeded
Ozone (O_3) (1-hour)	0.09 ppm for 1 hour	NA[4]	2010 2011 2012	0.104 ppm 0.111 0.134	5/0 13/0 18/1
Ozone (O_3) (8-hour)	0.070 ppm for 8 hours	0.075 ppm for 8 hours	2010 2011 2012	0.082 ppm 0.092 0.095	3/8 12/19 10/20
Carbon Monoxide (CO) (1-hour)	20 ppm for 1 hour	35 ppm for 1 hour	2010 2011 2012	2.50 ppm 2.41 1.85	0/0 0/0 0/0
Carbon Monoxide (CO) (8-hour)	9.0 ppm for 8 hours	9.0 ppm for 8 hours	2010 2011 2012	1.38 ppm 1.36 1.13	0/0 0/0 0/0
Nitrogen Dioxide (NO_2)[1]	0.18 ppm for 1 hour	0.100 ppm for 1 hour	2010 2011 2012	0.077 ppm 0.080 0.071	0/0 0/0 0/0
Fine Particulate Matter ($PM_{2.5}$)[2]	No Separate Standard	35 µg/m[1] for 24 hours	2010 2011 2012	44.4 µg/m[1] 94.6 39.6	NA/1 NA/2 NA/1
Particulate Matter (PM_{10})[2,3]	50 µg/m[1] for 24 hours	150 µg/m[1] for 24 hours	2010 2011 2012	70.0 µg/m[1] 65.0 78.0	5/0 8/0 6/0

Source: Aerometric Data Analysis and Measurement System (ADAM), summaries from 2010 to 2012, http://www.arb.ca.gov/adam.

ppm = parts per million; PM_{10} = particulate matter 10 microns in diameter or less; NM = not measured; µg/m^3 = micrograms per cubic meter; $PM_{2.5}$ = particulate matter 2.5 microns in diameter or less; NA = not applicable.

Notes:
1. Maximum concentration is measured over the same period as the California Standards.
2. PM_{10} exceedances are based on State thresholds established prior to amendments adopted on June 20, 2002.
3. PM_{10} and $PM_{2.5}$ exceedances are derived from the number of samples exceeded, not days.
4. The Federal standard was revoked in June 2005.

Ozone. O_3 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. 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. NO_2 (often used interchangeably with NO_X) is a reddish-brown gas that can cause breathing difficulties at high levels. Peak readings of NO_2 occur in areas that have a high concentration of combustion sources (e.g., motor vehicle engines, power plants, refineries, and other industrial operations).

NO_2 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 NO_2 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 NO_2 may aggravate eyes and mucus membranes and cause pulmonary dysfunction.

Coarse Particulate Matter (PM_{10}). PM_{10} refers to suspended particulate matter, which is smaller than 10 microns or ten one-millionths of a meter. PM_{10} arises from sources such as road dust, diesel soot, combustion products, construction operations, and dust storms. PM_{10} scatters light and significantly reduces visibility. In addition, these particulates penetrate into lungs and can potentially damage the respiratory tract. On June 19, 2003, the California Air Resources Board (CARB) adopted amendments to the statewide 24-hour particulate matter standards based upon requirements set forth in the Children's Environmental Health Protection Act (Senate Bill 25).

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. In 1997, the U.S. Environmental Protection Agency (EPA) announced new $PM_{2.5}$ standards. Industry groups challenged the new standard in court and the implementation of the standard was blocked. However, upon appeal by the EPA, the United States Supreme Court reversed this decision and upheld the EPA's new standards.

On January 5, 2005, the EPA published a Final Rule in the Federal Register that designates the Basin as a nonattainment area for Federal $PM_{2.5}$ standards. On June 20, 2002, CARB adopted amendments for statewide annual ambient particulate matter air quality standards. These standards were revised/established due to increasing concerns by CARB that previous standards were inadequate, as almost everyone in California is exposed to levels at or above the current State standards during some parts of the year, and the statewide potential for significant health impacts associated with particulate matter exposure was determined to be large and wide-ranging.

SENSITIVE RECEPTORS

Sensitive 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.

The immediate project area is developed with industrial and commercial uses and there are no sensitive uses in the immediate project area. The Vulcan Materials Quarry and industrial uses border the project site to the south; industrial uses are also located to the north and east. The Azusa Greens Country Club is located to the east across North Todd Avenue.

The nearest residential uses to the project site are located approximately 1,040 feet to the northeast, north of Sierra Madre Avenue. The nearest school to the project site is Hodge Elementary School, located approximately 2,710 feet to the east of the project site, north of West Eleventh Street. It should be noted that the Southern California Laborers Training School adjoins the project site to the west; however, this is a vocational school specializing in training construction workers, which includes operating machinery, and other hands-on learning activities that would render it to not be considered a sensitive receptor for air quality purposes.

5.3.2 REGULATORY FRAMEWORK

U.S. ENVIRONMENTAL PROTECTION AGENCY

The 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 O_3, CO, NO_2, which is a form of NO_X, SO_2, which is a form of SO_x, PM_{10}, $PM_{2.5}$, and lead (Pb); refer to Table 5.3-2, *National and California Ambient Air Quality Standards*. Proposed projects in or near nonattainment areas could be subject to more stringent air-permitting requirements. The Clean Air Act requires each state to prepare a State Implementation Plan (SIP) to demonstrate how it will attain the NAAQS within the federally imposed deadlines.

The EPA can withhold certain transportation funds from states that fail to comply with the planning requirements of the Clean Air Act. If a state fails to correct these planning deficiencies within two years of Federal notification, the EPA is required to develop a Federal implementation plan for the identified nonattainment area or areas. The provisions of 40 CFR Parts 51 and 93 apply in all nonattainment and maintenance areas for transportation-related criteria pollutants for which the area is designated nonattainment or has a maintenance plan. The EPA has designated enforcement of air pollution control regulations to the individual states.

