3.2 AIR QUALITY

This chapter examines the degree to which the proposed project may result in significant adverse changes in air quality. This chapter includes a description of existing air quality conditions, a summary of applicable regulations, and an analysis of potential short-term construction and long-term operational air quality impacts of the proposed project. The method of analysis for short-term construction, long-term operational, and toxic air contaminant (TAC) emissions is consistent with the recommendations of the South Coast Air Quality Management District (SCAQMD). In addition, mitigation measures are recommended, as necessary, to reduce significant air quality impacts.

3.2.1 ENVIRONMENTAL SETTING

Air quality is defined by the concentration of pollutants related to human health. Concentrations of air pollutants are determined by the rate and location of pollutant emissions released by pollution sources, and the atmosphere's ability to transport and dilute such emissions. Natural factors that affect transport and dilution include terrain, wind, and sunlight. Therefore, ambient air quality conditions within the local air basin are influenced by such natural factors as topography, meteorology, and climate, in addition to the amount of air pollutant emissions released by existing air pollutant sources.

The proposed project is located in the South Coast Air Basin (Basin) within the SCAQMD jurisdiction. The SCAQMD consists of the four-county Basin (Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties) and the Riverside County portions of the Salton Sea Air Basin and the Mojave Desert Air Basin. The Basin is bounded by the Pacific Ocean to the west and south and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east.

The climate in the Basin generally is characterized by sparse winter rainfall and hot summers tempered by cool ocean breezes. A temperature inversion, a warm layer of air that traps the cool marine air layer underneath it and prevents vertical mixing, is the prime factor that allows contaminants to accumulate in the Basin. The mild climatological pattern is interrupted infrequently by periods of extremely hot weather, winter storms, and Santa Ana winds. The climate of the area is not unique, but the high concentration of mobile and stationary sources of air contaminants in the western portion of the Basin, in addition to the mountains that surround the perimeter of the Basin, contribute to the generally poor air quality in the region.

Temperature affects the air quality of the region in several ways. Local winds are the result of temperature differences between the relatively stable ocean air and the uneven heating and cooling that takes place in the Basin due to a wide variation in topography. Temperature also has a major effect on vertical mixing height and affects chemical and photochemical reaction times. Rainfall at the Long Beach station in Los Angeles County, which is the closest climate monitoring station to the project site and represents the proposed project's area, climate, and topography in the Basin, averages approximately

12.01 inches annually.[1] The heaviest precipitation occurs in November through March. The mean annual air temperature ranges from 67 degrees Fahrenheit (°F) in December to 84°F in August, with an annual average temperature of approximately 74°F.[2]

Wind flow patterns play an important role in the transport of air pollutants in the Basin. The winds flow from offshore and blow eastward during the daytime hours. In summer, the sea breeze starts in mid-morning, peaks at 10 to 15 miles per hour, and subsides after sundown. There is a calm period until about midnight. At that time, the land breeze begins from the northwest, typically becoming calm again by sunrise. In winter, the same general wind flow patterns exist except that summer wind speeds average slightly higher than winter wind speeds. This pattern of low wind speeds is a major factor that allows pollutants to accumulate in the Basin.

The normal wind patterns in the Basin are interrupted by the unstable air accompanying the passing of storms during the winter and infrequent strong northeasterly Santa Ana wind flows from the mountains and deserts north of the Basin.

CRITERIA AIR POLLUTANTS

Individual air pollutants may adversely affect human or animal health, reduce visibility, damage property, and reduce the productivity or vigor of crops and natural vegetation. Six air pollutants have been identified by the U.S. Environmental Protection Agency (EPA) and the California Air Resources Board (CARB) as being of concern both on a nationwide and statewide level: ozone; carbon monoxide (CO); nitrogen dioxide (NO_2); sulfur dioxide (SO_2); lead; and particulate matter (PM), which is subdivided into two classes based on particle size: PM equal to or less than 10 micrometers in diameter (PM_{10}) and PM equal to or less than 2.5 micrometers in diameter ($PM_{2.5}$). Because these are the most prevalent air pollutants known to be harmful to human health and extensive health-effects criteria documentation is available for these pollutants, they are commonly referred to as “criteria air pollutants.”

Health-based air quality standards have been established for these pollutants by EPA at the national level and by CARB at the state level. These standards were established to protect the public with a margin of safety from adverse health impacts due to exposure to air pollution. California has also established standards for sulfates, visibility-reducing particles, hydrogen sulfide, and vinyl chloride. A brief description of each criteria air pollutant is provided below along with the most current monitoring station data and attainment designations for the project study areas. Table 3.2-1 presents the National Ambient Air Quality Standards and the California Ambient Air Quality Standards.

1 Western Regional Climate Center. 2013.

2 Ibid.

TABLE 3.2-1
NATIONAL AND CALIFORNIA AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards[a] Concentration[c]	National Standards[b] Primary[c,d]	National Standards[b] Secondary[c,e]
Ozone	1 hour	0.09 ppm (180 µg/m^3)	–	Same as primary standard
	8 hours	0.070 ppm (137 µg/m^3)	0.075 ppm (147 µg/m^3)	
Respirable particulate matter (PM_{10})[f]	24 hours	50 µg/m^3	150 µg/m^3	Same as primary standard
	Annual arithmetic mean	20 µg/m^3	–	
Fine particulate matter ($PM_{2.5}$)[f]	24 hours	–	35 µg/m^3	Same as primary standard
	Annual arithmetic mean	12 µg/m^3	12 µg/m^3	
Carbon monoxide	8 hours	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	None
	1 hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	
	8 hours (Lake Tahoe)	6 ppm (7 mg/m^3)	–	–
Nitrogen dioxide[g]	Annual arithmetic mean	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)	Same as primary standard
	1 hour	0.18 ppm (339 µg/m^3)	100 ppb (188 µg/m^3)	None
Sulfur dioxide[h]	Annual Arithmetic Mean	–	0.030 ppm (for certain areas)[h]	–
	24 hours	0.04 ppm (105 µg/m^3)	0.14 ppm (for certain areas)[h]	–
	3 hours	—	–	0.5 ppm (1,300 µg/m^3)
	1 hour	0.25 ppm (655 µg/m^3)	75 ppb (196 µg/m^3)	–
Lead[i,j]	30-day average	1.5 µg/m^3	–	–
	Calendar quarter	–	1.5 µg/m^3 (for certain areas)[j]	Same as primary standard
	Rolling 3-month average	–	0.15 µg/m^3	
Visibility-reducing particles[k]	8 hours	See footnote j	No national standards	
Sulfates	24 hours	25 µg/m^3		
Hydrogen sulfide	1 hour	0.03 ppm (42 µg/m^3)		
Vinyl chloride[i]	24 hours	0.01 ppm (26 µg/m^3)		

