4.2 AIR QUALITY

This section discusses the potential short- and long-term air quality impacts of the Belmont Pool Revitalization Project (proposed Project). Specifically, this section addresses short-term impacts during construction, including fugitive dust and equipment emissions, and long-term emissions associated with vehicular travel and stationary equipment. The analysis presented in this section is based on calculations resulting from air quality modeling performed for the proposed Project. The air quality modeling results are presented in Appendix B.

Scoping Process

The City of Long Beach (City) distributed the first Notice of Preparation (NOP) for the Draft Environmental Impact Report (EIR) from April 18 to May 17, 2013. The City received three comment letters in response to the original NOP. One comment letter addressing Air Quality was received from the South Coast Air Quality Management District (SCAQMD) during the first public review period. Due to revisions in the Project Description, the City re-issued the NOP for the Draft EIR between April 9, 2014, and May 8, 2014. The City received five comment letters in response to the re-issued NOP during the public review period. The SCAQMD commented again during the second public review period with a letter that contained the same topics and comments. Both letters from the SCAQMD recommended that air quality impacts be analyzed using the *California Environmental Quality Act (CEQA) Air Quality Handbook* (April 1993) as guidance for the preparation of the air quality analysis and development of mitigation measures. It also stated that the EIR should analyze air quality impacts associated with all project phases and air pollutant sources, quantify emissions of particulate matter less than 2.5 microns in diameter ($PM_{2.5}$), calculate localized air quality impacts and compare to the localized significance thresholds (LSTs), and conduct a mobile health risk assessment (HRA).

4.2.1 Methodology

Evaluation of air quality impacts associated with a proposed commercial retail project included the following:

- Determination of the short-term construction air quality impacts
- Determination of the long-term air quality impacts resulting from emissions from vehicular traffic and stationary sources on off-site and on-site air quality-sensitive uses
- Determination of mitigation measures required to reduce short- and long-term air quality impacts from all sources

The SCAQMD's current guidelines, included in its *CEQA Air Quality Handbook* (April 1993), were adhered to in the assessment of potential short- and long-term air quality impacts of the proposed Project. However, the air quality models identified in the *CEQA Air Quality Handbook* are outdated; therefore, the current model, California Emissions Estimator Model (CalEEMod) Version 2013.2.2, was used to quantify the Project-related mobile and stationary source emissions. Intersection vehicle turn volumes were used in the California Department of Transportation (Caltrans) CALINE4 model to evaluate carbon monoxide (CO) impacts.

4.2.2 Existing Environmental Setting

The Project site is located in the City of Long Beach, which is part of the South Coast Air Basin (Basin) and is under the jurisdiction of SCAQMD.

Climate/Meteorology. Air quality in the planning area is affected not only by various emission sources (mobile, industry, etc.) but also by atmospheric conditions such as wind speed, wind direction, temperature, and rainfall, etc. The combination of topography, low mixing height, abundant sunshine, and emissions from the second largest urban area in the United States gives the Basin the worst air pollution problem in the nation.

Climate in the Basin is determined by its terrain and geographical location. The Basin is a coastal plain with connecting broad valleys and low hills. The Pacific Ocean forms the southwestern border, and high mountains surround the rest of the Basin, which lies in the semipermanent high-pressure zone of the eastern Pacific; the resulting climate is mild and tempered by cool ocean breezes. This climatological pattern is rarely interrupted; however, periods of extremely hot weather, winter storms, or Santa Ana wind conditions do occur.

The annual average temperature varies little throughout the Basin, ranging from the low to middle 60s, measured in degrees Fahrenheit (°F). With a more pronounced oceanic influence, coastal areas show less variability in annual minimum and maximum temperatures than inland areas. The climatological station closest to the site is the Long Beach Daugherty Field Station. The monthly average maximum temperature recorded at this station from 1949 to January 2015 ranged from 67.0°F in December to 83.9°F in August, with an annual average maximum of 74.2°F. The monthly average minimum temperature recorded at this station ranged from 45.3°F in December to 64.9°F in August, with an annual average minimum of 54.8°F. January is typically the coldest month, and August is typically the warmest month in this area of the Basin.

Most rainfall in the Basin occurs between November and April. Summer rainfall is minimal and is generally limited to scattered thundershowers in coastal regions and slightly heavier showers in the eastern portion of the Basin and along the coastal side of the mountains. The Long Beach Daugherty Field Station monitored precipitation from 1949 to January 2015, during which average monthly rainfall varied from 2.90 inches in February to 0.42 inch or less between May and October, with an annual total of 12.01 inches. Patterns in monthly and yearly rainfall totals are unpredictable due to fluctuations in the weather.

Although the Basin has a semiarid climate, air near the surface is generally moist because of the presence of a shallow marine layer. With very low average wind speeds, there is a limited capacity to disperse air contaminants horizontally. The dominant daily wind pattern is an onshore 8- to 12-mile–per-hour (mph) daytime breeze and an offshore 3 to 5 mph nighttime breeze. The typical wind flow pattern fluctuates only with occasional winter storms or strong northeasterly (Santa Ana) winds from the mountains and deserts northeast of the Basin. Summer wind flow patterns represent worst-case conditions because this is the period of higher temperatures and more sunlight, which results in ozone (O_3) formation.

During spring and early summer, pollution produced during any one day is typically blown out of the Basin through mountain passes or lifted by warm, vertical currents adjacent to mountain

slopes. Air contaminants can be transported 60 miles or more from the Basin by ocean air during the afternoons. From early fall to winter, the transport is less pronounced because of slower average wind speed and the appearance of drainage winds earlier in the day. During stagnant wind conditions, offshore drainage winds may begin by late afternoon. Pollutants remaining in the Basin are trapped and begin to accumulate during the night and the following morning. A low morning wind speed in pollutant source areas is an important indicator of air stagnation and the potential for buildup of primary air contaminants.

Temperature normally decreases with altitude, and a reversal of this atmospheric state, where temperature increases with altitude, is called an inversion. The height from the Earth to the inversion base is known as the mixing height. Persistent low inversions and cool coastal air tend to create morning fog and low stratus clouds. Cloudy days are less likely in the eastern portions of the Basin and are about 25 percent more likely along the coast. The vertical dispersion of air pollutants in the Basin is limited by temperature inversions in the atmosphere close to the Earth's surface.

Inversions are generally lower in the nighttime when the ground is cool than during daylight hours when the sun warms the ground and, in turn, the surface air layer. As this heating process continues, the temperature of the surface air layer approaches the temperature of the inversion base, causing heating along its lower edge. If enough warming takes place, the inversion layer becomes weak and opens up to allow the surface air layers to mix upward. This can be seen in the middle to late afternoon on a hot summer day when the smog appears to clear up suddenly. Winter inversions typically break earlier in the day, preventing excessive contaminant buildup.

