5.3 Air Quality

Based on Appendix G of the *State CEQA Guidelines* and comments received during the Notice of Preparation (NOP) public review period, this section evaluates the Project's impacts on air quality. Comments received in response to the NOP along with notes from the Scoping Meeting are included in Appendix A of this DEIR.

The analysis in this section is based, in part, on the *Sycamore Canyon Business Park Warehouse CalEEMod Emissions Estimates, LST Analysis, and Screening HRA* (the AQ Report). The AQ Report, which is included as Appendix B to the DEIR, evaluated whether the expected criteria air pollutant emissions that would be generated as a result of construction and long-term operations (i.e., vehicle emissions) of the proposed Project would cause significant impacts to air quality. The AQ Report was prepared within the context of the California Environmental Quality Act (CEQA; California Public Resources Code Sections 21000 *et seq.*). The methodology follows the *CEQA Air Quality Handbook* (1993) prepared by the South Coast Air Quality Management District (SCAQMD) for quantification of emissions and evaluation of potential impacts to air resources. As recommended by SCAQMD and City staff, the California Emissions Estimator Model (CalEEMod™) version 2013.2.2 computer program was used to quantify Project-related emissions.

5.3.1 Physical Setting

The proposed Project is located within the South Coast Air Basin (Basin), which is under the jurisdiction of the SCAQMD. The Basin consists of Orange County, coastal and mountain portions of Los Angeles County, as well as Riverside and San Bernardino Counties (SCAQMD 1993, p. 2-1). Regional and local air quality within the Basin is affected by topography, atmospheric inversions, and dominant onshore flows. Topographic features such as the San Gabriel, San Bernardino, and San Jacinto Mountains form natural horizontal barriers to the dispersion of air contaminants. The presence of atmospheric inversions limits the vertical dispersion of air pollutants. With an inversion, the temperature initially follows a normal pattern of decreasing temperature with increasing altitude; however, at some elevations, the trend reverses and temperature begins to increase as altitude increases. This transition to increasing temperature establishes the effective mixing height of the atmosphere and acts as a barrier to vertical dispersion of pollutants. (SCAQMD 1993, p. A8-2)

Dominant onshore flow provides the driving mechanism for both air pollution transport and pollutant dispersion. Air pollution generated in coastal areas is transported east to inland receptors by the onshore flow during the daytime until a natural barrier (the mountains) is confronted, limiting the horizontal dispersion of pollutants. The result is a gradual degradation of air quality from coastal areas to inland areas, which is most evident with the photochemical pollutants such as ozone formed under reactions with sunlight. (SCAQMD 1993, pp. A8-1–A8-2)

5.3.2 Climate

Terrain and geographical location determine climate in the Basin. The Project site lies within the terrain south of the San Gabriel and San Bernardino Mountains and north of the Santa Ana Mountains. The climate in the Basin is typical of southern California's Mediterranean climate, which is characterized by dry, warm summers and mild winters. Winters typically have infrequent rainfall, light winds, and frequent early morning fog and clouds that turn to hazy afternoon sunshine. (SCAQMD 1993, pp. A8-1–A8-2)

The following factors govern microclimate differences among inland locations within the Basin: (1) distance of the mean air trajectory from the site to the ocean; (2) site elevation; (3) existence of any intervening terrain that may affect airflow or moisture content; and (4) proximity to canyons or mountain passes. As a general rule, locations farthest inland from the ocean have the hottest summer afternoons, the lowest rainfall, and the least amount of fog and clouds. Foothill communities in the Basin have greater levels of precipitation, cooler summer afternoons, and may be exposed to wind funneling through nearby canyons during Santa Ana winds. Terrain will generally steer local wind patterns. (SCAQMD 1993, pp. A8-1–A8-2)

The Project site is located in the City of Riverside south of the Santa Ana River, north of Lake Mathews, and southeast of Mount Rubidoux (**Figure 3-1 – Vicinity Map**), within the eastern portion of the Basin.

5.3.3 Precipitation and Temperature

Annual average temperatures in the Basin are typically in the low to mid-60 degrees Fahrenheit. Temperatures above 100 degrees are recorded for all portions of the Basin during the summer months. (SCAQMD 1993, p. A8-1)

The rainy season in the Basin is November to April. Summer rainfall can occur as widely scattered thunderstorms near the coast and in the mountainous regions in the eastern Basin. Rainfall averages vary over the Basin. The City of Riverside averages 9 inches of rainfall; the city of Corona averages 12.7 inches, while the city of Los Angeles averages 14 inches. Rainy days vary from 5 to 10 percent of all days in the Basin, with the most frequent occurrences of rainfall near the coast. (SCAQMD 1993, p. A8-1)

5.3.4 Winds

The interaction of land (offshore) and sea (onshore) breezes control local wind patterns in the area. Daytime winds typically flow from the coast to the inland areas, while the pattern typically reverses in the evening, flowing from the inland areas to the ocean. Air stagnation may occur in the early evening and early morning during periods of transition between day and nighttime flows.

Approximately 5 to 10 times a year, the site vicinity experiences strong, hot, dry desert winds known as the Santa Ana winds. These winds, associated with atmospheric high pressure, originate in the upper deserts and are channeled through the passes of the San Bernardino

Mountains and into the inland valleys. Santa Ana winds can last for a period of hours or days, and gusts of over 60 miles per hour have been recorded.

High winds, such as the Santa Ana winds, affect dust generation characteristics and create the potential for off-site air quality impacts, especially with respect to airborne nuisance and particulate emissions. Local winds in the Project area are also an important meteorological parameter because they control the initial rate of dilution of locally generated air pollutant emissions.

5.3.5 Categories of Emission Sources

Air pollutant emissions sources are typically grouped into two categories: stationary and mobile sources. These emission categories are defined and discussed in the following subsections.

Stationary Sources

Stationary sources are divided into two major subcategories: point and area sources. Point sources consist of a single emission source with an identified location at a facility. A single facility could have multiple point sources located on site. Stationary point sources are usually associated with manufacturing and industrial processes. Examples of point sources include boilers or other types of combustion equipment at oil refineries, electric power plants, etc. Area sources are small emission sources that are widely distributed, but are cumulatively substantial because there may be a large number of sources. Examples include residential water heaters; painting operations; lawn mowers; agricultural fields; landfills; and consumer products, such as barbecue lighter fluid and hair spray. (SCAQMD 1993, p. 1-1)

Mobile Sources

Mobile sources are motorized vehicles which are classified as either on-road or off-road. On-road mobile sources typically include automobiles and trucks that operate on public roadways. Off-road mobile sources include aircraft, ships, trains, and self-propelled construction equipment that operate off of public roadways. Mobile source emissions are accounted for as both direct source emissions (those directly emitted by the individual source) and indirect source emissions, which are sources that by themselves do not emit air contaminants but indirectly cause the generation of air pollutants by attracting vehicles. Examples of indirect sources include office complexes, commercial and government centers, sports and recreational complexes, and residential developments. (SCAQMD 1993, p. 1-2)

5.3.6 Air Pollution Constituents

Criteria Pollutants

Air pollutants are classified as either primary or secondary, depending on how they are formed. Primary pollutants are generated daily and are emitted directly from a source into the atmosphere. Examples of primary pollutants include carbon monoxide (CO), nitrogen dioxide

(NO_2) and nitric oxide (NO),[1] sulfur dioxide (SO_2), particulates (PM-10 and PM-2.5) and various hydrocarbons (HC) or volatile organic compounds (VOC), which are also referred to as reactive organic gases (ROG). The predominant source of air emissions expected to be generated by the proposed Project is vehicle emissions. Motor vehicles primarily emit CO, NO_X, and VOC/ROG/HC.

Secondary pollutants are created over time and occur within the atmosphere as chemical and photochemical reactions take place. An example of a secondary pollutant is ozone (O_3), which is one of the products formed when NO_X reacts with HC in the presence of sunlight. Other secondary pollutants include photochemical aerosols. Secondary pollutants such as ozone represent major air quality problems in the Basin.

The Federal Clean Air Act of 1970 established the National Ambient Air Quality Standards (NAAQS). Six "criteria" air pollutants were identified using specific medical evidence available at that time, and NAAQS were established for those chemicals. The State of California has adopted the same six chemicals as criteria pollutants, but has established different allowable levels. The six criteria pollutants are: carbon monoxide, nitrogen dioxide, ozone, lead, particulates less than 10 microns in size, and sulfur dioxide. The following is a further discussion of the criteria pollutants, as well as volatile organic compounds.

- **Carbon Monoxide (CO)** is a colorless, odorless, toxic gas produced by incomplete combustion of carbon-containing substances. Concentrations of CO are generally higher during the winter months when meteorological conditions favor the build-up of primary pollutants. (USEPA 2016) Automobiles are the major source of CO in the Basin, although various industrial processes also emit CO through incomplete combustion of fuels. In high concentrations, CO can cause serious health problems in humans by limiting the red blood cells' ability to carry oxygen (SCAQMD 1993, p. 3-2).
- **Oxides of Nitrogen (NO_X)** contribute to air pollution include nitric oxide (NO) and nitrogen dioxide (NO_2). NO is a colorless, odorless gas formed by a combination of nitrogen and oxygen when combustion takes place under high temperatures and pressures. NO_2 is a reddish-brown gas formed by the combination of NO with oxygen. Combustion in motor vehicle engines, power plants, refineries, and other industrial operations, as well as ships, railroads, and aircraft, are the primary sources of NO_X. NO_2 at atmospheric concentrations is a potential irritant and can cause coughing in healthy people, can alter respiratory responsiveness and pulmonary functions in people with preexisting respiratory illness, and potentially lead to increased levels of respiratory illness in children (USEPA 2016).
- **Ozone (O_3)** is a colorless toxic gas that irritates the lungs and damages materials and vegetation. During the summer's long daylight hours, plentiful sunshine provides the energy needed to fuel photochemical reactions between NO_2 and VOC which results in the formation of O_3. Conditions that lead to high levels of O_3 are adequate sunshine, early morning stagnation in source areas, high surface temperatures, strong and low

[1] NO_2 and NO are collectively known as oxides of nitrogen (NO_X).

morning inversions, greatly restricted vertical mixing during the day, and daytime subsidence that strengthens the inversion layer (all of which are characteristic of western Riverside County). Ozone represents the worst air pollution-related health threat in the Basin as it affects people with preexisting respiratory illness as well as reduces lung function in healthy people. Studies have shown that children living within the Basin experience a 10–15 percent reduction in lung function (SCAQMD 1993, p. 3-2).

- **Atmospheric Particulate Matter (PM)** is made up of fine solid and liquid particles, such as soot, dust, aerosols, fumes, and mists. PM-10 consists of particulate matter that is 10 microns or less in diameter, and PM-2.5 consists of particulate matter of 2.5 microns or less in size. Both PM-10 and PM-2.5 can be inhaled into the deepest part of the lung, contributing to health effects. The presence of these fine particles by themselves cause lung damage and interfere with the body's ability to clear its respiratory tract. These particles can also act as a carrier of other toxic substances. (SCAQMD 1993, p. 3-3)

  Sources contributing to particulate matter pollution include road dust, windblown dust, agriculture, construction, fireplaces and wood burning stoves, and vehicle exhaust. Specifically, SCAQMD data indicates the largest component of PM-10 particles in the area comes from dust (unpaved roads, unpaved yards, agricultural lands, and vacant land that has been disked). PM-2.5 particles are mostly manmade particles resulting from combustion sources. According to SCAQMD, one component of PM-2.5 pollution in Riverside comes from ammonium nitrate (NH_4NO_3) particulates. NO_X, emitted throughout the Basin by vehicles, reacts with ammonia produced from livestock and horses to form ammonium nitrate. Organic carbon particles generated from paints, degreasers, and vehicles are another component of PM-2.5 pollution. The last notable constituent of PM-2.5 sources is elemental carbon, which is used as a surrogate for diesel particulates.