Table 5.3-2
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
	8 Hours	0.070 ppm (137 μg/m^3)	N/A	0.075 ppm (147 μg/m^3)	**Extreme 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[6]	N/A
Fine Particulate Matter ($PM_{2.5}$)[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)	1 Hour	20 ppm (23 mg/m^3)	Attainment	35 ppm (40 mg/m^3)	Attainment/Maintenance
	8 Hours	9.0 ppm (10 mg/m^3)	Attainment	9 ppm (10 mg/m^3)	Attainment/Maintenance
Nitrogen Dioxide (NO_2)[6]	1 Hour	0.18 ppm (339 μg/m^3)	**Nonattainment**	100 ppb (188 μg/m^3)	Unclassified/Attainment
	Annual Arithmetic Mean	0.030 ppm (57 μg/m^3)	**Nonattainment**	0.053 ppm (100 μg/m^3)	Attainment/Maintenance
Sulfur Dioxide (SO_2)[7]	1 Hour	0.25 ppm (655 μg/m^3)	Attainment	75 ppb (196 μg/m^3)	N/A
	3 Hours	N/A	N/A	N/A	N/A
	24 Hours	0.04 ppm (105 μg/m^3)	Attainment	0.14 ppm	Unclassified/Attainment
	Annual Arithmetic Mean	N/A	N/A	0.030 ppm (for certain areas)	N/A
Lead (Pb)[8, 9]	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
Visibility-Reducing Particles[10]	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[9]	24 Hour	0.01 ppm (26 μg/m^3)	N/A		

μg/m^3 = 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

1. California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1- and 24-hour), nitrogen dioxide, suspended particulate matter-PM_{10} 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.
2. National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 mg/m^3 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. Contact U.S. EPA for further clarification and current Federal policies.
3. 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.
4. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.
5. On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 μg/m^3 to 12.0 μg/m^3. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 μg/m^3, as was the annual secondary standard of 15 μg/m^3. The existing 24-hour PM_{10} standards (primary and secondary) of 150 μg/m^3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.
6. To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.100 ppm (effective January 22, 2010).
7. On June 2, 2010, a new 1-hour SO_2 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 SO_2 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 parts per billion (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.
8. 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.
9. National lead standard, rolling 3-month average: final rule signed October 15, 2008.
10. 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, June 4, 2013.

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 5.3-2, 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 AQMP's also serve as the basis for preparation of SIP for the State of California.

Like the EPA, 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.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

The 2012 *Air Quality Management Plan* (2012 AQMP), which was adopted in December 2012, 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 (formerly named the Southeast Desert Air Basin) that are under the South Coast Air Quality Management District's (SCAQMD's) jurisdiction. The AQMP relies on a regional and multi-level partnership of governmental agencies at the federal, state, regional, and local level. These agencies (EPA, CARB, local governments, Southern California Association of Governments [SCAG] and the SCAQMD) are the primary agencies that implement the AQMP programs. The 2012 AQMP incorporates the latest scientific and technical information and planning assumptions, including the *2012 Regional Transportation Plan/Sustainable Communities Strategy* (RTP/SCS), updated emission inventory methodologies for various source categories, and SCAG's latest growth forecasts.

The 2012 AQMP addresses several state and federal planning requirements, incorporating new scientific information, primarily in the form of updated emissions inventories, ambient measurements, and new meteorological air quality models. The 2012 AQMP highlights the reductions and the interagency planning necessary to identify additional strategies, especially in the area of mobile sources, to meet all federal criteria pollutant standards within the timeframes allowed under federal Clean Air Act. The primary task of the 2012 AQMP is to bring the Basin into attainment with federal health-based standards.

SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS

SCAG is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial Counties and serves as a forum for regional issues relating to transportation, the economy, community development, and the environment. SCAG serves as the federally designated metropolitan planning organization (MPO) for the Southern California region and is the largest metropolitan planning organization in the United States. With respect to air quality planning, SCAG prepared the RTP/SCS, which is the culmination of a multi-year effort involving stakeholders from

across the region, which includes Growth Management and Regional Mobility chapters that form the basis for the land use and transportation control portions of the 2012 AQMP. SCAG is responsible under the FCAA for determining conformity of projects, plans, and programs within the jurisdiction of the SCAQMD.

5.3.3 IMPACT THRESHOLDS AND SIGNIFICANCE CRITERIA

CEQA THRESHOLDS

The environmental analysis in this section is patterned after the Initial Study Checklist recommended by the *CEQA Guidelines*, as amended. 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 environmental impact if it causes one or more of the following to occur:

- Conflict with or obstruct implementation of the applicable air quality plan (refer to Impact Statement AQ-5);
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation (refer to Impact Statement AQ-1 and AQ-2);
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable Federal or State ambient air quality standard (including releasing emissions that exceed quantitative thresholds for O3 precursors) (refer to Impact Statement AQ-1 and AQ-2);
- Expose sensitive receptors to substantial pollutant concentrations (refer to Impact Statement AQ-3); and
- Create objectionable odors affecting a substantial number of people (refer to Impact Statement AQ-4).

Based on these standards and thresholds, the effects of the proposed project have been categorized as either a "less than significant impact" or a "potentially significant impact." Mitigation measures are recommended for potentially significant impacts.

REGIONAL AIR QUALITY THRESHOLDS

Under CEQA, the 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 O_3 and PM_{10}. 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.

The *CEQA Air Quality Handbook* also provides significance thresholds for both construction and operation of projects within the SCAQMD jurisdictional boundaries. If the SCAQMD thresholds are exceeded, a potentially significant impact could result. However, ultimately the lead agency determines the thresholds of significance for impacts. If a project proposes development in excess of the established thresholds, as outlined in Table 5.3-3, *South Coast Air Quality Management District Emissions Thresholds*, a significant air quality impact may occur and additional analysis is warranted to fully assess the significance of impacts.

Table 5.3-3
South Coast Air Quality Management District Emissions Thresholds

Phase	Pollutant (lbs/day)					
	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Construction	75	100	550	150	150	55
Operational	55	55	550	150	150	55

Source: South Coast Air Quality Management District, *CEQA Air Quality Handbook*, November 1993.

Local Carbon Monoxide Standards

In addition, the significance of localized project impacts depends on whether ambient CO levels in the vicinity of the project are above or below State and Federal CO standards, as follows:

- If the project causes an exceedance of either the State one-hour or eight-hour CO concentrations, the project would be considered to have a significant local impact.

- If ambient levels already exceed a State or Federal standard, then project emissions would be considered significant if they increase one-hour CO concentrations by 1.0 ppm or more, or eight-hour CO concentrations by 0.45 ppm or more.