The combination of stagnant wind conditions and low inversions produces the greatest pollutant concentrations. On days of no inversion or high wind speeds, ambient air pollutant concentrations are lowest. During periods of low inversions and low wind speeds, air pollutants generated in urbanized areas are transported predominantly onshore into Riverside and San Bernardino Counties. In the winter, the greatest pollution problem is accumulation of CO and nitrogen oxides (NO_X) due to extremely low inversions and air stagnation during the night and early morning hours. In the summer, the longer daylight hours and the brighter sunshine combine to cause a reaction between hydrocarbons and NO_X to form photochemical smog.

Air Pollution Constituents and Attainment Status. The Air Resources Board (ARB) coordinates and oversees both State and federal air pollution control programs in California. The ARB oversees activities of local air quality management agencies and maintains air quality monitoring stations throughout the State in conjunction with the Environmental Protection Agency (EPA) and local air districts. The ARB has divided the State into 15 air basins based on meteorological and topographical factors of air pollution. Data collected at these stations are used by the ARB and the EPA to classify air basins as "attainment", "nonattainment", "nonattainment-transitional", or "unclassified", based on air quality data for the most recent three calendar years compared with the Ambient Air Quality Standards (AAQS). "Nonattainment" areas are imposed with additional restrictions as required by the EPA. The air quality data are also used to monitor progress in attaining air quality standards.

Ozone. O_3 (smog) is formed by photochemical reactions between oxides of nitrogen and reactive organic gases rather than being directly emitted. Ozone is a pungent, colorless gas typical of Southern California smog. Elevated ozone concentrations result in reduced lung function, particularly during vigorous physical activity. This health problem is particularly acute in sensitive receptors such as the sick, the elderly, and young children. Ozone levels peak during summer and early fall. The entire Basin is designated as a "nonattainment" area for the State 1-hour and 8-hour ozone standards. The EPA has officially designated the status for most of the Basin regarding the 8-hour ozone standard as "extreme nonattainment," which means the Basin has until 2024 to attain the federal 8-hour O_3 standard.

Carbon Monoxide. CO is formed by the incomplete combustion of fossil fuels, almost entirely from automobiles. It is a colorless odorless gas that can cause dizziness, fatigue, and impairment to central nervous system functions. The entire Basin is in "attainment" for the State standards for CO. The Basin is designated as an "attainment/maintenance" area under the federal CO standards.

Nitrogen Oxides. Nitrogen dioxide (NO_2), a reddish-brown gas, and nitric oxide (NO), a colorless odorless gas, are formed from fuel combustion under high temperature or pressure. These compounds are referred to as nitrogen oxides, or NO_X. NO_X is a primary component of the photochemical smog reaction. It also contributes to other pollution problems, including a high concentration of fine particulate matter, poor visibility, and acid deposition (i.e., acid rain). NO_2 decreases lung function and may reduce resistance to infection. The entire Basin is designated as "nonattainment" for the State NO_2 standard and as an "attainment/ maintenance" area under the federal NO_2 standard.

Sulfur Dioxide. Sulfur dioxide (SO_2) is a colorless irritating gas formed primarily from incomplete combustion of fuels containing sulfur. Industrial facilities also contribute to gaseous SO_2 levels. SO_2 irritates the respiratory tract, can injure lung tissue when combined with fine particulate matter, and reduces visibility and the level of sunlight. The entire Basin is in "attainment" with both federal and State SO_2 standards.

Lead. Lead is found in old paints and coatings, plumbing, and a variety of other materials. Once in the blood stream, lead can cause damage to the brain, nervous system, and other body systems. Children are highly susceptible to the effects of lead. The Los Angeles County (County) portion of the Basin was redesignated as "nonattainment" for the State and federal standards for lead in 2010.

Particulate Matter. Particulate matter is the term used for a mixture of solid particles and liquid droplets found in the air. Coarse particles (particulate matter less than 10 microns in diameter [PM_{10}]), derive from a variety of sources, including windblown dust and grinding operations. Fuel combustion and resultant exhaust from power plants and diesel buses and trucks are primarily responsible for fine particle ($PM_{2.5}$) levels. Fine particles can also be

formed in the atmosphere through chemical reactions. PM_{10} can accumulate in the respiratory system and aggravate health problems such as asthma. The EPA's scientific review concluded that $PM_{2.5}$, which penetrates deeply into the lungs, is more likely than PM_{10} to contribute to the health effects listed in a number of recently published community epidemiological studies at concentrations that extend well below those allowed by the current PM_{10} standards. These health effects include increased hospital admissions, emergency room visits (primarily among the elderly and individuals with cardiopulmonary disease), and premature death; increased respiratory symptoms and disease (children and individuals with cardiopulmonary disease such as asthma); decreased lung function (particularly in children and individuals with asthma); and alterations in lung tissue and structure and in respiratory tract defense mechanisms. The Basin is designated a "nonattainment" area for the federal and State $PM_{2.5}$ standards and a "nonattainment" area for the State PM_{10} standard. The Basin was redesignated as "attainment/maintenance" for the federal PM_{10} standard in 2013.

Reactive Organic Compounds. Reactive organic compounds (ROCs; also known as reactive organic gases (ROGs) and volatile organic compounds [VOCs]) are formed from combustion of fuels and evaporation of organic solvents. ROCs are not defined criteria pollutants but are a prime component of the photochemical smog reaction. Consequently, ROCs accumulate in the atmosphere more quickly during the winter when sunlight is limited and photochemical reactions are slower. As they are not a criteria pollutant, there is no state or federal attainment status for ROGs.

Sulfates. Sulfates occur in combination with metal and/or hydrogen ions. In California, emissions of sulfur compounds occur primarily from the combustion of petroleum-derived fuels (e.g., gasoline and diesel fuel) that contain sulfur. This sulfur is oxidized to SO_2 during the combustion process and subsequently converted to sulfate compounds in the atmosphere. The conversion of SO_2 to sulfates takes place comparatively rapidly and completely in urban areas of California due to regional meteorological features. The entire Basin is in "attainment" for the State standard for sulfates.

Hydrogen Sulfide. Hydrogen sulfide (H_2S) is a colorless gas with the odor of rotten eggs. It is formed during bacterial decomposition of sulfur-containing organic substances. Also, it can be present in sewer gas and some natural gas and can be emitted as the result of geothermal energy exploitation. In 1984, an ARB committee concluded that the ambient standard for H_2S is adequate to protect public health and to significantly reduce odor annoyance. The entire Basin is "unclassified" for the State standard for H_2S.

Table 4.2.A lists the attainment status for criteria pollutants in the Basin.

Table 4.2.A: Attainment Status of Criteria Pollutants in the South Coast Air Basin

Pollutant	State	Federal
1-hour Ozone	Nonattainment	N/A
8-hour Ozone	Nonattainment	Extreme Nonattainment
PM_{10}	Nonattainment	Attainment/Maintenance
$PM_{2.5}$	Nonattainment	Nonattainment
CO	Attainment	Attainment/Maintenance
NO_2	Nonattainment	Attainment/Maintenance
SO_2	Attainment	Attainment
Lead	Nonattainment (Los Angeles County only)	Nonattainment (Los Angeles County only)
All others	Attainment/Unclassified	Attainment/Unclassified

Source: California Air Resources Board (2016) (Website: http://www.arb.ca.gov/desig/desig.htm).
CO = carbon monoxide
N/A = not available
NO_2 = nitrogen dioxide
$PM_{2.5}$ = particulate matter less than 2.5 microns in diameter
PM_{10} = particulate matter less than 10 microns in diameter
SO_2 = sulfur dioxide

Visibility-Reducing Particles. Visibility-reducing particles consist of suspended particulate matter, which is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size, and chemical composition, and can be made up of many different materials such as metals, soot, soil, dust, and salt. The statewide standard is intended to limit the frequency and severity of visibility impairment due to regional haze. The entire Basin is "unclassified" for the State standard for visibility-reducing particles.