Notes: mg/m^3 = milligrams per cubic meter; ppb = parts per billion; ppm = parts per million; µg/m^3 = micrograms per cubic meter

[a] California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1- and 24-hour), nitrogen dioxide, and particulate matter (PM_{10}, $PM_{2.5}$, and visibility-reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

[b] National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over 3 years, is equal to or less than the standard. For PM_{10}, the 24-hour is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than 1. For $PM_{2.5}$, the 24-hour standard is attained when 98% of the daily concentrations, averaged over 3 years, are equal to or less than the standards.

[c] Concentration expressed first in the units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25 degrees Celsius (°C) and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and reference pressure of 760 torr; parts per million (ppm) in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

[d] National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

[e] National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[f] On December 14, 2012, the national annual PM2.5 primary standard was lowered from 15 µg/m3 to 12.0 µg/m3. The existing national 24-hour PM2.5 standards (primary and secondary) were retained at 35 µg/m3, as was the annual secondary standard of 15 µg/m3. The existing 24-hour PM10 standards (primary and secondary) of 150 µg/m3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

Source: CARB 2013

[g] To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. California standards are in units of ppm. To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

[h] On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until 1 year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved. To directly compare the 1-hour national standard to the California standard, the units can be converted to ppm. In this case, the national standard of 75 ppb is identical of 0.075 ppm.

[i] 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.

[j] The national standard for lead was revised on October 15, 2008, to a rolling 3-month average. The 1978 lead standard (1.5 µg/m^3 as a quarterly average) remains in effect until 1 year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standards are approved.

[k] In 1989, CARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and the "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

Ozone

Ozone is the principal component of smog and is formed in the atmosphere through a series of reactions involving reactive organic gases (ROG) and nitrogen oxides (NO_X) in the presence of sunlight. ROG and NO_X are called precursors of ozone. NO_X includes various combinations of nitrogen and oxygen, including nitric oxide (NO), NO_2, and others. Ozone is a principal cause of lung and eye irritation in the urban environment. Significant ozone concentrations are usually produced only in the summer, when atmospheric inversions are greatest and temperatures are high. ROG and NO_X emissions are both considered critical in ozone formation.

Carbon Monoxide (CO)

CO is a colorless and odorless gas that, in the urban environment, is associated primarily with the incomplete combustion of fossil fuels in motor vehicles. Relatively high concentrations are typically found near crowded intersections and along heavily used roadways carrying slow-moving traffic. Even under most severe meteorological and traffic conditions, high concentrations of CO are limited to locations within a relatively short distance (300 to 600 feet) of heavily traveled roadways. Vehicle traffic emissions can cause localized CO impacts, and severe vehicle congestion at major signalized intersections can generate elevated CO levels, called “hot spots,” which can be hazardous to human receptors adjacent to the intersections.

Nitrogen Dioxide (NO_2)

NO_2 is a product of combustion and is generated in vehicles and in stationary sources, such as power plants and boilers. It is also formed when ozone reacts with NO in the atmosphere. NO_2 can cause lung damage. As noted above, NO_2 is part of the NO_X family and is a principal contributor to ozone and smog generation.

Sulfur Dioxide (SO_2)

SO_2 is a combustion product, with the primary source being power plants and heavy industries that use coal or oil as fuel. SO_2 is also a product of diesel engine combustion. The health effects of SO_2 include lung disease and breathing problems for asthmatics. SO_2 in the atmosphere contributes to the formation of acid rain.

Lead

Lead is a highly toxic metal that may cause a range of human health effects. Previously, the lead used in gasoline anti-knock additives represented a major source of lead emissions to the atmosphere. The EPA began working to reduce lead emissions soon after its inception, issuing the first reduction standards in 1973. Lead emissions have significantly decreased due to the near elimination of leaded gasoline use.

Particulate Matter (PM)

PM is a complex mixture of extremely small particles and liquid droplets. PM is made up of a number of components, including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. Natural sources of particulate matter include windblown dust and ocean spray.

The size of PM is directly linked to the potential for causing health problems. The EPA is concerned about particles that are 10 micrometers in diameter or smaller, because these particles generally pass through the throat and nose and enter the lungs. Once inhaled, these particles can affect the heart and lungs and cause serious health effects. Health studies have shown a significant association between exposure to PM and premature death. Other important effects include aggravation of respiratory and cardiovascular disease, lung disease, decreased lung function, asthma attacks, and certain cardiovascular problems, such as heart attacks and irregular heartbeat.[3] Individuals particularly sensitive to fine particle exposure include older adults, people with heart and lung disease, and children. As previously discussed, the EPA groups PM into two categories, which are described below.

Fine particles, such as those found in smoke and haze, are $PM_{2.5}$. Sources of fine particles include all types of combustion activities (motor vehicles, power plants, wood burning, etc.) and certain industrial processes. $PM_{2.5}$ is also formed through reactions of gases, such as SO_2 and nitrogen oxides, in the atmosphere. $PM_{2.5}$ is the major cause of reduced visibility (haze) in California.

PM_{10} includes both fine and coarse dust particles; the fine particles are $PM_{2.5}$. Coarse particles, such as those found near roadways and dusty industries, are larger than 2.5 micrometers and smaller than 10 micrometers in diameter. Sources of coarse particles include crushing or grinding operations and dust from paved or unpaved roads. The health effects of PM_{10} are similar to $PM_{2.5}$. Control of PM_{10} is primarily achieved through the control of dust at construction and industrial sites, the cleaning of paved roads, and the wetting or paving of frequently used unpaved roads.

