4.2 AIR QUALITY

INTRODUCTION

This section describes the existing air quality conditions in the project area (including the project site, the applicable air district jurisdiction, and the air basin) and analyzes the potential air quality impacts, both temporary (i.e., construction) and long-term (i.e., operational), that could result from implementation of the Azusa TOD Specific Plan. The section also provides a description of the regulatory framework for air quality management on a federal, state, regional, and local level. In addition, to reduce impacts, mitigation measures are included when applicable. The air quality calculations are available in **Appendix 4.2.**

4.2.1 ENVIRONMENTAL SETTING

Regional Air Quality

The specific plan area is located in the central portion of the City of Azusa, bounded by 9th Street to the north, 5th and 6th Streets to the south, Lemon Avenue to the west, and Citrus Avenue to the east. The specific plan area is comprised of a combination of single-family residences, commercial uses, and public uses. The project site is located in the South Coast Air Basin (SoCAB). The SoCAB consists of Orange County, Los Angeles County (excluding the Antelope Valley portion), and the western, non-desert portions of San Bernardino and Riverside Counties. Meteorological conditions such as wind speed, wind direction, solar radiation, atmospheric stability, along with local topography heavily influence air quality by affecting the movement and dispersal of pollutants. Predominant meteorological conditions in SoCAB are light winds and shallow vertical mixing due to low-altitude temperature inversions. These conditions, when coupled with the surrounding mountain ranges, hinder the regional dispersion of air pollutants. These meteorological conditions, in combination with regional topography, are conducive to the formation and retention of ozone (O_3) and urban smog.

The atmospheric pollution potential of an area is largely dependent on winds, atmospheric stability, solar radiation, and topography. The combination of low wind speeds and low inversions produce the greatest concentration of air pollutants. Smog potential is greatly reduced on days without inversions or on days with winds averaging over 15 miles per hour (mph).[1]

Regional climate significantly influences air quality in SoCAB. Temperature, wind, humidity, precipitation, and the amount of sunshine are several factors that influence the quality of the air. In

1 South Coast Air Quality Management District, CEQA Air Quality Handbook, (1993) A8-1.

addition, SoCAB is frequently subjected to an inversion layer that traps air pollutants. Temperature has an important influence on SoCAB wind flow, pollutant dispersion, vertical mixing, and photochemistry. The average annual maximum temperature in the Azusa area is 78.2° Fahrenheit (F) and the average annual minimum is 52.8° F.[2]

Although climate of SoCAB can be characterized as semi-arid, air near the land surface is quite moist on most days because of the presence of a marine layer. This shallow layer of sea air is an important modifier of SoCAB climate. Humidity restricts visibility in SoCAB, and the conversion of sulfur dioxide (SO_2) to sulfates is heightened in air with high relative humidity. The marine layer is an excellent environment for this conversion process, especially during the spring and summer months. The annual average relative humidity is 71 percent along the coast and 59 percent inland. Because the ocean effect is dominant, periods of heavy early morning fog are frequent and low stratus clouds are a characteristic feature. These effects decrease with distance from the coast.

More than 90 percent of SoCAB's rainfall occurs from November through April. Annual average rainfall is 22.3 inches for the Azusa area.[3] Monthly and yearly rainfall totals are extremely variable. Summer rainfall usually consists of widely scattered thundershowers near the coast and slightly heavier shower activity in the eastern portion of the region near the mountains.

The determination of whether a region's air quality is healthful or unhealthful is made by comparing contaminant levels in ambient air samples to national and state standards. California and the United States Environmental Protection Agency (US EPA) have established health-based air quality standards for the following criteria air pollutants: ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), respirable particulate matter (PM10), fine particulate matter (PM2.5), and lead. These standards were established to protect sensitive receptors with a margin of safety from adverse health impacts due to exposure to air pollution. The California standards are more stringent than the federal standards, and in the case of PM10 and SO_2, much more stringent. California has also established standards for sulfates, visibility-reducing particles, hydrogen sulfide, and vinyl chloride. The state and national ambient air quality standards for each of the monitored pollutants and their effects on health are summarized in **Table 4.2-1, Ambient Air Quality Standards**.

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2 Western Regional Climate Center, "San Gabriel Canyon PH, California (047776)," http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca7776. 2013.

3 Western Regional Climate Center, "San Gabriel Canyon PH, California (047776)," http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca7776. 2013.

Table 4.2-1
Ambient Air Quality Standards

Air Pollutant	Concentration/Averaging Time: State Standard (CAAQS)	Concentration/Averaging Time: Federal Primary Standard (NAAQS)	Most Relevant Health Effects
Ozone	0.09 ppm, 1-hour avg. 0.070 ppm, 8-hour avg.	0.075 ppm, 8-hour avg. (three-year average of annual 4th-highest daily maximum)	(a) Pulmonary function decrements and localized lung edema in humans and animals; (b) Risk to public health implied by alterations in pulmonary morphology and host defense in animals; (c) Increased mortality risk; (d) Risk to public health implied by altered connective tissue metabolism and altered pulmonary morphology in animals after long-term exposures and pulmonary function decrements in chronically exposed humans; (e) Vegetation damage; and (f) Property damage
Nitrogen Dioxide	0.18 ppm, 1-hour avg. 0.030 ppm, annual arithmetic mean	0.100 ppm, 1-hour avg. (three-year avg. of the 98th percentile of the daily maximum 1-hour avg.) 0.053 ppm, annual arithmetic mean	(a) Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; (b) Risk to public health implied by pulmonary and extrapulmonary biochemical and cellular changes and pulmonary structural changes; and (c) Contribution to atmospheric discoloration
Carbon Monoxide	20 ppm, 1-hour avg. 9.0 ppm, 8-hour avg.	35 ppm, 1-hour avg. (not to be exceeded more than once per year) 9 ppm, 8-hour avg. (not to be exceeded more than once per year)	(a) Aggravation of angina pectoris and other aspects of coronary heart disease; (b) Decreased exercise tolerance in persons with peripheral vascular disease and lung disease; (c) Impairment of central nervous system functions; and (d) Possible increased risk to fetuses
Sulfur Dioxide	0.25 ppm, 1-hour avg. 0.04 ppm, 24-hour avg.	0.075 ppm, 1-hour avg. (three-year avg. of the 99th percentile) 0.14 ppm, 24-hour avg.	Bronchoconstriction accompanied by symptoms, which may include wheezing, shortness of breath and chest tightness, during exercise or physical activity in person with asthma
Respirable Particulate Matter (PM10)	50 μg/m³, 24-hour avg. 20 μg/m³, annual arithmetic mean	150 μg/m³, 24-hour avg. (not to be exceeded more than once per year on average over three years)	(a) Exacerbation of symptoms in sensitive patients with respiratory or cardiovascular disease; (b) Declines in pulmonary function growth in children; and (c) Increased risk of premature death from heart or lung diseases in the elderly
Fine Particulate Matter (PM2.5)	12 μg/m³, annual arithmetic mean	35 μg/m³, 24-hour avg. (three-year average of 98th percentile) 15 μg/m³, annual arithmetic mean (three-year average)	(a) Exacerbation of symptoms in sensitive patients with respiratory or cardiovascular disease; (b) Declines in pulmonary function growth in children; and (c) Increased risk of premature death from heart or lung diseases in the elderly
Lead[3]	1.5 μg/m³, 30-day avg.	1.5 μg/m³, calendar quarter 0.15 μg/m³, three-month rolling average	(a) Increased body burden, and (b) Impairment of blood formation and nerve conduction
Visibility-Reducing Particles	Reduction of visual range to less than 10 miles at relative humidity less than 70%, 8-hour avg. (10:00 AM–6:00 PM)	None	Visibility impairment on days when relative humidity is less than 70 percent.

