4.1 Air Quality

4.1.1 Methodology

This section describes the existing conditions of the Arroyo Seco Canyon Project (ASCP) Areas 2 and 3 (Project/proposed Project) site and vicinity, identifies associated regulatory requirements, evaluates potential impacts, and identifies mitigation measures related to implementation of the proposed Project. The analysis of the Project impacts related to air quality is based on:

Appendix C CalEEMod Data, February 2020.

Although not a part of the proposed Project, there are specific components in Area 2 that are approved to move forward without additional environmental review that are included in this EIR section and in the California Emissions Estimator Model (CalEEMod) construction assumptions. The improvements to be conducted in Area 2, which have been previously approved to proceed in accordance with the 2015 ASCP MND, include:

1. Removal of existing K-rails along an approximate 150-foot-long segment of the Gabrielino Trail/Access Road between Bridge No. 3 and the intake structure;
2. Stabilization and repaving of the Gabrielino Trail/Access Road with asphalt and would be sloped to direct surface runoff away from the stream towards the hillside; and,

These non-Project improvements are included in the CalEEMod assumptions because their construction is anticipated to occur simultaneously with the proposed Project improvements, likely using the same equipment. As such, it was determined to be unrealistic to parse out the short-term construction activities of the various Project components; therefore, the air quality impacts of constructing all improvements within Area 2 are considered in this section.

Similarly, although not a part of the proposed Project, there are specific components in Area 3 that are approved to move forward without additional environmental review that are included in this EIR section and in the CalEEMod construction assumptions. The improvements to be conducted in Area 3, which have been previously approved to proceed in accordance with the 2015 ASCP MND, include:

1. Demolition of various facilities, including inlet/outlet structures, dry vaults, woodsheds, utility light pole, pipes and valves, chainlink fencing, corrugated metal pipes, and other small appurtenant structures, to allow for the reconstructed basins;
2. Construction and operation of new pre-fabricated restroom, new sewer lift station, and associated pipelines, including a new 12-inch-diameter potable water pipeline and a new sewer line within the JPL Bridge;
3. Construction and operation of new pipelines, including a 12-inch-diameter well line, 16-inch-diameter utility service line, and 12-inch-diameter booster line;
4. Removal of the Behner WTP's influent and effluent lines and removal of the 8-inch-diameter sludge line from the Behner WTP;
5. Construction and operation of the recreational parking lot at the northern end of Area 3;

6. Construction/realignment and operation of Explorer Road; and
7. Construction of new fencing, gates, a roundabout, a guard station, a trail pathway, and signs at the northern end of the parking lot.

Additional details related to these non-Project components are included in Appendix A-3, 2015 ASCP Initial Study/Mitigated Negative Declaration.

The non-Project components within Areas 2 and 3 listed above were previously approved for both short-term construction and long-term operations. Only the short-term construction activities for these non-Project components are modeled in the CalEEMod analysis, as all operational aspects were approved through the 2015 IS/MND and there would be no changes associated with the long-term operations of the proposed Project when compared to the 2015 IS/MND, as further described in Section 3, Project Description, of this Draft EIR.

Comments received in response to the Notice of Preparation (NOP) are summarized in Table 1, Notice of Preparation and Scoping Comment Letters Summary, included in Section 1, Introduction of this Draft EIR. A copy of the NOP and Initial Study is included in Appendix A-1, and the comment letters received in response to the NOP are included in Appendix A-2 of this Draft EIR.

4.1.2 Existing Conditions

The Project site is located within the South Coast Air Basin (SCAB). SCAB is a 6,745-square-mile area bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. SCAB includes Orange County, Los Angeles County (except the Antelope Valley portion), and the western, non-desert portions of San Bernardino and Riverside Counties.

Meteorological and Topographical Conditions

The primary factors that determine air quality are the locations of air pollutant sources and the amount of pollutants emitted. Meteorological and topographical conditions, however, are also important. Factors such as wind speed and direction, air temperature gradients and sunlight, and precipitation and humidity interact with physical landscape features to determine the movement and dispersal of air pollutants. SCAB's air pollution problems are a consequence of the combination of emissions from the nation's second largest urban area, meteorological conditions discouraging dispersion of those emissions, and mountainous terrain surrounding SCAB that traps pollutants as they are pushed inland by the sea breeze (SCAQMD 2017a). The meteorological and topographical factors affecting air quality in SCAB are described in the following subsections.[1]

Climate

SCAB is characterized as having a Mediterranean climate (typified as semiarid with mild winters, warm summers, and moderate rainfall). The general region lies in the semi-permanent high-pressure zone of the eastern Pacific; as a result, the climate is mild and tempered by cool sea breezes. The usually mild climatological pattern is interrupted

[1] The discussion of meteorological and topographical conditions of SCAB is based on information provided in the Final 2016 Air Quality Management Plan (SCAQMD 2017a).

