

3.2 AIR QUALITY

This chapter examines the degree to which the proposed project may result in significant adverse changes to air quality. Both short-term construction emissions occurring from activities such as site grading and haul truck trips, as well as long-term effects related to the ongoing operation of the proposed project are discussed in this chapter. The analysis contained herein focuses on air pollution from two perspectives: daily emissions and pollutant concentrations. “Emissions” refer to the actual quantity of pollutant measured in pounds per day (ppd). “Concentrations” refer to the amount of pollutant material per volumetric unit of air and are measured in parts per million (ppm) or micrograms per cubic meter ($\mu\text{g}/\text{m}^3$). The following analysis is based on the *Air Quality Impact Analysis, Los Angeles State Historic Park Master Development Plan*, prepared by AECOM in November 2011, which is included as Appendix B of this EIR.

3.2.1 ENVIRONMENTAL SETTING

The project site is located within the South Coast Air Basin, a 6,600 square-mile coastal plain bounded by the Pacific Ocean on the southwest, and the San Gabriel, San Bernardino, and San Jacinto mountains on the north and east. The South Coast Air Basin includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties. The ambient concentrations of air pollutants are determined by the amount of emissions released by sources and the atmosphere’s ability to transport and dilute such emissions. Natural factors that affect transportation and dilution of emissions include terrain, wind, atmospheric stability, and sunlight. As such, existing air quality conditions in the area are determined by such natural factors as topography, meteorology, and climate, in addition to the amount of emissions released by existing air pollutant sources.

AIR POLLUTANTS AND HEALTH EFFECTS

Criteria air pollutants are defined as pollutants for which federal and state governments have established ambient air quality standards for outdoor concentrations to protect public health. The federal and state standards have been set at levels above which concentrations could be harmful to human health and welfare. These standards are designed to protect the most sensitive persons from illness or discomfort. Pollutants of concern include ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less (PM_{10}), fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less ($\text{PM}_{2.5}$), and lead. These pollutants and their effects on human health are described below.

Ozone (O_3). O_3 is a colorless gas that is formed in the atmosphere when reactive organic gases (ROG), which includes volatile organic compounds (VOCs), and oxides of nitrogen (NO_x) react in the presence of sunlight. O_3 is not a primary pollutant, but is a secondary pollutant formed by complex interactions of two pollutants directly emitted into the atmosphere. The primary sources of ROG and NO_x , the components of O_3 , are vehicle exhaust and industrial sources. Short-term exposure (lasting for a few hours) to O_3 at levels typically observed in southern California can result in breathing pattern changes,

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reduction in breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes.

Carbon Monoxide (CO). CO is a colorless, odorless gas that is formed by the incomplete combustion of fossil fuels. CO is emitted almost exclusively from motor vehicles, power plants, refineries, industrial boilers, ships, aircraft, and trains. In urban areas such as the project site, vehicle exhaust accounts for the majority of CO emissions. In terms of health effects, CO competes with oxygen, often replacing it in the blood, thus reducing the body's ability to transport oxygen to vital organs. The results of excess CO exposure can be dizziness, headaches, fatigue, and impairment of the central nervous system functions.

Nitrogen Dioxide (NO₂). NO₂, like O₃, is not directly emitted into the atmosphere, but is formed by an atmospheric chemical reaction between nitric oxide (NO) and atmospheric oxygen. NO and NO₂ are collectively referred to as NO_x and are major contributors to O₃ formation. NO₂ also contributes to the formation of inhalable particulate matter (PM₁₀). It results in a brownish-red coast to the atmosphere with reduced visibility. High concentrations of NO₂ can cause breathing difficulties. There is some indication of a relationship between NO₂ and chronic pulmonary fibrosis. Some increases in bronchitis in children (two and three year olds) has been observed at concentrations below 0.3 ppm.

Sulfur Dioxide (SO₂). SO₂ is a colorless, pungent gas formed primarily by the combustion of sulfur-containing fossil fuels. The main sources of SO₂ are coal and oil used in power plants and industries. Generally, the highest levels of SO₂ are found near large industrial complexes. In recent years, SO₂ concentrations have been reduced by increasingly stringent controls placed on stationary source emissions of SO₂ and limits on the sulfur content of fuels. SO₂ is an irritant gas that attacks the throat and lungs. It can cause acute respiratory symptoms and diminished lung function in children.

Particulate Matter. Particulate matter pollution consists of very small liquid and solid particles floating in the air, which can include smoke, soot, dust, salts, acids, and metals. Particulate matter also forms when gases emitted from industries and motor vehicles undergo chemical reactions in the atmosphere. Fine particulate matter, or PM_{2.5}, is 2.5 microns in diameter or less, roughly 1/28th the diameter of human hair. PM_{2.5} results from fuel combustion (e.g., motor vehicles, power generation, and industrial facilities), residential fireplaces, and wood stoves. In addition, PM_{2.5} can be formed in the atmosphere from gases such as SO₂, NO_x, and VOCs. Inhalable particulate matter, or PM₁₀, is 10 microns or less in diameter, about 1/7th the thickness of human hair. The major sources of PM₁₀ including crushing and grinding operations; dust stirred up by vehicles traveling on roads; wood burning stoves and fireplaces; dust from construction, landfills, and agriculture; wildfires and brush/waste burning; industrial sources; windblown dust from open lands; and atmospheric chemical and photochemical reactions. PM₁₀ and PM_{2.5} pose a greater health risk than larger-size particles. When inhaled, these tiny particles can penetrate the human respiratory system's natural defenses and damage the respiratory tract. PM₁₀ and PM_{2.5} can increase the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infections.