- **Sulfur dioxide (SO_2)** is a colorless, pungent gas formed primarily by the combustion of sulfur-containing fossil fuels. SO_2 can result in temporary breathing impairment in asthmatic children and adults engaged in active outdoor activities. When combined with PM, SO_2 can cause symptoms such as shortness of breath and wheezing; and, with long-term exposure, lead to the exacerbation of existing cardiovascular disease and respiratory illnesses (USEPA 2016). Although SO_2 concentrations have been reduced to levels well below State and federal standards, further reductions in SO_2 emissions are needed because SO_2 is a precursor to sulfate and PM-10.

- **Lead (Pb)** concentrations once exceeded the State and federal air quality standards by a wide margin, but have not exceeded State or federal air quality standards at any regular monitoring station since 1982. Health effects associated with lead include neurological impairments, mental retardation, and behavioral disorders. At low levels, lead can damage the nervous systems of fetuses and result in lowered IQ levels in children (USEPA 2016). Although special monitoring sites immediately downwind of

lead sources recorded very localized violations of the State standard in 1994, no violations have been recorded at these stations since 1996. Unleaded gasoline has greatly contributed to the reduction in lead emissions in the Basin. Since the proposed Project will not involve leaded gasoline, or other sources of lead emissions, this criteria pollutant is not expected to increase with Project implementation.

- **Reactive Organic Gases/Volatile Organic Compounds (ROG/VOC)** are not classified as criteria pollutants and as such do not have any State or federal ambient air quality standards. VOCs are regulated; however, a reduction in VOC emissions reduces certain chemical reactions which contribute to the formation of ozone. VOCs are also transformed into organic aerosols in the atmosphere, contributing to higher PM-10 and lower visibility levels. Although health-based standards have not been established for VOCs, health effects can occur from exposures to high concentrations of VOCs because of interference with oxygen uptake. In general, ambient VOC concentrations in the atmosphere, even at low concentrations, are suspected to cause coughing, sneezing, headaches, weakness, laryngitis, and bronchitis. Some hydrocarbon components classified as VOC emissions are thought or known to be hazardous. Benzene, for example, is a hydrocarbon component of VOC emissions that is known to be a human carcinogen. (SCAQMD 2005, p. 1-5)

5.3.7 Toxic Air Contaminants

A toxic air contaminant (TAC) is defined as an air pollutant which may cause or contribute to an increase in mortality or serious illness, or which may pose a hazard to human health. TACs are generally present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at very low concentrations. For those TACs that cause cancer, there is no concentration that does not present some low-level risk. In other words, there is no threshold below which adverse health impacts are not expected to occur. This contrasts with the criteria pollutants for which acceptable levels of exposure can be determined, and for which the state and federal governments have set ambient air quality standards. The majority of the estimated health risk from TACs can be attributed to relatively few compounds, the most important being PM from diesel-fueled engines, known as diesel particulate matter (DPM). In addition to DPM, benzene and 1,3-butadiene are also significant contributors to overall ambient public health risk in California.

Both SCAQMD and the California Air Resources Board (CARB) have monitoring networks within the Basin that measure ambient concentrations of certain TACs which are associated with important health-related effects, and are present in appreciable concentrations in the Basin. The SCAQMD uses this information to determine health risks for a particular area. CARB publishes annual statewide, air basin, and location-specific summaries of the concentration levels of several TACs and their resulting cancer risks. The most recent summary is the CARB Air Quality Almanac for 2013; however, this version did not include a discussion of TACs. The 2009 version of the Almanac is the most recent version which presents the relevant concentration and cancer risk data for the ten TACs that present the most substantial health risk in California based on available data. These TACs are: acetaldehyde, benzene, 1,3-

butadiene, carbon tetrachloride, hexavalent chromium, para-dichlorobenzene, formaldehyde, methylene chloride, and perchloroethylene. DPM is not directly measured, but is indirectly estimated based on fine particulate matter measurements and special studies on the chemical speciation of ambient fine particulate data, along with receptor modeling techniques.

Exhaust emissions from diesel mobile sources dropped by 38 percent from 1990 to 2000 due to more stringent emissions standards and introduction of cleaner burning diesel (CARB 2009, p. 3-12). Reductions in cancer risk are expected to continue into the future as new emission controls are implemented to further reduce DPM emissions, which are the major component total airborne cancer risk.

Table 5.3-A – TAC Concentration Levels and Associated Health Risks provides a summary of TACs and health risk information from the CARB Annual Toxic Summary for the most recent three year period, 2012-2014 for the Riverside-Rubidoux air monitoring station, which is located approximately 7.5 miles northeast of the Project site. The overall cancer risk attributable to the non-DPM chemicals (i.e., the 10 TACs measured by the CARB described above, excluding para-dichlorobenzene) have also shown significant reductions at the Riverside-Rubidoux location, declining from an estimated cancer risk of 299 in one million in 1996 to 118 in one million in 2014, a reduction of approximately 60 percent (CARB 2016).

Table 5.3-A – TAC Concentration Levels and Associated Health Risks

TAC		Year		
		2012	2013	2014
Acetaldehyde	Concentration[1]	1.39	1.27	1.17
	Risk[2]	7	6	6
Benzene	Concentration	0.32	0.31	0.29
	Risk	30	28	27
1,3-Butadiene	Concentration	0.05	0.07	0.06
	Risk	19	24	21
Carbon Tetrachloride	Concentration	0.08	0.08	0.10
	Risk	22	22	26
Chromium, Hex	Concentration[3]	0.03	0.06	0.04
	Risk	5	9	6
Para-Dichlorobenzene[4]	Concentration	-	-	-
	Risk	-	-	-
Formaldehyde	Concentration	3.70	3.57	3.56
	Risk	27	26	26
Methylene chloride	Concentration	2.41	1.33	1.49
	Risk	8	5	5
Perchloroethylene	Concentration	0.20	0.22	0.26
	Risk	0.8	0.9	1.0
Diesel PM[4]	Concentration	-	-	-
	Risk	-	-	-

Notes: [1]Concentration in parts per billion (ppb), [2]Risk in cancer cases per million, [3]Chromium Hex concentration in ng/m^3, [4]Data missing (most recent year is 2006 for para-Dichlorobenzene at Riverside-Rubidoux station)

In addition to the measurements presented in the CARB 2009 almanac and the Annual Air Toxics Summary, the SCAQMD has conducted a detailed TAC emission inventory, air sampling, and dispersion modeling study called the "Multiple Air Toxics Exposure Study in the South Coast Air SoCAB" (MATES-II, SCAQMD 2000), MATES-III (SCAQMD 2008a), and MATES-IV (SCAQMD 2014) (collectively, "MATES Studies").

The MATES Studies provided information on the importance of various TACs in terms of their relative health risks, as well as their spatial distribution across the Basin. The MATES-IV information can be used to characterize the "background" health risks from both regional and local TAC emission sources based on the available toxics emission inventory for the year 2012. The MATES-IV program results indicate that the existing cancer risk attributable to TACs in the area where the Project site is located is estimated to be 710.46 in one million, of which DPM contributes approximately 68 percent of the total cancer risk (MATES Appendices, p. VII-1). This cancer risk level is approximately 16 percent lower than the background cancer risks based on the MATES-III study that used the toxics emission inventory for the year 2005, which further illustrates the trend of declining health risk from TACs.

This sharp decline is attributable largely to emission reduction programs implemented by the SCAQMD, CARB, and the U.S. Environmental Protection Agency (USEPA), particularly with regard to DPM.

5.3.8 Monitored Air Quality

The Project site is located within SCAQMD Source Receptor Area (SRA) 23. The most recent published data for the Project site is presented in **Table 5.3-B – Air Quality Monitoring Summary from 2012-2014 (SRA 23)**. This data indicates that the baseline air quality conditions in the Project area include occasional events of very unhealthful air. Atmospheric concentrations of ozone and particulate matter are the two most significant air quality concerns in the Project area. It is encouraging to note that ozone levels have decreased in the last few years.

The primary local source of air pollution is mobile emissions from motor vehicles due to the Project site's proximity to Interstate 215 and 60 as well as local roadways.

Table 5.3-B – Air Quality Monitoring Summary from 2012—2014 (SRA 23)

	Pollutant/Standard	Monitoring Years		
		2012	2013	2014
No. Days Exceeded	**Ozone (O_3):**			
	Health Advisory - 0.15 ppm	0	0	0
	California Standard:			
	1-Hour - 0.09 ppm	27	13	29
	8-Hour - 0.07 ppm	70	38	69
	Federal Primary Standards:			
	8-Hour - 0.075 ppm	47	26	41
	Max 1-Hour Conc. (ppm)	0.126	0.123	0.141
	Max 8-Hour Conc. (ppm)	0.102	0.103	0.104
No. Days Exceeded	**Carbon Monoxide (CO):**			
	California Standard: [a]			
	1-Hour - 20 ppm	--	--	0
	8-Hour - 9.0 ppm	0	0	0
	Federal Primary Standards: [a]			
	1-Hour - 35 ppm	--	--	0
	8-Hour - 9.0 ppm	0	0	0
	Max 1-Hour Conc. (ppm)	--	--	2.0
	Max 8-Hour Conc. (ppm)	1.6	2.0	1.9
No. Days Exceeded	**Nitrogen Dioxide (NO_2):[a]**			
	California Standard:			
	1-Hour - 0.18 ppm (180 ppb)	0	0	0
	Federal Standard:			
	Annual Arithmetic Mean (ppb)	15.5	17.3	15.1
	Max. 1-Hour Conc. (ppb)	61.7	59.6	59.9
No. Days Exceeded	**Sulfur Dioxide (SO_2):**			
	California Standards:			
	1-Hour – 0.25 ppm (250 ppb)	0	0	0
	Federal Primary Standards: [b]			
	1-Hour – 0.075 ppm (75 ppb)	0	0	0
	Max. 1-Hour Conc. (ppb)	4.3	8.1	5.6
No. Days Exceeded	**Suspended Particulates (PM-10):**			
	California Standards:			
	24-Hour - 50 μg/m^3	19	10	17
	Federal Primary Standards:			
	24-Hour – 150 μg/m^3	0	0	0
	Annual Arithmetic Mean (μg/m^3)	34.5	33.8	36.7
	Max. 24-Hour Conc. (μg/m^3)	67	135	100
No. Days Exceeded	**Fine Particulates (PM-2.5):**			
	Federal Primary Standards:			
	24-Hour – 35μg/m^3	7	6	5
	Annual Arithmetic Mean (μg/m^3)	13.51	12.5	12.48
	Max. 24-Hour Conc. (μg/m^3)	38.1	60.3	48.9

Notes: -- indicates no data available; ppm = parts per million; ppb = parts per billion; μg/m^3 = micrograms/cubic meter

[a] The state and federal 1-hour and 8-hour standards were not exceeded.

[b] The Federal SO_2 standard for 24-hour and AAM standards revoked; established new 1-hour standard of 0.075 ppm, effective August 2, 2010.