infrequently by periods of extremely hot weather, winter storms, or Santa Ana winds. The extent and severity of the air pollution problem in SCAB is a function of the area's natural physical characteristics (e.g., weather and topography) and of manufactured influences (e.g., development patterns and lifestyle). Moderate temperatures, comfortable humidity, and limited precipitation characterize the climate in SCAB. The average annual temperature varies little, averaging 75°F; however, with a less-pronounced oceanic influence, the eastern inland portions of SCAB show greater variability in annual minimum and maximum temperatures, and all portions have recorded temperatures over 100°F in recent years. Although SCAB has a semiarid climate, the air near the surface is moist because of the presence of a shallow marine layer. Except for infrequent periods when dry air is brought into SCAB by offshore winds, the ocean effect is dominant. Periods with heavy fog are frequent, and low stratus clouds, occasionally referred to as "high fog," are a characteristic climate feature. Annual average relative humidity is 70% at the coast and 57% in the eastern part of SCAB. Precipitation is typically 9–14 inches annually and is rarely in the form of snow or hail because of typically warm weather. The frequency and amount of rainfall is greater in the coastal areas of SCAB.

The greatest precipitation in the City occurs from November to March, during which time the rainfall averages 2–4 inches per month. The average annual precipitation is 20.24 inches. The City has a mild climate with an annual average temperature of 72°F. The coolest months of the year are typically January and February, with an annual average low of 38.8°F. The warmest months are typically July through September, with an annual average high of 78°F. Prevailing wind direction in the City (as measured in Pasadena approximately 4.3 miles southwest of the site) is from the west and north (WRCC 2016).

Sunlight

The presence and intensity of sunlight are necessary prerequisites for the formation of photochemical smog. Under the influence of the ultraviolet radiation of sunlight, certain "primary" pollutants (mainly reactive hydrocarbons and oxides of nitrogen (NO_x)[2]) react to form "secondary" pollutants (primarily oxidants). Since this process is time dependent, secondary pollutants can be formed many miles downwind of the emission sources. Southern California also has abundant sunshine, which drives the photochemical reactions that form pollutants such as ozone (O_3) and a substantial portion of fine particulate matter (particulate matter less than or equal to 2.5 microns in diameter ($PM_{2.5}$)). In SCAB, high concentrations of O_3 are normally recorded during the late spring, summer, and early autumn months, when more intense sunlight drives enhanced photochemical reactions. Due to the prevailing daytime winds and time-delayed nature of photochemical smog, oxidant concentrations are highest in the inland areas of Southern California.

Temperature Inversions

Under ideal meteorological conditions and irrespective of topography, pollutants emitted into the air mix and disperse into the upper atmosphere. However, the Southern California region frequently experiences temperature inversions in which pollutants are trapped and accumulate close to the ground. The inversion, a layer of warm, dry air overlaying cool, moist marine air, is a normal condition in coastal Southern California. The cool, damp, and hazy sea air capped by coastal clouds is heavier than the warm, clear air, which acts as a lid through which the cooler marine layer cannot rise. The height of the inversion is important in determining pollutant concentration. When the inversion is

[2] NO_x is a general term pertaining to compounds of nitric oxide (NO), nitrogen dioxide (NO_2) and other oxides of nitrogen.

approximately 2,500 feet above mean sea level, the sea breezes carry the pollutants inland to escape over the mountain slopes or through the passes. At a height of 1,200 feet above mean sea level, the terrain prevents the pollutants from entering the upper atmosphere, resulting in the pollutants settling in the foothill communities. Below 1,200 feet above mean sea level, the inversion puts a tight lid on pollutants, concentrating them in a shallow layer over the entire coastal basin. Usually, inversions are lower before sunrise than during the daylight hours.

Mixing heights for inversions are lower in the summer, and inversions are more persistent, being partly responsible for the high levels of O_3 observed during summer months in SCAB. Smog in Southern California is generally the result of these temperature inversions combining with coastal day winds and local mountains to contain the pollutants for long periods, allowing them to form secondary pollutants by reacting in the presence of sunlight. SCAB has a limited ability to disperse these pollutants due to typically low wind speeds and the surrounding mountain ranges.

As with other cities within SCAB, the City of Los Angeles is susceptible to air inversions, which trap a layer of stagnant air near the ground where pollutants are further concentrated. These inversions produce haziness, which is caused by moisture, suspended dust, and a variety of chemical aerosols emitted by trucks, automobiles, furnaces, and other sources. Elevated particulate matter less than or equal to 10 microns in diameter (PM_{10}) and $PM_{2.5}$ concentrations can occur in SCAB throughout the year, but occur most frequently in fall and winter. Although there are some changes in emissions by day-of-week and season, the observed variations in pollutant concentrations are primarily the result of seasonal differences in weather conditions.

Pollutants and Effects

Criteria Air Pollutants

Criteria air pollutants are defined as pollutants for which the federal and state governments have established ambient air quality standards, or criteria, for outdoor concentrations to protect public health. The federal and state standards have been set (pursuant to the federal and state Clean Air Acts, which are discussed in the following pages), with an adequate margin of safety, 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 O_3, nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), PM_{10}, $PM_{2.5}$, and lead (Pb). These pollutants, as well as toxic air contaminants (TACs), are discussed in the following paragraphs.[3] In California, sulfates, vinyl chloride, hydrogen sulfide, and visibility-reducing particles are also regulated as criteria air pollutants. A more detailed discussion of health effects of criteria air pollutants is provided in Appendix C.