Lead (Pb). Lead occurs in the atmosphere as particulate matter. Sources of lead include the manufacture of batteries, paint, ink, ceramics, and ammunition, as well as secondary lead smelters. Health effects

associated with exposure to lead include gastrointestinal disturbances, anemia, kidney disease, and in severe cases, neuromuscular and neurological dysfunction.

Toxic Air Contaminants (TACs). A substance is considered toxic if it has the potential to cause adverse health effects in humans. A toxic substance released into the air is considered a TAC. TACS are identified by state and federal agencies based on review of available scientific evidence. According to *The California Almanac of Emissions and Air Quality*, the majority of the estimated health risk from TACs can be attributed to relatively few compounds, the most important being particulate matter from diesel-fueled engines (diesel PM). Diesel PM differs from other TACs in that it is not a single substance, but rather a complex mixture of hundreds of substances. Although diesel PM is emitted by diesel-fueled internal-combustion engines, the composition of the emissions varies depending on engine type, operating conditions, fuel composition, lubricating oil, and whether an emission control system is present. Unlike the other TACs, no ambient monitoring data are available for diesel PM because no routine measurement method currently exists.

ODORS

Odors are generally regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache).

Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience (e.g., flowery or sweet). Intensity refers to the strength of the odor, which is dependent on the odorant concentration in the air. When an odorous sample is progressively diluted, the odorant concentration decreases. As this occurs, the odor intensity weakens and eventually becomes so low that the detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odorant reaches a detection threshold, below which it is undetectable by the average human.

There are no existing concentrated sources of objectionable odors such as agriculture (farming and livestock), wastewater treatment plants, composting operations, landfills, rendering plants, or dairies within one mile of the project site.

EXISTING AIR QUALITY

Regional Topography, Meteorology, and Climate

The distinctive climate of the South Coast Air Basin is determined by its terrain and geographic location. The general region lies in the semi-permanent high-pressure zone of the eastern Pacific, resulting in a mild climate tempered by cool sea breezes with light average wind speeds. The usually mild climatological pattern is interrupted occasionally by periods of extremely hot weather, winter storms, or Santa Ana winds.

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Winds in the project area are usually driven by the dominant land/sea breeze circulation system. Regional wind patterns are dominated by the daytime onshore sea breezes. At night, the wind generally slows and reverses in direction, traveling toward the sea. Local canyons can also alter wind direction, with wind tending to flow parallel to the canyons.

The vertical dispersion of air pollutants in the South Coast Air Basin is hampered by the presence of persistent temperature inversions. Such inversions restrict the vertical dispersion of air pollutants released into the marine layer and, together with strong sunlight, can produce worst-case conditions for the formation of photochemical smog. The Basin-wide occurrence of inversions at 3,500 feet above mean sea level or less averages 191 days per year. The combination of low wind speeds and low inversions produces the greatest concentration of air pollutants. On days without inversions, or on days of winds averaging more than 15 miles per hour, smog potential is greatly reduced.

Local Air Quality

Criteria air pollutant concentrations are measured at 37 monitoring stations in the South Coast Air Basin. The project site is located in Source Receptor Area 1 – Central Los Angeles County. The most representative monitoring stations in the project area is the Los Angeles – North Main Street monitoring station, located less than 1,000 feet south of the project site. The North Main Street monitoring station reports data for O₃, CO, NO₂, SO₂, PM₁₀, and PM_{2.5}. Table 3.2-1 summarizes the air quality data from this station from the most recent three-year period for which data are available.

Both the California Air Resources Board (CARB) and the USEPA use this type of monitoring data to designate the attainment status of areas for criteria air pollutants. The purpose of these designations is to identify the areas with air quality problems and thereby initiate planning efforts for improvement. The three basic designation categories are nonattainment, attainment, and unclassified. Unclassified is used in an area that cannot be classified on the basis of available information as meeting or not meeting the standards. If an area is designated from nonattainment to attainment for a criteria air pollutant, it needs to demonstrate the maintenance of the redesignation through a maintenance plan. 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 classified as a federal nonattainment area for O₃ (extreme), PM₁₀ (serious), and the PM_{2.5} standard, and a federal attainment/maintenance area for CO. Additionally, the Basin is classified as a state nonattainment area for O₃, PM₁₀, and PM_{2.5}, and an attainment area for CO. The Basin currently meets the federal and state standards for NO₂, SO₂, and lead, and is classified as an attainment area for these pollutants.

TABLE 3.2-1
LOS ANGELES – NORTH MAIN STREET MONITORING STATION – AMBIENT AIR QUALITY

Pollutant	Averaging Time	Federal Primary Standards	State Air Quality Standards	Maximum Concentrations ^a			No. of Days Exceeding Federal Standard ^b			No. of Days Exceeding State Standard ^b		
				2008	2009	2010	2008	2009	2010	2008	2009	2010
Ozone	1-hour	0.12 ppm ^c	0.09 ppm	0.109	0.139	0.098	0	1	0	3	3	1
	8-hour	0.075 ppm	0.070 ppm	0.090	0.100	0.080	3	2	1	6	5	1
Carbon Monoxide	1-hour	35 ppm	20 ppm	3	*	–	0	*	–	0	*	–
	8-hour	9 ppm	9.0 ppm	1.96	2.17	2.32	0	0	0	0	0	0
Sulfur Dioxide	24 hours	0.14 ppm	0.04 ppm	0.003	0.002	0.002	0	0	0	0	0	0
	Annual	0.030 ppm	none	0.000	0.000	0.000	0	0	0	–	–	–
Nitrogen Dioxide	1-hour	0.100 ppm	0.18 ppm	0.122	0.115	0.089	–	–	–	0	0	0
	Annual	0.053 ppm	0.030 ppm	0.027	0.028	0.025	0	0	0	0	0	0
PM ₁₀ ^d	24 hours	150 µg/m ^c	50 µg/m ^c	66.0	72.0	42.0	0	0	0	2	4	*
	Annual	Revoked	20 µg/m ^c	24.0	33.1	27.1	–	–	–	–	–	–
PM _{2.5}	24 hours	35 µg/m ^c	none	78.3	61.6	48.6	10	7	5	0	0	0
	Annual	15 µg/m ^c	12 µg/m ^c	16.0	14.4	12.6	–	–	–	–	–	–

Notes: “–” = data not available to applicable; “*” = insufficient data were available to determine the value

^{a.} Concentration units for ozone, carbon monoxide, and nitrogen dioxide are in parts per million (ppm). Concentration units for PM₁₀ and PM_{2.5} are in micrograms per cubic meter (µg/m³).