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 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 for one-, two-, and five-acre projects emitting CO, NO_X, or PM_{10}. 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 should perform air quality dispersion modeling to assess impacts to nearby sensitive receptors.

5.3.4 IMPACTS AND MITIGATION MEASURES

SHORT-TERM (CONSTRUCTION) AIR EMISSIONS

AQ-1 SHORT-TERM CONSTRUCTION ACTIVITIES ASSOCIATED WITH THE PROPOSED PROJECT WOULD NOT RESULT IN SIGNIFICANT AIR POLLUTANT EMISSION IMPACTS.

Impact Analysis: Short-term air quality impacts are predicted to occur during grading and construction operations associated with implementation of the proposed project. Temporary 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.

Construction activities would include demolition, site preparation, grading, construction of buildings, paving, and architectural coating. Demolition activities would consist of removal of the existing one-story office building in the eastern portion of the site near North Todd Avenue, demolition of building foundations, and the concrete remnants of the former shipping/receiving bay. Site grading would disturb approximately 21 acres and require approximately 120,000 cubic yards of cut and fill, all of which would remain on-site; there would be no soil import or export. Project construction requires concrete/industrial saws, excavators, and dozers during demolition; excavators, graders, dozers, scrapers, tractors, and water trucks during grading; cranes, forklifts, generators, tractors, and welders during building construction; pavers, rollers, and paving equipment during paving; 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 13.4, *Air Quality/Greenhouse Gas Data*, for the CalEEMod outputs and results. Table 5.3-4, *Project Construction Emissions*, presents the anticipated daily short-term construction emissions.

Fugitive Dust Emissions

Construction activities are a source of fugitive dust (PM_{10} and $PM_{2.5}$) emissions that may have a substantial, temporary impact on local air quality. In addition, fugitive dust may be a nuisance to those living and working in the project area. Fugitive dust emissions are associated with land clearing, ground excavation, cut-and-fill, and truck travel on unpaved roadways (including demolition as well as construction activities). Fugitive dust emissions vary substantially from day to day, depending on the level of activity, specific operations, and weather conditions. Fugitive dust from demolition, grading, and construction is expected to be short-term and would cease upon project completion. Additionally, most of this material is inert silicates, rather than the complex organic particulates released from combustion sources, which are more harmful to health.

Table 5.3-4
Project Construction Emissions

Emissions Source	Pollutant (pounds/day) [1, 2]					
	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
2014						
Unmitigated Emissions	74.35	135.78	96.94	0.11	10.85	7.63
Mitigated Emissions	70.25	54.06	78.79	0.11	4.19	3.00
SCAQMD Thresholds	75	100	550	150	150	55
Is Threshold Exceeded After Mitigation?	***No***	***No***	***No***	***No***	***No***	***No***
2015						
Unmitigated Emissions	73.77	50.65	53.51	0.09	6.45	3.64
Mitigated Emissions	69.94	29.46	53.52	0.09	4.14	3.64
SCAQMD Thresholds	75	100	550	150	150	55
Is Threshold Exceeded After Mitigation?	***No***	***No***	***No***	***No***	***No***	***No***

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. The mitigation includes the following: properly maintain mobile and other construction equipment; replace ground cover in disturbed areas quickly; water exposed surfaces three times daily; cover stock piles with tarps; water all haul roads twice daily; and limit speeds on unpaved roads to 15 miles per hour.

Refer to Appendix 13.4, *Air Quality/Greenhouse Gas Data*, for assumptions used in this analysis.

Dust (larger than 10 microns) generated by such activities usually becomes more of a local nuisance than a serious health problem. Of particular health concern is the amount of PM_{10} (particulate matter smaller than 10 microns) generated as a part of fugitive dust emissions. PM_{10} poses a serious health hazard alone or in combination with other pollutants. Fine Particulate Matter ($PM_{2.5}$) is mostly produced by mechanical processes. These include automobile tire wear, industrial processes such as cutting and grinding, and re-suspension of particles from the ground or road surfaces by wind and human activities such as construction or agriculture. $PM_{2.5}$ is mostly derived from combustion sources, such as automobiles, trucks, and other vehicle exhaust, as well as from stationary 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. $PM_{2.5}$ components from material in the earth's crust, such as dust, are also present, with the amount varying in different locations.

Mitigation Measure AQ-1 would implement dust control techniques (i.e., daily watering), limitations on construction hours, and adherence to SCAQMD Rules 402 and 403 (which require watering of inactive and perimeter areas, track out requirements, etc.), to reduce PM_{10} and $PM_{2.5}$ concentrations. These are standard dust control measures that the SCAQMD requires for all projects. As indicated in Table 5.3-3, total PM_{10} and $PM_{2.5}$ emissions would be below the SCAQMD thresholds. Therefore, particulate matter impacts during construction would be less than significant.

ROG Emissions

In addition to gaseous and particulate emissions, the application of asphalt and surface coatings creates ROG emissions, which are O_3 precursors. In accordance with the methodology prescribed by the SCAQMD, the ROG emissions associated with paving have been quantified with CalEEMod. Architectural coatings were also quantified with CalEEMod based upon the size of the buildings.

The highest concentration of ROG emissions would be generated during the application of architectural coatings on the building. As required by law, all architectural coatings for the proposed project structures would comply with SCAQMD Regulation XI, Rule 1113 – Architectural Coating.[3] Rule 1113 provides specifications on painting practices as well as regulates the ROG content of paint. As shown in Table 5.3-3, project construction would not result in an exceedance of ROG emissions during any years of construction. Therefore, impacts would be less than significant in this regard.

Construction Equipment and Worker Vehicle Exhaust (NO_X 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 and from the site. As seen in Table 5.3-3, unmitigated NO_X construction emissions would exceed SCQMD thresholds during 2014 construction activities. However, implementation of Mitigation Measures AQ-1 and AQ-2 would reduce 2014 NO_X construction emissions to below SCAQMD thresholds; refer to Table 5.3-3. Mitigation Measure AQ-1 requires compliance with the regulations under SCAQMD Rule 403 Standard SCAQMD, which includes maintaining all construction equipment in proper tune, and shutting down equipment when not in use for extended periods of time. Mitigation Measure AQ-2 requires all off-road diesel-powered construction equipment greater than 50 horsepower to meet Tier 3 off-road emissions standards, and requires all construction equipment to be outfitted with Best Available Control Technology (BACT) devices certified by CARB. Implementation of Mitigation Measures AQ-1 and AQ-2 would reduce NO_X emissions to below SCAQMD thresholds, and therefore a less than significant impact would occur.