Air Pollutant	Concentration/Averaging Time: State Standard (CAAQS)	Concentration/Averaging Time: Federal Primary Standard (NAAQS)	Most Relevant Health Effects
Sulfates	25 μg/m³, 24-hour avg.	None	(a) Decrease in ventilatory function, (b) Aggravation of asthmatic symptoms, (c) Aggravation of cardio-pulmonary disease, (d) Vegetation damage, (e) Degradation of visibility, and (f) Property damage
Hydrogen Sulfide	0.03 ppm, 1-hour avg.	None	Odor annoyance
Vinyl Chloride[1]	0.010 ppm, 24-hour avg.	None	Known carcinogen

μg/m³ = microgram per cubic meter; ppm = parts per million by volume.
CAAQS = California Ambient Air Quality Standards; NAAQS = National Ambient Air Quality Standards.
[1] *CARB has identified lead and vinyl chloride as "toxic air contaminants" with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.*

Generally, the sources for hydrogen sulfide emissions include decomposition of human and animal wastes and industrial activities, such as food processing, coke ovens, Kraft paper mills, tanneries, and petroleum refineries. The sources for vinyl chloride emissions include manufacturing of plastic products, hazardous waste sites, and landfills. In addition, according to the SCAQMD's *2012 Air Quality Management Plan*, the sulfate and visibility-reducing particle standards have not been exceeded anywhere in SoCAB.[4] As a result, there is no need for any further evaluation of the hydrogen sulfide, vinyl chloride, sulfate, or visibility-reducing particle emissions for the project. Although the Los Angeles County portion of SoCAB is designated as nonattainment for lead, the exceedance is the result of lead emissions from an industrial lead-acid battery recycling facilities in the City of Vernon and the City of Industry.

The US EPA designated a portion of Los Angeles County as nonattainment for the 2008 lead NAAQS based on monitored air quality data from 2007–2009.[5] Concentrations during this period also exceeded the federal lead standard. Since this time, the SCAQMD monitors show concentrations that are much lower, although they still exceed the revised federal lead standard of 0.15 microgram per cubic meter (μg/m³) calculated as a rolling three-month average. No other monitors in SoCAB indicate lead exceedances. The project is not located in the same source receptor area as the lead exceedances and the project does not include any uses that would emit lead. Motor vehicles and paints used to be a source of lead; however, unleaded fuel and unleaded paints have virtually eliminated lead emissions from most land use projects. As a result, there is no need for any further evaluation of lead emissions. Accordingly, this air quality analysis will focus primarily on the criteria air pollutants summarized below.

4 South Coast Air Quality Management District, 2012, *2012 Air Quality Management Plan*.

5 South Coast Air Quality Management District. 2012. Lead State Implementation Plan for Los Angeles County. http://www.aqmd.gov/hb/attachments/2011-2015/2012May/2012-May4-030.pdf

- **Ozone (O_3).** Ozone is a gas that is formed when volatile organic compounds (VOCs) and nitrogen oxides (NO_X) undergo photochemical reactions in the presence of sunlight. Ozone concentrations are generally highest during the summer months when direct sunlight, light wind, and warm temperature conditions are favorable to the formation of this pollutant.

- **Volatile Organic Compounds (VOCs).** VOCs are compounds comprised primarily of hydrogen and carbon atoms. Internal combustion associated with motor vehicle usage is the major source of hydrocarbons. VOCs themselves are not criteria pollutants; however, they contribute to O_3 formation.

- **Nitrogen Dioxide (NO_2).** NO_2 is a reddish-brown, highly reactive gas that is formed in the ambient air through the oxidation of nitric oxide (NO) and is also a byproduct of fuel combustion. NO_X is primarily emitted in the form of NO, but quickly reacts to form NO_2. NO_X is primarily a mixture of NO and NO_2. NO_2 acts as an acute irritant and, in equal concentrations, is more injurious than NO.

- **Carbon Monoxide (CO).** CO is a colorless, odorless gas produced by the incomplete combustion of fuels. Motor vehicles operating at slow speeds are the primary source of CO. The highest ambient CO concentrations are generally found near congested transportation corridors and intersections.

- **Sulfur dioxide (SO_2).** SO_2 is a colorless, extremely irritating gas or liquid. It enters the atmosphere as a pollutant mainly as a result of burning high-sulfur-content fuel oils and coal and from chemical processes occurring at chemical plants and refineries. When sulfur dioxide oxidizes in the atmosphere, it forms sulfates (SO_4).

- **Respirable Particulate Matter (PM10).** PM10 consists of small, suspended particles or droplets 10 microns or smaller in diameter. Some sources of PM10, like pollen and windstorms, are naturally occurring. However, in populated areas, most PM10 is caused by road dust, diesel soot, combustion products, abrasion of tires and brakes, and construction activities.

- **Fine Particulate Matter (PM2.5).** PM2.5 refers to particulate matter that is 2.5 microns or smaller in size. The sources of PM2.5 include fuel combustion from automobiles, power plants, wood burning, industrial processes, and diesel-powered vehicles.

Local Air Quality Setting

The SCAQMD has divided SoCAB into Source Receptor Areas (SRAs) in which air quality monitoring stations are operated. The project site is located in SRA 9 (San Gabriel Valley). The monitoring station is located at 803 N. Loren Avenue, in the City of Azusa, approximately 0.7 mile west of the project site.[6] This station monitors emission levels of CO, O_3, NO_2, PM2.5, and PM10. This station does not monitor SO_2. The station located in SRA 7 (East San Fernando Valley) in the City of Burbank was used to represent SO_2 concentrations because it is the closest station that monitors SO_2. **Table 4.2-2, Ambient Pollutant Concentrations,** lists the ambient pollutant concentrations registered and the exceedances of state and federal standards that have occurred at the abovementioned monitoring stations from 2011 through 2013, the most recent years in which data is available from the SCAQMD. As shown, the monitoring station has

6 California Air Resources Board (CARB). 2014. "Quality Assurance Sitelist". http://www.arb.ca.gov/qaweb/site.php

registered values above state and federal standards for O_3, state standards for PM10, and federal standards for PM2.5.