^{b.} For annual standards, a value of 1 indicates that the standard has been exceeded.

^{c.} The federal 1-hour ozone standard was revoked in June 2005.

^{d.} PM₁₀ data are recorded separately for federal and state purposes because the USEPA and California methods are slightly different. Federal values are shown. PM₁₀ is measured every six days; the number of days exceeding standards is projected to a 365-day base from the measurements.

Sources: California Air Resources Board, Air Quality Data Statistics. Available at www.arb.ca.gov/adam/welcome.html; and South Coast Air Quality Management District, Historical Data by Year. Available at <http://www.aqmd.gov/smog/historicaldata.htm>.

SENSITIVE RECEPTORS

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 groups include children, older adults, persons with preexisting respiratory or cardiovascular illnesses, and athletes and others who engage in frequent exercise. The South Coast Air Quality Management District (SCAQMD) identifies sensitive receptors as structures that house these groups or places where they gather.

The project site is surrounded by urban development, consisting of residences north of the project site, and commercial/industrial land uses to the east, south, and west of the project site. Air quality sensitive receptors near the project site include the following:

- Multi-family residences north of the project site

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- Cathedral High School, located approximately 200 feet northwest of the project site
- Pacific Alliance Medical Center, located approximately 1,000 feet southwest of the project site

3.2.2 REGULATORY SETTING

FEDERAL

Federal Clean Air Act

The USEPA has been charged with implementing and enforcing the Clean Air Act at the federal level. As required under Clean Air Act, the USEPA has established National Ambient Air Quality Standards for O₃, CO, NO₂, SO₂, PM₁₀, PM_{2.5}, and lead. The primary standards, which protect the public health, and secondary standards, which protect the public welfare, for these criteria air pollutants are identified in Table 3.2-2.

Both the California Air Resources Board (CARB) and the USEPA use this type of monitoring data to designate the attainment status of areas for criteria air pollutants. The purpose of these designations is to identify the areas with air quality problems and thereby initiate planning efforts for improvement. The three basic designation categories are nonattainment, attainment, and unclassified. Unclassified is used in an area that cannot be classified on the basis of available information as meeting or not meeting the standards. If an area is designated from nonattainment to attainment for a criteria air pollutant, it needs to demonstrate the maintenance of the redesignation through a maintenance plan. 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 classified as a federal nonattainment area for O₃ (extreme), PM₁₀ (serious), and the PM_{2.5} standard, and a federal attainment/maintenance area for CO. Additionally, the Basin is classified as a state nonattainment area for O₃, PM₁₀, and PM_{2.5}, and an attainment area for CO. The Basin currently meets the federal and state standards for NO₂, SO₂, and lead, and is classified as an attainment area for these pollutants.

The Clean Air Act also required each state to prepare and air quality control plan, referred to as a State Implementation Plan. The Clean Air Act Amendments of 1990 added requirements for states with nonattainment areas to revise their State Implementation Plans to incorporate additional control measures to reduce air pollution. The USEPA is responsible to reviewing all State Implementation Plans to determine whether they conform to the mandates for the Clean Air Act and its amendments, and to determine whether implementing the State Implementation Plans will achieve air quality goals. If the USEPA determines a State Implementation Plan to be inadequate, a federal implementation plan that imposes additional control measures may be prepared for the nonattainment area.

**TABLE 3.2-2
FEDERAL AND STATE AMBIENT AIR QUALITY STANDARDS**

Pollutant	Averaging Period	California		Federal	
		Standards	Attainment Status	Standards	Attainment Status
Ozone (O ₃)	1-hour	0.09 ppm (180 µg/m ³)	Nonattainment	--	--
	8-hour	0.070 ppm (137 µg/m ³)	n/a ^a	0.075 ppm (147 µg/m ³)	Nonattainment
Respirable Particulate Matter (PM ₁₀)	24-hour	50 µg/m ³	Nonattainment	150 µg/m ³	Nonattainment
	Annual Arithmetic Mean	20 µg/m ³	Nonattainment	--	--
Fine Particulate Matter (PM _{2.5})	24-hour	--	--	35 µg/m ³	Nonattainment
	Annual Arithmetic Mean	12 µg/m ³	Nonattainment	15.0 µg/m ³	Nonattainment
Carbon Monoxide (CO)	8-hour	9.0 ppm (10 mg/m ³)	Attainment	9 ppm (10 mg/m ³)	Unclassified ^b
	1-hour	20 ppm (23 mg/m ³)	Attainment	35 ppm (40 mg/m ³)	Unclassified ^b
Nitrogen Dioxide (NO ₂)	Annual Arithmetic Mean	0.030 ppm (57 µg/m ³)	Nonattainment	53 ppb (100 µg/m ³)	Unclassified ^b
	1-hour	0.18 ppm (338 µg/m ³)	Nonattainment	100 ppb (190 µg/m ³)	n/a ^a
Sulfur Dioxide (SO ₂)	24-hour	0.04 ppm (105 µg/m ³)	Attainment	--	--
	3-hour	--	--	--	--
	1-hour	0.25 ppm (655 µg/m ³)	Attainment	75 ppb (196 µg/m ³)	Attainment
Lead (Pb)	30-day average	1.5 µg/m ³	Nonattainment	--	--
	Calendar Quarter	--	--	0.15 µg/m ³	Attainment

^a. n/a = not available means that the attainment status has not been determined for these pollutants. This is not an official designation.