Naturally Occurring Asbestos

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 was identified as a toxic air contaminant by the California Air Resources Board in 1986.

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

[3] South Coast Air Quality Management District, *Regulation XI Source Specific Standards,* http://www.aqmd.gov/rules/reg/reg11_tofc.html, accessed on January 24, 2014.

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. 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* (August 2000), serpentinite and ultramafic rocks are not known to occur within the project area. Thus, there would be no impact in this regard.

Total Daily Construction Emissions

In accordance with the SCAQMD Guidelines, CalEEMod was utilized to model construction emissions for ROG, NO_X, CO, SO_X, PM_{10}, and $PM_{2.5}$. Construction would occur over a one-year period with the greatest emissions being generated during the initial stages of construction. Additionally, the greatest amount of ROG emissions would typically occur during the final stages of development due to the application of architectural coatings.

CalEEMod allows the user to input mitigation measures such as watering the construction area to limit fugitive dust. Mitigation measures that were input into 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 districts throughout California, and were programmed within CalEEMod. As indicated in Table 5.3-3, CalEEMod calculates the reduction associated with recommended mitigation measures.

As depicted in Table 5.3-3, construction emissions would be below SCAQMD thresholds with implementation of Mitigation Measures AQ-1 and AQ-2. Thus, construction related air emissions would be less than significant.

Mitigation Measures:

AQ-1 Prior to issuance of any Grading Permit, the City Engineer and/or the Chief Building Official shall confirm that the Grading Plan, Building Plans, and specifications stipulate that, in compliance with SCAQMD Rule 403, excessive fugitive dust emissions shall be controlled by regular watering or other dust prevention measures, as specified in the SCAQMD's Rules and Regulations. In addition, SCAQMD Rule 402 requires implementation of dust suppression techniques to prevent fugitive dust from creating a nuisance off-site. Implementation of the following measures would reduce short-term fugitive dust impacts on nearby sensitive receptors:

- All active portions of the construction site shall 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.

- 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 shall occur if dust is observed migrating from the site during site disturbance.

- Any on-site stockpiles of debris or on-site haul roads, dirt, or other dusty material shall be enclosed, covered, or watered twice daily, or non-toxic soil binders shall be applied.

- All grading and excavation operations shall be suspended when wind speeds exceed 25 miles per hour.

- Disturbed areas shall 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) shall be installed to reduce mud/dirt trackout from unpaved truck exit routes. Alternatively a wheel washer shall be used at truck exit routes.

- On-site vehicle speed shall be limited to 15 miles per hour.

- All material transported off-site shall be either sufficiently watered or securely covered to prevent excessive amounts of dust prior to departing the job site.

- Reroute construction trucks away from congested streets or sensitive receptor areas.

AQ-2 The following measures shall be implemented during construction to substantially reduce NO_X related emissions. They shall be included in the Grading Plan, Building Plans, and/or contract specifications. Contract specification language shall be reviewed by the City Engineer and/or Chief Building Official prior to issuance of a grading permit.

- Off-road diesel equipment operators shall be required to shut down their engines rather than idle for more than five minutes, and shall ensure that all off-road equipment is compliant with the CARB in-use off-road diesel vehicle regulation and SCAQMD Rule 2449.

- Require the use of 2010 and newer diesel haul trucks (e.g., material delivery trucks and soil import/export) and if the lead agency determines that 2010 model year or newer diesel trucks cannot be obtained the lead agency shall use trucks that meet EPA 2007 model year NO_X emissions requirements

- The following note shall be included on all grading plans: During project construction, all internal combustion engines/construction, equipment operating on the project site shall 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 shall meet Tier 3 off-road emissions standards. In addition, all construction equipment shall be outfitted with Best Available Control Technology (BACT) devices certified by CARB. Any emissions control device used by the contractor shall achieve emissions reductions that are no 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 shall meet the Tier 4 emission standards, where available. In

addition, all construction equipment shall be outfitted with BACT devices certified by CARB. Any emissions control device used by the contractor shall achieve emissions reductions that are no 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 shall be provided at the time of mobilization of each applicable unit of equipment.

- The contractor or Applicant, depending on who supplies the equipment, shall maintain construction equipment engines by keeping them tuned and regularly serviced to minimize exhaust emissions.

- Use low sulfur fuel for stationary construction equipment. This is required by SCAQMD Rules 431.1 and 431.2.

- Utilize existing power sources (i.e., power poles) when available. This measure would minimize the use of higher polluting gas or diesel generators.

- Configure construction parking to minimize traffic interference.

- Minimize obstruction of through-traffic lanes and provide temporary traffic controls such as a flag person during all phases of construction when needed to maintain smooth traffic flow. Construction shall be planned so that lane closures on existing streets are kept to a minimum.
- Schedule construction operations affecting traffic for off-peak hours to the best extent when possible.

- Develop a traffic plan to minimize traffic flow interference from construction activities (the plan may include advance public notice of routing, use of public transportation and satellite parking areas with a shuttle service.)

- Construction-related equipment, including heavy-duty equipment, motor vehicles, and portable equipment, shall be turned off when not in use for more than five minutes.

Level of Significance: Less Than Significant Impact With Mitigation Incorporated.

LONG-TERM (OPERATIONAL) AIR EMISSIONS

AQ-2 DEVELOPMENT ASSOCIATED WITH THE PROPOSED PROJECT WOULD RESULT IN SIGNIFICANT AND UNAVOIDABLE IMPACTS PERTAINING TO OPERATIONAL AIR EMISSIONS.