Attainment Status

The USEPA has established NAAQS for the six criteria pollutants described in **Table 5.3-B** to protect human health, with an adequate margin of safety. Likewise, the California EPA (Cal EPA) has developed statewide thresholds for each of the criteria pollutants. If the concentration of one or more criteria pollutants within a geographic area is found to exceed the established

statewide or NAAQS threshold level for one of the criteria pollutants, the area is considered to be in nonattainment for that pollutant.

SRA 23 and the proposed Project site are located within a portion of the Basin that is designated as nonattainment for PM-10 by the state, as well as nonattainment for ozone, and PM-2.5 under both the state and federal standards (see **Table 5.3-C – Attainment Status**). As a result, SCAQMD is required to develop an Air Quality Management Plan (AQMP) for the Basin to bring the area into attainment for all criteria pollutants.

Table 5.3-C – Attainment Status

Criteria Air Pollutant	Attainment Designation	
	State	Federal
1-Hour Ozone	Nonattainment	Nonattainment (Extreme)
8-Hour Ozone	Nonattainment	Nonattainment (Extreme)
Carbon monoxide (1-Hour and 8-Hour)	Attainment	Attainment (Maintenance)
Nitrogen dioxide	Attainment	Attainment (Maintenance)
Sulfur dioxide	Attainment	Unclassifiable/Attainment
PM-10	Nonattainment	Attainment (Maintenance)
PM-2.5	Nonattainment	Nonattainment (Serious)

Source: http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/naaqs-caaqs-feb2016.pdf?sfvrsn=2

Sensitive Receptors

Some land uses are considered more sensitive to changes in air quality than others, depending on the population groups and the activities involved. People most likely to be affected by air pollution, as identified by the SCAQMD, may include children, the elderly, and people with cardiovascular and chronic respiratory diseases. Sensitive receptors may include residences, schools, playgrounds, athletic facilities, childcare centers, long-term healthcare facilities, rehabilitation centers, convalescent centers, and retirement homes.

Sensitive receptors in the Project vicinity primarily include existing residences adjacent to the north and northwest area of the Project site.

5.3.9 Related Regulations

Criteria Air Pollutants

The federal and State ambient air quality standards (AAQS) establish the context for the local air quality management plans (AQMP) and for determination of the significance of a Project's contribution to local or regional pollutant concentrations. The federal and State AAQS are presented in **Table 5.3-B**. The AAQS represent the level of air quality considered safe, with an adequate margin of safety, to protect the public health and welfare. They are designed to protect those people most susceptible to further respiratory distress such as asthmatics, the elderly, very young children, people already weakened by other diseases or illness, and persons engaged in strenuous work or exercise, all referred to as “sensitive receptors.” SCAQMD defines a "sensitive receptor" as a land use or facility such as schools, childcare

centers, athletic facilities, playgrounds, retirement homes, and convalescent homes. (SCAQMD 1993, p. 1-2)

Federal

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

State

California Air Resources Board (CARB)

In addition to being subject to the requirements of CAA, air quality in California is also governed by more stringent regulations under the California Clean Air Act (CCAA). CARB, which became part of the CalEPA in 1991, is responsible for administering the CCAA and establishing the California Ambient Air Quality Standards (CAAQS). The CCAA, as amended in 1992, requires all air districts in the state to achieve and maintain the CAAQS, which are generally more stringent than the federal standards and incorporate additional standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles.

CARB has broad authority to regulate mobile air pollution sources, such as motor vehicles. It is responsible for setting emission standards for vehicles sold in California and for other emission sources, such as consumer products and certain off-road equipment. CARB established passenger vehicle fuel specifications, which became effective in March 1996. CARB oversees the functions of local air pollution control districts and air quality management districts, which, in turn, administer air quality activities at the regional and county levels. The state standards are summarized in **Table 5.3-B**.

The CCAA requires CARB to designate areas within California as either attainment or non-attainment for each criteria pollutant based on whether the CAAQS have been achieved. Under the CCAA, areas are designated as non-attainment for a pollutant if air quality data shows that a state standard for the pollutant was violated at least once during the previous three calendar years. Exceedances that are affected by highly irregular or infrequent events are not considered violations of a state standard and are not used as a basis for designating areas as non-attainment. CAAQS attainment status is shown in **Table 5.3-C**.

California Green Building Code

Part 11 of the California Building Standards Code in Title 24 of the California Code of Regulations is also known as the CALGreen Code. The development of the CALGreen Code is intended to: (1) cause a reduction in greenhouse gas emissions from buildings; (2) promote

environmentally responsible, cost-effective, healthier places to live and work; (3) reduce energy and water consumption; and (4) respond to the directives by the Governor. The following sections of the CALGreen Code are applicable to this Project:

Section 5.106.4
Bicycle parking. Comply with Sections 5.106.4.1 and 5.106.4.2; or meet local ordinance or the University of California Policy on Sustainable Practices, whichever is stricter.

5.106.4.1 Short-term bicycle parking. If the project is anticipated to generate visitor traffic, provide permanently anchored bicycle racks within 200 feet of the visitors' entrance, readily visible to passers-by, for 5 percent of visitor motorized vehicle parking capacity, with a minimum of one two-bike capacity rack.

5.106.4.2 Long-term bicycle parking. For buildings with over 10 tenant-occupants, provide secure bicycle parking for 5 percent of motorized vehicle parking capacity, with a minimum of one space. Acceptable parking facilities shall be convenient from the street and may include: 1. Covered, lockable enclosures with permanently anchored racks for bicycles; 2. Lockable bicycle rooms with permanently anchored racks; and 3. Lockable, permanently anchored bicycle lockers. Note: Additional information on recommended bicycle accommodations may be obtained from Sacramento Area Bicycle Advocates.

Section 5.106.5.2
Designated parking. Provide designated parking for any combination of low-emitting, fuel efficient, and carpool/vanpool vehicles as shown in *Table 5.206.5.2* of the CALGreen Code.

Local

South Coast Air Quality Management District (SCAQMD)

The 1977 Lewis Air Quality Management Act merged four air pollution control district to create the SCAQMD to coordinate air quality planning efforts throughout Southern California. It is responsible for monitoring air quality, as well as planning, implementing, and enforcing programs designed to attain and maintain state and federal ambient air quality standards. Programs include air quality rules and regulations that regulate stationary sources, area sources, point sources, and certain mobile source emissions. The SCAQMD is also responsible for establishing stationary source permitting requirements and for ensuring that new, modified, or relocated stationary sources do not create net emission increases.

The SCAQMD monitors air quality over its jurisdiction of 10,743 square miles, including the Basin, which covers an area of 6,745 square miles and is bounded by the Pacific Ocean to the west; the San Gabriel, San Bernardino and San Jacinto mountains to the north and east; and the San Diego County line to the south. The Basin includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties. The SCAQMD also regulates the County portion of the Salton Sea Air Basin and Mojave Desert Air Basin. The

SCAQMD has developed a variety of plans and rules aiming to improve air quality within the Basin, as discussed below.[2]

Air Quality Management Plan

All areas designated as non-attainment under the CCAA are required to prepare plans showing how they will meet the air quality standards. The SCAQMD prepares the Air Quality Management Plan (AQMP) to address CAA and CCAA requirements by identifying policies and control measures. On December 7, 2012, the SCAQMD adopted its 2012 AQMP, which is now the legally enforceable plan for meeting the 24-hour PM-2.5 strategy standard by 2014.

The Southern California Association of Governments (SCAG) assists by preparing the transportation portion of the AQMP. This includes the preparation of a Sustainable Communities Strategy (SCS) that responds to planning requirements of SB 375 and demonstrates the region's ability to attain greenhouse gas reduction targets set forth in state law. The SCS identifies regional and local efforts to promote new housing and employment in high-quality transit areas that will support development patterns that complement the evolving transportation network. The SCS was incorporated into the 2012 Regional Transportation Plan, adopted by SCAG on April 4, 2012. The AQMP for the Basin establishes a program of rules and regulations directed at attainment of the state and national air quality standards. Ultimately, a project's operational cumulative impact is judged against its consistency with the applicable Air Quality Management Plan. Conformance with the AQMP for development projects is determined by demonstrating compliance with local land use plans.

Rule 220

SCAQMD Rule 220 gives the Executive Officer the power to exempt a source from prohibitions outlined in SCAQMD Regulations IV and XI, Prohibitions and Source Specific Standards respectively, if they can make the finding that the installation of controls and/or process changes required to achieve compliance with the subject prohibitory rule will result in a net adverse impact on air quality. One of the conditions of the permits on exemptions issued under Rule 220 is that alternative controls and/or process changes which will result in the greatest practical net emission reduction be included for project operation.

Rule 402

SCAQMD Rule 402 (Nuisance) prohibits the discharge of air containments in such quantities that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, but does not apply to odors emanating from agricultural operations necessary for growing of crops or the raising of fowl or animals.

Rule 403

The Project will be required to comply with existing SCAQMD rules for the reduction of fugitive dust emissions. SCAQMD Rule 403 establishes these procedures. The potential requirements include the application of water or chemical stabilizers to disturbed soils at least twice a day, covering all haul vehicles before transport of materials, restricting vehicle speeds on unpaved

[2] SCAQMD Rulebook can be accessed at: http://www.aqmd.gov/home/regulations/rules/scaqmd-rule-book.

roads to 15 mph, and sweeping loose dirt from paved site access roadways used by construction vehicles. In addition, it is required to establish a vegetative ground cover on disturbance areas that are inactive within 30 days after active operations have ceased. Alternatively, an application of dust suppressants can be applied in sufficient quantity and frequency to maintain a stable surface. Rule 403 also requires grading and excavation activities to cease when winds exceed 25 mph.

In addition to the general best management practices outlined in Rule 403, the Project is also required to comply with Rule 403 subsection (e) – Additional Requirements for Large Operations. Therefore, the Project will be required to submit a Large Operation Notification (Form 403 N) to the SCAQMD prior to commencing construction activities. The Project will also implement applicable dust control measures specified in Table 2 of the Rule and will implement additional measures specified in Table 3 of the Rule if performance standards cannot be met through use of Table 2 measures.

Rule 481
SCAQMD Rule 481 applies to all spray painting and spray coating operations and equipment and requires all spray coating equipment to be (1) operated inside an approved control enclosure, (2) applied using high velocity-low pressure (HVLP), electrostatic and/or airless spray equipment, or (3) applied using which has an equal effectiveness to either of the two approved methods.

Rule 1108
SCAQMD Rule 1108 applies to cutback and emulsified asphalt used at project sites.

Rule 1143
SCAQMD Rule 1143 aims to reduce emissions of VOCs from the use, storage, and disposal of consumer paint thinners and multi-purpose solvents commonly used in thinning of coating materials, cleaning of coating application equipment and other solvent cleaning operations by limiting their VOC content. Additionally, Rule 1143 requires several best management practices to reduce VOCs during use and application of paint thinners and other solvents. For example, this Rule requires containers to be closed when not in use. This Rule also establishes requirements for appropriate labelling and disclosure of contents for containers and storage areas of these corrosive, flammable substances.

Rule 1186
SCAQMD Rule 1186 is intended to reduce the amount of particulate matter entrained in the ambient air as a result of vehicular traffic on paved and unpaved public roads, and at livestock operations. This includes requirements for local governments that contract for street sweeping services to utilize only certified street sweeping equipment.

Rule 1113

SCAQMD Rule 1113 governs the sale of architectural coatings and limits the volatile organic content (VOC) content in paints and paint solvents. This rule will dictate the VOC content of paints available for use during the construction of the buildings.