Table 4.2-2
Ambient Air Pollutant Concentrations

Pollutant	Standards[1]	Year		
		2011	2012	2013
OZONE (O_3)				
Maximum 1-hour concentration (ppm)		0.111	0.134	0.115
Maximum 8-hour concentration (ppm)		0.092	0.095	0.085
Number of days exceeding state 1-hour standard	0.09 ppm	13	18	7
Number of days exceeding state 8-hour standard	0.070 ppm	19	18	15
Number of days exceeding federal 8-hour standard	0.075 ppm	12	10	6
NITROGEN DIOXIDE (NO_2)				
Maximum 1-hour concentration (ppm)		0.0795	0.0718	0.0769
Annual average concentration (ppm)		0.0190	0.0195	0.0177
Number of days exceeding state 1-hour standard	0.18 ppm	0	0	0
CARBON MONOXIDE (CO)				
Maximum 1-hour concentration (ppm)		--	--	--
Maximum 8-hour concentration (ppm)		1.4	1.2	1.7
Number of days exceeding 1-hour standard	20 ppm	--	--	--
Number of days exceeding 8-hour standard	9.0 ppm	0	0	0
SULFUR DIOXIDE (SO_2)				
Maximum 1-hour concentration (ppm)		0.0090	0.0065	0.0108
Maximum 24-hour concentration (ppm)		--	--	--
Number of days exceeding state 1-hour standard	0.25 ppm	0	0	0
Number of days exceeding state 24-hour standard	0.04 ppm	--	--	--
RESPIRABLE PARTICULATE MATTER (PM10)				
Maximum 24-hour concentration ($\mu g/m^3$)		65	61	61
Annual average concentration ($\mu g/m^3$)		32.7	30.3	33.0
Number of samples exceeding state standard	50 $\mu g/m^3$	9	6	6
Number of samples exceeding federal standard	150 $\mu g/m^3$	0	0	0
FINE PARTICULATE MATTER (PM2.5)				
Maximum 24-hour concentration ($\mu g/m^3$)		49.5	39.6	29.6
Annual average concentration ($\mu g/m^3$)		11.4	11.02	10.54
Number of samples exceeding federal 24-hour standard	35 $\mu g/m^3$	1	1	0

Source: South Coast Air Quality Management District, "Historical Data by Year," http://www.aqmd.gov/home/library/air-quality-data-studies/historical-data-by-year. 2013.

[1] *Parts by volume per million of air (ppm), micrograms per cubic meter of air ($\mu g/m^3$), or annual arithmetic mean (aam).*

4.2.2 REGULATORY FRAMEWORK

Federal

The US EPA is responsible for enforcing the federal Clean Air Act (CAA) and the National Ambient Air Quality Standards (NAAQS). The US EPA regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, and certain locomotives. The US EPA also maintains jurisdiction over emissions sources outside state waters (outer continental shelf), and establishes national emissions standards for vehicles. The US EPA formally classifies air basins as attainment or nonattainment based on whether the region meets or exceeds the NAAQS. As part of its enforcement responsibilities, the US EPA requires each state with areas that do not meet the NAAQS to prepare and submit a State Implementation Plan (SIP) that demonstrates the means to attain the federal standards. The SIP must integrate federal, state, and local plan components and regulations to identify specific measures to reduce pollution, using a combination of performance standards and market-based programs within the period identified in the SIP. The US EPA makes area designations for seven criteria pollutants: O_3 (eight hour), CO, NO_2, SO_2, PM10, PM2.5, and lead. The status of the Los Angeles County portion of SoCAB with respect to attainment with the NAAQS is summarized in **Table 4.2-3, National and California Ambient Air Quality Standard Designations for Los Angeles County.**

Table 4.2-3
National and California Ambient Air Quality Standard Designations for Los Angeles County

Pollutant	National Ambient Air Quality Standard Designations	California Ambient Air Quality Standard Designations
Ozone (O_3) – one hour	None	Nonattainment (Extreme)
Ozone (O_3) – eight hour	Nonattainment	Nonattainment
Carbon Monoxide (CO)	Unclassified/Attainment	Attainment
Nitrogen Dioxide (NO_2)	Unclassified/Attainment	Attainment
Sulfur Dioxide (SO_2)	Attainment	Attainment
Respirable Particulate Matter (PM10)	Attainment	Nonattainment
Fine Particulate Matter (PM2.5)	Nonattainment	Nonattainment
Lead (Pb)	Nonattainment	Attainment
Sulfates (SO_4)	None	Attainment
Hydrogen Sulfide (H_2S)	None	Unclassified
Visibility-Reducing Particles	None	Unclassified

Source: CARB. http://www.arb.ca.gov/desig/adm/adm.htm, 2014.

In response to rapid population growth and the associated rise in motor vehicle operations, the 1990 Clean Air Act Amendments addressed tailpipe emissions from automobiles, heavy-duty engines, and diesel fuel engines. The amendments established more stringent standards for hydrocarbons, NO_X, and CO emissions in order to reduce the levels of these pollutants in heavily populated areas. Under the 1990 Clean Air Act Amendments, new fuels were required to be less volatile, contain less sulfur (regarding diesel fuel), and have higher levels of oxygenates (oxygen-containing substances to improve fuel combustion). Due to the lack of a substantial reduction in hazardous emissions under the 1977 Clean Air Act, the 1990 Clean Air Act Amendments include regulations for reducing impacts from 189 listed hazardous air pollutants (HAPs) that are carcinogenic, mutagenic, and/or reproductive toxicants. The 1990 Clean Air Act Amendments also affects major stationary sources and area emissions sources requiring use of Maximum Achievable Control Technology (MACT) to reduce HAP emissions and their associated health impacts.

State

The California Air Resources Board (CARB) oversees air quality planning and control throughout California. It is primarily responsible for ensuring the implementation of the California Clean Air Act (CCAA), responding to federal CAA requirements, and regulating emissions from motor vehicles and consumer products within the state. In addition, CARB also sets health-based air quality standards and control measures for toxic air contaminants (TACs). Automobile emissions are a major focus of CARB's research as they are the largest contributor to air pollution in California. CARB establishes new standards for vehicles sold in California and for various types of equipment available commercially and sets vehicle fuel specifications to reduce vehicular emissions.

The CCAA established a legal mandate for air basins to achieve the California Ambient Air Quality Standards (CAAQS) by the earliest practical date. California Health and Safety Code Section 39607(e) requires CARB to establish and periodically review area designation criteria. These designation criteria provide the basis for CARB to designate areas of the state as attainment, nonattainment, or unclassified according to state standards. CARB makes area designations for 10 criteria pollutants: O_3, NO_2, CO, SO_2,

PM10, M2.5, lead, sulfates, hydrogen sulfide, and visibility-reducing particles.[7] The status of SoCAB with respect to attainment with the CAAQS is summarized in **Table 4.2-3.**

In addition to the criteria pollutants discussed above, TACs are another group of pollutants of concern. Public exposure to TACs can result from emissions from normal operations, as well as accidental releases of hazardous materials during upset spill conditions. Health effects of TACs include cancer, birth defects, neurological damage, and premature death. In 1998, CARB identified diesel particulate matter from diesel-fueled engines as a TAC. Mobile sources (including trucks, buses, automobiles, trains, ships, and farm equipment) are by far the largest source of diesel emissions. The exhaust from diesel engines includes hundreds of different gaseous and particulate components, many of which are toxic. Many of these toxic compounds adhere to the particles and, because diesel particles are very small, they penetrate deeply into the lungs.