Health Effects. Table 4.2.B lists the health effects of the criteria pollutants and their potential sources. Because the State and federal concentration standards were set at levels that protect public health with an adequate margin of safety, these health effects will not occur unless the standards are exceeded by a large margin or for a prolonged period of time.

Regional Air Quality. Both the State of California and the federal government have established health-based AAQS for the criteria air pollutants described previously. As previously discussed, areas that meet AAQSs are classified as "attainment" areas, while areas that do not meet these standards are classified as "nonattainment" areas.

Local Air Quality. The SCAQMD, together with the ARB, maintains ambient air quality monitoring stations in the Basin. The air quality monitoring station closest to the project site is the Long Beach East Pacific Coast Highway Station at 2425 Webster Street. This station is approximately 3 miles to the northwest of the Project site, and its air quality trends are representative of the ambient air quality in the project area. The pollutants monitored at this station are CO, O_3, PM_{10}, NO_2, and SO_2. The closest station that monitors $PM_{2.5}$ is the North Long Beach Station, located approximately 5 miles to the north-northwest of the Project site. The ambient air quality data monitored at these two stations within the past 3 years is listed in Table 4.2.C.

Table 4.2.B: Health Effects Summary of Some of the Major Criteria Air Pollutants

Pollutant	Health Effects	Examples of Sources
Particulate Matter (PM_{10}: less than or equal to 10 microns)	• Increased respiratory disease • Lung damage • Premature death	• Cars and trucks, especially diesels • Fireplaces, wood stoves • Windblown dust from roadways, agriculture, and construction
Ozone (O_3)	• Breathing difficulties • Lung damage	Formed by chemical reactions of air pollutants in the presence of sunlight; common sources are motor vehicles, industries, and consumer products
Carbon Monoxide (CO)	• Chest pain in heart patients • Headaches, nausea • Reduced mental alertness • Death at very high levels	Any source that burns fuel such as cars, trucks, construction and farming equipment, and residential heaters and stoves
Nitrogen Dioxide (NO_2)	Lung damage	See carbon monoxide sources
Toxic Air Contaminants	• Cancer • Chronic eye, lung, or skin irritation • Neurological and reproductive disorders	• Cars and trucks, especially diesels • Industrial sources such as chrome platers • Neighborhood businesses such as dry cleaners and service stations • Building materials and products

Source: California Air Resources Board (2005).

Table 4.2.C: Ambient Air Quality Monitored at the Long Beach Stations

Pollutant	Standard		2012	2013	2014
Carbon Monoxide (CO) (2012 from North Long Beach, 2013 & 2014 from 2425 Webster Street)					
Maximum 1-hour concentration (ppm)			4.2	4.1	3.7
Number of days exceeded:	State: > 20 ppm		0	0	0
	Federal: > 35 ppm		0	0	0
Maximum 8-hour concentration (ppm)			2.57	2.6	2.6
Number of days exceeded:	State: ≥ 9.0 ppm		0	0	0
	Federal: ≥ 9 ppm		0	0	0
Ozone (O_3) (2425 Webster Street)					
Maximum 1-hour concentration (ppm)			0.080	0.090	0.087
Number of days exceeded:	State: > 0.09 ppm		0	0	0
Maximum 8-hour concentration (ppm)			0.067	0.070	0.072
Number of days exceeded:	State: > 0.07 ppm		0	0	1
	Federal: > 0.075 ppm		0	0	0
Coarse Particulates (PM_{10}) (2012 & 2013 from North Long Beach, 2014 from 2425 Webster Street)					
Maximum 24-hour concentration (µg/m^3)			45	37	84
Number of days exceeded:	State: > 50 µg/m^3		0	0	3
	Federal: > 150 µg/m^3		0	0	0
Annual arithmetic average concentration (µg/m^3)			23.2	N/A	29.5
Exceeded for the year:	State: > 20 µg/m^3		Yes	N/A	Yes
Fine Particulates ($PM_{2.5}$) (North Long Beach)					
Maximum 24-hour concentration (µg/m^3)			49.8	47.2	51.5
Number of days exceeded:	Federal: > 35 µg/m^3		4	2	2
Annual arithmetic average concentration (µg/m^3)			10.6	10.9	11.0
Exceeded for the year:	State: > 12 µg/m^3		No	No	No
	Federal: > 15 µg/m^3		No	No	No
Nitrogen Dioxide (NO_2) (2425 Webster Street)					
Maximum 1-hour concentration (ppm)			0.077	0.082	0.136
Number of days exceeded:	State: > 0.18 ppm		0	0	0
	Federal: > 0.10 ppm		0	0	2
Annual arithmetic average concentration (ppm)			0.020	0.036	0.036
Exceeded for the year:	State: > 0.030 ppm		No	Yes	Yes
	Federal: > 0.053 ppm		No	No	No
Sulfur Dioxide (SO_2) (2425 Webster Street)					
Maximum 24-hour concentration (ppm)			0.003	0.001	0.003
Number of days exceeded:	State: > 0.04 ppm		0	0	0
Maximum 1-hour concentration (ppm)			0.004	0.003	0.015
Number of days exceeded:	State: > 0.25 ppm		No	No	No
	Federal: > 0.075 ppm		No	No	No

Sources: United States Environmental Protection Agency. Website: http://www.epa.gov/airdata/ad_maps.html; and California Air Resources Board. Website: www.arb.ca.gov/adam/welcome.html.
µg/m^3 = micrograms per cubic meter
ARB = California Air Resources Board
EPA = United States Environmental Protection Agency
N/A = not available
ppm = parts per million

The ambient air quality data in Table 4.2.C show that SO_2 and CO levels are below the relevant State and federal standards. The State 8-hour O_3 standards were exceeded once in 2014. The State 24-hour PM_{10} standard was exceeded three times in 2014, but has not exceeded the federal 24-hour standard. The federal 24-hour $PM_{2.5}$ standard was exceeded from 2 to 4 times per year during the last 3 years. The federal 1-hour NO_2 standard was exceeded twice in 2014.

4.2.3 Regulatory Setting

Federal Regulations and Standards. Pursuant to the federal Clean Air Act (CAA) of 1970, the EPA established national ambient air quality standards (NAAQS). The NAAQS were established for six major pollutants termed "criteria" pollutants. Criteria pollutants are defined as those pollutants for which the federal and State governments have established AAQS, or criteria, for outdoor concentrations in order to protect public health. The NAAQS are shown in Table 4.2.D.