Impact Analysis:

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, PM_{10}, and $PM_{2.5}$ are all pollutants of regional concern (NO_X and ROG react with sunlight to form O_3 [photochemical smog], and wind currents readily transport SO_X, PM_{10}, 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. Trip generation rates associated with the project were based on traffic data within the *10th Street Center Master Plan Traffic Report* (*Traffic Impact Study*) prepared by Stantec (December 2013). The proposed project would result in 1,462 new daily trips. Of these 1,462 trips, it is expected that 65 percent would be made by light duty automobiles, 20 percent from vans/trucks, and 15 percent from heavy duty trucks. Table 5.3-5, *Long-Term Air Emissions*, presents the anticipated mobile source emissions. As shown in Table 5.3-4, NO_X emissions generated by vehicle traffic associated with the proposed project would exceed the established SCAQMD regional threshold by 22.62 lbs/day; all other criteria pollutant emissions would be below SCAQMD thresholds. Because the NO_X emissions would exceed SCAQMD thresholds, a significant and unavoidable impact would occur. Mitigation Measure AQ-3 would be implemented to reduce emissions from mobile sources by requiring project design features such as trip reduction programs and rideshare programs.

Table 5.3-5
Long-Term Air Emissions

Source	Estimated Emissions (pounds/day) [1]					
	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Proposed Emissions						
Area Sources	13.15	0.00	0.09	0.00	0.00	0.00
Energy Sources	0.06	0.56	0.47	0.00	0.04	0.04
Mobile Sources[2]	8.79	77.06	103.03	0.25	14.83	4.97
Total Proposed Emissions	*22.0*	*77.62*	*103.59*	*0.25*	*14.87*	*5.01*
SCAQMD Threshold	*55*	*55*	*550*	*150*	*150*	*55*
Is Threshold Exceeded? (Significant Impact)	**No**	**Yes**	**No**	**No**	**No**	**No**

Notes:
1. Based on CalEEMod modeling results, worst-case seasonal emissions for area and mobile emissions have been modeled.
2. Mobile source emissions were conservatively calculated based on the December 2013 *Traffic Impact Analysis*, prepared by Stantec Consultants. The project-generated trips calculated in the December 2013 *Traffic Impact Study* (1,462 total trips, 219 heavy truck trips) are greater than the trips calculated in the April 2014 *Traffic Impact Study* (1,309 total trips, 165 heavy truck trips), prepared by Stantec Consultants. Thus, this analysis of long-term air emissions is considered conservative. Refer to Appendix 13.3, *Traffic Report*.

Source: Refer to Appendix 13.4, *Air Quality/Greenhouse Gas Data*, for assumptions used in this analysis.

Area Source Emissions

Area source emissions would be generated due to an increased demand for natural gas associated with the development of the proposed project. The primary use of natural gas producing area source emissions by the project would be for consumer products, architectural coating, and landscaping. The proposed project would not include wood burning fireplaces or other devices per SCAQMD Rule 445 (Wood Burning Devices). As shown in Table 5.3-5, unmitigated area source emissions from the proposed project would not exceed SCAQMD thresholds for ROG, NO_X, CO, SO_X, PM_{10}, or $PM_{2.5}$.

Energy Source Emissions

Energy source emissions would be generated as a result of electricity and natural gas (non-hearth) usage associated with the proposed project. The primary use of electricity and natural gas by the project would be for space heating and cooling, water heating, ventilation, lighting, appliances, and electronics. As shown in Table 5.3-5, unmitigated energy source emissions from the proposed project would not exceed SCAQMD thresholds for ROG, NO_X, CO, SO_X, PM_{10}, or $PM_{2.5}$.

Conclusion

As indicated in Table 5.3-5, operational NO_X emissions from the proposed project would exceed SCAQMD thresholds; all other criteria pollutants would not exceed SCAQMD thresholds. The site has already been designed for efficient traffic flow, and future occupants of the site are unable to regulate the efficiency of employee or commuter vehicles. There are no feasible mitigation measures to reduce operational NO_X emissions for the proposed project. As a result, a significant and unavoidable impact would occur with regards to operational air emissions despite implementation of Mitigation Measure AQ-3.

Mitigation Measures:

AQ-3 The proposed project shall include, but not be limited to, the following list of project design features. These features shall be incorporated into the project design to ensure consistency with adopted statewide plans and programs. The project applicant shall demonstrate the incorporation of the following project design features prior to the issuance of building or occupancy permits as applicable. Lease/purchase documents shall identify that tenants are required to implement the following:

- At project start, all heavy duty trucks entering the property must meet or exceed 2010 engine emission standards specified in California Code of Regulations Title 13, Article 4.5, Chapter 1, Section 2025 (prior to issuance of occupancy permit).

- If the above clean truck requirements are infeasible, a phase-in schedule shall be set forth that shall feasibly achieve emission reductions as soon as possible, and faster than existing regulations (i.e., California Code of Regulations Title 13, Article 4.5, Chapter 1, Section 2025). Should an alternative schedule be found necessary, the SCAQMD staff shall be consulted prior to approving the schedule (prior to issuance of occupancy permit).

- Require at least a portion of the construction equipment fleet to utilize alternative fueled technologies (prior to issuance of occupancy permit).

- At a minimum, require tenants upon occupancy that do not already operate 2007 and newer trucks to apply in good faith for funding to replace/retrofit their trucks, such as Carl Moyer, VIP, Prop 1B, or other similar funds. Should funds be awarded, the tenant should also be required to accept and use them (prior to issuance of occupancy permit).

- Provide food options, fueling, truck repair and or convenience store on-site to minimize the need for trucks to traverse through residential neighborhoods (prior to issuance of building permit).

- Require all on-site vehicles (hostlers, forklifts, etc.) to utilize zero or near-zero emission technology (prior to issuance of occupancy permit).

- Implement a trip reduction program, for which all employees shall be eligible to participate (prior to issuance of occupancy permit).

- Provide a ride sharing program, for which all employees shall be eligible to participate (prior to issuance of occupancy permit).

- Provide transit subsidies, for which all employees shall be eligible to receive (prior to issuance of occupancy permit).

Level of Significance: Significant and Unavoidable Impact.

LOCALIZED HOT-SPOT EMISSIONS

AQ-3 DEVELOPMENT ASSOCIATED WITH THE PROJECT WOULD NOT RESULT IN SIGNIFICANT LOCALIZED EMISSIONS IMPACTS OR EXPOSE SENSITIVE RECEPTORS TO SUBSTANTIAL POLLUTANT CONCENTRATIONS.

Impact Analysis: Sensitive receptors are defined as facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. CARB has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over 65, children under 14, athletes, and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis.