^b. Unclassified means the data are incomplete and do not support a designation of attainment or nonattainment. Unclassified is an official designation.

Source: CARB 2010.

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STATE

California Clean Air Act

CARB is responsible for administering the California Clean Air Act, which was adopted in 1988 and required CARB to establish California Ambient Air Quality Standards (see Table 3.2-2). In most cases, the CAAQS are more stringent than the corresponding National Ambient Air Quality Standards, partially due to fact that the CAAQS incorporate a margin of safety to protect sensitive individuals. The California Clean Air Act requires all local air districts in the state to achieve and maintain the California Ambient Air Quality Standards by the earliest practical date. The California Clean Air Act specifies that local air districts focus particular attention on reducing the emissions from transportation and area-wide emission sources, and provides districts with the authority to regulate indirect sources. Additionally, CARB establishes emissions standards for new mobile sources, consumer products, small utility engines, off-road vehicles, and fuels.

The California Clean Air Act requires CARB to designate areas within California as either attainment or nonattainment for each criteria pollutant based on whether the California Ambient Air Quality Standards have been achieved. Under the California Clean Air Act, areas are designated as nonattainment for a pollutant if air quality data shows that a state standard for the pollutant was violated at least once during the previous three calendar years. Exceedances that are affected by highly irregular or infrequent events are not considered violations of a state standard and are not used as a basis for designating areas as nonattainment. Under the California Clean Air Act, the Los Angeles County portion of the South Coast Air Basin is designated as a nonattainment area for O₃, PM_{2.5}, PM₁₀, NO₂, and lead.¹

1977 Lewis Air Quality Management Act

The 1977 Lewis Air Quality Management Act created the SCAQMD to coordinate air quality planning efforts throughout southern California. This act merged four county air pollution control agencies into one regional district to better address the issue of improving air quality in southern California. Under the act, renamed the Lewis-Presley Air Quality Management Act in 1988, the SCAQMD is the agency principally responsible for comprehensive air pollution control in the region. Specifically, the SCAQMD is responsible for monitoring air quality, as well as planning, implementing, and enforcing programs designed to attain and maintain state and federal ambient air quality standards in the district. Programs that were developed include air quality rules and regulations relating to stationary sources, area sources, point sources, and certain mobile source emissions. The SCAQMD is also responsible for establishing stationary source permitting requirements and for ensuring that new, modified, or relocated stationary sources do not create net emission increases.

¹ California Air Resources Board, Area Designations Maps, 2010 State Area Designations, available at: <http://www.arb.ca.gov/desig/adm/adm.htm>, accessed: April 4, 2011.

Air Quality Management Plan

All areas designated as nonattainment under the California Clean Air Act are required to prepare plans showing how the area will meet the state air quality standards by its attainment dates. The Air Quality Management Plan (AQMP) is the SCAQMD plan for improving regional air quality. It addresses Clean Air Act and California Clean Air Act requirements and demonstrates attainment with state and federal ambient air quality standards. The AQMP is prepared by SCAQMD and the Southern California Association of Governments (SCAG). The current AQMP was adopted by the SCAQMD on June 1, 2007. The AQMP provides policies and control measures that reduce emissions to attain both state and federal ambient air quality standards by their applicable deadlines. Environmental review of individual projects within the South Coast Air Basin must demonstrate that daily construction and operational emissions thresholds, as established by the SCAQMD, would not be exceeded. The environmental review must also demonstrate that individual projects would not increase the number or severity of existing air quality violations.

3.2.3 ENVIRONMENTAL IMPACTS

METHODOLOGY

Construction Emissions

The proposed project's construction-generated emissions of criteria air pollutants and O₃ precursors were assessed in accordance with methods recommended by the SCAQMD. Where quantification is required, emissions were modeled using the URBEMIS 2007 Version 9.2.4 computer program. URBEMIS was used to determine whether construction-related emissions of criteria air pollutants associated with the proposed project would exceed applicable thresholds and where mitigation would be required. URBEMIS modeling was based on project-specific data, when available. However, when project-specific information was not available, reasonable assumptions and default settings in URBEMIS were used to estimate criteria air pollutant and O₃ precursor emissions. A detailed list of modeling assumptions is provided in Appendix B of this EIR. Predicted construction-generated emissions were compared with applicable SCAQMD thresholds for determining significance.

At this time, SCAQMD has not adopted a methodology for analyzing short-term construction-related emissions of TACs and/or exposure to short-term construction-related TACs. Therefore, construction-related emissions of TACs were assessed in a qualitative manner.

Operational Emissions

The proposed project's operational emissions of criteria air pollutants and precursors, including mobile- and area-source emissions, were also quantified using the URBEMIS computer model. It was assumed that full buildout of the proposed project would occur in 2030 and the first phase of project improvements would be completed in 2014. Area-source emissions were modeled according to the size and type of on-site uses proposed under the proposed project. Mobile-source emissions were modeled based on the net

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increase in daily vehicle trips that would result from full buildout of the proposed project. Project trip generation rates were available from the transportation impacts analysis prepared for the project (see Appendix G of this EIR). Predicted project operational emissions were compared with applicable SCAQMD thresholds for determining significance.