Data collected at permanent monitoring stations are used by the EPA to classify regions as "attainment" or "nonattainment," depending on whether the regions met the requirements stated in the primary NAAQS. "Nonattainment" areas are imposed with additional restrictions as required by the EPA.

The EPA has designated the Southern California Association of Governments (SCAG) as the Metropolitan Planning Organization (MPO) responsible for ensuring compliance with the requirements of the CAA for the Basin.

The EPA established new national air quality standards for ground-level ozone and fine particulate matter in 1997. On May 14, 1999, the Court of Appeals for the District of Columbia Circuit issued a decision ruling that the CAA, as applied in setting the new public health standards for ozone and particulate matter, was unconstitutional as an improper delegation of legislative authority to the EPA. On February 27, 2001, the United States Supreme Court upheld the way the government sets air quality standards under the CAA. The Court unanimously rejected industry arguments that the EPA must consider financial costs as well as health benefits in writing standards. The justices also rejected arguments that the EPA took too much lawmaking power from Congress when it set tougher standards for ozone and soot in 1997. Nevertheless, the court dismissed the EPA's policy for implementing new ozone rules, saying that the agency ignored a section of the law that restricts its authority to enforce such rules.

In April 2003, the EPA was cleared by the White House Office of Management and Budget (OMB) to implement the 8-hour ground-level ozone standard. The EPA issued the proposed rule implementing the 8-hour ozone standard in April 2003. The EPA completed final 8-hour "nonattainment" status on April 15, 2004. The EPA revoked the 1-hour ozone standard on June 15, 2005, and lowered the 8-hour O_3 standard from 0.08 parts per million (ppm) to 0.075 ppm on April 1, 2008.

The EPA issued the final $PM_{2.5}$ implementation rule in fall 2004. The EPA lowered the 24-hour $PM_{2.5}$ standard from 65 to 35 micrograms per cubic meter ($\mu g/m^3$) and revoked the annual PM_{10} standard on December 17, 2006. The EPA issued final designations for the 2006 24-hour $PM_{2.5}$ standard on December 12, 2008.

Table 4.2.D: Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[1]		Federal Standards[2]		
		Concentration[3]	Method[4]	Primary[3,5]	Secondary[3,6]	Method[7]
Ozone (O_3)	1-Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	--	Same as Primary Standard	Ultraviolet Photometry
	8-Hour	0.070 ppm (137 µg/m^3)		0.070 ppm (137 µg/m^3)		
Respirable Particulate Matter (PM_{10})[8]	24-Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m^3		--		
Fine Particulate Matter ($PM_{2.5}$)[8]	24-Hour	No Separate State Standard		35 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	12.0 µg/m^3	15.0 µg/m^3	
Carbon Monoxide (CO)	8-Hour	9.0 ppm (10 mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m^3)	None	Non-Dispersive Infrared Photometry (NDIR)
	1-Hour	20 ppm (23 mg/m^3)		35 ppm (40 mg/m^3)		
	8-Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		—	—	—
Nitrogen Dioxide (NO_2)[9]	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)	Gas Phase Chemiluminescence	0.053 ppm (100 µg/m^3)	Same as Primary Standard	Gas Phase Chemiluminescence
	1-Hour	0.18 ppm (339 µg/m^3)		100 ppb (188 µg/m^3)	—	
Sulfur Dioxide (SO_2)[10]	Annual Arithmetic Mean	—	Ultraviolet Fluorescence	0.030 ppm (for certain areas)[10]	—	Ultraviolet Fluorescence; Spectrophotometry (Pararosaniline Method)
	24-Hour	0.04 ppm (105 µg/m^3)		0.14 ppm (for certain areas)[10]	—	
	3-Hour	—		—	0.5 ppm (1300 µg/m^3)	
	1-Hour	0.25 ppm (655 µg/m^3)		75 ppb (196 µg/m^3)	—	
Lead[11,12]	30-Day Average	1.5 µg/m^3	Atomic Absorption	—	—	High-Volume Sampler and Atomic Absorption
	Calendar Quarter	—		1.5 µg/m^3 (for certain areas)[12]	Same as Primary Standard	
	Rolling 3-Month Average[11]	—		0.15 µg/m^3		
Visibility-Reducing Particles[13]	8-Hour	See footnote 13	Beta Attenuation and Transmittance through Filter Tape	No Federal Standards		
Sulfates	24-Hour	25 µg/m^3	Ion Chromatography			
Hydrogen Sulfide	1-Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride[11]	24-Hour	0.01 ppm (26 µg/m^3)	Gas Chromatography			

Source: California Air Resources Board (October 1, 2015).
Footnotes:

1 California standards for ozone; carbon monoxide (except Lake Tahoe); sulfur dioxide (1- and 24-hour); nitrogen dioxide; suspended 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.

2 National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once per year. The ozone standard is attained when the fourth-highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. For PM_{10}, the 24-hour

standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard. Contact the EPA for further clarification and current federal policies.

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

[4] Any equivalent procedure which can be shown to the satisfaction of ARB to give equivalent results at or near the level of the air quality standard may be used.

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

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

[7] Reference method as described by the EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the EPA.

[8] On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 µg/m^3 to 12 µg/m^3. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 µg/m^3, as was the annual secondary standard of 15. The existing 24-hour PM_{10} standards (primary and secondary) of 150 µg/m^3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

[9] To attain the 1-hour standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum 1-hour average at each monitor within an area must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (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.

[10] On June 2, 2010, the 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.
Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard, the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

[11] The ARB 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.

[12] 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.

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

°C = degrees Celsius
ARB = California Air Resources Board
EPA = United States Environmental Protection Agency
µg/m^3 = micrograms per cubic meter
mg/m^3 = milligrams per cubic meter
ppm = parts per million
ppb = parts per billion

State Regulations and Standards. In 1967, the California Legislature passed the Mulford-Carrell Act, which combined two Department of Health bureaus: the Bureau of Air Sanitation and the Motor Vehicle Pollution Control Board, in order to establish ARB. Since its formation, ARB has worked with the public, the business sector, and local governments to find solutions to California's air pollution problems.

The ARB identified particulate emissions from diesel-fueled engines (diesel particulate matter [DPM]) as toxic air contaminants (TACs) in August 1998. Following the identification process, ARB was required by law to determine whether there is a need for further control. In September 2000, the ARB adopted the Diesel Risk Reduction Plan (Diesel RRP), which recommends many control measures to reduce the risks associated with DPM and to achieve the goal of 85 percent DPM reduction by 2020.

California Green Building Code. California Green Buildings Standards Code (Cal Green Code) (California Code of Regulations [CCR], Title 24, Part 11) was adopted by the California Building Standards Commission in 2010 and became effective in January 2011. The Code applies to all new constructed residential, nonresidential, commercial, mixed-use, and State-owned facilities, as well as schools and hospitals. Cal Green Code is comprised of Mandatory Residential and Nonresidential Measures and more stringent Voluntary Measures (TIERs I and II).