Ozone. O_3 is a strong-smelling, pale blue, reactive, toxic chemical gas consisting of three oxygen atoms. It is a secondary pollutant formed in the atmosphere by a photochemical process involving the sun's energy and O_3 precursors. These precursors are mainly NO_X and volatile organic compounds (VOCs). The maximum effects of precursor emissions on O_3 concentrations usually occur several hours after they are emitted and many miles from the source. Meteorology and terrain play major roles in O_3 formation, and ideal conditions occur during

[3] The descriptions of each of the criteria air pollutants and associated health effects are based on the EPA's Criteria Air Pollutants (2016a) and the CARB Glossary of Air Pollutant Terms (2016a).

summer and early autumn on days with low wind speeds or stagnant air, warm temperatures, and cloudless skies. O_3 exists in the upper atmosphere O_3 layer (stratospheric ozone) and at Earth's surface in the lower atmosphere (tropospheric ozone).[4] The O_3 that the U.S. Environmental Protection Agency (EPA) and the California Air Resources Board (CARB) regulate as a criteria air pollutant is produced close to the ground level, where people live, exercise, and breathe. Ground-level O_3 is a harmful air pollutant that causes numerous adverse health effects and is thus considered "bad" O_3. Stratospheric, or "good," O_3 occurs naturally in the upper atmosphere, where it reduces the amount of ultraviolet light (i.e., solar radiation) entering Earth's atmosphere. Without the protection of the beneficial stratospheric O_3 layer, plant and animal life would be seriously harmed.

O_3 in the troposphere causes numerous adverse health effects; short-term exposures (lasting for a few hours) to O_3 at levels typically observed in Southern California can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes (EPA 2013). These health problems are particularly acute in sensitive receptors such as the sick, the elderly, and young children.

Nitrogen Dioxide. NO_2 is a brownish, highly reactive gas that is present in all urban atmospheres. The major mechanism for the formation of NO_2 in the atmosphere is the oxidation of the primary air pollutant nitric oxide (NO), which is a colorless, odorless gas. NO_x plays a major role, together with VOCs, in the atmospheric reactions that produce O_3. NO_x is formed from fuel combustion under high temperature or pressure. In addition, NO_x is an important precursor to acid rain and may affect both terrestrial and aquatic ecosystems. The two major emissions sources are transportation and stationary fuel combustion sources such as electric utility and industrial boilers.

NO_2 can irritate the lungs, cause bronchitis and pneumonia, and lower resistance to respiratory infections (EPA 2016).

Carbon Monoxide. CO is a colorless, odorless gas formed by the incomplete combustion of hydrocarbon, or 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 City of Los Angeles, transportation accounts for the majority of CO emissions. CO is a nonreactive air pollutant that dissipates relatively quickly; therefore, ambient CO concentrations generally follow the spatial and temporal distributions of vehicular traffic. CO concentrations are influenced by local meteorological conditions—primarily wind speed, topography, and atmospheric stability. CO from motor vehicle exhaust can become locally concentrated when surface-based temperature inversions are combined with calm atmospheric conditions, which is a typical situation at dusk in urban areas from November to February. The highest levels of CO typically occur during the colder months of the year, when inversion conditions are more frequent.

In terms of adverse health effects, CO competes with oxygen, often replacing it in the blood, reducing the blood's ability to transport oxygen to vital organs. The results of excess CO exposure can include dizziness, fatigue, and impairment of central nervous system functions.

[4] The troposphere is the layer of Earth's atmosphere nearest to the surface of Earth, extending outward approximately 5 miles at the poles and approximately 10 miles at the equator.

Sulfur Dioxide. SO_2 is a colorless, pungent gas formed primarily from incomplete combustion of sulfur-containing fossil fuels. The main sources of SO_2 are coal and oil used in power plants and industries; as such, the highest levels of SO_2 are generally found near large industrial complexes. In recent years, SO_2 concentrations have been reduced by the increasingly stringent controls placed on stationary source emissions of SO_2 and limits on the sulfur content of fuels.

SO_2 is an irritant gas that attacks the throat and lungs and can cause acute respiratory symptoms and diminished ventilator function in children. When combined with particulate matter, SO_2 can injure lung tissue and reduce visibility and the level of sunlight. SO_2 can also yellow plant leaves and erode iron and steel.

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 can form when gases emitted from industries and motor vehicles undergo chemical reactions in the atmosphere. $PM_{2.5}$ and PM_{10} represent fractions of particulate matter. Coarse particulate matter (PM_{10}) is about 1/7 the thickness of a human hair. Major sources of PM_{10} include crushing or 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. Fine particulate matter ($PM_{2.5}$) is roughly 1/28 the diameter of a human hair. $PM_{2.5}$ results from fuel combustion (e.g., from motor vehicles and power generation and industrial facilities), residential fireplaces, and woodstoves. In addition, $PM_{2.5}$ can be formed in the atmosphere from gases such as sulfur oxides (SO_x), NO_x, and VOCs.