Rule 1303

SCAQMD Rule 1303 prohibits issuance of permits for any relocation or for any new or modified source which results in an emission increase of any nonattainment air contaminant, any ozone depleting compound, or ammonia unless a best available control technology (BACT) is employed for the new or relocated source as specified by the Clean Air Act or other regulations.

Riverside General Plan 2025

The GP 2025 contains objectives and policies to protect air quality within the City in the Air Quality Element. Appendix M of this DEIR summarizes the Project's consistency with the applicable GP 2025 policies.The following objectives and policies are applicable to the proposed Project:

Objective AQ-1: Adopt land use policies that site polluting facilities away from sensitive receptors and vice versa; improve jobs-housing balance; reduce vehicle miles travelled and length of work trips; and improve the flow of traffic.

Policy AQ-1.8: Promote "Job/Housing Opportunity Zones" and incentives to support housing in job-rich areas and jobs in housing-rich areas, where the jobs are located at non-polluting or extremely low polluting entities.

Policy AQ-1.21: Cooperate and participate in regional air quality management plans, programs, and enforcement measures.

Policy AQ-1.22: Implement the required components of the Congestion Management Plan (CMP) and continue to work with Riverside County Transportation Commission on annual updates to the CMP.

Policy AQ-2.8: Work with Riverside Transit Authority (RTA) to establish mass transit mechanisms for the reduction of work-related and non-work-related vehicle trips.

Policy AQ-2.11: Develop ways to incorporate the "Good Neighbor Guidelines for Siting New and/or Modified Warehouse/Distribution Facilities" into the Development Review process and Citywide air quality education programs.

Policy AQ-3.6: Support "green" building codes that require air conditioning/filtration installation, upgrades or improvements for all buildings, but particularly for those associated with sensitive receptors.

Policy AQ-4.4: Support programs that reduce emissions from building materials and methods that generate excessive pollutants through incentives and/or regulations.

Policy AQ-4.5: Require the suspension of all grading operations when wind speeds (as instantaneous gusts) exceed 25 miles per hour.

Policy AQ-5.1: Utilize source reduction, recycling and other appropriate measures to reduce the amount of solid waste disposed of in landfills.

Riverside Good Neighbor Guidelines

The City adopted *Good Neighbor Guidelines for Siting New and/or Modified Warehouse/Distribution Facilities* in October 2008 to focus on the relationship between land use, permitting, and air quality, highlighting strategies that can help minimize the impacts of diesel emissions associated with warehouse/distribution centers. Specifically, the Guidelines will help to minimize the impacts of diesel particulate matter from on-road trucks associated with warehouses and distribution centers on existing communities and sensitive receptors located in the City. Appendix M of this DEIR summarizes the Project's consistency with the applicable Riverside Good Neighbor Guidelines. The following goals and strategies are applicable to the proposed Project:

Goal 1: Minimize exposure to diesel emissions to neighbors that are situated in close proximity to the warehouse/distribution center.

Strategy 1a: Design facilities to allow for the queuing of trucks on-site and away from sensitive receptors. Conversely, prevent the queuing of trucks on streets or elsewhere outside of facility in compliance with Title 10 – Vehicles and Traffic – Chapter 10.44 – Stopping, Standing and Parking.

Strategy 1b: To the extent possible, locate driveways, loading docks, and internal circulation routes away from residential uses or any other sensitive receptors.

Strategy 1c: In compliance with CEQA, conduct SCAQMD URBEMIS and EMFAC computer models, as appropriate, to initially evaluate warehouse and distribution projects on a case by case basis to determine the significance of air quality impacts and whether air quality thresholds would be exceeded as a result of the project. Where thresholds are exceeded, a more detailed air quality analysis/health risk assessment prepared by an air quality specialist is required to be prepared and submitted by the project applicant. As a general rule, the following guidelines can be used to determine whether a proposed project will be required to prepare additional technical analyses:

i. An air quality study for an industrial project is required when the proposed project has the potential to exceed established thresholds as

noted by URBEMIS and EMFAC computer models provided by SCAQMD. If these models indicate the project will exceed thresholds due to existing or proposed site conditions, intensity of development, location of nearest sensitive receptor, or any other exceptional circumstance warranting the need for additional review the preparation of an air quality study will be required.

ii. A health risk assessment is required when the truck traffic areas of an industrial project are located within 1,000 feet of sensitive receptors, in accordance with SCAQMD guidelines and/or practices.

Goal 4: Reduce and/or eliminate diesel idling within the warehouse/distribution center.

Toxic Air Contaminants

Toxic Air Contaminants (TACs) are regulated under both federal and State laws. Federally, the 1970 Amendments to the Clean Air Act included a provision to address air toxics. California regulates toxic air contaminants through its air toxics program, mandated in Chapter 3.5 (Toxic Air Contaminants) of the Health and Safety Code Section 39660, *et seq.*, and Part 6 Air Toxics "Hot Spots" Information and Assessment (Section 44300, *et seq.*). CARB, working in conjunction with the Office of Environmental Health Hazard Assessment (OEHHA), identifies toxic air contaminants. Air toxic control measures may then be adopted to reduce ambient concentrations of the identified toxic air contaminant below a specific threshold based on its effects on health, or to the lowest concentration achievable through use of best available control technology for toxics (T-BACT). The program is administered by the CARB. Air quality control agencies, including the SCAQMD, must incorporate air toxic control measures into their regulatory programs or adopt equally stringent control measures as rules within six months of adoption by CARB.

Diesel Regulations

In 1990, the State of California listed diesel exhaust as a known carcinogen under its Safe Drinking Water and Toxic Enforcement Act (Proposition 65). In 1998, CARB listed diesel particulate as a TAC.

CARB took the lead on addressing diesel emissions in the state of California. The first step to significantly reduce diesel emissions occurred in September 2000 when CARB approved the "Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles" or Diesel Risk Reduction Plan. The two main goals of the Diesel Risk Reduction Plan are: 1) to get new diesel fueled engines to use state-of-the-art emission controls as well as low-sulfur diesel fuel and, 2) for existing diesel engines to be retrofitted with emission control features. Effects of meeting these goals set by the CARB reduce the health effects experienced by Californians from diesel exhaust.

<u>CARB Diesel Risk Reduction Program</u>

Under CARB's Diesel Risk Reduction Program, mobile diesel emissions have their own set of reduction programs, as opposed to stationary diesel sources (generators) which are addressed separately under the Reduction Plan. One of the incentive programs for mobile diesel sources is the Carl Moyer Program which is a clean engine incentive program. This program provides money in the form of grants to cover the incremental portion of the cost to purchase cleaner burning engines or retrofitting existing ones.

Other programs include a program designed to develop and implement strategies to reduce emissions from new on-road heavy-duty diesel engines. The primary method of implementing this program will be through the development of emission control regulations and test procedures for those new engines. The California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles were amended in 2007 and will reduce emissions from new on-road heavy-duty diesel engines.

Strategies for reducing diesel emissions from existing on-road heavy duty engines are mainly implemented through three sections of this program: retrofit assessment, heavy-duty testing and field support, and retrofit implementation. CARB staff has developed a regulation to reduce diesel particulate matter and other emissions from existing on-road heavy-duty diesel powered vehicles operating in California. These regulations were adopted by CARB in December 2008 and last amended in December 2014. Beginning January 1, 2012, the Statewide Truck and Bus rule began requiring heavier trucks to be retrofitted diesel exhaust filters, and requires older truck replacement which started in January 2015. By 2023, nearly all trucks and buses will need to have 2010 model year engines or equivalent.

CARB Air Quality and Land Use Handbook

In addition to the above listed programs and regulations, CARB's *Air Quality and Land Use Handbook* (CARB 2005, p. 4) provides recommendations for siting new sensitive land uses. These recommendations include a 1,000-foot buffer between new sensitive land uses and freeways or urban roads with 100,000 vehicles per day. The Handbook also recommends to avoid the placement of new sensitive land uses within 1,000 feet of a distribution center (accommodating more than 100 trucks per day, 40 trucks with transport refrigeration units (TRUs), or where TRUs operate more than 300 hours a week) and to take into account the configuration of existing distribution centers and avoid locating residences and other sensitive land uses near entry and exit points. These are recommendations, not mandates, and land use decisions ultimately lie with the local agency which needs to balance other considerations.

Other Regulations

Also, some statewide regulations proposed to reduce one form of pollutant have the added benefit of reducing other forms of pollution. For example, when CARB approved the Heavy-Duty Vehicle Greenhouse Gas Reduction Measure in 2008 and the most recent amendments in December 2014 to reduce greenhouse gas emissions from heavy-duty trucks, it also reduces NO_X emissions. This measure requires a compliance schedule for trucks to be certified under the USEPA SmartWay Program, which reduces fuel consumption by improving fuel efficiency through improvements to tractor and trailer aerodynamics and low-rolling resistance tires.

On February 1, 2005, a requirement limiting the idling of diesel-fueled commercial vehicles to five minutes at any location pursuant to Section 2485 of Chapter 10 within Title 13 of California Code of Regulations was adopted. Similarly, Section 2449 prohibits construction equipment and truck idling times shall be prohibited in excess of five minutes on site.

Off-road diesel vehicles are also regulated under CARB for both in-use (existing) and new engines. Off-road diesel vehicles include construction equipment.

There have been four sets of off-road standards implemented by CARB, known as Tiers. Tier 1 standards began in 1996. Tier 2 and 3 were adopted in 2000 and were more stringent than the first tier. Tier 2 and 3 standards were completely phased in by 2006 and 2008, respectively. In December 2004, CARB adopted the Tier 4 or fourth phase of emission standards for late model year engines. These emission standards are nearly identical to those finalized by the USEPA in May 2004. These standards, which commenced in 2011, are estimated to decrease PM and NO_X emissions by 90 percent below pre-2011 levels.

Since most off-road vehicles today have no emission controls and can last 30 years or longer, CARB approved a regulation in 2007 to reduce emissions from existing off-road diesel vehicles used in construction and other industries. This regulation establishes emission rates targets that decline over time to accelerate turnover to newer, cleaner engines and require exhaust retrofits to meet these targets. The regulation took effect on the larger fleets first, with average compliance dates in 2010, while medium and small fleet requirements achieved compliance in 2013 and 2015, respectively. This regulation also includes the Surplus Off-Road Opt-in for NOX (SOON) program. The local air districts may opt into the SOON program to reduce NO_X emissions beyond what is required by the regulation. Staff at SCAQMD proposed Rule 2449 which would implement the SOON program. This rule was adopted by SCAQMD in 2008. Opting in to this program was anticipated to achieve a 12 ton per day reduction in NO_X by 2014.

5.3.10 Thresholds of Significance

The City of Riverside has not established local CEQA significance thresholds as described in Section 15064.7 of the State *CEQA Guidelines*. However, impacts related to air quality may be considered potentially significant if the proposed Project would:

- (Threshold A) conflict with or obstruct implementation of the applicable air quality plan;
- (Threshold B) violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- (Threshold C) result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors;
- (Threshold D) expose sensitive receptors to substantial pollutant concentrations; and/or
- (Threshold E) create objectionable odors affecting a substantial number of people

5.3.11 Project Design Features

The Project includes several features that will reduce Project-related emissions both during construction and operation.