TOXIC AIR CONTAMINANTS (TACS)

In addition to criteria air pollutants, the EPA regulates TACs, also known as hazardous air pollutants. Concentrations of TACs are also used as indicators of ambient air quality conditions. A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or in serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in ambient air; however, their high toxicity may pose a threat to public health even at low concentrations. Most TACs originate from human-made sources, including on-road mobile sources, off-road mobile sources (e.g., construction equipment), area sources (e.g., dry cleaners), and stationary sources (e.g., factories and refineries).

EPA and CARB have on-going programs to identify and regulate TACs. Among the many substances identified as TACs are diesel exhaust particulates, asbestos, and inorganic lead. The regulation of TACs

[3] U.S. Environmental Protection Agency. 2007.

is generally through statutes and rules that require the use of the maximum or best available control technology to limit TAC emissions.

Particulate exhaust emissions from diesel-fueled engines (diesel PM) were identified as a TAC by CARB in 1998. The majority of the estimated local health risk from TACs is from diesel PM. The composition of diesel PM emissions from diesel-fueled engines varies depending on engine type, operating conditions, fuel composition, lubricating oil, and whether an emission control system is present. Federal and state efforts to reduce diesel PM emissions have focused on the use of improved fuels, adding particulate filters to engines, and requiring the production of new-technology engines that emit fewer exhaust particulates.

The maximum or best available control technology for asbestos and lead have been identified for many years and there are established rules and procedures to prevent dispersion and inhalation of these substances. Asbestos is a naturally occurring mineral that was used in building materials for thermal and acoustical insulation and fire resistance until the mid-1980s and a partial ban by EPA was imposed in 1989. Lead was used in paint for housing until 1978 when lead-based paint was banned by EPA for use in housing. Asbestos and lead, when disturbed during building demolition, can become airborne as inhalable health hazard pollutants and, therefore, require abatement before demolition.

ATTAINMENT STATUS

Both EPA and CARB use ambient air quality monitoring data to designate areas according to their attainment status for criteria air pollutants. The purpose of these designations is to identify the areas with air quality problems and initiate planning efforts for improvement. The three basic designation categories are nonattainment, attainment, and unclassified. An "attainment" designation for an area signifies that pollutant concentrations did not exceed the established standard. In most cases, areas designated or redesignated as attainment must develop and implement maintenance plans, which are designed to ensure continued compliance with the standard.

In contrast to attainment, a "nonattainment" designation indicates that a pollutant concentration has exceeded the established standard. Nonattainment may differ in severity. To identify the severity of the problem and the extent of planning and actions required to meet the standard, nonattainment areas are assigned a classification that is commensurate with the severity of their air quality problem (e.g., moderate, serious, severe, extreme).

Finally, an unclassified designation indicates that insufficient data exists to determine attainment or nonattainment. In addition, the California designations include a subcategory of nonattainment-transitional, which is given to nonattainment areas that are progressing and nearing attainment.

The Basin is currently designated as non-attainment for ozone and $PM_{2.5}$ for both state and federal standards, non-attainment for the state PM_{10} and NO_2 standards, and the Los Angeles County portion of the Basin is designated as non-attainment for the both the federal and state lead standards, based on emissions from two specific facilities. The Basin is classified as attainment for both the federal and state standards for CO and SO_2 and as attainment for the federal standards for NO_2. The Basin is classified as attainment for the state sulfates standard.

Ambient air pollutant concentrations in the Basin are measured at air quality monitoring stations operated by CARB and the SCAQMD. The closest and most representative air quality monitoring station to the project site is the Long Beach monitoring station. Table 3.2-2 presents the most recent data over the past three years from the Long Beach monitoring station as summaries of the exceedances of standards and the highest pollutant levels recorded for years 2010 through 2012.

TABLE 3.2-2
SUMMARY OF ANNUAL AMBIENT AIR QUALITY DATA (2010–2012)

	2010	2011	2012
OZONE			
Maximum concentration (1-hour/8-hour, ppm)	0.101/0.084	0.073/0.061	0.084/0.067
Number of days national standard exceeded (1-hour/8-hour)[1]	0/1	0/0	0/0
Number of days state standard exceeded (1-hour/8-hour)	1/1	0/0	0/0
CARBON MONOXIDE (CO)			
Maximum concentration (8-hour, ppm)	2.08	2.56	2.17
Number of days national standard exceeded (8-hour)	0	0	0
Number of days state standard exceeded (8-hour)	0	0	0
NITROGEN DIOXIDE (NO_2)			
Maximum concentration (1-hour, ppb)	92.8	106.4	77.2
Number of days state standard exceeded	0	1	0
Number of days state standard exceeded	0	0	0
Annual average (ppm)	20	*	*
FINE PARTICULATE MATTER ($PM_{2.5}$)			
Maximum concentration (µg/m^3)	35.0	39.7	49.8
Number of days national standard exceeded (measured/calculated)[2]	0/0.0	2/2.0	4/4.0
State annual average (µg/m^3)	*	*	*
RESPIRABLE PARTICULATE MATTER (PM_{10})			
Maximum concentration (µg/m^3)	44.0	43.0	45.0
Number of days state standard exceeded (measured/calculated) [2]	0/*	0/0.0	0/0.0
Number of days national standard exceeded (measured/calculated) [2]	0/0.0	0/0.0	0/0.0
Annual average (µg/m^3) (national/California)	22.0/*	24.2/24.1	23.2/23.2

Notes: µg/m^3 = micrograms per cubic meter; ppb = parts per billion; * = data not available

1 State and national statistics may differ for the following reasons: State statistics are based on California-approved samplers, whereas national statistics are based on samplers using federal reference or equivalent methods. State and national statistics may therefore be based on different samplers. State statistics are based on local conditions while national statistics are based on standard conditions. State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than the national criteria.

2 Measured days are those days that an actual measurement was greater than the level of the state daily standard or the national daily standard. Measurements are typically collected every 6 days. Calculated days are the estimated number of days that a measurement would have been greater than the level of the standard had measurements been collected every day. The number of days above the standard is not necessarily the number of violations of the standard for the year.