$PM_{2.5}$ and PM_{10} 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. $PM_{2.5}$ and PM_{10} 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. Very small particles of substances such as lead, sulfates, and nitrates can cause lung damage directly or be absorbed into the blood stream, causing damage elsewhere in the body. Additionally, these substances can transport adsorbed gases such as chlorides or ammonium into the lungs, also causing injury. PM_{10} tends to collect in the upper portion of the respiratory system, whereas $PM_{2.5}$ is small enough to penetrate deeper into the lungs and damage lung tissue. Suspended particulates also produce haze and reduce regional visibility and damage and discolor surfaces on which they settle.

People with influenza, people with chronic respiratory and cardiovascular diseases, and the elderly may suffer worsening illness and premature death as a result of breathing particulate matter. People with bronchitis can expect aggravated symptoms from breathing in particulate matter. Children may experience a decline in lung function due to breathing in PM_{10} and $PM_{2.5}$ (EPA 2009).

Lead. Lead in the atmosphere occurs as particulate matter. Sources of lead include leaded gasoline; the manufacturing of batteries, paints, ink, ceramics, and ammunition; and secondary lead smelters. Prior to 1978, mobile emissions were the primary source of atmospheric lead. Between 1978 and 1987, the phaseout of leaded gasoline reduced the overall inventory of airborne lead by nearly 95%. With the phaseout of leaded gasoline, secondary lead smelters, battery recycling, and manufacturing facilities are becoming lead-emissions sources of greater concern.

Prolonged exposure to atmospheric lead poses a serious threat to human health. Health effects associated with exposure to lead include gastrointestinal disturbances, anemia, kidney disease, and, in severe cases, neuromuscular and neurological dysfunction. Of particular concern are low-level lead exposures during infancy and childhood. Such exposures are associated with decrements in neurobehavioral performance, including intelligence quotient performance, psychomotor performance, reaction time, and growth. Children are highly susceptible to the effects of lead.

Volatile Organic Compounds. Hydrocarbons are organic gases that are formed from hydrogen and carbon and sometimes other elements. Hydrocarbons that contribute to formation of O_3 are referred to and regulated as VOCs (also referred to as reactive organic gases). Combustion engine exhaust, oil refineries, and fossil-fueled power plants are the sources of hydrocarbons. Other sources of hydrocarbons include evaporation from petroleum fuels, solvents, dry cleaning solutions, and paint.

The primary health effects of VOCs result from the formation of O_3 and its related health effects. High levels of VOCs in the atmosphere can interfere with oxygen intake by reducing the amount of available oxygen through displacement. Carcinogenic forms of hydrocarbons, such as benzene, are considered TACs. There are no separate health standards for VOCs as a group.

Toxic Air Contaminants. A substance is considered toxic if it has the potential to cause adverse health effects in humans, including increasing the risk of cancer upon exposure, or acute and/or chronic non-cancer health effects. A toxic substance released into the air is considered a TAC. TACs are identified by federal and state agencies based on a review of available scientific evidence. In the State of California, TACs are identified through a two-step process that was established in 1983 under the Toxic Air Contaminant Identification and Control Act. This two-step process of risk identification and risk management and reduction was designed to protect residents from the health effects of toxic substances in the air. In addition, the California Air Toxics "Hot Spots" Information and Assessment Act, Assembly Bill (AB) 2588, was enacted by the Legislature in 1987 to address public concern over the release of TACs into the atmosphere. The law requires facilities emitting toxic substances to provide local air pollution control districts with information that will allow an assessment of the air toxics problem, identification of air toxics emissions sources, location of resulting hotspots, notification of the public exposed to significant risk, and development of effective strategies to reduce potential risks to the public over 5 years.

Examples include certain aromatic and chlorinated hydrocarbons, certain metals, and asbestos. TACs are generated by a number of sources, including stationary sources, such as dry cleaners, gas stations, combustion sources, and laboratories; mobile sources, such as automobiles; and area sources, such as landfills. Adverse health effects associated with exposure to TACs may include carcinogenic (i.e., cancer-causing) and noncarcinogenic effects. Noncarcinogenic effects typically affect one or more target organ systems and may be experienced on either short-term (acute) or long-term (chronic) exposure to a given TAC, such as diesel particulate matter (DPM).

Diesel Particulate Matter. DPM, which is the predominant TAC, is part of a complex mixture that makes up diesel exhaust. Diesel exhaust is composed of two phases, gas and particle, both of which contribute to health risks. More than 90% of DPM is less than 1 micrometer in diameter (about 1/70 the diameter of a human hair) and, thus, is a subset of $PM_{2.5}$ (CARB 2016). DPM is typically composed of carbon particles ("soot," also called black carbon) and numerous organic compounds, including over 40 known cancer-causing organic substances. Examples of these