Sensitive receptors near the project site include surrounding residences approximately 1,040 feet to the northeast of the project site, to the north of Sierra Madre Avenue. The next nearest sensitive receptors are residences located approximately 1,455 to the east, east of the Azusa Greens Country Club. In order to identify impacts to sensitive receptors, the SCAQMD recommends addressing localized significance thresholds (LSTs) for construction and operations impacts (area sources only). The CO hotspot analysis following the LST analysis addresses localized mobile source impacts.

Localized Significance Thresholds (LST)

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 2008]) for guidance. The LST methodology assists lead agencies in analyzing localized air quality impacts. The SCAQMD provides the LST screening lookup tables for one, two, and five acre projects emitting CO, NO_X, $PM_{2.5}$, or PM_{10}. 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 should perform air quality dispersion modeling to assess impacts to nearby sensitive receptors from area source emissions. For LST analysis purposes, SCAQMD is divided into 38 Source Receptor Areas (SRAs), each of which contain specific localized air quality emission thresholds for CO, NO_X, $PM_{2.5}$, and PM_{10} to determine local air quality impacts. The project is located within SRA 9, East San Gabriel Valley.

Construction

The SCAQMD guidance on applying CalEEMod to LSTs specifies the amount of acres a particular piece of equipment would likely disturb per day. SCAQMD provides LST thresholds for one-, two-, and five-acre site disturbance areas; SCAQMD does not provide LST thresholds for projects over five acres. Based on the SCAQMD guidance on applying CalEEMod to LSTs, the project would disturb approximately 21 acres of land per day (as a conservative estimate). Therefore, the LST thresholds for five acres were utilized for the construction and operation LST analyses (see operations LST analysis below). The five-acre LST threshold was used as a conservative estimate for the project, as 21 acres of land would be disturbed per day. The emissions from the proposed project (21 acres) have been compared to a smaller threshold (five acres), and therefore this LST analysis is considered a conservative approach.

The closest sensitive receptors to the project site are located to the northeast of the project site, to the north of Sierra Madre Avenue. These sensitive land uses may be potentially affected by air pollutant emissions generated during on-site construction activities. LST thresholds are provided for distances to sensitive receptors of 25, 50, 100, 200, and 500 meters. As the nearest sensitive uses are approximately 1,040 feet northeast of the project site, LST values were interpolated for 317 meters as a conservative approach. Table 5.3-6, *Localized Significance of Construction Emissions*, shows the localized unmitigated and mitigated construction-related emissions. As seen in Table 5.3-6, mitigated on-site emissions would not exceed the LSTs for SRA 9. It should be noted that although unmitigated construction emissions would be under LST thresholds for SRA 9, implementation of Mitigation Measures AQ-1 and AQ-2 would further reduce construction emissions to an even lesser level of insignificance.

Table 5.3-6
Localized Significance of Construction Emissions

Source	Pollutant (pounds/day)[1]			
	NO_X	CO	PM_{10}	$PM_{2.5}$
2014				
Total Unmitigated On-Site Emissions[2]	228.01	143.36	17.51	14.03
Total Mitigated On-Site Emissions[2]	98.15	121.05	6.68	5.56
Localized Significance Threshold[1]	*452*	*14,603*	*153*	*67*
Thresholds Exceeded?	***No***	***No***	***No***	***No***
2015				
Total Unmitigated On-Site Emissions[3]	39.83	23.72	2.63	2.49
Total Mitigated On-Site Emissions[3]	18.64	23.72	1.13	1.13
Localized Significance Threshold[1]	*452*	*14,603*	*153*	*67*
Thresholds Exceeded?	***No***	***No***	***No***	***No***

Notes:
1. The Localized Significance Threshold was determined using Appendix C of the SCAQMD Final Localized Significant Threshold Methodology guidance document for pollutants NO_X, CO, PM_{10}, and $PM_{2.5}$. The Localized Significance Threshold was based on the anticipated daily acreage disturbance for construction, the distance to sensitive receptors, and the source receptor area (SRA 9). The thresholds were interpolated for the receptors located approximately 317 meters away.
2. 2014 Demolition Phase represents the worst case scenario for NO_X and CO and the Grading Phase represents the worst case scenario for PM_{10} and $PM_{2.5}$.
3. 2015 Building and Architectural Coating (overlapping phases) represents the worst case scenario.

Operations

For project operations, the five-acre threshold was conservatively utilized, as the project site is approximately 21 acres. As the nearest sensitive uses are approximately 1,040 feet (317 meters) to the project site, LST thresholds were interpolated for the proposed project emissions. As seen in Table 5.3-7, *Localized Significance of Operational Emissions*, project-related unmitigated operational area source emissions would be negligible and would be below the LSTs. Therefore, operational LST impacts would be less than significant in this regard. It should be noted that although unmitigated operational emissions would be under LST thresholds for SRA 9, implementation of Mitigation Measure AQ-3 would further reduce operational emissions to an even lesser level of insignificance.

Table 5.3-7
Localized Significance of Operational Emissions

Source	Pollutant (pounds/day)			
	NO_X	CO	PM_{10}	$PM_{2.5}$
Operational				
Total Unmitigated Area Source Emissions	0.00	0.09	0.00	0.00
Localized Significance Threshold[2]	*452*	*14,603*	*37*	*16*
Thresholds Exceeded?	***No***	***No***	***No***	***No***

Note:
1. The proposed project does not include hearths.
2. The Localized Significance Threshold was determined using Appendix C of the SCAQMD Final Localized Significant Threshold Methodology guidance document for pollutants NO_X, CO, PM_{10}, and $PM_{2.5}$. The Localized Significance Threshold was based on the total acreage, the distance to sensitive receptors, and the source receptor area (SRA 9). The thresholds were interpolated for the receptors located approximately 317 meters away.

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 unhealthful levels (i.e., adversely affect 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 0.02 (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 hotspots are typically produced at intersections. Table 5.3-8, *Project Carbon Monoxide Concentrations*, provides the CO hotspot analysis results for the study intersection that warranted a CO hotspot analysis.