Source: CARB 2013b

As shown in Table 3.2-2, ambient air concentrations of CO and PM_{10} have not exceeded the National Ambient Air Quality Standards or the California Ambient Air Quality Standards in the past three years. Ozone concentrations have exceeded the National Ambient Air Quality Standards and California Ambient Air Quality Standards in 2010, and NO_2 concentrations exceeded the California Ambient Air Quality Standards in 2011. Concentrations of $PM_{2.5}$ exceeded the California Ambient Air Quality Standards and National Ambient Air Quality Standards in 2011 and 2012.

3.2.2 Regulatory Setting

Federal

The EPA, under the provisions of the Clean Air Act, requires each state with regions that have not attained the National Ambient Air Quality Standards to prepare a State Implementation Plan, detailing how these standards are to be met in each local area. The State Implementation Plan is a legal agreement between each state and the federal government to commit resources to improving air quality. It serves as the template for conducting regional and project-level air quality analysis. The State Implementation Plan is not a single document, but a compilation of new and previously submitted attainment plans, emissions reduction programs, district rules, state regulations, and federal controls.

State

The ARB is the lead agency for developing the SIP in California. Local air districts and other agencies prepare Air Quality Attainment Plans (AQAPs), or Air Quality Management Plans (AQMPs), and submit them to CARB for review, approval, and incorporation into the applicable SIP. CARB also maintains air quality monitoring stations throughout the state in conjunction with local air districts. Data collected at these stations are used by the CARB to classify air basins as being in attainment or nonattainment with respect to each pollutant and to monitor progress in attaining air quality standards.

The California Clean Air Act requires that each area exceeding the California Ambient Air Quality Standards for ozone, CO, SO_2, and NO_2 must develop a plan aimed at achieving those standards.[4] The California Health and Safety Code Section 40914, requires air districts to design a plan that achieves an annual reduction in district wide emissions of five percent or more, averaged every consecutive three year period. To satisfy this requirement, the local air districts have to develop and implement air pollution reduction measures, which are described in their AQAPs/AQMPs, and outline strategies for achieving the California Ambient Air Quality Standards for any criteria pollutants for which the region is classified as nonattainment.

CARB has established emission standards for vehicles sold in California and for various types of equipment. California gasoline specifications are governed by both state and federal agencies. During the past decade, federal and state agencies have imposed numerous requirements on the production and

4 California Health and Safety Code 40911 et seq.

sale of gasoline in California. CARB has also adopted control measures for diesel PM and more stringent emissions standards for various on-road mobile sources of emissions, including transit buses and off-road diesel equipment (e.g., tractors, generators).

TACs in California are regulated primarily through the Tanner Air Toxics Act (Assembly Bill 1807) and the Air Toxics Hot Spots Information and Assessment Act (Assembly Bill 2588).[5,6] Assembly Bill (AB) 1807 sets forth a formal procedure for CARB to designate substances as TACs. Research, public participation, and scientific peer review must occur before CARB can designate a substance as a TAC. The Air Toxics Hot Spots Information and Assessment Act requires that TAC emissions from stationary sources be quantified and compiled into an inventory according to criteria and guidelines developed by the CARB, and if directed to do so by the local air district, a health risk assessment must be prepared to determine the potential health impacts of such emissions.

REGIONAL AND LOCAL

South Coast Air Quality Management District

The SCAQMD is the agency responsible for air quality planning and development of the AQMP. The AQMP establishes the strategies that will be used to achieve compliance with California Ambient Air Quality Standards in all areas within the SCAQMD's jurisdiction. The SCAQMD adopted a comprehensive AQMP update, the 2012 AQMP, in December 2012. The 2012 AQMP demonstrates that the applicable ambient air quality standards can be achieved within the timeframes required under federal law. Population and commercial/industrial growth projections from local general plans adopted by cities in the district and compiled by the Southern California Association of Governments (SCAG) are some of the inputs used to develop the AQMP. The 2012 AQMP also addresses several state and federal planning requirements, incorporating new scientific information, primarily in the form of updated emissions inventories, ambient measurements, and new meteorological air quality models.

SCAQMD attains and maintains air quality conditions in the Basin through a comprehensive program of planning, regulation, enforcement, and promotion of the understanding of air quality issues. SCAQMD regulations are primarily focused on stationary sources, indirect sources, and Best Available Control Measures to minimize air pollutants within their jurisdiction. The proposed project is required to comply with all SCAQMD rules, and conformance will be incorporated into project specifications and procedures. For example, it is mandatory for all construction projects in the South Coast Air Basin to comply with SCAQMD Rule 403 for fugitive dust.[7] Rule 403 fugitive dust control requirements include, but are not limited to, applying water in sufficient quantities to prevent the generation of visible dust plumes, re-establishing ground cover as quickly as possible, utilizing a wheel washing system to remove

[5] . Assembly Bill 1807, Chapter 1047, Statutes of 1983.

[6] Assembly Bill 2588, Chapter 1252, Statutes of 1987.

[7] South Coast Air Quality Management District. 2005.

bulk material from tires and vehicle undercarriages before vehicles exit the project site, and maintaining effective cover over exposed areas. Implementing these measures throughout construction activities would minimize fugitive dust emissions from all possible sources.

City of Long Beach General Plan

The City of Long Beach General Plan was prepared in accordance with California State law requiring that each city and county adopt a long-term comprehensive general plan. The City has included an Air Quality Element as part of its General Plan. The Air Quality Element sets forth a number of programs to reduce current pollution emissions. The following goals, policies and actions are relevant to the proposed project:

- *Goal 6.0*. Minimize particulate emissions from the construction and operation of roads and buildings, from mobile sources, and from the transportation, handling and storage of materials.
- *Goal 7.0*. Reduce emissions through reduced energy consumption.
- *Policy 7.1*. Reduce energy consumption through conservation improvements and requirements.
- *Action 7.1.4*. Encourage the incorporation of energy conservation features in the design of all new construction.