Mandatory Measures are required to be implemented on all new construction projects and consist of a wide array of green measures concerning project site design, water use reduction, improvement of indoor air quality, and conservation of materials and resources. The Cal Green Code refers to Title 24, Part 6, compliance with respect to energy efficiency; however, it encourages 15 percent energy use reduction over that required in Part 6. Voluntary Measures are optional, more stringent measures that may be used by jurisdictions that strive to enhance their commitment towards green and sustainable design and achievement of Assembly Bill (AB) 32 goals. Under TIERs I and II, all new construction projects are required to reduce energy consumption by 15 percent and 30 percent, respectively, below the baseline required under the California Energy Commission (CEC), as well as implement more stringent green measures than those required by mandatory code.

Local Regulations and Policies.

There are a number of local regulations and policies related to air quality, as described below.

Regional Air Quality Planning Framework. The 1976 Lewis Air Quality Management Act established the SCAQMD and other air districts throughout the State. The federal CAA Amendments of 1977 required that each state adopt an implementation plan outlining pollution control measures to attain the federal standards in nonattainment areas of the state.

The ARB is responsible for incorporating air quality management plans for local air basins into a State Implementation Plan (SIP) for EPA approval. Significant authority for air quality control

within the local air basins has been given to local air districts that regulate stationary source emissions and develop local nonattainment plans.

Regional Air Quality Management Plan. The SCAQMD and the SCAG are responsible for formulating and implementing the Air Quality Management Plan (AQMP) for the Basin. Every 3 years, the SCAQMD prepares a new AQMP, updating the previous plan and having a 20-year horizon. The SCAQMD adopted the 2012 AQMP in December 2012. The ARB approved it on January 23, 2013, and forwarded it to the EPA for review and approval. The 2012 AQMP incorporates the latest scientific and technological information and planning assumptions, including the 2012 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) and updated emission inventory methodologies for various source categories. The 2012 AQMP included the new and changing federal requirements, the implementation of new technology measures, and continued development of economically sound, flexible compliance approaches.

City of Long Beach General Plan. The Air Quality Element (1996) of the City's General Plan includes goals and polices related to air quality. The following goals and policies are applicable to the proposed Project:

Goal 6: Minimize particulate emissions from the construction and operation of roads and buildings, from mobile sources, and from the transportation, handling and storage materials.

Policy 6.1: *Control Dust.* Further reduce particulate emissions from roads, parking lots, construction sites, unpaved alleys, and port operations and related uses.

Goal 7: Reduce emissions through reduced energy consumption.

Policy 7.1: *Energy Conservation.* Reduce energy consumption through conservation improvements and requirements.

4.2.4 Impact Significance Criteria

The thresholds for impacts related to air quality used in this analysis are consistent with Appendix G of the *State CEQA Guidelines*. The proposed Project may be deemed to have a significant impact with respect to air quality if it would:

Threshold 4.2.1: Conflict with or obstruct implementation of the applicable air quality plan;

Threshold 4.2.2: Violate any air quality standard or contribute substantially to an existing or projected air quality violation;

Threshold 4.2.3: **Result in a cumulative 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 O_3 precursors);**

Threshold 4.2.4: **Expose sensitive receptors to substantial pollutant concentrations; or**

Threshold 4.2.5: **Create objectionable odors affecting a substantial number of people.**

The Initial Study (IS)/NOP prepared for the proposed Project identified potential significant adverse impacts related to a potential conflict with air quality plans, violation of air quality standards, cumulatively considerable increase of criteria pollutants, and exposure of sensitive receptors to substantial air quality pollutant concentrations. Although the proposed Project would result in temporary odors associated with construction equipment (i.e., diesel-powered equipment and asphalt paving), these impacts would be temporary and would not result in long-term odor impacts. The proposed Project may also result in the generation of odors related to food service. These odors are not anticipated to be objectionable and would not result in permanent impacts related to odors on adjacent sensitive users. Therefore, impacts related to Project-generated odors (Threshold 4.2.5) will not be discussed further in this EIR. Refer to Appendix A, IS/NOP, for additional discussion.

California Environmental Quality Act (CEQA) Baseline. At the time the NOP was issued, the Project site contained both the Belmont Pool facilities and the outdoor temporary pool (opened in December 2013 to provide swimming facilities while the permanent facility was under construction). Although the site contained the former Belmont Pool building at the time of the NOP, the facility was subsequently demolished in February 2015 to alleviate an imminent public safety threat due to the seismically unsafe condition of the building.

The inclusion of the former pool building in the assessment of air quality impacts is appropriate because the former facility was present on the site for approximately 45 years and represents the historic uses of the site and the historic air quality conditions of the site. The substantial evidence of recent historical use supports the determination that utilizing the Belmont Pool building as the baseline for air quality impacts is appropriate.

SCAQMD Criteria. In addition to the federal and State AAQS, there are daily and quarterly emissions thresholds for construction and operation of a proposed project in the Basin. The Basin is administered by the SCAQMD, and guidelines and emissions thresholds established by the SCAQMD in its *CEQA Air Quality Handbook* (1993) are used in the air quality analysis (Appendix B). The emission thresholds were established based on the "attainment" status of the air basin in regard to air quality standards for specific criteria pollutants. Because the concentration standards were set at a level that protects public health with an adequate margin of safety (EPA), these emission thresholds are regarded as conservative and would overstate an individual project's contribution to health risks.

Thresholds for Construction Emissions. The following CEQA significance thresholds for construction emissions have been established for the Basin:

- 75 pounds per day (lbs/day) of ROCs
- 100 lbs/day of NO_X
- 550 lbs/day of CO
- 150 lbs/day of PM_{10}
- 55 lbs/day of $PM_{2.5}$
- 150 lbs/day of sulfur oxides (SO_X)

Projects in the Basin with construction-related emissions that exceed any of the emission thresholds are considered to be significant short-term adverse air quality impacts under the SCAQMD guidelines and under CEQA.

Thresholds for Operational Emissions. The daily operational emissions significance thresholds established for the Basin by the SCAQMD are as follows.

Emission Thresholds for Pollutants with Regional Effects. Projects with operation-related emissions that exceed any of the emission thresholds listed below are considered significant under SCAQMD guidelines.

- 55 lbs/day of ROCs
- 55 lbs/day of NO_X
- 550 lbs/day of CO
- 150 lbs/day of PM10
- 55 lbs/day of $PM_{2.5}$
- 150 lbs/day of SO_X

Local Microscale Concentration Standards. The significance of localized project impacts under CEQA depends on whether ambient CO levels in the vicinity of the project are above or below State and federal CO standards. If ambient levels are below the standards, a project is considered to have a significant impact if project emissions result in an exceedance of one or more of these standards. If ambient levels already exceed a State or federal standard, project emissions are considered significant if they increase 1-hour CO concentrations by 1.0 ppm or more or 8-hour CO concentrations by 0.45 ppm or more. The following are applicable local emission concentration standards for CO:

- California State 1-hour CO standard of 20.0 ppm
- California State 8-hour CO standard of 9.0 ppm

Localized Significance Thresholds. For this Project, the appropriate Source Receptor Area (SRA) for Localized Significance Thresholds (LST) is South Coastal Los Angeles County, according to the SRA/City Table on the SCAQMD LST website.[1] The Project site is approximately 5 acres. The sensitive land uses within the vicinity of the proposed Project include the existing Belmont Shores Children's Center (Preschool/Child Care) facility located within 25 feet (ft) from the northern Project construction boundary, residences across East Ocean Boulevard to the northeast located approximately 100 ft from the northern Project construction boundary, and residences across Termino Avenue to the northwest located approximately 80 ft from the western Project construction boundary. According to the LST guidelines, the shortest distance that can be used is 25 meters (m) (82 ft). Therefore, the following thresholds apply for this Project.