Sustainability Features

As described in DEIR Section 3.2.6 (Sustainability Features), the Project will meet or exceed all applicable standards under California's Green Building Code (CalGreen) and Title 24. This will be accomplished by incorporating, at a minimum, the following sustainability features or other features that are equally efficient:

Energy Efficiency

- Design building shells and components, such as windows, roof systems and electrical systems, to meet California Title 24 Standards for nonresidential buildings.
- Design buildings to provide CalGreen Standards with Leadership in Energy and Environmental Design (LEED) features for potential certification. This includes design considerations related to the building envelope, HVAC, lighting, and power systems. Additionally, the architectural expression such as roofs and windows in the buildings will relate to conserving energy.
- Install efficient lighting and lighting control systems. Solar or light-emitting diodes (LEDs) will be installed for outdoor lighting. The site and buildings will be designed to take advantage of daylight, such that use of daylight is an integral part of the lighting systems in buildings. Lighting will incorporate motion sensors that turn them off when not in use.
- Use trees and landscaping on west and south exterior building walls to reduce energy use.
- Install light colored "cool" roofs over office area spaces and cool pavements.
- For future office improvement, install energy efficient heating and cooling systems, appliances and equipment, and control systems that are Energy Star rated.
- For future office improvement, refrigerants and HVAC equipment will be selected to minimize or eliminate the emission of compounds that contribute to ozone depletion and global warming. Ventilation and HVAC systems will be designed to meet or exceed the minimum outdoor air ventilation rates described in the American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHREA) standards and/or per California Title 24 requirements.
- For future office improvement, implement design features to increase the efficiency of the building envelope (i.e., the barrier between conditioned and unconditioned spaces). This includes installation of insulation to minimize heat transfer and thermal bridging and to limit air leakage through the structure or within the heating and cooling distribution system to minimize energy consumption.

- Provide vegetative or human-made exterior wall shading devices or window treatments for east, south, and west-facing walls with windows.
- Incorporate Energy Star rated windows, space heating and cooling equipment, light fixtures, appliances, or other applicable electrical equipment.

Renewable Energy

- Design buildings to have "solar ready" roofs that will structurally accommodate later installation of rooftop solar panels. Building operators providing rooftop solar panels will submit plans for solar panels prior to occupancy.

Water Conservation and Efficiency

- Create water-efficient landscapes in compliance with the City's Water Efficient Landscape and Irrigation Ordinance 19.570.
- Surface parking lots will be landscaped in accordance with City standards to reduce heat island effect.
- Install water-efficient irrigation systems and devices, such as soil moisture based irrigation controls and sensors for landscaping according to the City's Water Efficient Landscape and Irrigation Ordinance 19.570, which complies with the California Department of Water Resources Model Efficient Landscape Ordinance.
- Design buildings to be water-efficient. Install water-efficient fixtures and appliances (e.g., EPA WaterSense labeled products).
- Restrict watering methods (e.g., prohibit systems that apply water to non-vegetated surfaces) and control runoff.
- Provide education about water conservation and available programs and incentives to the building operators to distribute to employees.

Solid Waste Measures

- Reuse and recycle construction and demolition waste (including, but not limited to, soil, vegetation, concrete, lumber, metal, and cardboard).
- Provide interior and exterior storage areas for recyclables and green waste, and adequate recycling containers located in public areas.
- The property operator will provide readily available information provided by the City for employee education about reducing waste and available recycling services.

Transportation and Motor Vehicles

- Limit idling time for commercial vehicles to no more than five minutes.
- Provide up to three electric vehicle charging facilities to encourage the use of low or zero-emission vehicles.

- Provide bicycle parking per the CalGreen Code Standards including short-term bicycle parking (Section 5.710.6.2.1) and long-term bicycle parking (Section 5.710.6.2.2).
- Designate parking (per Section 5.710.6.3) for 10 or more vehicular parking spaces, for any combination of low-emitting, fuel-efficient and carpool/vanpool vehicles as shown in Table 5.106.2.2 of CalGreen Building Code Division 5.1.
- The Building Operator will support and encourage ridesharing and transit for the construction crew.

On-Site Equipment and Loading Docks

- The Project will require building operators (by contract specifications) to turn off equipment, including heavy-duty equipment, motor vehicles, and portable equipment, when not in use for more than 5 minutes. Truck idling shall not exceed 5 minutes in time. All facilities will post signs requiring that trucks shall not be left idling for more than 5 minutes pursuant to Title 13 of the California Code of Regulations, Section 2485, which limits idle times to not more than five minutes.
- Electrical hookups will be installed at all loading docks in order to allow transport refrigeration units (TRUs) with electric standby capabilities to use them where TRUs are in use. Trucks incapable of utilizing the electrical hookups shall be prohibited from accessing the site as set forth in the lease agreement.
- Service equipment (i.e., forklifts) used within the site shall be electric or compressed natural gas-powered.

Construction

- Require construction equipment to turn off when not in use.
- Use locally produced and/or manufactured building materials for at least 10% of the construction materials used for the Project.
- Use “green” building materials where feasible, such as those materials that are resource efficient and recycled and manufactured in an environmentally friendly way.
- During grading, heavy-duty construction equipment (i.e., excavators, graders, scrapers, dozers, tractor/loader/backhoes, etc.) shall be CARB/U.S. Environmental Protection Agency Tier 3 certified.

5.3.12 Environmental Impacts before Mitigation

Threshold A: *Conflict with or obstruct implementation of the applicable air quality plan.*

The City is located within the South Coast Air Basin (“the Basin”), where air quality is regulated by the SCAQMD. SCAQMD prepares the Air Quality Management Plan (AQMP) for the Basin to set forth a comprehensive program that will lead the Basin into compliance with all federal and state air quality standards. The AQMP’s control measures and related emission reduction estimates are based upon emissions projections for a future development scenario derived

from land use, population, and employment characteristics defined in consultation with local governments. Accordingly, if a project demonstrates compliance with local land use plans and/or population projections, then the AQMP would have taken into account such uses when it was developed.

The City of Riverside's General Plan 2025 (GP 2025) designates the Project site as Business/Office Park (B/OP), and per the City's zoning map the Project site is zoned for Business and Manufacturing Park (BMP) zone (GP 2025 FPEIR). The Project site is also within the Sycamore Canyon Business Park Specific Plan (SCBPSP), which designates the site as Industrial. As discussed in Section 5.10 – Land Use and Planning of this DEIR, the Project is consistent with both the existing land use designation in the GP 2025 and SCBPSP. Although the Project does propose both a General Plan Amendment and a Specific Plan Amendment, these modifications to each respective plan would remove planned roadways from within the Project site, as described in Section 3.0, Project Description of this document, and would not alter the Project's consistency with the AQMP because the land use evaluated in the AQMP is unchanged and the land use does not generate population growth. Therefore, the Project will not conflict with or obstruct implementation of the applicable air quality plan and impacts are **less than significant**.

Threshold B: *Violate any air quality standard or contribute substantially to an existing or projected air quality violation.*

Air quality impacts can be divided into short-term and long-term impacts. Short-term impacts are usually related to construction and grading activities. Long-term impacts are usually associated with build-out conditions and long-term operations of a project. Both short-term and long-term air quality impacts can be analyzed on a regional and localized level. Regional air quality thresholds examine the effect of project emissions on the air quality of the Basin, while localized air quality impacts examine the effect of project emissions on the neighborhood around the Project site. The following information was derived from the AQ Report which is found in Appendix B of this DEIR.

The construction and operation analysis was performed using CalEEMod™ (California Emissions Estimation Model), the official statewide land use computer model designed to provide a uniform platform for estimating potential criteria pollutant and greenhouse gas (GHG) emissions associated with both construction and operations of land use projects under CEQA. The model quantifies direct emissions from construction and operations (including vehicle use), as well as indirect emissions, such as emissions from energy use. The mobile source emission factors used in the model (EMFAC2011) includes the Pavley standards and Low Carbon Fuel standards into the mobile source emission factors. The model also identifies Project design features, regulatory measures, and mitigation measures to reduce criteria pollutant and GHG emissions along with calculating the benefits achieved from the selected measures.

SCAQMD's Regional Significance Threshold (RST) Analysis

The thresholds contained in the SCAQMD *CEQA Air Quality Handbook* are considered regional thresholds and are shown in **Table 5.3-D – SCAQMD CEQA Regional Significance Thresholds**.

Table 5.3-D – SCAQMD CEQA Regional Significance Thresholds

Emission Threshold	Units	VOC	NO_X	CO	SO_X	PM-10	PM-2.5
Construction	lbs/day	75	100	550	150	150	55
Operations	lbs/day	55	55	550	150	150	55

Short-Term RST Analysis

Short-term emissions consist of fugitive dust and other particulate matter, as well as exhaust emissions generated by construction-related vehicles. Short-term impacts will also include emissions generated during construction as a result of operation of personal vehicles by construction workers, asphalt degassing, and architectural coating (painting) operations.

Project-related short-term emissions were evaluated using the CalEEMod version 2013.2.2 computer program. The model evaluated emissions resulting from site preparation, grading and construction. The total construction period is expected to require approximately one year beginning no earlier than January 2017. The default parameters within CalEEMod were used and these default values reflect a worst-case scenario, which means that Project emissions are expected to be equal to or less than the estimated construction emissions. In addition to the default values used, the following assumptions relevant to construction were used to model short-term construction emissions:

- Tier 3 grading equipment will be used during Project grading to reduce NOx and diesel particulate matter (DPM) impacts to nearby receptors. (also listed as **MM AQ 17**)
- Default construction equipment ratings and load factors contained in CalEEMod were applied to 40-hours per week actual engine running times except cranes at 20-hours per week.
- To evaluate Project compliance with SCAQMD Rule 403 for fugitive dust control, the Project will utilize the mitigation option of watering the Project site three times daily which achieves a control efficiency of 61 percent for PM-10 and PM-2.5 emissions. (also listed as **MM AQ 20**)
- Additional water truck trips were specifically included during grading, 200 horsepower at default load factor for slow speed operation.
- The architectural coating schedule at the end of construction was extended by one week (24 days to 30 days) to reduce daily volatile organic compound (VOC) emissions.
- The actual architectural coating surface area was recalculated from the CalEEMod defaults based on actual Project size.

The construction equipment estimated to be used for each activity is identified in Appendix A of the AQ Report. **Table 5.3-E – Estimated Daily Construction Emissions** summarizes the estimated construction emissions.

Table 5.3-E – Estimated Daily Construction Emissions

Activity	Peak Daily Emissions (lb/day)					
	VOC	NO_X	CO	SO_2	PM-10	PM-2.5
SCAQMD Daily Thresholds	**75**	**100**	**550**	**150**	**150**	**55**
Site Preparation	4.0	41.0	34.2	0.0	2.3	2.1
Site Grading	5.5	86.2	86.9	0.2	3.6	3.5
Building Construction	11.4	71.0	133.5	0.3	2.3	2.2
Paving	4.8	25.2	17.2	0.0	1.4	1.3
Architectural Coating	66.5	3.7	15.0	0.0	0.2	0.2
Maximum	**66.5**	**86.2**	**133.5**	**0.03**	**3.6**	**3.5**
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Notes:
See Table 3-4 of the AQ Report for model output report. Numbers may not match due to rounding within the model.

Evaluation of **Table 5.3-E** indicates that criteria pollutant emissions from construction activities will not exceed the SCAQMD regional daily thresholds during Project construction if each activity occurs separately. The construction activities that may overlap included building constructions, paving, and architectural coating (painting) activities. **MM AQ 21** will be implemented to prohibit the building construction and architectural coating (painting) activities from overlapping in order to avoid an exceedance of VOC emissions if these two activities overlap.