The CARB Handbook provides guidance concerning land use compatibility with sources of TAC emissions according to guidance provided by the CARB Handbook. All other air quality impacts (i.e., local mobile-source emissions, exposure of sensitive receptors to TACs, and odorous emissions) were assessed in accordance with methodologies recommended by SCAQMD.

THRESHOLDS OF SIGNIFICANCE

In accordance with the CEQA Guidelines, the proposed project would have a significant impact 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;
- Expose sensitive receptors to substantial pollutant concentrations,
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region in nonattainment under an applicable NAAQS or CAAQS (including releasing emissions that exceed quantitative thresholds for O₃ precursors); or
- Create objectionable odors affecting a substantial number of people.

As stated in 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. SCAQMD has established thresholds, as shown below in Table 3.2-3.

**TABLE 3.2-3
SCAQMD AIR QUALITY SIGNIFICANCE THRESHOLDS**

Mass Daily Thresholds^a		
Pollutant	Construction^b	Operation^c
NO _x	100 lbs/day	55 lbs/day
VOC	75 lbs/day	55 lbs/day
PM ₁₀	150 lbs/day	150 lbs/day
PM _{2.5}	55 lbs/day	55 lbs/day
SO _x	150 lbs/day	150 lbs/day
CO	550 lbs/day	550 lbs/day
Lead	3 lbs/day	3 lbs/day

**TABLE 3.2-3
SCAQMD AIR QUALITY SIGNIFICANCE THRESHOLDS**

Toxic Air Contaminants and Odor Thresholds		
TACs (including carcinogens and noncarcinogens)	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)	
Odor	Project creates odor nuisance pursuant to SCCAQMD Rule 402	
Ambient Air Quality for Criteria Pollutants^d		
Pollutant	Averaging Time	Threshold
NO ₂	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards:	
	1-hour	0.18 ppm (state)
	Annual	0.03 ppm (state)
PM ₁₀	24-hour	10.4 $\mu\text{g}/\text{m}^3$ (construction) ^e
		2.5 $\mu\text{g}/\text{m}^3$ (operation)
	Annual	1.0 $\mu\text{g}/\text{m}^3$
PM _{2.5}	24-hour	10.4 $\mu\text{g}/\text{m}^3$ (construction) ^e
		2.5 $\mu\text{g}/\text{m}^3$ (operation)
Sulfate	24-hour	1 $\mu\text{g}/\text{m}^3$
CO	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards:	
	1-hour	20 ppm (state)
	8-hour	9.0 ppm (state/federal)

Notes: lbs/day = pounds per day; ppm = parts per million; $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter

^{a.} SCAQMD, *SCAQMD Air Quality Significance Thresholds*, available at: <http://www.aqmd.gov/CEQA/handbook/signthres.pdf>.

^{b.} Construction thresholds apply to both the South Coast Air Basin and Coachella Valley (Salton Sea Air Basin and Mojave Desert Air Basin).

^{c.} For Coachella Valley, the mass daily thresholds for operation are the same as the construction thresholds.

^{d.} Ambient air quality thresholds for criteria pollutants are based on SCAQMD Rule 1303, Table A-2 unless otherwise stated.

^{e.} Ambient air quality threshold is based on SCAQMD Rule 403.

IMPACT ANALYSIS

AIR-1 *The proposed project would not conflict with or obstruct implementation of the applicable air quality plan. The impact would be less than significant.*

The 2007 Air Quality Management Plan was prepared to accommodate growth, reduce the high levels of pollutants within the areas under the jurisdiction of the SCAQMD, and return clean air to the region. Projects that are considered to be consistent with the Air Quality Management Plan would not interfere with attainment, as this growth is included in the projections used to formulate the AQMP. In preparation of the Air Quality Management Plan, the SCAQMD and Southern California Association of Governments use land use designations contained in General Plan documents to forecast, inventory, and allocate

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regional emissions from land use and development-related sources. When analyzing consistency with the Air Quality Management Plan, it may be assumed that a proposed project generating substantially greater vehicle trips than anticipated in the General Plan would, consequently, conflict with the Air Quality Management Plan.

The project site is located within the Central City North Community Plan Area, as designated under the City's General Plan. The project site is currently designated for industrial land uses under the Community Plan and as such, the Air Quality Management Plan assumptions would assess the project site as an industrial use. The trip generation rates for industrial land uses are much higher than for open space and recreational uses, including a high percentage of heavy-duty truck traffic. Thus, the proposed project's trip generation rate would be lower than what has been assumed for the project site in the Air Quality Management Plan. Therefore, implementation of the proposed project would not conflict with air quality planning efforts in the South Coast Air Basin. Impacts related to consistency with the Air Quality Management Plan would be less than significant.

AIR-2 *The proposed project would not violate any air quality standard or contribute substantially to an existing or projected air quality violation. The impact would be less than significant.*

Construction

Construction emissions are considered short-term and temporary in duration, but still have the potential to represent a significant impact with respect to air quality. Construction emissions can vary greatly depending on the level of activity, the specific operations taking place, the number and types of equipment operated, local soil conditions, weather conditions, and the amount of earth disturbance (e.g., site grading, excavation, cut-and-fill).

Regional Impacts

The proposed project would be developed in phases. The first phase would allow the new park to become fully functional and lay the foundation for work deferred to future phases. It was assumed that buildout of the proposed project would likely begin with a revenue-generating project, such as the large amphitheater. Worst-case emissions were estimated for construction of the plaza areas, Welcome Station/restrooms, two driveways, parking and overflow parking to represent the maximum intensity of construction that could occur. Construction of these uses was assumed to overlap to account for the worst day for comparison with SCAQMD's daily thresholds. As such, the on-site uses analyzed represent the most construction-intensive development anticipated under the proposed project. It is anticipated that construction emissions associated with future phases would be less than or similar to those of the Phase 1 improvements.