Before California listed particulate matter from diesel engine exhaust as a TAC, it had already adopted various regulations that would reduce diesel emissions. These regulations include new standards for diesel fuel; exhaust emission standards for new diesel trucks, buses, automobiles, and utility equipment; and inspection and maintenance requirements for heavy-duty vehicles. Since listing diesel exhaust as a TAC, CARB continues to evaluate what additional regulatory action is needed to reduce public exposure.

Local

South Coast Air Quality Management District

Air Quality Management Plan

The SCAQMD is required to produce air quality management plans (AQMPs) directing how SoCAB's air quality will be brought into attainment with federal and state standards. The US EPA requires that transportation conformity budgets be established based on the most recent planning assumptions (i.e., within the last five years). Plan updates are necessary to ensure continued progress toward attainment and to avoid a transportation conformity lapse and associated federal funding losses. A multi-level partnership of governmental agencies at the federal, state, regional, and local levels implement the

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7 California Air Resources Board, "Area Designations (Activities and Maps)," http://www.arb.ca.gov/desig/desig.htm. 2010. According to California Health and Safety Code, Section 39608, "state board, in consultation with the districts, shall identify, pursuant to subdivision (e) of Section 39607, and classify each air basin which is in attainment and each air basin which is in nonattainment for any state ambient air quality standard." Section 39607(e) states that the state shall "establish and periodically review criteria for designating an air basin attainment or nonattainment for any state ambient air quality standard set forth in Section 70200 of Title 17 of the California Code of Regulations. California Code of Regulations, Title 17, Section 70200 does not include vinyl chloride; therefore, CARB does not make area designations for vinyl chloride.

programs contained in these plans. Agencies involved include the US EPA, CARB, the Southern California Association of Governments (SCAG), local governments, and the SCAQMD.

Since 1979, the SCAQMD has prepared a number of AQMPs. The SCAQMD adopted the currently applicable 2012 Air Quality Management Plan (2012 AQMP) on February 1, 2012. CARB approved the 2012 AQMP as the comprehensive SIP component for SoCAB on September 27, 2007. The 2012 AQMP for the Air Basin (and those portions of the Salton Sea Air Basin under the SCAQMD's jurisdiction) sets forth a comprehensive program that would lead these areas into compliance with federal and state air quality planning requirements for ozone, PM10, and PM2.5. The 2012 AQMP focuses on attainment strategies for the ozone and PM2.5 standards through stricter control of sulfur oxides and directly emitted PM2.5, NO_x, and VOCs. The 2012 AQMP demonstrates that with implementation of all feasible controls, the 24-hour PM2.5 attainment shall be achieved by 2014. In addition, the SoCAB still exceeds the federal 8-hour ozone standard and is designated as an "extreme" nonattainment area. The rate of ozone reduction has slowed over the last several years. Therefore, a strategy focusing primarily on NOx reductions has been identified as the optimum method to achieve long-term ozone attainment objectives. Additional VOC reductions are still required to achieve ozone reduction.

CEQA Handbook

In 1993, the SCAQMD prepared its *CEQA Air Quality Handbook* (CEQA Handbook) to assist local government agencies and consultants in preparing environmental documents for projects subject to CEQA.[8] The SCAQMD is in the process of developing its *Air Quality Analysis Guidance Handbook* (Guidance Handbook) to replace the CEQA Handbook. The CEQA Handbook and the Guidance Handbook describe the criteria that SCAQMD uses when reviewing and commenting on the adequacy of environmental documents. The Guidance Handbook provides the most up-to-date recommended thresholds of significance in order to determine if a project would have a significant adverse environmental impact. Other important subjects covered in the CEQA Handbook and the Guidance Handbook include methodologies for estimating project emissions and mitigation measures that can be implemented to avoid or reduce air quality impacts. Although the Governing Board of the SCAQMD has adopted the CEQA Handbook, and is in the process of developing the Guidance Handbook, the SCAQMD does not, nor intends to, supersede a local jurisdiction's CEQA procedures.[9]

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8 South Coast Air Quality Management District, "Air Quality Analysis Guidance Handbook," http://www.aqmd.gov/CEQA/hdbk.html. 2010.

9 South Coast Air Quality Management District, "Frequently Asked CEQA Questions," http://www.aqmd.gov/ceqa/faq.html. 2010.

While the Guidance Handbook is being developed, supplemental information has been adopted by the SCAQMD. These include revisions to the air quality significance thresholds and a procedure referred to as "localized significance thresholds," which has been added as a significance threshold under the *Final Localized Significance Threshold Methodology* (LST Methodology).[10] The LST Methodology provides thresholds of significance for NO_x, CO, PM10, and PM2.5 to evaluate localized air quality impacts at sensitive receptors in the vicinity of a project. In addition, the SCAQMD has recommended that lead agencies not use the screening tables in the CEQA Handbook's Chapter 6 because the tables were derived using an obsolete version of CARB's mobile source emission factor inventory and are also based on outdated trip generation rates from a prior edition of the Institute of Transportation Engineer's Trip Generation Handbook.[11] The SCAQMD has also recommended that lead agencies not use the on-road mobile source emission factors in Tables A9-5-J1 through A9-5-L as they are obsolete, and instead recommends using on-road mobile source emission factors approved by CARB.[12] The outdated and obsolete information were not used in this analysis. The applicable portions of the CEQA Handbook, the Guidance Handbook, and other revised methodologies were used in preparing the air quality analysis in this section, as discussed and referenced later in this section.

Multiple Air Toxics Exposure Study IV

The SCAQMD 2014 Draft MATES IV Multiple Air Toxics Exposure Study (MATES IV) includes the most recent air toxics data collected in the Basin. The study includes a monitoring program, an updated emissions inventory of toxic air contaminants, a modeling effort to characterize risk across the Basin, projections for carcinogenic risk from exposure to air toxics and the measurement of ultrafine particle concentrations.[13] The purpose of the study is to provide the public with information on risks associated with the exposure of air toxics, evaluate any progress in reducing air toxics exposure, and to provide direction on future toxics control programs.[14] The potential cancer risk for a given substance is expressed as the incremental number of potential excess cancer cases per million people over a 70-year lifetime exposure at a constant annual average pollutant concentration. The risks are presented in chances per million. For example, if the cancer risk were estimated to be 100 per million, this would predict an additional 100 excess cases of cancer in a population of 1 million people over a 70-year lifetime.[15]

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10 South Coast Air Quality Management District, *Final Localized Significance Threshold Methodology*, (2008).

11 South Coast Air Quality Management District, "CEQA Air Quality Handbook," http://www.aqmd.gov/ceqa/oldhdbk.html. 2010.

12 South Coast Air Quality Management District, "EMFAC 2007 (v2.3) Emission Factors (On-Road)," http://www.aqmd.gov/CEQA/handbook/onroad/onroad.html. 2010.

13 SCAQMD, Mates IV Multiple Air Toxics Exposure Study, http://www.aqmd.gov/home/library/air-quality-data-studies/health-studies/mates-iv, accessed January 20, 2015.

14 SCAQMD, Mates IV Presentation http://www.aqmd.gov/docs/default-source/air-quality/air-toxic-studies/mates-iv/matesivbrdmtg100314.pdf?sfvrsn=4, accessed January 20, 2015.