Long-Term RST Analysis

Long-term emissions are evaluated for Project buildout. The Project is assumed to be operational in 2018. Mobile emissions refer to on-road motor vehicle emissions at Project buildout, which include passenger vehicles and delivery trucks. These emissions are estimated by using the trip generation rates provided in the *Traffic Impact Analysis for the Sycamore Canyon Industrial Buildings 1 & 2* (Appendix J). Additionally, CalEEMod truck trip length defaults were increased and it was conservatively assumed that all truck trips are travelling to and from the ports of Los Angeles and Long Beach.

Area source emissions include stationary combustion emissions of natural gas used for space and water heating, yard and landscape maintenance (assumed to occur throughout the year in Southern California), consumer use of solvents and personal care products which were excluded from emissions estimates because no substantial use would occur from a logistics center, and an average building square footage to be repainted each year. CalEEMod

computes area source emissions based upon default factors and land use assumptions. The CalEEMod defaults for energy use were modified to reflect the increased stringency of the current 2013 CalGreen Building Code compared to the 2008 CalGreen Building Code. The 2013 CalGreen Building Code will result in 30 percent greater emissions reductions compared to the 2008 standards.

Project-related operational emissions were computed and the results are presented below in **Table 5.3-F1 – Estimated Daily Project Operation Emissions (Summer)** and **Table 5.3-F2 – Estimated Daily Project Operation Emissions (Winter)**.

Table 5.3-F1 – Estimated Daily Project Operation Emissions (Summer)

	Peak Daily Emissions (lb/day)					
Activity	**VOC**	**NO_x**	**CO**	**SO_2**	**PM-10**	**PM-2.5**
SCAQMD Daily Thresholds	**55**	**55**	**550**	**150**	**150**	**55**
Mobile	24.12	325.37	323.27	1.52	83.22	26.91
Area	2.28[1]	0.00	0.40	0.00	0.00	0.00
Energy	0.06	0.58	0.49	0.00	0.04	0.04
Total	26.46	325.95	324.16	1.52	83.26	26.96
Exceeds Threshold?	**No**	**Yes**	**No**	**No**	**No**	**No**

[1]Note: Emissions associated with consumer products were manually excluded because there is no substantial use of consumer products associated with the logistics center land use.
Source: See Appendix D of the AQ Report for model output report

Table 5.3-F2 – Estimated Daily Project Operation Emissions (Winter)

	Peak Daily Emissions (lb/day)					
Activity	**VOC**	**NO_x**	**CO**	**SO_2**	**PM-10**	**PM-2.5**
SCAQMD Daily Thresholds	**55**	**55**	**550**	**150**	**150**	**55**
Mobile	24.05	338.81	309.11	1.48	83.23	26.91
Area	2.28[1]	0.00	0.40	0.00	0.00	0.00
Energy	0.06	0.58	0.49	0.00	0.04	0.04
Total	26.39	339.39	310.00	1.48	83.27	26.96
Exceeds Threshold?	**No**	**Yes**	**No**	**No**	**No**	**No**

[1]Note: Emissions associated with consumer products were manually excluded because there is no substantial use of consumer products associated with the logistics center land use.

Source: See Appendix D of the AQ Report for model output report

Evaluation of the modeling results presented in the above table indicates that criteria pollutant emissions from operation of the proposed Project will exceed the SCAQMD regional daily threshold for NO_x.

RST Analysis Conclusion

Based on the RST for the proposed Project, short-term emissions will not exceed the daily regional thresholds set by SCAQMD for any criteria pollutants with the incorporation of proposed Project design features (which are also listed as **MM AQ 16** and **MM AQ 17**). Additionally, **MM AQ 20** and **MM AQ 21** will be implemented during construction to comply with SCAQMD fugitive dust requirements and avoid significant VOC emissions from architectural coating. Long-term operational emissions will only exceed the daily regional threshold set by SCAQMD for NO_x, even with the incorporation of proposed Project design features (which are also listed as mitigation measures **MM AQ 1** through **MM AQ 15**, **MM AQ 18**, **MM AQ 19**, as well as additional **MM AQ 22** through **MM AQ 25**). Because the tenants of these buildings are currently unknown, emissions quantified represent a conservative estimate.

SCAQMD's Localized Significance Threshold (LST) Analysis

The pollutants analyzed under the localized significance threshold (LST) are CO, NO_X, PM-10, and PM-2.5 (SCAQMD 2008b, p. 1-2). Of these pollutants, the "attainment pollutants" (CO and NO_X) are derived using an air quality dispersion model to back-calculate the daily emissions that would cause or contribute to a violation in ambient air quality for the SRA within which the Project is located (SRA 23). The non-attainment PM-10 and PM-2.5 pollutant measurements are derived using an air quality dispersion model to back-calculate the emissions that would be necessary to worsen the existing violation in SRA 23, using the allowable change in concentration thresholds approved by the SCAQMD. Therefore, the tabulated LSTs represent the maximum mass emissions from a project that would not cause or contribute to an exceedance of state or federal ambient air quality standards (AAQS) for the above pollutants, and were developed based on ambient concentrations of these pollutants for each SRA in the Basin.

Short-Term LST Analysis

The SCAQMD Governing Board adopted a methodology for calculating localized air quality impacts through localized significance thresholds (also referred to as a LST analysis). Localized significance thresholds represent the maximum emissions from a project that would not cause or contribute to an exceedance of the most stringent applicable state or federal ambient air quality standards. Localized significance thresholds were developed in recognition of the fact that criteria pollutants such as CO, NO_X, and PM-10 and PM-2.5 in particular, can have local impacts at nearby sensitive receptors as well as regional impacts.

The localized assessment methodology limits the emissions in the analysis to those generated from on-site activities. SCAQMD has provided LST lookup tables and sample construction

scenarios[3] to allow users to readily determine if the daily emissions for proposed construction or operational activities could result in significant localized air quality impacts for projects five acres or smaller. Although the Project site is approximately 80 gross acres, it is anticipated that only five acres will be disturbed in one day; thus it is appropriate to use these LST lookup tables for this analysis. Additional detail is found in Appendix A of the AQ Report.

The LST thresholds are estimated for each SRA using the maximum daily disturbed area (in acres) and the distance of the Project to the nearest sensitive receptors (in meters). Sensitive receptors in the Project vicinity primarily include existing residences adjacent to the north and northwest area of the Project site (**Figure 3-3 – Aerial Photograph**). The closest receptor distance on the LST look-up tables is 25 meters. According to the LST Methodology, projects with boundaries closer than 25 meters to the nearest receptor should use LSTs for receptors located at 25 meters. Therefore, a receptor distance of 25 meters was used to ensure a conservative analysis. The results of the short-term LST analysis are summarized in **Table 5.3-G – LST Results for Construction Emissions**, below.

Table 5.3-G – LST Results for Construction Emissions

Activity	Peak Daily Emissions (lb/day)			
	NO_X	CO	PM-10	PM-2.5
LST Threshold for 5 acre	**270**	**1,577**	**13**	**8**
Maximum	86	134	4	3
Exceeds Threshold?	**No**	**No**	**No**	**No**

Source: AQ Report, Table 3-3: Mitigated SCAQMD LST Evaluation

As indicated in the above table, Project-related short-term construction emissions do not exceed the SCAQMD-established LST.

Long-Term LST Analysis

According to the LST methodology, LSTs only apply to the operational phase if a project includes stationary sources or attracts mobile sources that may spend long periods of time idling at the site, such as warehouse/transfer facilities. Therefore, because the proposed Project will operate as a logistics center and has the potential to attract mobile sources, that can reasonably be assumed will idle at the site, a long-term LST analysis was prepared for this Project.

Table 5.3-H – LST Results for Operational Emissions

Activity	Peak Daily Emissions (lb/day)			
	NO_X	CO	PM-10	PM-2.5
LST Threshold for 5 acre	**270**	**1,577**	**4**	**2**
Maximum	12	11	3	1

[3] Available at www.aqmd.gov/ceqa/handbook/LST/LST.html

Exceeds Threshold?	**No**	**No**	**No**	**No**

Source: AQ Report, Table 3-3: Mitigated SCAQMD LST Evaluation

Therefore, as indicated in the table above, Project-related long-term operational emissions will not exceed any SCAQMD operational LST.

LST Analysis Conclusion

Based on the LST analysis, neither the short-term construction nor long-term operation of the Project will exceed SCAQMD LST at sensitive receptors within the Project vicinity for any criteria pollutants.

CO Hot Spots Analysis

A carbon monoxide (CO) "hot spot" is a localized concentration of CO that is above the state or federal 1-hour or 8-hour ambient air quality standards (AAQS). Localized high levels of CO are associated with traffic congestion and idling or slow-moving vehicles. Based on the information presented below, a site-specific CO "hot spot" analysis is not needed to determine whether the addition of Project related traffic will contribute to an exceedance of either the state or federal AAQS for CO emissions in the Project area.

The analysis prepared for CO attainment in the South Coast Air Basin by the SCAQMD can be used to assist in evaluating the potential for CO exceedances in the South Coast Air Basin. CO attainment was thoroughly analyzed as part of the SCAQMD's 2003 Air Quality Management Plan (2003 AQMP) and the Revised 1992 Federal Attainment Plan for Carbon Monoxide (1992 CO Plan). As discussed in the 1992 CO Plan, peak carbon monoxide concentrations in the South Coast Air Basin are generally due to unusual meteorological and topographical conditions, and not due to the impact of particular intersections (2003 AQMP Appendix V, p. V-4-32). Considering the region's unique meteorological conditions and the increasingly stringent CO emissions standards, CO modeling was performed as part of the 1992 CO Plan and subsequent plan updates and air quality management plans.

In the 1992 CO Plan, a CO hot spot analysis was conducted for four busy intersections in Los Angeles at the peak morning and afternoon time periods. The intersections evaluated included: Long Beach Blvd. and Imperial Highway (Lynwood); Wilshire Blvd. and Veteran Ave. (Westwood); Sunset Blvd. and Highland Ave. (Hollywood); and La Cienega Blvd. and Century Blvd. (Inglewood). These analyses did not predict a violation of CO standards. The busiest intersection evaluated in the 1992 CO Plan and subsequent 2003 AQMP was that at Wilshire Blvd. and Veteran Ave., which has a daily traffic volume of approximately 100,000 vehicles per day (2003 AQMP Appendix V, Table 4-7). The Los Angeles County Metropolitan Transportation Authority (MTA) evaluated the LOS in the vicinity of the Wilshire Blvd./Veteran Ave. intersection and found it to be level E at peak morning traffic and Level F at peak afternoon traffic (MTA, Exhibit 2-5 and 2-6).

Considering existing traffic, plus 2018 ambient traffic, plus cumulative traffic plus Project-related traffic, the TIA prepared for this Project calculated that the highest average daily trips

would be 20,213 on Eastridge Avenue between Box Springs Boulevard to the I-215 Ramps, which is lower than the values studied by SCAQMD in their 1992 CO Plan and 2003 AQMP, as described above (Appendix J). Therefore, none of the roadway segments in the vicinity of the proposed Project site would have daily traffic volumes exceeding those at the intersections modeled in the 2003 AQMP, nor would there be any reason unique to the meteorology to conclude that this intersection would yield higher CO concentrations if modeled in detail. Thus, the Project would not result in CO hot spots.