chemicals include polycyclic aromatic hydrocarbons, benzene, formaldehyde, acetaldehyde, acrolein, and 1,3-butadiene (CARB 2016). CARB classified "particulate emissions from diesel-fueled engines" (i.e., DPM; 17 CCR 93000) as a TAC in August 1998. DPM is emitted from a broad range of diesel engines: on-road diesel engines of trucks, buses, and cars and off-road diesel engines, including locomotives, marine vessels, and heavy-duty construction equipment, among others. Approximately 70% of all airborne cancer risk in California is associated with DPM (CARB 2000). To reduce the cancer risk associated with DPM, CARB adopted a diesel risk reduction plan in 2000 (CARB 2000). Because it is part of $PM_{2.5}$, DPM also contributes to the same non-cancer health effects as $PM_{2.5}$ exposure. These effects include premature death; hospitalizations and emergency department visits for exacerbated chronic heart and lung disease, including asthma; increased respiratory symptoms; and decreased lung function in children. Several studies suggest that exposure to DPM may also facilitate development of new allergies (CARB 2016). Those most vulnerable to non-cancer health effects are children whose lungs are still developing and the elderly who often have chronic health problems.

Odorous Compounds

Odors are generally regarded as an annoyance rather than a health hazard. Manifestations of a person's reaction to odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache). The ability to detect odors varies considerably among the population and overall is quite subjective. People may have different reactions to the same odor. An odor that is offensive to one person may be perfectly acceptable to another (e.g., coffee roaster). An unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. Known as odor fatigue, a person can become desensitized to almost any odor, and recognition may only occur with an alteration in the intensity. The occurrence and severity of odor impacts depend on the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of receptors.

Sensitive Receptors

Some land uses are considered more sensitive to changes in air quality than others, depending on the population groups and the activities involved. People most likely to be affected by air pollution include children, the elderly, athletes, and people with cardiovascular and chronic respiratory diseases. Facilities and structures where these air-pollution-sensitive people live or spend considerable amounts of time are known as sensitive receptors. Land uses where air-pollution-sensitive individuals are most likely to spend time include schools and schoolyards, parks and playgrounds, daycare centers, nursing homes, hospitals, and residential communities (sensitive sites or sensitive land uses) (CARB 2005). The South Coast Air Quality Management District (SCAQMD) identifies sensitive receptors as residences, schools, playgrounds, childcare centers, long-term healthcare facilities, rehabilitation centers, convalescent centers, and retirement homes (SCAQMD 1993).

The nearest off-site sensitive receptors to Area 2 of the proposed Project are residences approximately 800 feet to the east on Canyon Dell Drive in Altadena, part of unincorporated Los Angeles County. Residential neighborhoods to the west in the City of La Cañada Flintridge are more than 1,700 feet from Area 2. Single-family residential neighborhoods exist to the east of Area 3. Some homes are in the City of Pasadena and others are in Altadena. The closest off-site sensitive receptors to Area 3 are on Ridgeview Drive in Altadena and Crestford Drive in Pasadena, approximately 250 feet from the Project site. All other air quality sensitive receptors are located at greater distances from the Project site and would be less impacted by emissions generated by the proposed Project. Impacts are quantified in Section 4.2.4, Impacts Analysis, for the above sensitive receptors.

Regional and Local Air Quality Conditions

South Coast Air Basin Attainment Designation

Pursuant to the 1990 federal Clean Air Act amendments, the EPA classifies air basins (or portions thereof) as "attainment" or "non-attainment" for each criteria air pollutant, based on whether the National Ambient Air Quality Standards (NAAQS) have been achieved. Generally, if the recorded concentrations of a pollutant are lower than the standard, the area is classified as "attainment" for that pollutant. If an area exceeds the standard, the area is classified as "non-attainment" for that pollutant. If there is not enough data available to determine whether the standard is exceeded in an area, the area is designated as "unclassified" or "unclassifiable." The designation of "unclassifiable/attainment" means that the area meets the standard or is expected to be meet the standard despite a lack of monitoring data. Areas that achieve the standards after a non-attainment designation are re-designated as maintenance areas and must have approved Maintenance Plans to ensure continued attainment of the standards. The California Clean Air Act, like its federal counterpart, called for the designation of areas as "attainment" or "non-attainment," but based on California Ambient Air Quality Standards (CAAQS) rather than the NAAQS. Table 4.1-1 depicts the current attainment status of the Project site with respect to the NAAQS and CAAQS as well as the attainment classifications for the criteria pollutants.

Table 4.1-1. South Coast Air Basin Attainment Classification

Pollutant	Designation/Classification	
	Federal Standards[a]	*State Standards*[b]
Ozone (O_3) – 1 hour	No federal standard	**Non-attainment**
Ozone (O_3) – 8 hour	**Extreme non-attainment**	**Non-attainment**
Nitrogen dioxide (NO_2)	Unclassifiable/attainment	Attainment
Carbon monoxide (CO)	Attainment/maintenance	Attainment
Sulfur dioxide (SO_2)	Unclassifiable/attainment	Attainment
Coarse particulate matter (PM_{10})	Attainment/maintenance	**Non-attainment**
Fine particulate matter ($PM_{2.5}$)	**Serious non-attainment**	**Non-attainment**
Lead (Pb)	Nonattainment	Attainment
Hydrogen sulfide	No federal standard	Unclassified
Sulfates	No federal standard	Attainment
Visibility-reducing particles	No federal standard	Unclassified
Vinyl chloride	No federal standard	No designation

Notes: bold text = not in attainment; attainment = meets the standards; attainment/maintenance = achieve the standards after a non-attainment designation; non-attainment = does not meet the standards; unclassified or unclassifiable = insufficient data to classify; unclassifiable/attainment = meets the standard or is expected to be meet the standard despite a lack of monitoring data.