15 SCAQMD Mates IV Carcinogenic Risk Interactive Map, http://www3.aqmd.gov/webappl/OI.Web/OI.aspx?jurisdictionID=AQMD.gov&shareID=73f55d6b-82cc-4c41-b779-4c48c9a8b15b, accessed January 20, 2015.

Rules and Regulations

The SCAQMD primarily regulates emissions from stationary sources such as manufacturing and power generation. Mobile sources such as buses, automotive vehicles, trains, and airplanes are largely out of the SCAQMD's jurisdiction and within the regulatory jurisdiction of CARB and the US EPA. In order to achieve air quality standards, the SCAQMD adopts an AQMP that serves as a guideline to bring pollutant concentrations into attainment with federal and state standards. The SCAQMD determines if certain rules and control measures are appropriate for their specific region according to technical feasibility, cost effectiveness, and the severity of nonattainment. Once the SCAQMD has adopted the proper rules, control measures, and permit programs, it is responsible to implement and enforce compliance with those rules, control measures, and programs. These rules not only regulate the emissions of the federal and state criteria pollutants but also TACs and acutely hazardous materials. The rules are also subject to ongoing refinement by SCAQMD. Stationary emissions sources are regulated through SCAQMD's permitting process. Through this permitting process, SCAQMD monitors the amount of stationary emissions being generated and uses this information in developing AQMPs.

City of Azusa General Plan

The City's General Plan is primarily a policy document that sets goals concerning the community and gives direction to growth and development. In addition, it outlines the programs that were developed to accomplish the goals and policies of the General Plan. City policies pertaining to air quality are included in Natural Environment Chapter of the City's General Plan. These policies include the following, among others:

Air Quality Policies:

Policy 1.1	Integrate air quality concerns into land use planning decisions
Policy 1.2	Integrate air quality concerns into site design review

4.2.3 ENVIRONMENTAL IMPACTS

Thresholds of Significance

The following thresholds for determining the significance of impacts related to air quality are contained in the environmental checklist form contained in Appendix G of the most recent update of the *State CEQA Statutes and Guidelines*. Adoption and/or implementation of the Azusa TOD Specific Plan could result in significant adverse impacts to air quality, if any of the following could occur:

Threshold AQ-1 **Would construction and/or operation of the project conflict with or obstruct implementation of applicable air quality plans of the SCAQMD?**

Threshold AQ-2 **Would construction and/or operation of the project violate any applicable federal or state air quality standard or contribute substantially to an existing or projected air quality violation?**

Threshold AQ-3 **Would construction and/or operation of the project 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?**

Threshold AQ-4 **Would construction and/or operation of the project expose sensitive receptors to substantial pollutant concentrations?**

Threshold AQ-5 **Would construction and/or operation of the project create objectionable odors affecting a substantial number of people?**

The project is within the jurisdiction of the SCAQMD, which provides similar thresholds. Per the SCAQMD guidelines, a project would have a significant impact if it would:

- Would construction and/or operation of the project conflict with or obstruct implementation of the applicable air quality plan;
- Would construction and/or operation of the project 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);
- Would the project generate total criteria pollutant emissions during operation (direct and indirect) in excess of the thresholds given in **Table 4.2-4, SCAQMD Regional Emissions Significance Thresholds**;
- Would construction and/or operation of the project expose sensitive receptors to substantial pollutant concentrations:
  - exceed the localized significance thresholds,
  - cause or contribute to the formation of CO Hotspots,
  - result in an incremental increase in cancer risk greater than or equal to 10 in 1 million, a cancer burden greater than 0.5 excess cancer cases (in areas where the incremental increase in risk is greater than 1 in 1 million), and/or a Hazard Index (HI) (non-cancerous) greater than or equal to 1; and/or
- Would construction and/or operation of the project expose sensitive receptors to objectionable odors affecting a substantial number of people?

The *State CEQA Guidelines* Section 15064.7 provides the significance criteria established by the applicable air quality management district or air pollution control district, when available, may be relied upon to make determinations of significance. The potential air quality impacts of the project are, therefore, evaluated according to thresholds developed by the SCAQMD in their *CEQA Air Quality Handbook, Air Quality Analysis Guidance Handbook*, and subsequent guidance, which are listed below.

While the SCAQMD has established significance thresholds for lead, construction and operation of the project would not exceed the established thresholds for lead as previously discussed above. Furthermore, as discussed near the beginning of this section, the region is below the state and federal ambient air quality standards for lead. Therefore, lead emissions from the project would not cause an air quality violation and will not be analyzed further.

Regional Thresholds of Significance

The SCAQMD CEQA Handbook provides significance thresholds for evaluation of impacts from both the construction and operation of projects within SCAQMD jurisdictional boundaries. Exceedance of the SCAQMD thresholds could result in a potentially significant impact. Ultimately, the lead agency determines the thresholds of significance for impacts. If a project proposes development that would generate emissions in excess of the established thresholds, as illustrated in **Table 4.2-4, South Coast Air Quality Management District Regional Emission Thresholds**, a significant air quality impact may occur and additional analysis is warranted to fully assess the significance of impacts.

Table 4.2-4
South Coast Air Quality Management District Regional Emission Thresholds

Phase	Pollutant (pounds per day)					
	VOC	NOx	CO	SOx	PM10	PM2.5
Construction	75	100	550	150	150	55
Operational	55	55	550	150	150	55

Source: South Coast Air Quality Management District, Air Quality Significance Thresholds*, (2011).*

Localized Significance Thresholds

In addition to the above-listed emission-based thresholds, the SCAQMD also recommends that potential impacts on localized ambient air concentrations due to construction emissions be evaluated. This Localized Significance Threshold (LST) evaluation requires that anticipated ambient air concentrations, determined using a computer-based air quality dispersion model, be compared to localized significance

thresholds for PM10, PM2.5, NO_2, and CO.[16] The allowable emission rates depend on (1) the Source Receptor Area (SRA) in which the project is located, (2) the size of the project site, and (3) the distance between the project site and the nearest sensitive receptor (e.g., residences, schools, hospitals). The subject site is located in Azusa, which is in SCAQMD SRA 9 (San Gabriel Valley). Sensitive receptors are located immediately adjacent to the Specific Plan boundary to the north, east, south, and west.

Operational CO "Hotpots" Thresholds of Significance

The significance of project impacts depends on whether existing ambient CO levels in the vicinity of the project are above or below state and federal CO standards. If the ambient CO levels are less than these standards and operation of the project causes an exceedance of either the state 1-hour or 8-hour CO concentrations, the project would be considered to have a significant local impact. If ambient levels already exceed a state or federal standard, then project emissions would be considered significant if they cause an increase in the 1-hour CO concentrations by 1.0 parts per million (ppm) or more or 8-hour CO concentrations by 0.45 ppm or more.