Project-generated emissions were modeled based on information provided in Chapter 2.0, Project Description. Compliance with SCAQMD rules is required; specifically, it is assumed that the construction would be performed in accordance with Rule 403 - Fugitive Dust, and Rule 1113 -

Architectural Coatings. Therefore, emissions reductions consistent with those rules have been included in the estimate of construction emissions. Table 3.2-4 summarizes the modeled emissions for the proposed project's construction phases. Construction-related air quality impacts were determined by comparing these modeling emissions with applicable SCAQMD significance thresholds. Detailed modeling assumptions, input parameters, and results are included in Appendix B of this EIR.

TABLE 3.2-4
ESTIMATED CONSTRUCTION-RELATED DAILY EMISSIONS OF CRITERIA AIR POLLUTANTS
AND PRECURSORS (UNMITIGATED)

Phase (Year)	Emissions (lbs/day)				
	VOC	NO _x	CO	PM ₁₀	PM _{2.5}
Plaza Areas (2013)					
Mass Grading	2.80	23.27	12.98	20.86	4.75
Fine Grading	2.58	20.61	11.94	20.80	4.70
Welcome Station/Restrooms, Two Driveways, Parking (2011 & 2012)					
2013: Demolition	1.39	10.42	6.70	21.15	5.01
Grading ^a	2.80	23.27	12.98	20.86	4.75
Trenching	1.25	9.75	4.65	0.54	0.50
Construction ^b	2.70	9.34	32.03	0.93	0.75
Architectural Coating	4.87	0.00	0.04	0.00	0.00
2014: Asphalt Paving	5.08	44.91	22.83	2.20	2.01
Overflow Parking (2014)^c					
Grading	2.80	23.27	12.98	20.86	4.75
Construction	2.46	8.78	30.15	0.86	0.69
<i>Worst-Case Total Daily Emissions (Unmitigated) – 2013^d</i>	6.62	53.64	32.03	83.86	19.38
<i>Worst-Case Total Daily Emissions (Unmitigated) – 2014^d</i>	12.41	53.69	53.02	3.06	2.70
SCAQMD Significance Threshold	75	100	550	150	55
Exceeds Threshold?	No	No	No	No	No

Notes: Calculations assume compliance with SCAQMD Rules 403 and 1113.

^{a.} Includes grading for the plaza areas.

^{b.} Includes construction of the concrete sidewalk for the plaza areas.

^{c.} It was assumed that construction of the overflow parking would begin after construction of the other project components is completed.

^{d.} Worst-case totals may not be equal to the sum of applicable phases due to rounding.

Source: Data modeled by AECOM, 2011. Detailed assumptions and modeling output files are included in Appendix B of this EIR.

Based on the modeling conducted, the proposed project's construction-related activities would not result in criteria air pollutant and ozone precursor emissions that exceed SCAQMD's regional significance thresholds. As Phase 1 represents the most development-intense phase based on the uses anticipated on-site, worst-case daily emissions from construction of future phases would not be expected to exceed the

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emissions levels recorded in Table 3.2-4. Thus, construction-related emission of criteria air pollutants and ozone precursors would not violate or contribute substantially to an existing or projected air quality violation. Additionally, compliance with SCAQMD Rule 403 would ensure that on-site dust emissions would not be allowed to disperse beyond the project site boundaries. Therefore, regional construction-related emissions from the proposed project during all construction phases would be less than significant.

Operation

Regional Impacts

Operation of the proposed project would result in long-term regional emission of criteria air pollutants and ozone precursors associated with area sources such as landscaping, applications of architectural coatings, and consumer products, in addition to operational vehicle exhaust emissions. The proposed project is estimated to result in approximately 640 additional vehicle trips per day.²

Operations emissions were modeled using URBEMIS, as recommended by the SCAQMD. Modeled operations emissions for the proposed project are shown in Table 3.2-5.

**TABLE 3.2-5
ESTIMATED PROJECT-GENERATED OPERATIONS EMISSIONS**

Source	Emissions (lbs/day)				
	ROG	NO _x	CO	PM ₁₀	PM _{2.5}
Area Sources	0.12	0.02	1.55	0.01	0.01
Mobile Sources	1.87	2.13	19.46	10.02	1.94
<i>Total Emissions^a</i>	<i>1.87</i>	<i>2.13</i>	<i>21.01</i>	<i>10.03</i>	<i>1.95</i>
SCAQMD Significance Threshold	55	55	550	150	55
Exceeds Threshold?	No	No	No	No	No

Notes: Maximum daily emissions of ROG, NO_x, PM10, and PM2.5 occur in winter; maximum daily emissions of CO occur in summer. Total emissions shown are the maximum during a particular season and may not be a direct sum of area source and mobile source emissions.

^a Totals may not add up due to rounding.

Source: Data modeled by AECOM, 2011. Detailed assumptions and modeling output files are included in Appendix B to this EIR.

Based on the modeling conducted, and as summarized in Table 3.2-5, implementation of the proposed project would not result in long-term regional emissions of criteria air pollutants or ozone precursors that exceed the SCAQMD's daily thresholds. Operational area- and mobile-source emissions of criteria air pollutants and ozone precursors for the proposed project would not result in or substantially contribute to emissions concentrations that exceed the National Ambient Air Quality Standards or California Ambient Air Quality Standards. Therefore, impacts associated with regional operational emissions from the proposed project would be less than significant.

² *Transportation Impact Analysis for the Los Angeles State Historic Park Project*, prepared by Fehr & Peers, October 2011. The Transportation Impact Analysis is included as Appendix G to this EIR.