Conclusions

Based on the RST analysis for the proposed Project, the short-term construction emissions will not exceed any thresholds for any criteria pollutants with the incorporation of proposed Project design features (which are also listed as **MM AQ 16** and **MM AQ 17**). Additionally, **MM AQ 20** and **MM AQ 21** will be implemented during construction to comply with SCAQMD fugitive dust requirements and avoid significant VOC emissions from architectural coating. The long-term operation emissions will only exceed the threshold for NO_x, even with the incorporation of proposed Project design features (which are also listed as mitigation measures **MM AQ 1** through **MM AQ 15**, **MM AQ 15**, **MM AQ 18**, and **MM AQ 19**, as well as additional **MM AQ 22** through **MM AQ 25**). Therefore, as discussed in Section 5.3.16, long-term regional air quality impacts are significant and unavoidable.

Based on the LST analysis of the proposed Project, neither the short-term construction nor long-term operation of the Project will result in localized air quality impacts to sensitive receptors in the Project vicinity for NO_x, CO, PM-10 or PM-2.5. Additionally, the proposed Project will not form any CO hot spots in the Project area. For these reasons, localized air quality impacts from short-term construction and long-term operation are considered less than significant.

Therefore, because long-term operation of the proposed Project will exceed the SCAQMD threshold for NO_x, **impacts are considered to be significant and unavoidable after implementation of mitigation**, and a Statement of Overriding Considerations will be required should the City choose to approve the Project.

Threshold C: *Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).*

As previously stated, the portion of the Basin within which the Project is located is designated as a non-attainment area for PM-10 under State standards, and for ozone and PM-2.5 under both State and federal standards. Ozone is not directly emitted into the atmosphere; rather, it forms via a reaction of VOC and NOx in the atmosphere. Therefore, in evaluating this threshold it is also important to consider these emissions and their potential to contribute to ozone pollution in the region even if the region is not in non-attainment for these constituent pollutants.

SCAQMD considers the thresholds for project-specific impacts and cumulative impacts to be the same.[4] Therefore, projects that exceed project-specific significance thresholds are considered by SCAQMD to be cumulatively considerable. Based on SCAQMD's regulatory jurisdiction over regional air quality, it is reasonable to rely on its thresholds to determine whether there is a cumulative air quality impact. None of the SCAQMD mass daily significance thresholds are exceeded during Project construction; however, the mass daily significance threshold for NO_x would be exceeded during Project operation. Thus, the Project would have a cumulatively considerable increase in emissions due to operational NO_x. In terms of localized air quality impacts, none of the SCAQMD LST thresholds are exceeded. Thus, the Project would not have a cumulatively considerable impact due to criteria pollutant emissions. Because the Project would have a cumulatively considerable increase in emissions due to operational NO_x, even with implementation of mitigation measures **MM AQ 1** through **MM AQ 25**, the impact is **significant and unavoidable after implementation of mitigation**, and a Statement of Overriding Considerations will be required should the City choose to approve the Project.

Threshold D: *Expose sensitive receptors to substantial pollutant concentrations.*

As the analysis under *Threshold B*, above, addressed the short-term and long-term LST analysis and the CO hot spots analysis, the remainder of this analysis focuses on the exposure of sensitive receptors to both cancer and non-cancer risks.

Health risk assessments are commonly used to estimate the health risks to the surrounding community from projects that will be a source of diesel emissions and hence increase the amount of DPM in the area. Those individuals who are sensitive to air pollution include children, the elderly, and persons with preexisting respiratory or cardiovascular illness. For purposes of CEQA, the SCAQMD considers a sensitive receptor to be a location where a sensitive individual could remain for 24 hours, such as residences, hospitals, or convalescent facilities. Commercial and industrial facilities are not included in the definition because employees do not typically remain onsite for 24 hours.

The closest sensitive receptors are the residences located adjacent to the Project site in the north and northwest area of the Project site. The nearest residential property line is approximately 100 feet (30 meters) from the edge of the proposed buildings.

The CARB Air Quality and Land Use Handbook contains recommendations that will "help keep California's children and other vulnerable populations out of harm's way with respect to nearby sources of air pollution" (CARB 2005), including recommendations for distances between sensitive receptors and certain land uses. The Handbook states that its recommendations are advisory and should not be interpreted as "buffer zones." CARB recognizes the opportunity for more detailed site-specific analyses and there is no "one size fits all" solution to land use planning. The Handbook recommends avoiding siting new sensitive land uses within 1,000 feet of a distribution center. Therefore, since the Project involves the construction of a logistics

[4] http://www.aqmd.gov/docs/default-source/Agendas/Environmental-Justice/cumulative-impacts-working-group/cumulative-impacts-white-paper-appendix.pdf?sfvrsn=4

center approximately 30 meters from the nearest sensitive receptor, a more detailed Screening Health Risk Assessment (HRA) was prepared for the Project (Appendix B). The following is a summary of the methodology and the results in the HRA from both Project construction and operation.

Methodology

The health risk calculations were performed using the Hotspots Analysis and Reporting Program Version 2 (HARP2) Risk Assessment Standalone Tool (RAST, version 16088). The ground-level concentration (GLC) input file format was calculated using the annual average and hourly maximum emission rates in units of grams per second (g/s) times the annual and hourly X/Q values predicted by AERSCREEN (version 15181). Risks associated with the volume source (i.e., active construction and operational area) were determined at the nearest receptor impact locations specified above. Due to the large built area of the project site (28.88 hectares) with a 2:1 aspect ratio, the site was parsed into eight equal areas of 36,100 square meters (8.92 acres) each and the average (composite) distances from the centroids of the corresponding volume sources to the nearest residential and worker receptors were determined. Local dispersion modeling parameters are consistent with other projects in the South Coast Air Basin.

Cancer and non-cancer risks evaluated in Appendix B of the DEIR are conservatively calculated by the model using the 2015 risk assessment guidelines established by SCAQMD and the Office of Environmental Health Hazard Assessment (OEHHA) which assume different exposure periods and pathways for residential uses and workers. These assumptions are listed below:

- The residential multi-pathway exposures include inhalation, soil ingestion, dermal exposure, mother's milk, and homegrown produce to represent the variety of ways that an individual residing in the area may be exposed to contaminants in their environment. Residential operational exposure was estimated for an exposure period of 30 years, which assumes that an individual would live in the impacted area for an extended amount of time.

- The worker multi-pathways include only inhalation, soil ingestion, and dermal exposure for an exposure period of 25 years to determine the health risks associated with Project construction on workers in the nearby industrial and distribution facilities.

Cancer risks are based upon mathematical calculations which estimate the probability of the number of people who will develop cancer after exposure to DPM. This probability is generally expressed in terms of the number of people who will develop cancer per one million people who are exposed. It is important to understand that this cancer risk represents the probability that a person develops some form of cancer; the estimated risk does not represent actual mortality rates.

Non-cancer risks can be described as acute (short-term, generally one-hour peak exposures) or chronic (long-term exposure) health impacts. SCAQMD recognizes and uses the acute and chronic reference exposure levels (REL) developed by OEHHA for determining non-cancer health impacts of toxic substances. Exceeding the acute or chronic REL does not necessarily indicate that an adverse health impact will occur; however, levels of exposure above the REL have an increasing but undefined probability of resulting in an adverse health impact, particularly in sensitive individuals.

The SCAQMD thresholds of significance for TAC evaluated herein are a maximum incremental cancer risk of 10 in one million and a non-cancer hazard index of 1.0 or greater. Additionally, the SCAQMD thresholds for 24-hour PM-2.5 incremental concentrations of 10.4 and 2.5 $\mu g/m^3$ were evaluated for constructions and operation, respectively.

Construction and Operational Impacts

The results of the Project-specific construction and operation related HRA, and summarized below in **Table 5.3-I – Construction Health Risk Assessment** and **Table 5.3-J – Operation Health Risk Assessment**. Additional details are provided in Appendix B of the DEIR.

Table 5.3-I – Construction Health Risk Assessment

Time and Age Weighted Toxic Air Contaminants Risk	AERSCREEN/HARP2 Screening Results			
	Model Output	Cancer Risk Per Million	Threshold	Exceeds Threshold?
Residential MICR	8.3E-06	8.3	10	No
Residential HIC	9.3E-03	-	1	No
Residential HIA	0	-	1	No
Residential 24-Hour $PM_{2.5}$ (ug/m^3)	2.4	-	10.4	No
Worker MICR	1.3E-06	1.3	10	No
Worker HIC	2.5E-02	-	1	No
Worker HIA	0	-	1	No
Worker 24-Hour PM-2.5 (ug/m^3)	6.5	-	10.4	No

Notes: MICR – Maximum Individual Cancer Risk; HIC – Chronic Hazard Index; HIA – Acute Hazard Index
Exposure period = project life (30 years residential; 25 years worker; warm climate)
Residential Multipathway (MP): inhalation, soil ingestion, dermal, mother's milk, homegrown produce
Worker MP: inhalation, soil ingestion, dermal
Deposition rate: 0.02 m/s (PM controlled)

Source: AQ Report, Table 4-1: Screening Health Risk Assessment – Construction Maxima

Table 5.3-J – Operation Health Risk Assessment

Time and Age Weighted Toxic Air Contaminants Risk	AERSCREEN/HARP2 Screening Results			
	Model Output	Cancer Risk Per Million	Threshold	Exceeds Threshold?
Residential MICR	5.3E-06	5.3	10	No
Residential HIC	1.4E-03	-	1	No
Residential HIA	0	-	1	No
Residential 24-Hour $PM_{2.5}$ (ug/m^3)	0.4	-	2.5	No
Worker MICR	4.9E-06	4.9	10	No
Worker HIC	3.8E-03	-	1	No
Worker HIA	0	-	1	No
Worker 24-Hour PM-2.5 (ug/m3)	1.2	-	2.5	No

Notes: MICR – Maximum Individual Cancer Risk; HIC – Chronic Hazard Index; HIA – Acute Hazard Index
Exposure period = project life (30 years residential; 25 years worker; warm climate)
Residential Multipathway (MP): inhalation, soil ingestion, dermal, mother's milk, homegrown produce
Worker MP: inhalation, soil ingestion, dermal
Deposition rate: 0.02 m/s (PM controlled)

Source: AQ Report, Table 4-2: Screening Health Risk Assessment – Operation Maxima

Cancer Risks

As shown in **Tables 5.3-I** and **5.3-J**, the residential MICR is 8.3 in one million during Project construction and 5.3 in one million during Project operation, respectively. Thus, the Project will not expose residential uses to cancer risks that exceed the SCAQMD threshold of 10 in one million. The maximum cancer risk to workers was also below the SCAQMD threshold of 10 in one million. Therefore, construction or operation of the proposed Project will not pose a significant cancer risk to residents or workers in the Project vicinity without mitigation required.

Non-Cancer Risks

As shown in **Tables 5.3-I** and **5.3-J**, the maximum chronic and acute non-cancer hazard indices from the construction and operation of the Project do not exceed the SCAQMD threshold of 1.0 for either residential or worker receptors. The HIC can also be reported as a percentage. Specifically, during construction the resident HIC is 0.93 percent and the worker HIC is 2.5 percent. During operation, the resident HIC is reduced to 0.14 percent and the worker HIC is reduced to 0.38 percent. Additionally, the 24-hour PM-2.5 levels were well below the SCAQMD-established thresholds for exposure during construction and operation. Therefore, construction or operation of the proposed Project will not pose a significant non-cancer cancer risk to residents or workers in the Project vicinity.

Conclusion

None of the cancer or non-cancer thresholds are exceeded as a result of Project construction or operation for workers or residents within the proposed Project vicinity. Therefore, the Project will not result in the exposure of sensitive receptors to substantial pollutant concentrations during Project construction or operation, and impacts are considered **less than significant**.