Long Beach Unified School District

In 2008, LBUSD approved the Facility Master Plan (FMP) that emerged includes principles and provides guidance on how LBUSD schools can be renovated and replaced over the next 20 years. The FMP includes recommendations from the Community Advisory Committee, including a recommendation that that sustainable design practices be followed for renovations and new construction. The Community Advisory Committee recommended that LBUSD adopt CHPS and/or Leadership in Energy and Environmental Design (LEED). In coordination with the FMP, LBUSD enacted Resolution No. 012208-B to address sustainability guidelines associated with the CHPS program. Resolution No. 012208-B ensures that "every new school, new building, modernization project, and relocatable classroom…meet or exceed minimum eligibility under CHPS Criteria and incorporate to the extent feasible CHPS best practices."

3.2.3 Environmental Impacts

Thresholds of Significance

Pursuant to the CEQA Guidelines, the proposed project would have a significant effect on air quality if it would:

- Conflict with or obstruct implementation of the applicable air quality plan;

- Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors); or
- Expose sensitive receptors to substantial pollutant concentrations; or
- Create objectionable odors affecting a substantial number of people.

As stated in Appendix G of the CEQA Guidelines, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the above determinations. The SCAQMD has established thresholds, as shown in Table 3.2-3.

TABLE 3.2-3
SCAQMD AIR QUALITY SIGNIFICANCE THRESHOLDS[8]

<table>
<tr><th colspan="3">Mass Daily Thresholds</th></tr>
<tr><th>Pollutant</th><th>Construction [a]</th><th>Operation [b]</th></tr>
<tr><td>NO_X</td><td>100 lb/day</td><td>55 lb/day</td></tr>
<tr><td>VOC</td><td>75 lb/day</td><td>55 lb/day</td></tr>
<tr><td>PM_{10}</td><td>150 lb/day</td><td>150 lb/day</td></tr>
<tr><td>$PM_{2.5}$</td><td>55 lb/day</td><td>55 lb/day</td></tr>
<tr><td>SO_X</td><td>150 lb/day</td><td>150 lb/day</td></tr>
<tr><td>CO</td><td>550 lb/day</td><td>550 lb/day</td></tr>
<tr><td>Lead</td><td>3 lb/day</td><td>3 lb/day</td></tr>
<tr><th colspan="3">Toxic Air Contaminants (TACs) and Odor Thresholds</th></tr>
<tr><td>TACs
(including carcinogens
and noncarcinogens)</td><td colspan="2">Maximum Incremental Cancer Risk
≥ 10 in 1 million
Cancer Burden > 0.5 excess cancer cases (in areas ≥ 1 in 1 million)
Hazard Index ≥ 1.0 (project increment)</td></tr>
<tr><td>Odor</td><td colspan="2">Project creates an odor nuisance
pursuant to SCAQMD Rule 402</td></tr>
<tr><th colspan="3">Ambient Air Quality for Criteria Pollutants [c]</th></tr>
<tr><td>NO_2

1-hour average
annual average</td><td colspan="2">SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards:
0.18 ppm (state)
0.03 ppm (state)</td></tr>
</table>

8 SCAQMD. *SCAQMD Air Quality Significance Thresholds*. March 2009. Website: http://www.aqmd.gov/CEQA/handbook/signthres.pdf.

TABLE 3.2-3
SCAQMD AIR QUALITY SIGNIFICANCE THRESHOLDS[8]

PM_{10} 24-hour average annual average	10.4 μg/m³ (construction)[d] & 2.5 μg/m³ (operation) 1.0 μg/m³
$PM_{2.5}$ 24-hour average	10.4 μg/m³ (construction)[d] & 2.5 μg/m³ (operation)
Sulfate 24-hour average	1 μg/m³
CO 1-hour average 8-hour average	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 20 ppm (state) 9.0 ppm (state/federal)

[a] Construction thresholds apply to both the South Coast Air Basin and Coachella Valley (Salton Sea Air Basin and Mojave Desert Air Basin).
[b] For Coachella Valley, the mass daily thresholds for operation are the same as the construction thresholds.
[c] Ambient air quality thresholds for criteria pollutants based on SCAQMD Rule 1303, Table A-2 unless otherwise stated.
[d] Ambient air quality threshold based on SCAQMD Rule 403.
KEY: lb/day = pounds per day; μg/m³ = micrograms per cubic meter; ppm = parts per million; ≥ greater than or equal to

Other air quality impacts (e.g., construction- and operation-related TACs, and odors) were assessed in accordance with methodologies recommended by CARB and the SCAQMD. Localized emissions of criteria air pollutants were analyzed based on the SCAQMD's localized significance threshold (LST) methodology.[9]

METHODOLOGY

Construction-related emissions associated with typical construction activities, such as site grading and construction of the buildings, were modeled using the California Emissions Estimator Model (CalEEMod), Version 2013.2. CalEEMod allows the user to enter project-specific construction information, such as types, number and horsepower of construction equipment, and number and length of off-site motor vehicle trips. The construction period for the proposed project was input into CalEEMod to estimate total construction-related emissions. Construction-related exhaust emissions for the proposed project were estimated for construction worker commutes, haul trucks, and the use of off-road equipment.

Construction-generated criteria pollutant emissions were modeled based on general land use information and construction period description provided in Chapter 2.0, Project Description of this EIR. The CalEEMod input data, included in this EIR as Appendix B, lists the assumed equipment to be used for

[9] South Coast Air Quality Management District. 2003.

project construction, the duration of each phase, and changes to default settings that were made for project-specific conditions.

After construction, day-to-day activities associated with operation of the proposed project would generate emissions from a variety of sources. Operational criteria pollutant emissions were also estimated using CalEEMod. Since the project site is currently operating as a high school, the estimated emissions are based on the impacts of the proposed project's net increase in emissions compared to existing conditions. As described in detail in Chapter 2.0, Project Description of this EIR, the proposed project would demolish, renovate, and build various structures on the project site. The proposed project would result in a net increase of approximately 90,000 square feet of academic buildings compared to existing conditions. Therefore, this analysis evaluates the net change in operational emissions associated with the additional approximately 90,000 square feet of academic buildings. However, no increase in student enrollment and associated motor vehicle trips are anticipated as a result of the proposed project. Therefore, the net change in emissions is based on the increase in energy usage and area source emissions. Vehicle fleet characteristics, energy consumption, waste generation, and water use and wastewater generation data specific to Los Angeles County, or project-specific data, were used in place of CalEEMod defaults, where available.