Table 5.3-8
Project Carbon Monoxide Concentrations

Intersection	1-hour CO (ppm)[1]		8-Hour CO (ppm) [1]	
	1-hour Standard	Future + Project	8-hour Standard	Future + Project
I-605/Mount Olive and Huntington Drive	20 ppm	2.4	9 ppm	1.5
Irwindale Avenue and Foothill Boulevard	20 ppm	2.4	9 ppm	1.5
Irwindale Avenue and I-210 Eastbound	20 ppm	2.8	9 ppm	1.7
Azusa Avenue and Foothill Boulevard	20 ppm	2.1	9 ppm	1.3
Azusa Avenue and First Street	20 ppm	2.4	9 ppm	1.5
I-210 Westbound/Alameda Avenue and First Street	20 ppm	2.2	9 ppm	1.3

Note:
1. As measured at a distance of 10 feet from the corner of the intersection predicting the highest value. Presented 1 hour CO concentrations include a background concentration of 1.85 ppm. Eight-hour concentrations are based on a persistence of 0.61 of the 1-hour concentration. Refer to Appendix 13.4, *Air Quality and Greenhouse Gas Data*.

The projected traffic volumes were modeled using the CALINE4 dispersion model. The resultant values were then added to an ambient concentration. A receptor height of 1.8 meters was used in accordance with the EPA's recommendations. The calculations assume a meteorological condition of almost no wind (0.5 meters/second), a flat topological condition between the source and the receptor and a mixing height of 1,000 meters. A standard deviation of five degrees was used for the deviation of wind direction. The suburban land classification was used for the aerodynamic roughness coefficient. This follows the CALINE4 user's manual definition of suburban as "regular coverage with large obstacles, open spaces roughly equal to obstacle heights, villages, mature forests." All of the above parameters are based on the standards stated in the *Transportation Project-Level Carbon Monoxide (CO Protocol)*, December 1997.

For the purposes of this analysis, the ambient concentration used in the modeling was the highest one-hour measurement (the highest concentration of the last three years data was available) of SCAQMD monitoring data at the Azusa Monitoring Station. Actual future ambient CO levels may be lower due to emissions control strategies that would be implemented between now and construction of the proposed project. Due to changing meteorological conditions over an eight-hour period which diffuses the local CO concentrations, the eight-hour CO level concentrations

have been found to be typically proportional and lower than the one-hour concentrations, where it is possible to have stable atmospheric conditions last for the entire hour. Therefore, eight-hour CO levels were calculated using the locally derived persistence factor as stated in the CO Protocol. The local persistence factor is derived by calculating the highest ratio of eight-hour to one-hour maximum locally measured CO concentrations from the most recent three years of data. Of the most recent three years of data, the highest eight-hour to one-hour ratio was 0.61.

The intersection listed in Table 5.3-7 currently operates at an LOS D for peak hour activities. At proposed project buildout, these intersections would continue to operate at LOS D and project implementation would increase the volume-to-capacity ratio by 0.02 (two percent) in an unmitigated condition, requiring a CO hotspot analysis. As indicated in Table 5.3-7, CO concentrations would be well below the State and Federal standards. The modeling results are compared to the CAAQS for CO of 9 ppm on an eight-hour average and 20 ppm on a one-hour average. Neither the one-hour average nor the eight-hour average would be equaled or exceeded. Impacts in regards to CO hotspots would be less than significant.

Mitigation Measures: Refer to Mitigation Measures AQ-1 through AQ-3.

Level of Significance: Less Than Significant Impact.

ODORS

AQ-4 THE PROJECT WOULD NOT CREATE OBJECTIONABLE ODORS AFFECTING A SUBSTANTIAL NUMBER OF PEOPLE.

Impact Analysis: According to the SCAQMD *CEQA Air Quality Handbook*, land uses associated with odor complaints typically include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. The proposed project does not include any uses identified by the SCAQMD as being associated with odors.

Construction Odors

Potential odors could arise from the diesel construction equipment used on-site, as well as from architectural coatings and asphalt off-gassing. Odors generated from the referenced sources are common in the man-made environment and are not known to be substantially offensive to adjacent receptors. The nearest sensitive receptors to the project site are residential uses located approximately 1,040 feet to the northeast. At this distance, odors would disperse rapidly from the source (i.e., construction equipment at the project site) and would not be detectable at these residential uses. Additionally, odors generated during construction activities would be temporary and would cease upon completion. Any impacts to existing adjacent land uses would be short-term and are less than significant.

Mitigation Measures: No mitigation measures are required.

Level of Significance: Less Than Significant Impact.

AIR PLAN CONSISTENCY

AQ-5 DEVELOPMENT ASSOCIATED WITH THE PROPOSED PROJECT WOULD RESULT IN SIGNIFICANT AND UNAVOIDABLE IMPACTS RELATED TO CONSISTENCY WITH THE APPLICABLE AIR QUALITY 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. The 2012 AQMP was forwarded to CARB for inclusion into the California State Implementation Plan (SIP) in January 2013. Subsequently, the 2012 AQMP was submitted to the EPA as the 24-hour $PM_{2.5}$ SIP addressing the 2006 $PM_{2.5}$ NAAQS and as a limited update to the approved 8-hour ozone SIP. The 1-hour ozone attainment demonstration and vehicle miles traveled (VMT) emissions offset demonstration was submitted through CARB to the EPA. 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 discussed in Impact Statement AQ-3, localized concentrations of CO, NO_X, PM_{10}, and $PM_{2.5}$ would be less than significant during project construction and operations. Therefore, the proposed project would not result in an increase in the frequency or severity of existing air quality violations. Because reactive organic gases (ROGs) are not a criteria pollutant, there is no ambient standard or localized threshold for ROGs. 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 discussed in Impact Statement AQ-2, operations of the proposed project would result in NO_X emissions that would exceed the SCAQMD operational thresholds. Therefore, the proposed project would have the potential to cause or affect a violation of the ambient air quality standards.

c) Would the project delay timely attainment of air quality standards or the interim emissions reductions specified in the AQMP?

As noted above, the proposed project would result in significant and unavoidable impacts with regard to NO_X operational emissions despite implementation of Mitigation Measure AQ-3. As such, the proposed project could 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 proposed 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 Azusa 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 project site is designated Light Industrial by the General Plan, as is zoned DWL (District West End Light Industrial) in the City's Zoning Code. The project proposes an industrial/warehousing development, which is consistent with the City's General Plan land use designation, and Zoning Code designation for the site.