Methodology

The SCAQMD provides methodologies for evaluating the significance of operational emissions from projects. The methodologies are described in the SCAQMD CEQA Handbook and Guidance Handbook. The SCAQMD thresholds of significance apply to all sources of air pollutants, including equipment and businesses not directly regulated by the SCAQMD and motor vehicles. The SCAQMD has produced substantial data to demonstrate the appropriateness of these thresholds in the Basin. Emissions modeling were conducted using the California Emissions Estimator Model (CalEEMod) and information provided in the CalEEMod *User's Guide*.[17] CalEEMod is a program that calculates air pollutant emissions from land use sources and incorporates the CARB on-road and off-road vehicle emissions models. The model also incorporates factors specific to air basins in California, such as vehicle fleet mixes. Air quality impacts are also estimated based on information and estimated activity levels of project operation. The potential for the project to cause health impacts is assessed in accordance with land use planning recommendations described in CARB's *Air Quality and Land Use Handbook*.[18] The purpose of the *Air Quality and Land Use Handbook* is to provide information that would help keep vulnerable populations out of harm's way with

16 South Coast Air Quality Management District, *Final Localized Significance Threshold Methodology*, (2008).

17 South Coast Air Quality Management District, *California Emissions Estimator Model User's Guide*, (2011). The model and User's Guide may be downloaded from the following website: http://www.caleemod.com.

18 California Air Resources Board, *Air Quality and Land Use Handbook: A Community Health Perspective*, (2005). The document may be downloaded from the following website: http://www.arb.ca.gov/ch/landuse.htm.

respect to nearby sources of air pollution. Other sources of information relied upon are provided as footnote citations where applicable.

Environmental Effects Found Not To Be Significant

As to **Threshold AQ-5,** a less than significant impact or no impact was determined in the Initial Study (**Appendix 1.0**) and therefore this threshold is not evaluated in this section. See **Section 7.0, Effects Found Not To Be Significant**, for a discussion of these environmental effects, as well as others, that were found not to be significant and are, therefore, not evaluated in detail in this EIR. The remaining thresholds are evaluated below.

Impacts Analysis

Threshold AQ-1 Would construction and/or operation of the project conflict with or obstruct implementation of applicable air quality plans of the SCAQMD?

The 2012 AQMP, discussed previously, was prepared to accommodate growth, to reduce the levels of pollutants within the areas under the jurisdiction of SCAQMD, to return clean air to the region, and to minimize the impact on the economy. Projects that are considered to be consistent with the AQMP would not interfere with attainment because this growth is included in the projections utilized in the formulation of the AQMP. Therefore, projects, uses, and activities that are consistent with the applicable assumptions used in the development of the AQMP would not jeopardize attainment of the air quality levels identified in the AQMP, even if they exceed the SCAQMD's recommended daily emissions thresholds.

Consistency with the assumptions in the AQMP is established by demonstrating that the project is consistent with the land use plan that was used to generate the growth forecast. The 2012 AQMP based its assumptions on growth forecasts contained in the SCAG *2012–2035 Regional Transportation Plan/ Sustainable Communities Strategy* (2012 RTP/SCS).[19] The 2012 RTP/SCS is based on growth assumptions through 2035 developed by each of the cities and counties in the SCAG region.

The additional population within the project area would be 2,915 people by 2035 buildout. Based on the analysis in **Section 4.10, Population, Housing, and Employment,** the Azusa TOD Specific Plan population growth is within SCAG projections for the area. Therefore, the increase in population would be within the projected growth for the City and would not exceed the growth assumptions in the Azusa General Plan. Thus, the project would be considered consistent with the air quality-related regional plans,

19 South Coast Air Quality Management District, 2012, 2012 Air Quality Management Plan.

and would not jeopardize attainment of state and federal ambient air quality standards. The project would have a less than significant impact.

Level of Significance Before Mitigation

Impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Impacts would be less than significant.

Threshold AQ-2 **Would construction and/or operation of the project violate any applicable federal or state air quality standard or contribute substantially to an existing or projected air quality violation?**

Threshold AQ-3 **Would construction and/or operation of the project 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?**

The Azusa TOD Specific Plan would facilitate the development of the downtown core and specific plan area, which at full development would accommodate approximately new 840 dwelling units, 150-room hotel, and approximately 400,000 square feet of retail, office, and service space. For the purposes of analyzing air quality impacts in this EIR, it was assumed that total development would be achieved by 2035. The Azusa TOD Specific Plan is a land use plan that would guide the development of the downtown core and identified corridors in the City of Azusa between 2015 and 2035. It is, however, not a development program, and details of specific building projects that would be built within the plan area over this period are not available.

Construction

Development of the new residential and commercial buildings in the plan area would include demolition, site preparation (i.e., trenching and grading); pavement and asphalt installation; and building construction, and would result in construction emissions. To develop an estimate of the maximum possible construction emissions that could result from the projected new building space (including new

development projects) under the Azusa TOD Specific Plan, it was assumed that there would be ongoing construction in the plan area between 2015 and 2035, and that all the new building space under the Azusa TOD Specific Plan would be completely constructed by 2035, although, in reality, development could take longer and buildout may not be completed until several years later. It was also conservatively assumed that the entire development envisioned in the Azusa TOD Specific Plan would actually be completed, though this is contingent on financing and other factors and may not be achieved. During the 2015 through 2035 period, construction emissions of criteria pollutants and DPM would be generated by heavy-duty construction equipment, on-road trucks for material deliveries, and construction worker vehicles. VOC emissions would occur as a result of asphalt paving and architectural coatings. In addition, fugitive dust would be generated by grading and related activities.

Because of the construction time frame and the normal day-to-day variability in construction activities, it is difficult, if not impossible, to precisely quantify the emissions associated with each construction sub-phase. In order to estimate the construction emissions using CalEEMod, an averaging approach was taken in which construction of residential, commercial, retail, and industrial buildings was assumed to occur throughout the calendar year of 2020. 2020 was chosen as it is roughly in the middle of the construction period and would therefore present roughly average emissions rates from construction equipment. The amount of space assumed to be constructed during 2020 was 1/20 of the total planned space. In this way, the emissions from construction during this one year of construction were assumed to represent an approximate average annual rate of emissions during the overall project period. That is, instead of modeling all 20 years separately with the same amount of construction occurring in each year, one year was modeled and assumed to be representative of any year within the 20-year construction period. **Table 4.2-5, Land Uses and Development Under the Azusa TOD Specific Plan,** provides the total land uses and development proposed under the Azusa TOD Specific Plan and the average of the development used to determine construction emissions.

Table 4.2-5
Land Uses and Development Under the Azusa TOD Specific Plan

Study Area	Retail	Office	Services	Lodging	Apartments
Buildout Total	226,000 sf	93,000 sf	84,000 sf	150 room	840 units
Average assumed for 2020	4,650 sf	7,500 sf	4,200 sf	8 room	42 units

Source: Azusa TOD Specific Plan, 2015

Development was assumed to consist of the following five construction sub-phases: demolition, site preparation, building construction, architectural coating, and asphalt paving. Each sub-phase was assumed to continue over the entire calendar year. Demolition of approximately 90,000 square feet is assumed to occur over buildout of the plan, of which 4,500 square feet would occur in the year 2020. Site

preparation would disturb approximately 17 acres[20] over the course of the Azusa TOD Specific Plan's life, of which 0.85 acres is assumed to be disturbed in the year 2020.

Based on the schedules and assumptions described above and CalEEMod default assumptions, the average annual construction emissions were estimated and are shown below in **Table 4.2-6, Estimated Unmitigated Construction Emissions**.