Special Events

With the implementation of the proposed project, the project site would continue to host special events that would attract individuals from outside of the immediate project area. As many as four daytime/evening/nighttime special events per year are expected with attendance of up to 25,000 people. Smaller events of 500 to 5,000 people are expected to occur monthly. Special events have the potential to impact air quality due to additional traffic from the increased number of visitors, as well as impacts resulting from fireworks displays.

Traffic-Related Impacts

As shown in Table 3.2-5 above, the proposed project's operational emissions are substantially lower than the SCAQMD's daily thresholds for regional pollutants. The smaller special events of 500 to 5,000 people would not increase vehicle trips to a level above average daily attendance that would cause an exceedance of the SCAQMD's thresholds. The occasional increase in congestion that may result from a large special event at the project site may require traffic mitigation through the implementation of improved traffic management through a traffic management plan. As discussed in Chapter 3.12, Transportation and Traffic, the traffic management plan is designed to minimize impacts related to the additional traffic generated by the special events related to the proposed project. The traffic management plan would include, for example, providing incentives for carpooling. Additionally, the project site is located in proximity to several transit lines, including the Metro Gold Line. It is anticipated that a large number of park visitors would walk, bike, carpool, or take mass transit to attend special events at the project site. Therefore, it is likely that not all of the estimated 25,000 park visitors would attend a special event using single occupancy vehicles. Furthermore, even if daily trips during a special event were 25 to 30 times the average daily trips generated at the project site, the SCAQMD's regional daily thresholds would not be exceeded. As such, traffic-related air quality impacts during special events would be less than significant.

Fireworks-Related Impacts

The SCAQMD prepared a White Paper on regulations affecting fireworks in the South Coast Air Basin. With respect to emissions from fireworks and pyrotechnic displays, Rule 401 – Visible Emissions and State Health and Safety Code 41701 prohibit a person from discharging into the atmosphere visible emissions from any single source for any period aggregating more than three minutes in any one hour, which are as dark or darker in shade as that designated Number 1 on the Ringelmann Chart, or of such opacity as to obscure an observer's view to a degree equal to or greater than smoke of 20 percent opacity. There is no exemption for fireworks or pyrotechnics displays contained in Rule 401. However, as summarized in the White Paper, although aerial and ground fireworks displays may include bursts of smoke from exploding pyrotechnic materials, it is difficult to properly apply the appropriate visible emissions evaluation method to the sources. The SCAQMD field inspectors have been unsuccessful in applying emissions evaluation methods due to the height and duration of emissions, their distance and angle from the plume, and the evening hours when the fireworks displays occur. As such, no violation of the SCAQMD Rule 401 has ever been established in the South Coast Air Basin due to fireworks displays.

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Therefore, emissions from fireworks would be instantaneous and intermittent and would not lead to, result in, or substantially contribute to emissions concentrations that exceed the National Ambient Air Quality Standards or California Ambient Air Quality Standards. The air quality impacts related to fireworks displays during special events would be less than significant.

Local Impacts

CO concentration is a direct function of motor vehicle activity (e.g., idling time and traffic flow conditions), particularly during peak commute hours, and meteorological conditions. Under specific meteorological conditions (e.g., stable conditions that result in poor dispersion), CO concentrations may reach unhealthy levels with respect to local sensitive land uses such as residential areas, schools, and hospitals. As a result, the SCAQMD recommends project analysis of CO emissions at the local and regional levels.

An appropriate qualitative screening procedure for localized CO concentrations is provided in the procedures and guidelines contained in *Transportation Project-Level Carbon Monoxide Protocol* (the Protocol) to determine whether a project poses the potential to create a CO hotspot. A CO hotspot is an area of localized CO pollution that is caused by severe vehicle congestion on major roadways, typically near intersections. According to the protocol, projects may worsen air quality if they increase the percentage of vehicles in cold start modes by two percent or more; significantly increase traffic volumes (by five percent or more) over existing volumes; or worsen traffic flow, defined for signalized intersections as increasing average delay at intersections operating a level of service (LOS) E or F or causing an intersection that would operate at LOS D or better without the project to operate at LOS E or F.

The Transportation Impact Analysis prepared for the proposed project (included as Appendix G to this EIR) indicates that all signalized intersections that were analyzed would operate at LOS C or better under 2035 cumulative conditions at full buildout of the proposed project. Additionally, the proposed project would not lead to a significant increase in traffic volumes or percentage of vehicles in cold start mode.³ Congestion during special events would be managed through the preparation of a traffic management plan. The Sacramento Metropolitan Air Quality Management District reports that CO hotspots are expected to occur at an intersection that experiences more than 31,600 vehicles per hour. Intersections affected by the proposed project are not anticipated to experience this level of traffic during a large special event. Thus, project-generated localized mobile-source CO emissions would not result in or substantially contribute to concentrations that exceed the 1-hour or 8-hour ambient air quality standards for CO. Therefore, local operational air quality impacts would be less than significant.

³ *Los Angeles State Historic Park Draft Transportation Impact Analysis*, prepared by Fehr & Peers, October 2011.

AIR-3 *The proposed project would not expose sensitive receptors to substantial pollutant concentrations. The impact would be less than significant.*

Construction

The proposed project would result in short-term emissions of diesel exhaust from heavy-duty construction equipment. Diesel PM was identified as a TAC by CARB in 1998. Construction activities would result in the generation of diesel PM emissions from the use of off-road diesel equipment required for site grading and excavation, construction, paving, and other construction activities. According to CARB, the potential cancer risk from the inhalation of diesel PM outweighs the potential non-cancer health impacts.