As noted above, the proposed land uses are permitted and considered consistent with the General Plan and Zoning Code designations as the project involves an industrial/warehousing development. Thus, the proposed 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. Additionally, as the SCAQMD has incorporated these same projections into the 2012 AQMP, it can be concluded that the proposed project would be consistent with the projections.

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

Compliance with all feasible emission reduction measures identified by the SCAQMD would be required as identified in Mitigation Measures AQ-1 through AQ-3. As such, the proposed project would meet this AQMP consistency criterion.

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

The proposed project would serve to implement various City of Azusa and SCAG policies. The proposed project is located within a developed portion of the City, and is located within the DWL zone; a mix of industrial and commercial uses are located in the vicinity of the project site.

In conclusion, the determination of 2012 AQMP consistency is primarily concerned with the long-term influence of a project on air quality in the Basin. The proposed project would result in significant and unavoidable impacts related to operational NO_X emissions, and therefore could result in a long-term impact on the region's ability to meet State and Federal air quality standards. As such, a significant and unavoidable impact would occur in regards to air quality plan consistency.

Mitigation Measures: Refer to Mitigation Measures AQ-1 through AQ-3.

Level of Significance: Significant and Unavoidable Impact.

5.3.5 CUMULATIVE IMPACTS

- **DEVELOPMENT ASSOCIATED WITH THE PROPOSED PROJECT AND RELATED CUMULATIVE PROJECTS WOULD RESULT IN SIGNIFICANT AIR QUALITY IMPACTS AND MAY EXPOSE SENSITIVE RECEPTORS TO SUBSTANTIAL POLLUTANT CONCENTRATIONS.**

Impact Analysis:

Cumulative Construction Impacts

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 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 Section 4.0, *Basis of Cumulative Analysis*, the City anticipates several construction projects. The total amount of construction and development within the City would exceed the SCAQMD's recommended thresholds of significance, resulting in a cumulative impact.

With respect to the proposed 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. As such, the proposed project would comply with SCAQMD Rule 403 requirements, and implement all feasible mitigation measures. In addition, the proposed 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 listed in Section 4.0, *Basis of Cumulative Analysis*.

Compliance with SCAQMD rules and regulations (see Mitigation Measure AQ-1 regarding SCAQMD Rule 402 and 403), as well adherence to Mitigation Measure AQ-2 would reduce construction-related NO_X emissions to below SCAQMD thresholds. Thus, it can be reasonably inferred that the project-related construction activities, in combination with those from other projects in the area, would not deteriorate the local air quality and would not result in significant cumulative construction-related impacts.

***Mitigation Measures*:** Refer to Mitigation Measures AQ-1 and AQ-2.

Level of Significance: Less Than Significant Impact With Mitigation Incorporated.

Cumulative Operational Impacts

Due to the Basin's nonattainment status for O_3 and $PM_{2.5}$, additional emissions in excess of SCAQMD thresholds under a long-term condition for NO_X would be considered significant and unavoidable for cumulative impacts. NO_X emissions are projected to be above the significance thresholds during operation of the proposed project. Despite the implementation of Mitigation Measure AQ-3, project-related operational emissions have been concluded to be significant and unavoidable for NO_X. Thus, it can be reasonably inferred that the project-related operational activities, in combination 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*:** Refer to Mitigation Measure AQ-3.

Level of Significance: Significant and Unavoidable Impact.

Cumulative Odors

Construction activities in accordance with the projects identified in Section 4.0, *Basis of Cumulative Analysis*, and the proposed project have the potential to generate airborne odors due to the construction equipment. However, these emissions would occur during daytime hours and would be isolated to the vicinity of the construction site. Odor emissions would be of short duration and temporary in nature. Therefore, odor impacts associated with cumulative projects would not be cumulatively considerable.

***Mitigation Measures*:** No mitigation measures are required.

Level of Significance: Less Than Significant Impact.

Cumulative Air Quality Plan Consistency

The City of Azusa is subject to the SCAQMD's 2012 AQMP. Additionally, the City is located within the Los Angeles County subregion of the SCAG 2012-2035 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), which governs population growth. The General Plan is consistent with the 2012-2035 RTP/SCS, and since the 2012-2035 RTP/SCS is

consistent with the 2012 AQMP, growth under the General Plan is consistent with the 2012 AQMP. However, because operational NO_X emissions associated with the proposed project would exceed SCAQMD thresholds, the project could conflict or obstruct the 2012 AQMP. As such, the project would cumulatively contribute to impacts in this regard, and a significant and unavoidable impact would occur. It is noted that all applicable NO_X emission reduction measures would be required for the project to reduce emissions to the furthest extent possible (refer to Mitigation Measures AQ-1, AQ-2, and AQ-3).

Mitigation Measures: Refer to Mitigation Measures AQ-1 through AQ-3.

Level of Significance: Significant and Unavoidable Impact.

5.3.6 SIGNIFICANT UNAVOIDABLE IMPACTS

Implementation of the proposed project would result in a significant and unavoidable impact for the following areas:

- *Regional Operational NO_X Emissions* – During the operational phase of the proposed project, NO_X emissions would exceed SCAQMD thresholds from mobile sources. Mitigation Measure AQ-3 would reduce the potential air quality impacts to the degree technically feasible, but NO_X emissions would remain above SCAQMD significance thresholds. Therefore, operation of the proposed project would have a significant and unavoidable impact on regional air quality.

- *Cumulative Operational Emissions* – As stated above, operational activities would create a significant and unavoidable impact due to exceedances of SCAQMD thresholds for NO_X. Implementation of Mitigation Measure AQ-3 would reduce impacts; however a significant and unavoidable impact would remain.

- *Air Quality Plan Consistency* – As stated above, operational activities would create a significant and unavoidable impact due to exceedances of SCAQMD thresholds for NO_X. Implementation of recommended mitigation measures AQ-1 through AQ-3 would reduce emissions to the maximum extent feasible. However, operational emissions would still be expected to be above SCAQMD thresholds, and therefore, the project would not be consistent with the 2012 AQMP. Therefore, a significant and unavoidable project-level and cumulative impact would remain.

If the City of Azusa approves the project, the City shall be required to adopt findings of fact in accordance with Section 15091 of the CEQA Guidelines, as well as adopt a Statement of Overriding Considerations in accordance with Section 15093 of the CEQA Guidelines.

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