Table 4.2-6
Estimated Unmitigated Construction Emissions

	Maximum Emissions in Pounds per Day					
Construction Year	**VOC**	**NOx**	**CO**	**SOx**	**PM10[1]**	**PM2.5[1]**
Average emissions per year	11.2	63.3	60.7	0.1	6.4	4.6
SCAQMD Threshold:	**75**	**100**	**550**	**150**	**150**	**55**
Exceeds Threshold?	NO	NO	NO	NO	NO	NO

*Source: Impact Sciences, Inc., 2015. Emissions calculations are provided in **Appendix 4.2**.*
Note: Totals in table may not appear to add exactly due to rounding in the computer model calculations.
[1] *As mandated by the SCAQMD dust suppression measures have been included as part of the Project, consequently PM10 and PM2.5 emission estimates are based on compliance with SCAQMD requirements.*

As shown in **Table 4.2-6**, the SCAQMD significance thresholds for construction would not be exceeded. In addition, future projects would be required to comply with SCAQMD Rule 403 (discussed in greater detail below), thus the impact from construction emissions would be less than significant.

Operation

Operational emissions would be generated by mobile sources, area sources, and stationary sources as a result of normal day-to-day activity in the plan area. Mobile source emissions would be generated by motor vehicles traveling to, from, and within the plan area. Area emissions would be generated by the combustion of natural gas in space and water heating devices, the operation of landscape maintenance equipment, the use of consumer products, and the application of architectural coatings (for building maintenance). CalEEMod was used to quantify mobile source and area source emissions. Stationary sources, such as boilers, generators, cooling towers, and industrial operations, could also be located within the plan area. Quantification of these emissions would require detailed and specific information about the sources, which is currently unavailable. Emissions from stationary sources would have to be estimated at a project level, and are not reported here.

[20] This assumes 403,000 sf uses, 59,375 sf of hotel (325 sf per hotel room, amenity space of 10,625 sf [http://www.fixr.com/costs/build-hotel]), and 280,000 sf of apartments (1,000 sf per apt assumed [http://www.doityourself.com/stry/apartments-typical-unit-sizes-in-los-angeles], 3-story buildings are assumed).

At a minimum, buildings and facilities developed under the Azusa TOD Specific Plan would comply with the energy efficiency requirements of the 2013 Title 24 Building Standards Code. This was included in the emissions estimation for this project. In addition, the Azusa TOD Specific Plan includes sustainability and other green principles and strategies that would be applied to development projects in the plan area. As many of these principles and strategies are difficult to quantify, they were not included in the emissions estimates. Consequently the estimates presented herein are considered conservative.

Table 4.2-7, **Estimated Unmitigated Operational Emissions,** shows the operational emissions from new development under the Azusa TOD Specific Plan.

Table 4.2-7
Estimated Unmitigated Operational Emissions

	Emissions in Pounds Per Day[1]					
Emissions Source	**ROG**	**NOx**	**CO**	**SOx**	**PM10**	**PM2.5**
Mobile Sources	42.7	93.2	440.1	1.9	126.6	35.6
Area Sources	36.7	0.8	69.1	0.0	0.4	0.4
Total	**79.4**	**94**	**509.2**	**1.9**	**127**	**36**
SCAQMD Threshold	55	55	550	150	150	55
Exceeds Threshold?	**YES**	**YES**	NO	NO	NO	NO

Source: Impact Sciences, Inc. Emissions calculations are provided in ***Appendix 4.2****.*
[1] Assumes a 25 percent improvement over 2008 Title 24 standards due to compliance with 2013 Title 24 standards.

As shown in **Table 4.2-7**, operation emissions associated with the development under the Azusa TOD Specific Plan would exceed the SCAQMD significance thresholds for ROG and NOx.

Level of Significance Before Mitigation

Operation impacts would be potentially significant.

Mitigation Measures

AQ-1: As a condition of approval for development projects within the Azusa TOD Specific Plan, project applicants/developers shall comply with all applicable standards or guidelines included in the Azusa TOD Specific Plan. The Azusa TOD Specific Plan includes standards or guidelines that reduce energy use and vehicle traffic. These include improvements to streetscapes to encourage pedestrian use, improved bicycle access, a focus on infill and compact development, promotion of green development guidelines, increased energy efficiency in buildings, and others. These measures represent the most effective feasible strategies to reduce emissions of air pollutants due to development.

Level of Significance After Mitigation

The specific reductions in air pollutant operation emissions that would result from the implementation of the measures included in Azusa TOD Specific Plan cannot be fully or accurately calculated. Therefore, while operational emissions would be substantially reduced with implementation of the Azusa TOD Specific Plan, this EIR concludes that even with mitigation the impact from operational emissions would be significant and unavoidable.

Threshold AQ-4 Would construction and/or operation of the project expose sensitive receptors to substantial pollutant concentrations?

CO Hotspots

Motor vehicles are a primary source of pollutants within the vicinity of the project. Traffic congested roadways and intersections have the potential to generate localized high levels of CO referred to as "hotspots." Such hotspots are defined as locations where the ambient CO concentrations exceed the state or federal ambient air quality standards. CO is produced in greatest quantities from vehicle combustion and is usually concentrated at or near ground level because it does not readily disperse into the atmosphere. As a result, potential air quality impacts to sensitive receptors are assessed through an analysis of localized CO concentrations. Areas of vehicle congestion have the potential to create CO hotspots that exceed the state ambient air quality 1-hour standard of 20 ppm or the 8-hour standard of 9.0 ppm. The federal levels are less stringent than the state standards and are based on 1- and 8-hour standards of 35 and 9 ppm, respectively. Thus, an exceedance condition would occur based on the state standards prior to exceedance of the federal standard.

Post-project maximum future CO concentrations were calculated for peak-hour traffic volumes for both AM and PM using the CALINE4 screening model described above. The results of these CO concentration calculations for AM peak hour and PM peak hour are presented in **Table 4.2-8 Carbon Monoxide Concentrations – Future Cumulative with Project Traffic**.

Table 4.2-8
Carbon Monoxide Concentrations – Future Cumulative with Project Traffic

Intersection[3]	AM 1-Hour[1]	PM 1-Hour[1]	8-Hour[2]
San Gabriel Avenue and Foothill Boulevard	3.5	4.1	2.5
Azusa Avenue and Foothill Boulevard	3.5	4.1	2.5
Dalton Avenue and Foothill Boulevard	3.3	3.8	2.3
Exceeds state 1-hour standard of 20 ppm?	NO	NO	—
Exceeds federal 1-hour standard of 35 ppm?	NO	NO	—
Exceeds state 8-hour standard of 9.0 ppm?	—	—	NO
Exceeds federal 8-hour standard of 9 ppm?	—	—	NO

[1] *State standard is 20 parts per million. Federal standard is 35 parts per million.*
[2] *State standard is 9.0 parts per million. Federal standard is 9 parts per million.*
[3] *The four intersections were chosen based on the intersections in Table 12(c) from the Traffic Study.*
Source: Impact Sciences, Inc. Emissions calculations are provided in ***Appendix 4.2****.*

As shown above in **Table 4.2-8**, the CALINE4 screening procedure conservatively predicts that future CO concentrations at each intersection would not exceed the state 1-hour and 8-hour standards with the operation of the project. No significant CO hotspot impacts would occur to sensitive receptors in the vicinity of these intersections. As a result, no significant project-related impacts would occur relative to future CO concentrations. The CO hotspot impact would be less than significant.