Construction thresholds for a 5-acre site:

- 123 lbs/day of NO_X at 25 m
- 1,530 lbs/day of CO at 25 m
- 14 lbs/day of PM_{10} at 25 m
- 8 lbs/day of $PM_{2.5}$ at 25 m

Operational thresholds for a 5-acre site:

- 123 lbs/day of NO_X at 25 m
- 1,530 lbs/day of CO at 25 m
- 4 lbs/day of PM_{10} at 25 m
- 2 lbs/day of $PM_{2.5}$ at 25 m

4.2.5 Project Impacts

Air pollutant emissions associated with the proposed Project would occur over the short term from construction activities such as fugitive dust from site preparation and grading, and emissions from equipment exhaust. There would be long-term regional emissions associated with Project-related vehicular trips and stationary source emissions such as natural gas used for heating.

Threshold 4.2.1: Would the project conflict with or obstruct implementation of the applicable air quality plan?

Less than Significant Impact. An AQMP describes air pollution control strategies to be taken by a city, county, or region classified as a "nonattainment" area. The main purpose of an AQMP is to bring the area into compliance with federal and State air quality standards. CEQA requires that certain proposed projects be analyzed for consistency with the AQMP. For a project to be

[1] South Coast Air Quality Management District. Website: www.aqmd.gov/ceqa/handbook/LST/LST.html.

consistent with the AQMP adopted by the SCAQMD, the pollutants emitted from the project should not exceed the SCAQMD daily threshold or cause a significant impact on air quality, or the project must already have been included in the AQMP projection. However, if feasible mitigation measures are implemented and shown to reduce the impact level from significant to less than significant, a project may be deemed consistent with the AQMP. The AQMP uses the assumptions and projections of local planning agencies to determine control strategies for regional compliance status. Since the AQMP is based on local General Plans, projects that are deemed consistent with the General Plan are found to be consistent with the AQMP. As described below, the proposed Project would not result in significant operational air quality impacts, contribute to an ozone exceedance at a nearby monitoring station, or cause the area to be inconsistent with the regional AQMP. Furthermore, because the proposed Project does not require a General Plan Amendment and is consistent with the site's current General Plan land use designation, emissions associated with the proposed Project are not anticipated to exceed the General Plan projections or contribute to air quality deterioration beyond SCAQMD projects. Therefore, the proposed Project would be consistent with the General Plan and the Final 2012 AQMP, and no mitigation is required.

General Plan Air Quality Element Policy Analysis. The City's General Plan Air Quality Element (1996) includes goals and policies related to air quality that apply to the proposed Project. As specified in Standard Conditions 4.2.1 and 4.2.2., the proposed Project would be required to adhere to a variety of measures aimed at controlling dust during Project construction, consistent with General Plan Air Quality Element Policy 6.1, which states that it is a policy of the City to "further reduce particulate emissions from roads, parking lots, construction sites, unpaved alleys, and port operations and related uses."

The stationary source emissions from the proposed land uses would come primarily from consumption of natural gas and electricity. As described in Chapter 3.0, Project Description, the proposed Project would implement a variety of Conservation and Sustainability features aimed at reducing energy consumption. Additionally, the proposed Project would be built to meet Leadership in Energy and Environmental Design (LEED) Gold (or higher) certification standards. Several proposed design features would be implemented to assist in reaching the LEED certification through reducing water and energy consumption. Examples of some of the proposed pool features include the use of energy-efficient pumping equipment, the low-water filtration system, the direct fire heating system, the light-emitting diode pool lighting, pool blankets, and the thermal solar heating system. Incorporation of these features would minimize pollution and reduce source emissions consistent with General Plan Air Quality Element Policy 7.1. Furthermore, the proposed Project would be compliant with all Mandatory Measures outlined in the Cal Green Code aimed at the improvement of air quality. Therefore, because the proposed Project would be consistent with the City's General Plan Air Quality Element, the Cal Green Code, and the Final 2012 AQMP, the proposed Project would have a less than significant impact related to conflict with applicable goals and policies established in the City's General Plan Air Quality Element, and no mitigation would be required.

Threshold 4.2.2: Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Less than Significant Impact.

Construction. Construction activities produce combustion emissions from various sources such as utility engines, on-site heavy-duty construction vehicles, equipment hauling materials to and from the site, and motor vehicles transporting the construction crew. Exhaust emissions from construction activities envisioned on site would vary daily as construction activity levels change. The use of construction equipment on the site would result in localized exhaust emissions.

Equipment Exhaust and Related Construction Activities. The most recent version of the CalEEMod model (Version 2013.2.2) was used to calculate the construction emissions, as shown in Table 4.2.E. These emissions are the combination of the on- and off-site emissions. Compliance with SCAQMD Rules, including Rule 403, has been included in the calculations of construction emissions. The emissions rates shown in Table 4.2.E are from the CalEEMod output tables listed as "Mitigated Construction," even though the only measures that have been applied to the analysis are the required construction emissions control measures (see Standard Conditions 4.2.1 and 4.2.2). As shown in Table 4.2.E, with incorporation of these SCAQMD Rules and emission control measures, construction emissions would not exceed any of the SCAQMD's thresholds.

Table 4.2.E: Short-Term Regional Construction Emissions

	Total Regional Pollutant Emissions (lbs/day)							
Construction Phase	**ROC**	**NO_X**	**CO**	**SO_X**	**Fugitive PM_{10}**	**Exhaust PM_{10}**	**Fugitive $PM_{2.5}$**	**Exhaust $PM_{2.5}$**
Demolition	4.3	45	37	0.050	1.2	2.2	0.23	2.0
Site Preparation	4.9	52	40	0.042	7.2	2.8	3.9	2.5
Grading	3.7	39	28	0.039	2.9	2.1	1.4	1.9
Building Construction	3.5	28	23	0.039	0.72	1.8	0.19	1.7
Architectural Coating	37	2.1	2.4	0.0045	0.12	0.15	0.033	0.15
Paving	1.9	17	15	0.024	0.17	0.94	0.045	0.86
Peak Daily Emissions	**41**	**52**	**40**	**0.05**	**10**		**6.4**	
SCAQMD Thresholds	**75**	**100**	**550**	**150**	**150**		**55**	
Significant Emissions?	**No**	**No**	**No**	**No**	**No**		**No**	

Source: LSA Associates, Inc. (March 2016).
CO = carbon monoxide
CO_2e = carbon dioxide equivalent
lbs/day = pounds per day
NO_X = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
ROC = reactive organic compounds
SCAQMD = South Coast Air Quality Management District
SO_X = sulfur oxides

Fugitive Dust. Fugitive dust emissions are generally associated with land clearing, exposure, and cut-and-fill operations. Dust generated daily during construction would vary substantially, depending on the level of activity, the specific operations, and weather conditions. Nearby sensitive receptors and on-site workers may be exposed to blowing dust, depending upon prevailing wind conditions. Fugitive dust would also be generated as construction equipment or trucks travel on unpaved areas of the construction site. The PM_{10} and $PM_{2.5}$ emissions are included in construction emissions listed in Table 4.2.E. As shown, the emissions would not exceed the SCAQMD's thresholds. Although no mitigation is required for these constituents, the proposed Project would comply with SCAQMD Standard Condition 4.2.2 and Rule 403 to control fugitive dust.