IMPACT ANALYSIS

AIR-1: *The proposed project would not conflict with or obstruct of implementation of the applicable air quality plan. Implementation of the proposed project would be consistent with emissions levels allowed under the current air quality plans. This impact would be less than significant.*

Air quality plans describe air pollution control strategies and measures to be implemented by a city, county, region, and/or air district. The primary purpose of an air quality plan is to bring an area that does not attain the National Ambient Air Quality Standards or California Ambient Air Quality Standards into compliance with the requirements of the Clean Air Act and California Clean Air Act. Project consistency is based on whether a proposed project would conflict with or obstruct implementation of the AQMP and/or applicable portions of the State Implementation Plan, which would lead to increases in the frequency or severity of existing air quality violations.

As mentioned earlier, the most recent AQMP was adopted by the SCAQMD in December 2012.[10] The 2012 AQMP is the blueprint for how the region will meet and maintain state and federal air quality standards. The 2012 AQMP identifies control measures needed required to achieve attainment of the federal 24-hour standard for $PM_{2.5}$ by 2014 in the Basin. The 2012 AQMP also provides updates on progress towards meeting the 8-hour ozone standard by 2023 and an attainment demonstration for the revoked 1-hour ozone standard.

10 South Coast Air Quality Management District. 2012.

Consistency with the AQMP is also determined through evaluation of whether the project would exceed the estimated air basin emissions used as the basis of the AQMP, which are based, in part, on population projections developed by SCAG. The SCAG forecasts are based on local general plans and other related documents, such as housing elements, that are used to develop population projections and traffic projections. The project site is currently zoned as "Institutional" per the City of Long Beach. The full buildout would include the renovation of approximately 213,000 square feet of existing building space, and the construction of approximately 240,000 square feet of new building space. At full buildout, the project site would consist of approximately 453,000 square feet of total building space. The objectives of the proposed project are to provide upgraded and expanded instructional technology, provide upgraded classrooms, libraries, restrooms, plumbing and roofs consistent with educational program requirements, improve energy and water efficiency, and meet CHPS criteria. While the proposed project would result in a net increase in square footage, there is not anticipated to be an increase in student enrollment or capacity. The objectives of the proposed project are to provide upgraded and expanded instructional technology, provide upgraded classrooms, libraries, restrooms, plumbing and roofs consistent with educational program requirements, improve energy and water efficiency, and meet CHPS criteria.

The proposed project is consistent with the Institutional zoning designation. Because the proposed project is consistent with the existing zoning designation and no increase in student enrollment is anticipated, it is likely that the intensity of operational emissions would have been accounted for in the 2012 AQMP. In addition, renovated buildings would be more energy efficient than the existing buildings on the project site. Therefore, long-term operational emissions associated with the proposed project are not anticipated to exceed the emissions budgeted for the project site in the AQMP, and the proposed project would not conflict or obstruct implementation of the AQMP. This impact would be less than significant.

AIR-2: *The proposed project would not violate an air quality standard or contribute substantially to an existing or projected air quality violation. Short-term construction-generated emissions would not exceed SCAQMD's significance thresholds. Therefore, this impact would be less than significant.*

Construction

Construction emissions are described as "short-term" or temporary in duration; however, they have the potential to represent a significant impact with respect to air quality. Construction of the proposed project would result in the temporary generation of ROG, NO_x, CO, PM_{10}, and $PM_{2.5}$ emissions. ROG, NO_x, and CO emissions are primarily associated with mobile equipment exhaust, including off-road construction equipment and on-road motor vehicles. Fugitive PM dust emissions are primarily associated with site preparation and vary as a function of such parameters as soil silt content, soil moisture, wind speed, acreage of disturbance area, and miles traveled by construction vehicles on- and off-site.

Construction emissions can substantially vary from day to day, depending on the level of activity, the specific type of operation, and the prevailing weather conditions. Project construction would consist of several types of activities, including demolition, site preparation, and building construction. Construction activities would generally occur for eight hours per day and five days per week. Construction of the proposed project would occur in approximately six phases, depending on the availability of funding.

Table 3.2-4 shows the maximum daily emissions for each construction phase of the proposed project. Additional modeling assumptions and details are provided in Appendix B.

TABLE 3.2-4
MAXIMUM DAILY REGIONAL CONSTRUCTION EMISSIONS BY PHASE

Phase	Estimated Emissions (lbs/day)				
	ROG	**NO_x**	**CO**	**PM_{10}**	**$PM_{2.5}$**
Phase 1A	6.03	57.77	44.41	11.68	7.44
Phase 1B	13.84	57.73	44.38	11.58	7.43
Phase 1C	7.36	37.71	24.97	2.69	2.18
Phase 2A	20.11	47.27	37.08	3.82	2.48
Phase 2B	7.61	24.60	21.19	2.55	1.50
Phase 3	3.41	10.00	9.94	0.87	0.61
Phase 4	6.03	17.09	13.03	1.55	1.18
Phase 5	2.73	13.91	15.01	6.65	3.78
Phase 6	5.45	14.46	17.96	1.07	0.71
Maximum Daily Emissions	20.11	57.77	44.41	11.68	7.44
Significance Threshold	**75**	**100**	**550**	**150**	**55**
Exceed Significance?	NO	NO	NO	NO	NO

Source: Modeled by AECOM 2013.

As shown in Table 3.2-4, construction emissions for the individual construction phases of the proposed project would result in maximum daily emissions of approximately 20 pounds of ROG, 58 pounds of NO_x, 44 pounds of CO, 12 pounds of PM_{10} (combined exhaust and fugitive dust) and 7 pounds of $PM_{2.5}$. The estimate of maximum daily emissions for each individual construction phase would not exceed any of the SCAQMD's construction thresholds of significance. However, according to the construction schedule for the proposed project, some of the construction activities for several phases could overlap (e.g., Phase 1A would have building construction at the time as demolition would occur in Phase 1B). Therefore, in order to estimate the total construction-related impacts, the emissions from these activities must be combined to estimate the daily emissions that would occur as a result of the proposed project. The maximum daily emissions for each year are shown in Table 3.2-5. Additional modeling assumptions and details are provided in Appendix B.