Localized Significance Thresholds

The SCAQMD recommends the evaluation of localized air quality impacts to sensitive receptors in the immediate vicinity of the project site as a result of construction activities and operation of the project. Sensitive receptors are people who could be easily affected by air pollutants, such as people with health conditions or young children. Locations that are likely to include sensitive receptors are hospitals, schools, and residences. This evaluation requires that anticipated ambient air concentrations, determined using a computer-based air quality dispersion model, be compared to localized significance thresholds for PM10, PM2.5, NO_2, and CO.[21] The significance threshold for PM10 represents compliance with Rule 403 (Fugitive Dust), while the thresholds for NO_2 and CO represent the allowable increase in concentrations above background levels in the vicinity of the project that would not cause or contribute to an exceedance of the relevant ambient air quality standards. The significance threshold for PM2.5 is

21 South Coast Air Quality Management District, *Final Localized Significance Threshold Methodology*, (2008).

intended to constrain emissions so as to aid in progress toward attainment of the ambient air quality standards.[22]

Determining local concentrations of air pollutants associated with a project requires accurate and detailed project-specific information regarding the construction and operation of the project. At a minimum this information would include the size and function of a project, a construction schedule, the location(s) of nearby sensitive receptors relative to the project, details on any stationary sources included with the project, and any other data pertinent to emissions of air pollutants. None of this information is currently available since the project only allows for the possibility of general types of buildings to be constructed. That is, while a specific site in the Azusa TOD Specific Plan area may be described as residential, no information is currently available as to when or if a site would be developed, and no specific information on the size and type of building(s) to be developed. Without this information it is impossible to estimate localized concentrations. Consequently, any required LST analyses for the potential development sites within the Azusa TOD Specific Plan would be performed during a project-level environmental review.

Due to the unknown level of construction activity and operational aspects that could result as part of proposed plan build-out, and the possible location of sensitive receptors near to project sites, this is considered a potentially significant impact. Implementation of the standard code requirements, SCAQMD's Best Available Control Measures (BACMs), and project-level mitigation measures would reduce this impact, but it is unknown to what extent. Consequently this impact is conservatively considered significant.

Toxic Air Contaminants

TACs consist primarily of reactive organic gases, such as benzene and formaldehyde, polycyclic aromatic hydrocarbons, such as benzo(a)pyrene-10 and dibenz(a,h)anthracene-10, and metals, such as arsenic and lead. DPM from diesel-fueled engines has also been determined by CARB to be a TAC as defined under Section 39655 of the Health and Safety Code.

The potential for project-related TACs to affect human health is typically assessed in terms of an increase in cancer risk and non-cancer health effects. The SCAQMD has established a threshold for evaluating human health risk impacts from TACs, which is based on an incremental increase in cancer risk. A project is considered to have a less than significant impact in terms of lifetime cancer risk, if the project would result in a maximum increase of no more than 10 in 1 million in the risk of contracting cancer during a lifetime of exposure to project emissions at any one receptor.

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22 South Coast Air Quality Management District, *Final Localized Significance Threshold Methodology*, (2008).

The project would result in emissions of TACs, primarily from diesel-fueled trucks. The SCAQMD recommends a detailed health risk assessment (HRA) be performed for DPM for facilities that are substantial sources of DPM. As the project includes sites that are zoned for industrial uses, it is possible that some sites may include sources of TACs, including DPM. These sources would also be required to perform an HRA if they have the potential to emit substantial amounts of TACs in the vicinity of potential sensitive receptors. Many sources of TACs are also required to obtain permits to operate from the SCAQMD, which would ensure that TAC emissions from these sources are controlled. However, as noted above, there currently is not sufficient information to make an accurate analysis of the potential impacts of TACs associated with the project. Therefore impacts are conservatively assumed to be significant.

Level of Significance Before Mitigation

Impacts would be potentially significant.

Mitigation Measures

AQ-2: Individual projects developed under the Azusa TOD Specific Plan shall be evaluated for potential impacts related to exposure of sensitive receptors to pollutant concentrations according to the CARB Air Quality and Land Use Handbook and the SCAQMD's Rule 1401. Developments found to potentially result in such an exposure would be required under CEQA to mitigate impacts to the extent feasible.

Level of Significance After Mitigation

Even with implementation of **Mitigation Measure AQ-2,** impacts are conservatively assumed to be significant and unavoidable.

4.2.4 CUMULATIVE IMPACTS

CEQA defines cumulative impacts as two or more individual effects which, when considered together, are either significant or "cumulatively considerable," meaning they add considerably to a significant environmental impact. Cumulative impacts can result from individually minor but collectively significant projects (*State CEQA Guidelines* Section 15355). An adequate cumulative impact analysis considers a project over time and in conjunction with other past, present, and reasonably foreseeable future projects whose impacts might compound those of the project being assessed.

According to the SCAQMD CEQA Handbook, projects with emissions that are below the emission thresholds identified above should be considered less than significant on a cumulative basis unless there

is other pertinent information to the contrary.[23] As shown in **Table 4.2-7**, operational emissions are estimated to exceed the SCAQMD thresholds of significance. Therefore, the project would result in a cumulatively considerable contribution to air quality impacts and would be significant on a cumulative basis.

The SCAQMD states that for projects that exceed the emissions-based thresholds of significance, cumulative impacts should be determined based on whether the rate of growth in ADT or VMT for the project exceeds the rate of growth in population.

Buildout of the Azusa TOD Specific Plan would result in a total of approximately 2,915 persons by 2035 in the specific plan area. Population data for Los Angeles County were obtained from SCAG projections.[24] Plan ADT was obtained from the Specific Plan traffic analysis report prepared by Fehr & Peers. Los Angeles County ADT was obtained from the EMFAC2011 on-road motor vehicle emissions model developed by CARB. These figures were used to calculate and compare the ratio of population growth to ADT growth, as shown in **Table 4.2-9, Comparison of ADT to Population Growth at the Azusa TOD Specific Plan Buildout**,

Table 4.2-9
Comparison of ADT to Population Growth at the Azusa TOD Specific Plan Buildout

Population Comparison	ADT	Population
Azusa TOD Specific Plan [1]	16,314	2,915
Los Angeles County[2, 3]	262,636,003	356,300
Ratio of Project to Los Angeles County	**0.0006211**	**0.0082**

Source: Impact Sciences, Inc.

[1] *Estimated ADT for the Azusa TOD Specific Plan population as determined by project traffic study.*

[2] *Estimated ADT in Los Angeles County as determined by EMFAC2011.*

[3] *Southern California Association of Governments, "Economic and Demographic Library," http://www.scag.ca.gov/forecast/process.htm. 2014*

The rate of growth in ADT is less than the rate of growth in population. As such, cumulative impacts would be less than significant based on this criterion.

Level of Significance Before Mitigation

Impacts would be less than significant.

23 South Coast Air Quality Management District, *CEQA Air Quality Handbook*, 9–12.

24 Southern California Association of Governments, "Economic and Demographic library," http:/scag.ca.gov/forecast/index.htm. 2014.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Impacts would be less than significant.