Operation. Long-term air pollutant emission impacts are those associated with stationary sources and mobile sources involving any project-related changes. The proposed Project would increase the size of the on-site pools. The stationary source emissions would come from many sources, including the use of consumer products, landscape equipment, general energy, and solid waste. Based on trip generation factors (LSA Associates, Inc. [LSA], March 2016), long-term operational emissions associated with the existing land uses and the proposed Project, calculated with the CalEEMod model, are shown in Table 4.2.F. Area sources include architectural coatings, consumer products, and landscaping. Energy sources include natural gas consumption for heating. Table 4.2.F shows that the increase of all criteria pollutants would not exceed the corresponding SCAQMD daily emission thresholds for any criteria pollutants. Therefore, Project-related long-term air quality impacts would be less than significant, and no mitigation is required.

Table 4.2.F: Long-Term Regional Operational Emissions

Source	Pollutant Emissions (lbs/day)					
	ROC	**NO_X**	**CO**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Existing Land Use						
Area Sources	6.4	0.00007	0.0072	0	0.00003	0.00003
Energy Sources	0.029	0.27	0.22	0.0016	0.02	0.02
Mobile Sources	3.4	7.8	32	0.063	4.3	1.2
Total	9.8	8.1	32	0.065	4.3	1.2
Proposed Development						
Area Sources	3.3	0.00013	0.014	0	0.00005	0.00005
Energy Sources	0.070	0.63	0.53	0.0038	0.048	0.048
Mobile Sources	7.1	17	67	0.18	12	3.4
Total	**10**	**18**	**68**	**0.18**	**12**	**3.4**
Net Increase	0.2	9.9	36	0.12	7.7	2.2
SCAQMD Thresholds	**55**	**55**	**550**	**150**	**150**	**55**
Significant?	**No**	**No**	**No**	**No**	**No**	**No**

Source: LSA Associates, Inc. (March 2016).
CO = carbon monoxide
lbs/day = pounds per day
NO_x = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
ROCs = reactive organic compounds
SCAQMD = South Coast Air Quality Management District
SO_x = sulfur oxides

Threshold 4.2.3: Would the project result in a cumulative 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 O_3 precursors)?

Less than Significant Impact. As discussed above, projected construction, operational, and LST emissions of criteria pollutants as a result of the proposed Project are expected to be below the emissions thresholds established for the region. Cumulative emissions are part of the emission inventory included in the AQMP for the Project area. Therefore, there would be no cumulatively considerable net increase of the criteria pollutants that are in "nonattainment" status in the Basin, and Project impacts would have a less than significant impact; no mitigation is required.

Threshold 4.2.4: Would the project expose sensitive receptors to substantial pollutant concentrations?

Less than Significant Impact.

Localized Construction Emissions. Construction activities associated with the proposed Project would result in air quality impacts from various sources, such as soil disturbance and equipment exhaust. Based on equipment-specific grading rates provided by the SCAQMD, the proposed Project could result in the maximum disturbance of the entire Project site on any 1 day during the grading phase. The following analysis was performed in accordance with the *SCAQMD Final Localized Significance Threshold* (LST) *Methodology* (June 2003). The sensitive land uses within the vicinity of the proposed Project include the existing Belmont Shores Children's Center (Preschool/Child Care) facility located within 25 feet of the northern boundary of the Project site, residences approximately 80 ft to the west, and residences across East Ocean Boulevard approximately 100 ft to the northeast of the Project site.

The closest sensitive receptors to the various construction phases are located within the shortest distance allowed in the LST Guidelines (25 m [82 ft]) and, therefore, LST values for 25 m were used. Table 4.2.G shows the construction-related emissions of NO_X, CO, PM_{10}, and $PM_{2.5}$ compared to the LSTs for South Coastal Los Angeles County at distances of 25 m.

Table 4.2.G: Summary of Construction Emissions, Localized Significance

Construction Activity	Emission Rates (lbs/day)			
	NO_X	**CO**	**PM_{10}**	**$PM_{2.5}$**
Construction Equipment	52	39	9.8	6.4
Localized Significance Threshold (at 25 m)	**123**	**1,530**	**14**	**8.0**
Exceed Significance?	**No**	**No**	**No**	**No**

Source: LSA Associates, Inc. (March 2016).
CO = carbon monoxide
lbs/day = pounds per day
m = meters
NO_X = nitrogen oxides
PM_{10} = particulate matter less than 10 microns in diameter
$PM_{2.5}$ = particulate matte less than 2.5 microns in diameter

Fugitive dust emissions would occur during construction of the proposed Project as a result of demolition, grading, and the exposure of soils to the air and wind. The SCAQMD has established a fugitive dust emissions threshold of 14 lbs/day. To reduce fugitive dust emissions, the Project would be required to comply with SCAQMD Standard Conditions and Rule 403, as specified in Standard Conditions 4.2.1 and 4.2.2. As shown in Table 4.2.G, fugitive dust emissions would be 9.8 lbs/day for PM_{10} and 6.4 lbs/day for $PM_{2.5}$. These emissions would be below the SCAQMD's thresholds of 14 lbs/day for $PM_{2.5}$ and 8.0 lbs/day for $PM_{2.5}$. Therefore, with implementation of Standard Conditions 4.2.1 and 4.2.2, no significant impacts to sensitive receptors related to fugitive dust during Project construction would occur.

As previously stated, CalEEMOD (Version 2013.2.2) was also used to calculate construction emissions for CO and NO_X. As shown in Table 4.2.G, CO and NO_X emissions during construction would not exceed SCAQMD thresholds. Therefore, the Project construction would result in less than significant air quality impacts related to CO and NO_X emissions, and no mitigation is required.

Localized Operational Emissions. As previously stated, long-term operational criteria pollutant emission impacts are those associated with stationary and mobile sources. Table 4.2.H shows the calculated emissions for the proposed operational activities compared with the appropriate localized significance thresholds. The emissions shown include all stationary sources and 5 percent of the mobile sources, which is an estimate of the amount of Project-related vehicle traffic that would occur on site.