[a] EPA 2018.

[b] CARB 2018.

In summary, SCAB is designated as a non-attainment area for federal and state O_3 standards and federal and state $PM_{2.5}$ standards. SCAB is designated as a non-attainment area for state PM_{10} standards; however, it is designated as an attainment area for federal PM_{10} standards. SCAB is designated as an attainment area for

federal and state CO standards, federal and state NO_2 standards, and federal and state SO_2 standards. While SCAB has been designated as non-attainment for the federal rolling 3-month average lead standard, it is designated attainment for the state lead standard (EPA 2018; CARB 2018).

Despite the current non-attainment status, air quality within SCAB has generally improved since the inception of air pollutant monitoring in 1976. This improvement is mainly due to lower-polluting on-road motor vehicles, more stringent regulation of industrial sources, and the implementation of emission reduction strategies by the SCAQMD. This trend toward cleaner air has occurred in spite of continued population growth. Despite this growth, air quality has improved significantly over the years, primarily due to the impacts of the region's air quality control program. PM_{10} levels have declined almost 50% since 1990, and $PM_{2.5}$ levels have also declined 50% since measurements began in 1999 (SCAQMD 2013). Similar improvements are observed with O_3, although the rate of O_3 decline has slowed in recent years.

California air districts have based their thresholds of significance for CEQA purposes on the levels that scientific and factual data demonstrate that the air basin can accommodate without affecting the attainment date for the NAAQS or CAAQS. Since an ambient air quality standard is based on maximum pollutant levels in outdoor air that would not harm the public's health, and air district thresholds pertain to attainment of the ambient air quality standard, this means that the thresholds established by air districts are also protective of human health. The NAAQS and CAAQS are presented in Table 4.1-2.

Table 4.1-2. Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[a]	National Standards[b]	
		Concentration[c]	*Primary*[c,d]	*Secondary*[c,e]
O_3	1 hour	0.09 ppm (180 µg/m³)	—	Same as Primary Standard[f]
	8 hours	0.070 ppm (137 µg/m³)	0.070 ppm (137 µg/m³)[f]	
NO_2[g]	1 hour	0.18 ppm (339 µg/m³)	0.100 ppm (188 µg/m³)	Same as Primary Standard
	annual arithmetic mean	0.030 ppm (57 µg/m³)	0.053 ppm (100 µg/m³)	
CO	1 hour	20 ppm (23 mg/m³)	35 ppm (40 mg/m³)	None
	8 hours	9.0 ppm (10 mg/m³)	9 ppm (10 mg/m³)	
SO_2[h]	1 hour	0.25 ppm (655 µg/m³)	0.075 ppm (196 µg/m³)	—
	3 hours	—	—	0.5 ppm (1,300 µg/m³)
	24 hours	0.04 ppm (105 µg/m³)	0.14 ppm (for certain areas)[g]	—
	annual	—	0.030 ppm (for certain areas)[g]	—
PM_{10}[i]	24 hours	50 µg/m³	150 µg/m³	Same as Primary Standard
	annual arithmetic mean	20 µg/m³	—	

Table 4.1-2. Ambient Air Quality Standards

Pollutant	Averaging Time	California Standardsa	National Standardsb	
		Concentration[c]	*Primary[c,d]*	*Secondary[c,e]*
$PM_{2.5}$[i]	24 hours	—	35 µg/m³	Same as Primary Standard
	annual arithmetic mean	12 µg/m³	12.0 µg/m³	15.0 µg/m³
Lead[j,k]	30-day average	1.5 µg/m³	—	—
	calendar quarter	—	1.5 µg/m³ (for certain areas)[k]	Same as Primary Standard
	rolling 3-month average	—	0.15 µg/m³	
Hydrogen sulfide	1 hour	0.03 ppm (42 µg/m³)	—	—
Vinyl chloride[j]	24 hours	0.01 ppm (26 µg/m³)	—	—
Sulfates	24 hours	25 µg/m³	—	—
Visibility-reducing particles	8 hour (10:00 a.m. to 6:00 p.m. PST)	Insufficient amount to produce an extinction coefficient of 0.23 per kilometer due to the number of particles when the relative humidity is less than 70%	—	—

Source: CARB 2019a.

Notes: µg/m³ = micrograms per cubic meter; mg/m³= milligrams per cubic meter; ppm = parts per million by volume; O_3 = ozone; NO_2 = nitrogen dioxide; CO = carbon monoxide; SO_2 = sulfur dioxide; PM_{10} = particulate matter with an aerodynamic diameter less than or equal to 10 microns; $PM_{2.5}$ = particulate matter with an aerodynamic diameter less than or equal to 2.5 microns.

a California standards for O_3, CO, SO_2 (1-hour and 24-hour), NO_2, 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. CAAQS are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

b National standards (other than O_3, NO_2, SO_2, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once per year. The O_3 standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over 3 years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m³ is equal to or less than 1. For $PM_{2.5}$, the 24-hour standard is attained when 98% of the daily concentrations, averaged over 3 years, are equal to or less than the standard.

c Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based on 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.