Emissions from construction equipment would be reduced over the period of buildout of the proposed project. In January 2001, USEPA promulgated a final rule to reduce emissions standards for heavy-duty diesel engines in 2007 and subsequent model years. These emissions standards represent a 90 percent reduction in NO_x emissions, 72 percent reduction of nonmethane hydrocarbon emissions, and 90 percent reduction of particulate matter emissions in comparison to the emissions standards for the 2004 model year. In December 2004, CARB adopted a fourth phase of emission standards (Tier 4) in the Clean Air Non-road Diesel Rule that are nearly identical to those finalized by USEPA on May 11, 2004. As such, engine manufacturers are now required to meet after-treatment-based exhaust standards for NO_x and particulate matter starting in 2011 that are more than 90 percent lower than current levels, putting emissions from off-road engines virtually on par with those from on-road heavy-duty diesel engines.

More specifically, the dose to which receptors are exposed (a function of concentration and duration of the exposure period) is the primary factor used to determine health risk (i.e., potential exposure to TAC emission levels that exceed applicable standards). According to the Office of Environmental Health Hazard Assessment, health risk assessments, which determine the exposure of sensitive receptors to TAC emissions, should be limited to the period/duration of activities associated with the project. Thus, because the use of off-road heavy-duty diesel equipment would be temporary, combined with the highly dispersive properties of diesel PM and further reductions in exhaust emissions due to USEPA and CARB regulations, and that construction-related activities would be similar to other typical development-type projects, construction-related TAC emissions would not expose sensitive receptors to substantial pollutant emissions. Impacts related to construction TAC emissions would be less than significant.

Operation

The proposed project would not involve the development of any major stationary or area sources of emissions on-site. Therefore, the proposed project would not expose sensitive receptors to substantial criteria pollutant concentrations.

The project site is located in proximity to several regional roadways including I-5, SR-110, I-10, and US 101. Implementation of the proposed project would develop a recreational use that would be frequented by sensitive receptors. In April 2005, CARB published a guidance document entitled *Air Quality and Land Use Handbook: A Community Health Perspective*, which includes the recommendation to avoid

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siting new sensitive land uses within 500 feet of freeways, urban roads with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day. The project site is not located within 500 feet of I-5, SR-110, I-10, or US 101. Additionally, the projected 2035 average daily traffic volumes on the roadways adjacent to the project site are less than CARB's specified criteria (refer to the Traffic Impact Analysis included as Appendix G of this EIR). There are no major stationary sources of criteria air pollutants or TACs located within two miles of the project site. The adjacent Metro Gold Line operates using electricity and would not expose sensitive receptors to criteria air pollutants or TACs. Thus, the location of the proposed sensitive uses would be in concurrence with CARB recommendations.

SCAQMD's White Paper on fireworks also reviewed the Disneyland Resort's AB 2588 Health Risk Assessment, which was updated in 1998 and in subsequent years to include all fireworks-related activities conducted at the resort. The 1998 and 2000 assessments indicated that the facility cancer risks and non-cancer hazard index values were well below any notification requirements of AB 2588 and the SCAQMD's threshold levels. The SCAQMD also conducted air sampling downwind of the Disneyland Resort during firework display activities in 2002. The samples showed no exceedance of the State's Reference Exposure Levels. The volume of fireworks displays and use of pyrotechnic materials at the proposed project is likely to be much lower and less frequent than those at the Disneyland Resort. As such, it is reasonable to assume that any fireworks displays at the project site would not exceed applicable cancer risks and non-cancer hazard index thresholds. Therefore, based on the findings in the CARB guidance document, it can be ascertained that the proposed project would not have the potential to expose sensitive receptors to TACs to an extent that health risks could result. Operational impacts would be less than significant.

AIR-4 *The proposed project would not 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. The impact would be less than significant.*

The proposed project would not exceed significance thresholds for any criteria pollutant during construction activities or operation of the proposed project. Additionally, the proposed project would not involve the development of any major stationary or area sources of emissions on-site, and would not expose sensitive receptors to substantial criteria pollutant concentrations. Furthermore, the proposed project would not expose sensitive receptors to TAC's at levels that could pose health risks. Thus, the proposed project would not result in a cumulatively considerable net increase of criteria pollutants. The impact would be less than significant.

AIR-5 *The proposed project would not create objectionable odors affecting a substantial number of people. The 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. Although offensive odors rarely cause any physical harm, they can be very unpleasant, leading to

considerable distress and often generating citizen complaints to local governments and regulatory agencies.

Construction

Construction activities associated with development of the proposed project could result in odorous emissions from diesel exhaust generated by construction equipment. However, construction activities are temporary in nature. Additionally, diesel exhaust is highly diffusive. As such, nearby receptors would not be affected by diesel exhaust odors associated with project construction activities. The construction impacts related to odors would be less than significant.

Operation

No common sources of nuisance odors, such as wastewater treatment facilities, waste-disposal facilities, or agricultural operations, are included as part of the proposed project. With regular maintenance, recreational land uses are typically not considered a major source of odors. As discussed, some events held at the project site may include fireworks displays. Odors generated during these fireworks displays would be temporary and would dissipate quickly. Thus, on-site operations would not expose sensitive receptors to objectionable odors. The operational impacts related to odors would be less than significant.

3.2.4 MITIGATION MEASURES

The proposed project would not exceed applicable significance thresholds and would not require mitigation measures. However, as mentioned in Chapter 2.0, Project Description, SCAQMD's Rule 403 for Best Available Control Measures and Rule 1113 would be implemented as part of the project. Compliance with these rules would ensure that the emissions of fugitive dust, including PM₁₀ and PM_{2.5}, as well as VOC, would be minimized.

3.2.5 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Impacts related to air quality would be less than significant without mitigation.

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