Threshold E: *Create objectionable odors affecting a substantial number of people.*

According to the CARB *Air Quality and Land Use Handbook* (CARB 2005), common sources of odor complaints include: sewage treatment plants, landfills, recycling facilities, petroleum

refineries, and auto body shops (CARB 2005, p. 34). The proposed Project does not contain land uses typically associated with emitting objectionable odors and is therefore not anticipated to create any objectionable odors during Project operation. Potential odor sources associated with implementation of the proposed Project may result from construction equipment exhaust and the application of asphalt and architectural coatings during construction activities. Recognizing the short-term duration and quantity of construction emissions in the Project area and the limited outdoor exposure of persons to outdoor odors, the Project will not expose substantial numbers of people to objectionable odors. The proposed Project will also be required to comply with SCAQMD Rule 402 to correct occurrences of public nuisances. Additionally, as mentioned above, truck idling times will be limited to a maximum of five minutes at the Project site (as required by the California airborne toxics control measure Title 13, Section 2485 of CCR). Therefore, the Project's construction and operation will not create objectionable odors affecting a substantial number of people, and the impact is considered **less than significant**.

5.3.13 Proposed Mitigation Measures

An EIR is required to describe feasible mitigation measures that could minimize significant adverse impacts (CEQA Guidelines, Section 15126.4). The Project will have a significant adverse impact with respect to operational NO_x emissions. The Project incorporates several design features that will help reduce this impact. In addition, all feasible mitigation measures have been identified and imposed on the Project to reduce the impact, which measures are listed below. However, even with implementation of the mitigation measures, the impact related to operational NO_x emissions remains significant and unavoidable.

As stated previously, the Project's design features are also listed as mitigation measures to minimize air quality impacts during construction and operation. Applicable Project design features were quantitatively evaluated in the Project emissions estimates. The following Project design features are included as mitigation measures:

MM AQ 1: Solar or light-emitting diodes (LEDs) shall be installed for outdoor lighting. Prior to building permit issuance, the City shall verify building plans contain these features.

MM AQ 2: Indoor and outdoor lighting shall incorporate motion sensors to turn off fixtures when not in use. The site and buildings shall be designed to take advantage of daylight, such that use of daylight is an integral part of the lighting systems. Prior to building permit issuance, the City shall verify building plans contain these features.

MM AQ 3: Trees and landscaping shall be installed along the west and south exterior building walls to reduce energy use. Vegetative or man-made exterior wall shading devices or window treatments shall be provided for east, south, and west-facing walls with windows. Landscaping and/or building plans shall

contain these features and are subject to City verification prior to building permit issuance.

MM AQ 4: Light colored "cool" roofs shall be installed over office area spaces and cool pavement shall be installed in parking areas. Prior to building permit issuance, the City shall verify building plans contain these features.

MM AQ 5: Energy efficient heating and cooling systems, appliances and equipment, and control systems that are Energy Star rated shall be installed in future office improvement plans. Refrigerants and heating, ventilation, and air conditioning (HVAC) equipment shall also be selected to minimize or eliminate the emission of compounds that contribute to ozone depletion and global warming. The efficiency of the building envelope shall also be increased (i.e., the barrier between conditioned and unconditioned spaces). This includes installation of insulation to minimize heat transfer and thermal bridging and to limit air leakage through the structure or within the heating and cooling distribution system to minimize energy consumption. The City shall verify tenant improvement plans include these features. The City shall verify these features are installed prior to issuance of occupancy permits.

MM AQ 6: Energy Star rated windows, space heating and cooling equipment, light fixtures, appliances, or other applicable electrical equipment shall be installed. Prior to building permit issuance, the City shall verify building plans contain these features.

MM AQ 7: All buildings shall be designed with "solar ready" roofs that can structurally accommodate future installation of rooftop solar panels. Prior to building permit issuance, the City shall verify roofs are "solar ready." If future building operators are providing rooftop solar panels, they shall submit plans for solar panels to the City prior to occupancy.

MM AQ 8: The Project's landscaping plans shall incorporate water-efficient landscaping, with a preference for xeriscape landscape palette. Landscaping plans shall be approved by the City prior to building permit issuance.

MM AQ 9: All building owners shall provide education about water conservation and available programs and incentives to building operators to distribute to employees.

MM AQ 10: Interior and exterior waste storage areas shall be provided for recyclables and green waste. Prior to occupancy permits, the City shall verify interior and exterior storage areas are provided for recyclables and green waste. The property operator will also provide readily available information provided by the

City for employee education about reducing waste and available recycling services.

MM AQ 11: Up to three electric vehicle charging stations shall be provided to encourage the use of low or zero-emission vehicles. Prior to building permit issuance, the City shall verify building plans contain electric vehicle charging stations.

MM AQ 12: Adequate bicycle parking near building entrances shall be provided at the site. Facilities that encourage bicycle commuting (e.g., locked bicycle storage or covered or indoor bicycle parking) shall be provided. Prior to building permit issuance, the City shall verify building plans contain adequate bicycle parking.

MM AQ 13: All facilities shall post signs informing users of requirements limiting idling to five minutes or less pursuant to Title 13 of the California Code of Regulations, Section 2485. The City shall verify signage has been installed prior to occupancy.

MM AQ 14: Electrical hookups shall be installed at all loading docks to allow transport refrigeration units (TRUs) with electric standby capabilities to plug in when TRUs are in use. Trucks incapable of using the electrical hookups shall be prohibited from accessing the site as set forth in the lease agreement. The City shall verify electrical hookups have been installed prior to occupancy and shall confirm lease agreement includes such language.

MM AQ 15: Service equipment (i.e., forklifts) used within the site shall be electric or compressed natural gas-powered.

MM AQ 16: The Building Operator shall support and encourage ridesharing and transit for the construction crew and regular employees by providing information on ridesharing and transit opportunities.

MM AQ 17: During grading, all off-road diesel-powered construction equipment greater than 50 horsepower shall meet or exceed United States Environmental Protection Agency (EPA) Tier 3 off-road emissions standards. Proof of compliance shall be reviewed by the City prior to issuance of a grading permit.

MM AQ 18: Locally produced and/or manufactured building materials shall be used for at least 10% of the construction materials used for the Project. Verification shall be submitted to the City prior to issuance of a building permit.

MM AQ 19: “Green” building materials shall be used where feasible, such as those materials that are resource efficient and recycled and manufactured in an environmentally friendly way. Verification of the feasibility or infeasibility of securing these materials shall be submitted to the City prior to issuance of a building permit.

In addition to the Project design features, the following mitigation measures will be implemented during Project construction to minimize air quality impacts.

MM AQ 20: Pursuant to SCAQMD Rule 403 (e) – Additional Requirements for Large Operations – the Project will implement applicable dust control measures specified in Table 2 of the Rule and will implement additional measures specified in Table 3 of the Rule if performance standards cannot be met through use of Table 2 measures. The Project will submit a Large Operation Notification (Form 403 N) to the SCAQMD prior to commencing construction activities. Consistent with Rule 403, the following general-practice BMPs will be implemented as part of the Project's construction specifications so that all construction-related emissions, including fugitive dust, would result in less than significant impacts:

a) All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered three times per day.

b) All haul trucks transporting soil, sand, or other loose material off-site shall be covered.

c) All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.

d) All vehicle speeds on unpaved roads shall be limited to 15 mph.

e) All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.

f) Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of CCR). Clear signage shall be provided for construction workers at all access points.

g) All construction equipment shall be maintained and properly tuned in accordance with the manufacturer's specifications. All equipment shall be checked by a certified visible emissions evaluator if visible emissions are apparent to onsite construction staff.

h) A publicly visible sign shall be posted with the telephone number and person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

MM AQ 21: To reduce VOC emissions during construction, the building construction activities and architectural coating (painting) activities shall not occur concurrently.

In addition to the Project design features, the following mitigation measures shall be implemented during Project operations to minimize air quality impacts.

MM AQ 22: The Project shall implement the following measures to reduce emissions from on-site heavy duty trucks within six months after operations commence:

a) Post signs informing truck drivers about the health effects of diesel particulates, the CARB diesel idling regulations, and the importance of being a good neighbor by not parking in residential areas.

b) Tenants shall maintain records on its fleet equipment and vehicle engine maintenance to ensure that equipment and vehicles serving the building are in good condition, and in proper tune pursuant to manufacturer's specifications. The records shall be maintained on site and be made available for inspection by the City.

b) The facility operator will ensure that site enforcement staff in charge of keeping the daily log and monitoring for excess idling will be trained/certified in diesel health effects and technologies, for example, by requiring attendance at California Air Resources Board approved courses (such as the free, one-day Course #512).

MM AQ 23: In order to promote alternative fuels, and help support "clean" truck fleets, the developer/successor-in-interest shall provide building occupants with information related to SCAQMD's Carl Moyer Program, or other such programs that promote truck retrofits or "clean" vehicles and information including, but not limited to, the health effect of diesel particulates, benefits of reduced idling time, CARB regulations, and importance of not parking in residential areas. If trucks older than 2007 model year will be used at a facility, the developer/successor-in-interest shall require, within one year of signing a lease, future tenants to apply in good-faith for funding for diesel truck replacement/retrofit through grant programs such as the Carl Moyer, Prop 1B, VIP, HVIP, and SOON funding programs, as identified on SCAQMD's website (http://www.aqmd.gov). Tenants will be required to use those funds, if awarded.

MM AQ 24: Any yard trucks used on-site to move trailers in or around the loading areas shall be electric in place of traditional diesel powered yard trucks.

MM AQ 25: The building operator shall provide signage or flyers that advise truck drivers of the closest restaurants, fueling stations, truck repair facilities, lodging, and entertainment.

5.3.14 Summary of Environmental Effects after Mitigation Measures are Implemented

Based on the RST analysis for the proposed Project, the short-term construction emissions will not exceed any thresholds; however, because the majority of the mitigation measures do not have quantitative reductions associated with them or were already included within the emissions estimates, the long-term operation emissions are anticipated to exceed the threshold for NO_x after implementation of mitigation. Regional air quality impacts from long-term operation are therefore considered **significant and unavoidable** and a Statement of Overriding Considerations will be required should the City choose to approve the Project.

Based on the LST analysis of the proposed Project, neither the short-term construction nor the long-term operation of the Project will result in localized air quality impacts to sensitive receptors in the Project vicinity for NO_X, CO, PM-10 or PM-2.5. Additionally, the Project's screening HRA determined that the Project will not expose workers or residents in the immediate Project vicinity to cancer and non-cancer risk in excess of SCAQMD thresholds. Localized air quality impacts from short-term construction are considered **less than significant**.

The Project's short-term emissions are below regional and localized thresholds. However, the Project's long-term NO_x emissions are above the regional threshold even after implementation of Project design features and mitigation measures so the Project is considered to have a cumulatively considerable net increase on non-attainment pollutants in the region under applicable State and federal standards. Therefore, the impact is considered **significant and unavoidable** and a Statement of Overriding Considerations will be required should the City choose to approve the Project.

The Project's construction and operation will not create objectionable odors affecting a substantial number of people, and the impact is considered **less than significant**.

5.3.15 References

In addition to other documents, the following references were used in the preparation of this section of the DEIR:

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TIA — Albert A. Webb Associates, *Traffic Impact Analysis for the Sycamore Canyon Industrial Buildings 1 and 2*, May 2016. (Included as Appendix J.)

USEPA 2016 — U.S. Environmental Protection Agency, *Criteria Air Pollutants.* (Available at https://www.epa.gov/criteria-air-pollutants, accessed June 22, 2016.)