TABLE 3.2-5
MAXIMUM DAILY REGIONAL CONSTRUCTION EMISSIONS BY YEAR

Phase	Estimated Emissions (lbs/day)				
	ROG	**NO_x**	**CO**	**PM_{10}**	**$PM_{2.5}$**
2014	11.74	89.58	70.69	14.93	9.83
2015	13.84	57.73	44.38	11.58	7.43
2016	14.00	92.75	72.50	6.97	5.24
2017	12.87	51.45	37.20	3.92	3.12
2018 – 2020	7.61	24.60	21.19	2.55	1.50
2021	3.41	10.00	9.94	0.87	0.61
2022 - 2023	2.73	13.91	15.01	6.65	3.78
2024	5.45	14.46	17.96	6.65	3.78
2025 - 2026	5.45	14.46	17.96	1.07	0.71
Maximum Daily Emissions	14.00	92.75	72.50	14.93	9.83
Significance Threshold	**75**	**100**	**550**	**150**	**55**
Exceed Significance?	NO	NO	NO	NO	NO

Source: Modeled by AECOM 2013.

As shown in Table 3.2-5, emissions of ROG, NO_x, and CO would be highest in year 2016. PM_{10} and $PM_{2.5}$ emissions would be highest in year 2014. However, the maximum daily emissions in those years would still not exceed any of the SCAQMD's construction thresholds of significance.

Localized emissions of criteria air pollutants and precursors were assessed in accordance with SCAQMD's LST guidance. SCAQMD recommends that lead agencies perform project-specific air quality modeling for projects larger than five acres. For projects less than five acres, the SCAQMD has developed look-up tables showing the maximum mass emissions that would not cause an exceedance of any LST. The look-up tables analyze distances from the project site to the nearest off-site receptor. Although the total project site is 26.9 acres, the proposed project would be developed in distinct and separate phases. Because each of the individual phases is less than 5 acres, peak daily emissions that would occur during each individual construction phase were compared to the applicable LSTs from the SCAQMD lookup tables. In the LST analysis, only on-site emissions are considered; thus, off-site emissions such as haul trucks and worker commutes are not included. The maximum daily on-site construction emissions shown in Table 3.2-6 would not exceed any of the SCAQMD LSTs.

TABLE 3.2-6
MAXIMUM DAILY LOCALIZED CONSTRUCTION EMISSIONS

Phase	Estimated On-Site Emissions (lbs/day)			
	NO_x	CO	PM_{10}	$PM_{2.5}$
Phase 1A	57.57	42.92	11.41	7.37
Localized Significance Threshold	123	1530	14	8
Exceed Significance?	NO	NO	NO	NO
Phase 1B	57.57	42.92	11.30	7.36
Localized Significance Threshold	102	1625	33	9
Exceed Significance?	NO	NO	NO	NO
Phase 1C	30.80	18.04	1.53	1.39
Localized Significance Threshold	95	971	9	6
Exceed Significance?	NO	NO	NO	NO
Phase 2A	45.61	35.00	2.85	2.22
Localized Significance Threshold	98	1117	10	6
Exceed Significance?	NO	NO	NO	NO
Phase 2B	23.48	19.68	1.79	1.34
Localized Significance Threshold	89	1350	26	8
Exceed Significance?	NO	NO	NO	NO
Phase 3	7.8	6.47	0.45	0.41
Localized Significance Threshold	50	508	3	2
Exceed Significance?	NO	NO	NO	NO
Phase 4	13.69	8.20	0.94	0.86
Localized Significance Threshold	57	585	4	3
Exceed Significance?	NO	NO	NO	NO
Phase 5	1.02	10.32	3.23	1.94
Localized Significance Threshold	126	2613	58	18
Exceed Significance?	NO	NO	NO	NO
Phase 6	12.74	14.05	0.54	0.51
Localized Significance Threshold	87	1611	37	13
Exceed Significance?	NO	NO	NO	NO

Notes: Emission estimates include 55 percent reduction in PM emissions associated with watering two times per day.
Source: Modeled by AECOM 2013.

Construction-generated emissions of ROG, CO, NO_X, PM_{10}, and $PM_{2.5}$ would not exceed applicable mass emission or localized significance thresholds established by SCAQMD. Therefore, construction emissions would not violate an ambient air quality standard or contribute substantially to an existing violation. This impact would be less than significant.

Operations

The proposed project would include an additional approximately 90,000 square feet of academic buildings compared to existing conditions. Daily activities associated with the operation of the proposed project would generate criteria air pollutant and precursor emissions from mobile and area sources. Mobile sources include vehicle trips coming to and leaving from the existing and planned land uses. Area sources include sources such as consumer products (i.e., ROG), natural gas combustion for water and space heating, landscape maintenance equipment, and periodic architectural coatings. While construction emissions are considered short-term and temporary, operational emissions are considered long-term and would occur for the lifetime of the project and the resulting land uses that are established. The estimated project criteria air pollutant emissions from operations are shown in Table 3.2-7.

TABLE 3.2-7
SUMMARY OF MODELED LONG-TERM OPERATIONAL EMISSIONS

	Estimated Emissions (lbs/day)				
	ROG	**NO_x**	**CO**	**PM_{10}**	**$PM_{2.5}$**
Existing	94.26	82.17	336.10	44.09	12.93
Proposed Project	79.64	59.03	238.15	54.01	15.17
Net Change – Maximum Daily Emissions	(14.62)	(23.14)	(97.95)	9.92	2.24
Significance Threshold	**55**	**55**	**550**	**150**	**55**
Exceed Significance?	NO	NO	NO	NO	NO

Source: Modeled by AECOM 2013.