Table 4.2.H: Summary of Operational Localized Significance

	Emission Rates (lbs/day)			
	NO_X	**CO**	**PM_{10}**	**$PM_{2.5}$**
Proposed Project	0.85	3.4	0.60	0.17
Localized Significance Threshold	**123**	**1,530**	**4.0**	**2.0**
Exceed Significance?	**No**	**No**	**No**	**No**

Source: LSA Associates, Inc. (March 2016).
CO = carbon monoxide
lbs/day = pounds per day
NO_X = nitrogen oxides
PM_{10} = particulate matter less than 10 microns in diameter
$PM_{2.5}$ = particulate matte less than 2.5 microns in diameter

Table 4.2.H shows that the maximum emissions from Project operation would not cause or contribute to an exceedance of the most stringent applicable federal or State AAQS. Therefore, operation of the proposed Project would not result in a significant impact on local air quality related to CO, NO_X, or other criteria pollutants, and would not expose sensitive receptors to substantial pollutant concentrations. No mitigation would be required.

Long-Term Microscale (CO Hot-Spot) Analysis. The primary mobile source pollutant of local concern is CO, which is a direct function of vehicle idling time and, thus, traffic flow conditions. CO transport is extremely limited; it disperses rapidly with distance from the source under normal meteorological conditions. However, under certain extreme

meteorological conditions, CO concentrations proximate to a congested roadway or intersection may reach unhealthful levels affecting local sensitive receptors (residents, school children, the elderly, and hospital patients, etc.). Typically, high CO concentrations are associated with roadways or intersections operating at unacceptable levels of service (LOS) or with extremely high traffic volumes. In areas with high ambient background CO concentrations, modeling is recommended to determine a project's effect on local CO levels.

As shown in Table 4.2.C, the proposed Project is located within an area with low background CO concentrations. In addition, a traffic evaluation (LSA, March 2016) determined that the intersections within the Project area would operate at an LOS of A, B, or C, all within the City's limit of satisfactory operations. Because the intersections evaluated for the proposed Project would not be congested, and because the Project area has low background CO levels, the likelihood for CO concentrations to reach unhealthful levels is low. Therefore, the proposed Project would not have a significant impact on local air quality for CO, and no mitigation measures would be required.

4.2.6 Cumulative Impacts

The cumulative study area for air quality analysis is the Basin, and air quality conformance is overseen by the SCAQMD. Each project in the Basin is required to comply with SCAQMD rules and regulations. The proposed Project would not result in significant operational air quality impacts, contribute to an O_3 exceedance at a nearby monitoring station, cause the area to be in noncompliance with the AQMP, or result in a significant health risk for any of the analyzed pollutants. As described further in Section 4.12, Transportation and Traffic, there would not be a significant cumulative traffic impact, and so there would not be a cumulative traffic emissions impact. Therefore, the proposed Project air quality emissions, when considered in combination with the cumulative projects within the Project vicinity would be incremental and would not result in cumulatively considerable impacts.

4.2.7 Level of Significance Prior to Mitigation

The following air quality impacts are less than significant and do not require mitigation: (1) consistency with air quality plans, (2) operational emissions, (3) criteria pollutants, and (4) exposure of sensitive receptors to substantial pollutant concentrations. However, to further reduce fugitive dust emissions, the proposed Project would be required to comply with SCAQMD Rule 402 and 403, as specified in Standard Conditions 4.2.1 and 4.2.2.

4.2.8 Standard Conditions

Applicable dust suppression techniques from SCAQMD's *CEQA Air Quality Handbook* and Rule 403 measures are summarized below. Implementation of these dust suppression techniques would reduce fugitive dust generation. Compliance with these rules would reduce impacts from fugitive dust on nearby sensitive receptors.

Standard Condition 4.2.1: **Construction Emissions.** The proposed Project is required to comply with regional rules that assist in reducing short-term air pollutant emissions. The South Coast Air Quality Management District (SCAQMD) Rule 403 requires that fugitive dust be controlled with best available control measures so that the presence of such dust does not remain visible in the atmosphere beyond the property line of the emission source. In addition, SCAQMD Rule 402 requires implementation of dust suppression techniques to prevent fugitive dust from creating a nuisance off site. Applicable dust suppression techniques from Rules 403 and 402 are summarized below. Implementation of these dust suppression techniques can reduce the fugitive dust generation (and thus the particulate matter less than 10 microns in diameter [PM_{10}] component).

Standard Condition 4.2.2: **Applicable Rules 403 and 402 Measures.** The Project construction contractor shall develop and implement dust-control methods that shall achieve this control level in a SCAQMD Rule 403 dust control plan, designate personnel to monitor the dust control program, and order increased watering, as necessary, to ensure a 55 percent control level. Those duties shall include holiday and weekend periods when work may not be in progress. Additional control measures to reduce fugitive dust shall include, but are not limited to, the following:

- Apply water twice daily, or nontoxic soil stabilizers according to manufacturers' specifications, to all unpaved parking or staging areas or unpaved road surfaces or as needed to areas where soil is disturbed.
- Use low-sulfur fuel for stationary construction equipment. This is required by SCAQMD Rules 431.1 and 431.2.
- During earthmoving or excavation operations, fugitive dust emissions shall be controlled by regular watering or other dust-preventive measures using the following procedures:
  - All material excavated shall be sufficiently watered to prevent excessive amounts of dust. Watering, with complete coverage, shall occur at least twice daily, preferably in the late morning and after work is done for the day.
  - All earthmoving or excavation activities shall cease during periods of high winds (i.e., winds greater than 20 miles per hour [mph] averaged over 1 hour).
  - All material transported off site shall be either sufficiently watered or securely covered to prevent excessive amounts of dust.

- The area disturbed by earthmoving or excavation operations shall be minimized at all times.
  - After earthmoving or excavation operations, fugitive dust emissions shall be controlled using the following measures:
    - Portions of the construction area to remain inactive longer than a period of 3 months shall be revegetated and watered until cover is grown.
    - All active portions of the construction site shall be watered to prevent excessive amounts of dust.
  - At all times, fugitive dust emissions shall be controlled using the following procedures:
    - On-site vehicle speed shall be limited to 15 mph.
    - Road improvements shall be paved as soon as feasible, watered periodically, or chemically stabilized.
  - At all times during the construction phase, ozone precursor emissions from mobile equipment shall be controlled using the following procedures:
    - Equipment engines shall be maintained in good condition and in proper tune according to manufacturers' specifications.
    - On-site mobile equipment shall not be left idling for a period longer than 60 seconds.
  - Outdoor storage piles of construction materials shall be kept covered, watered, or otherwise chemically stabilized with a chemical wetting agent to minimize fugitive dust emissions and wind erosion.

4.2.9 Level of Significance after Mitigation

There are no significant air quality impacts; therefore, no mitigation measures are required. However, implementation of Standard Conditions 4.2.1 and 4.2.2 would minimize the proposed Project's fugitive dust impacts to air quality. With adherence to these Standard Conditions, there would be no significant and unavoidable impacts of the proposed Project related to Air Quality.