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

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

[f] On October 1, 2015, the national 8-hour O_3 primary and secondary standards were lowered from 0.075 to 0.070 ppm.

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

[h] On June 2, 2010, a new 1-hour SO_2 standard was established, and the existing 24-hour and annual primary standards were revoked. To attain the national 1-hour 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 non-attainment of the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

[i] On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 $\mu g/m^3$ to 12.0 $\mu g/m^3$. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 $\mu g/m^3$, as was the annual secondary standard of 15 $\mu g/m^3$. The existing 24-hour PM_{10} standards (primary and secondary) of 150 $\mu g/m^3$ were also retained. The form of the annual primary and secondary standards is the annual mean averaged over 3 years.

[j] CARB has identified lead and vinyl chloride as TACs 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.

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

Local Ambient Air Quality

CARB, air districts, and other agencies monitor ambient air quality at approximately 250 air quality monitoring stations across the state. Air quality monitoring stations usually measure pollutant concentrations 10 feet above ground level; therefore, air quality is often referred to in terms of ground-level concentrations. The most recent background ambient air quality data from 2016 to 2018 are presented in Table 4.1-3. The Pasadena monitoring station, located at 752 S. Wilson Avenue, Pasadena, California 91106, is the nearest air quality monitoring station to the Project site, located approximately 2 miles northeast from the Project site. Air quality data for O_3, NO_2, CO, and $PM_{2.5}$ from the Pasadena monitoring station are provided in Table 4.1-3. Because SO_2 and CO are not monitored at the Pasadena monitoring station, these measurements were taken from the Los Angeles North Main Street monitoring station (1630 North Main Street, California 90012, approximately 15 miles south of the Project site). The data collected at these stations are considered representative of the air quality experienced in the Project vicinity. The number of days exceeding the ambient air quality standards is also shown in Table 4.1-3.

Table 4.1-3. Local Ambient Air Quality Data

Averaging Time	Unit	Agency/ Method	Ambient Air Quality Standard	Measured Concentration by Year			Exceedances by Year		
				2016	*2017*	*2018*	*2016*	*2017*	*2018*
Ozone (O3) – Pasadena									
Maximum 1-hour Concentration	ppm	State	0.09	0.126	0.126	0.139	0.112	1	2
Maximum 8-hour Concentration	ppm	State	0.070	0.070	0.090	0.100	0.090	*17*	*36*
		Federal	0.070	0.070	0.091	0.100	0.091	*19*	*38*
Nitrogen Dioxide (NO_2) – Pasadena									
Maximum 1-hour Concentration	ppm	State	0.18	0.100	0.072	0.072	0.068	*0*	*0*
		Federal	0.100	0.030	0.015	0.015	0.014	0	0
Annual Concentration	ppm	State	0.030	0.053	0.015	0.015	0.14	0	0
		Federal	0.053	0.100	0.072	0.072	0.068	*0*	*0*
Carbon Monoxide (CO) –									
Maximum 1-hour Concentration	ppm	State	20	1.5	1.7	1.5	0	0	0
		Federal	35	1.5	1.7	1.5	0	0	0
Maximum 8-hour Concentration	ppm	State	9.0	1.0	1.0	1.4	0	0	0
		Federal	9	1.0	1.0	1.4	0	0	0
Sulfur Dioxide (SO_2) – Pasadena									
Maximum 1-hour Concentration	ppm	Federal	0.075	0.001	0.002	0.001	0	0	0
Maximum 24-hour Concentration	ppm	State	0.04	0.000	0.001	0.000	0	0	0
	ppm	Federal	0.140	0.000	0.001	0.000	0	0	0
Annual Concentration	ppm	Federal	0.030	0.000	0.000	0.000	0	0	0
Coarse Particulate Matter (PM_{10})[a] – Los Angeles – North Main Street									
Maximum 24-hour Concentration	µg/m^3	State	50	74.6	96.2	81.2	21	40	31.8
		Federal	150	64.0	64.6	68.2	0	0	0
Annual Concentration	µg/m^3	State	20	30	27	34	30	27	34
Fine Particulate Matter ($PM_{2.5}$)[a] – Pasadena									
Maximum 24-hour Concentration	µg/m^3	Federal	35	29.2	22.8	32.5	0	0	0
Annual Concentration	µg/m^3	State	12	9.5	10	10	0	0	0
		Federal	12.0	9.5	9.6	10.2	0	0	0

Sources: CARB 2019b; EPA 2019.

Notes: ppm = parts per million; µg/m3 = micrograms per cubic meter; — = not available.

Data taken from CARB iADAM (http://www.arb.ca.gov/adam) and Environmental Protection Agency AirData (http://www.epa.gov/airdata/) represent the highest concentrations experienced over a given year.