The analysis assumed the same level of on-road vehicle activity for existing conditions and the proposed project because enrollment would not increase. As a result, ROG, NO_x, and CO emissions would decrease in future years based on improvements to vehicle emission standards. As shown in Table 3.2-7, operational emissions would not exceed any of the SCAQMD's mass daily operational emission thresholds. Therefore, operation of the proposed project would not violate an air quality standard or contribute substantially to an existing or projected air quality violation. This impact would be less than significant.

AIR-3: *The proposed project would not result in a cumulatively considerable net increase of a criteria pollutant for which the project region is classified as nonattainment under the National Ambient Air Quality Standards or California Ambient Air Quality Standards. The proposed project would not exceed any of the SCAQMD's project-level significance thresholds for air quality. Therefore, this impact would be less than significant.*

The SCAQMD cumulative analysis focuses on whether a specific project would result in cumulatively considerable contribution of emissions to the region. In accordance with CEQA Guidelines Section 15064(h)(4), the existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the proposed project's incremental effects are cumulatively considerable.

As discussed earlier, the proposed project would result in the generation of criteria air pollutant emissions, but at levels that do not exceed any of the SCAQMD regional and localized thresholds for construction and operational activities. These thresholds are designed to identify those projects that would result in significant levels of air pollution and that would assist the region in attaining the applicable state and federal ambient air quality standards. Projects that would not exceed the thresholds of significance would be considered not to contribute a considerable amount of criteria air pollutant emissions to the region's emission profile and not impede attainment and maintenance of ambient air quality standards.

Because the proposed project would not exceed any SCAQMD project-level air quality significance thresholds, the proposed project's construction and operational emissions would not be have a cumulatively considerable contribution to the region's air quality. Therefore, the cumulative impact would be less than significant.

AIR-4: *The proposed project would not expose sensitive receptors to substantial pollutant concentrations. Off-road equipment used during construction of the proposed project would generate diesel particulate matter. However, these emissions would occur only during construction. Sensitive receptors would not be exposed to concentrations exceeding the applicable thresholds. This impact would be less than significant.*

Some members of the population are especially sensitive to air pollutant emissions and should be given special consideration when evaluating air quality impacts from projects. These people include children, older adults, persons with preexisting respiratory or cardiovascular illness, and athletes and others who engage in frequent exercise. Structures that house these persons or places where they gather are defined as sensitive receptors by the SCAQMD. According to the SCAQMD, sensitive receptors include residences, schools, playgrounds, child care centers, athletic facilities, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes. Therefore, the project site itself is considered a sensitive receptor to surrounding emissions sources.

The nearest off-site sensitive receptors to the project site are single-family residences located to the north and directly adjacent to the project site. Residential land uses are located to the west and east of the project site at various distances. The residential sensitive receptors represent the nearest off-site land uses with the potential to be impacted as a result of the proposed project.

Construction

The greatest potential for TAC emissions would be related to diesel PM emissions associated with heavy-duty construction equipment operations. According to the SCAQMD methodology, health effects from carcinogenic TACs are usually described in terms of individual cancer risk, which is based on a 70-year lifetime exposure to TACs.

Building construction activities for individual phases of the proposed project are anticipated to last no longer than two years. The project phases are located at varying distances from different sensitive receptors surrounding the project site. Therefore, it is not anticipated that individual receptors would be exposed to TAC emissions for longer than two years. Given that heavy-duty construction equipment would only operate intermittently during that time-frame, the proposed project would not result in a long-term emissions of TACs in the immediate vicinity of sensitive receptors.

All construction emissions would cease following completion of the proposed project. Thus, if the duration of potentially harmful construction activities near a sensitive receptor is two years, then the exposure would be approximately three percent of the total exposure period used for typical health risk calculations (i.e., 70 years). Construction emissions would occur intermittently throughout the day as construction equipment is required and would not occur as a constant plume of emissions from the project site. As discussed above, the location of construction activities would shift around the project site and, therefore, emissions would not only occur at the location nearest to sensitive receptors. In addition, construction of the proposed project would not exceed the SCAQMD mass emissions or localized significance thresholds, which represent the maximum levels of emissions where ambient air quality standards would not be exceeded, and thus, unhealthful pollutant concentrations would not be generated. Therefore, the proposed project would not expose sensitive receptors to substantial construction pollutant concentrations. The impact would be less than significant.

Operations

The land uses associated with the proposed project would primarily be educational, recreational or commercial (e.g., cafeteria), which are not typically sources of TAC emissions. In addition, the proposed project is not anticipated to significantly increase operational activities and TAC emissions above existing levels. As discussed earlier, the proposed project would not result in emissions that exceed the SCAQMD thresholds of significance. Therefore, the proposed project would not expose sensitive receptors to substantial operational TAC concentrations. This impact would be less than significant.

AIR-5: *The proposed project would not create objectionable odors affecting a substantial number of people. This impact would be less than significant.*

The occurrence and severity of odor impacts depend on numerous factors, including the nature, frequency, and intensity of the source; wind speed and direction; and the presence of sensitive receptors. While offensive odors rarely cause any physical harm, they still can be very unpleasant, leading to considerable distress and often generating citizen complaints to local governments and regulatory agencies.

Potential sources that may emit odors during construction activities include exhaust from diesel construction equipment. However, because of the temporary nature of these emissions and the highly diffusive properties of diesel exhaust, nearby receptors would not be affected by diesel exhaust odors associated with project construction. Odors from these sources would be localized and generally confined to the immediate area surrounding the project site. The proposed project would utilize typical construction techniques, and the odors would be typical of most construction sites and temporary in nature.

Operation of the proposed project would not add any new odor sources. Minor sources of odors, such as exhaust from mobile sources and charbroilers associated with commercial uses, are not typically associated with numerous odor complaints but are known to have temporary, less concentrated odors. The project would not have any significant odor sources, and any odors generated would be similar to existing odors associated with operation of the high school. The surrounding land uses are primarily residential, and no significant odors would be anticipated from those sources. As a result, the proposed project would not create objectionable odors affecting a substantial number of people. The impact would be less than significant.

3.2.4 Mitigation Measures

Impacts to air quality would be less than significant. Therefore, no mitigation measures are required.

3.2.5 Significance after Mitigation

Not applicable.

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