Daily exceedances for particulate matter are estimated days because PM_{10} and $PM_{2.5}$ are not monitored daily. All other criteria pollutants did not exceed federal or state standards during the years shown. There is no federal standard for 1-hour O_3, annual PM_{10}, or 24-hour SO_2, nor is there a state 24-hour standard for $PM_{2.5}$.

[a] Measurements of PM_{10} and $PM_{2.5}$ are usually collected every six days and every one to three days, respectively. Number of days exceeding the standards is a mathematical estimate of the number of days concentrations would have been greater than the level of the standard had each day been monitored. The numbers in parentheses are the measured number of samples that exceeded the standard.

4.1.3 Relevant Plans, Policies, and Ordinances

Federal

Clean Air Act

The federal Clean Air Act, passed in 1970 and last amended in 1990, forms the basis for the national air pollution control effort. The EPA is responsible for implementing most aspects of the Clean Air Act, including setting NAAQS for major air pollutants; setting hazardous air pollutant (HAP) standards; approving state attainment plans; setting motor vehicle emission standards; issuing stationary source emission standards and permits; and establishing acid rain control measures, stratospheric O_3 protection measures, and enforcement provisions. Under the Clean Air Act, NAAQS are established for the following criteria pollutants: O_3, CO, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and lead.

The NAAQS describe acceptable air quality conditions designed to protect the health and welfare of the citizens of the nation. The NAAQS (other than for O_3, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and those based on annual averages or arithmetic mean) are not to be exceeded more than once per year. NAAQS for O_3, NO_2, SO_2, PM_{10}, and $PM_{2.5}$ are based on statistical calculations over 1- to 3-year periods, depending on the pollutant. The Clean Air Act requires the EPA to reassess the NAAQS at least every 5 years to determine whether adopted standards are adequate to protect public health based on current scientific evidence. States with areas that exceed the NAAQS must prepare a state implementation plan that demonstrates how those areas will attain the standards within mandated timeframes.

The 1977 federal Clean Air Act amendments required the EPA to identify National Emission Standards for Hazardous Air Pollutants to protect public health and welfare. HAPs include certain VOCs, pesticides, herbicides, and radionuclides that present a tangible hazard, based on scientific studies of exposure to humans and other mammals. Under the 1990 federal Clean Air Act amendments, which expanded the control program for HAPs, 189 substances and chemical families were identified as HAPs.

State/Regional

California Ambient Air Quality Standards

The federal Clean Air Act delegates the regulation of air pollution control and the enforcement of the NAAQS to the states. In California, the task of air quality management and regulation has been legislatively granted to CARB, with subsidiary responsibilities assigned to air quality management districts and air pollution control districts at the regional and county levels. CARB, which became part of the California Environmental Protection Agency in 1991, is responsible for ensuring implementation of the California Clean Air Act of 1988, responding to the federal Clean Air Act, and regulating emissions from motor vehicles and consumer products.

CARB has established CAAQS, which are generally more restrictive than the NAAQS. As stated previously, an ambient air quality standard defines the maximum amount of a pollutant averaged over a specified period of time that can be present in outdoor air without harm to the public's health. The CAAQS describe adverse conditions; that is, pollution levels must be below these standards before a basin can attain the standard. Air quality is considered "in attainment" if pollutant levels are continuously below the CAAQS and violate the standards no more than once each year. The CAAQS for O_3, CO, SO_2 (1-hour and 24-hour), NO_2, PM_{10}, and $PM_{2.5}$ and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded.

California air districts have based their thresholds of significance for CEQA purposes on the levels that scientific and factual data demonstrate that the air basin can accommodate without affecting the attainment date for the NAAQS or CAAQS. Since an ambient air quality standard is based on maximum pollutant levels in outdoor air that would not harm the public's health, and air district thresholds pertain to attainment of the ambient air quality standard, this means that the thresholds established by air districts are also protective of human health.

AB 1809 - Air Toxics Program

The state Air Toxics Program was established in 1983 under AB 1807 (Tanner). The California TAC list identifies more than 700 pollutants, a subset of which have carcinogenic and noncarcinogenic toxicity criteria established pursuant to the California Health and Safety Code. In accordance with AB 2728, the state list includes the (federal) HAPs. The Air Toxics "Hot Spots" Information and Assessment Act of 1987 (AB 2588) was enacted by the legislature in 1987 to address public concern over the release of TACs into the atmosphere. AB 2588 law requires facilities emitting toxic substances to provide local air pollution control districts with information that will allow an assessment of the air toxics problem, identification of air toxics emissions sources, location of resulting hotspots, notification of the public exposed to significant risk, and development of effective strategies to reduce potential risks to the public over 5 years. TAC emissions from individual facilities are quantified and prioritized. "High-priority" facilities are required to perform a health risk assessment (HRA), and if specific thresholds are exceeded, are required to communicate the results to the public in the form of notices and public meetings.

In 2000, CARB approved a comprehensive Diesel Risk Reduction Plan to reduce diesel emissions from both new and existing diesel-fueled vehicles and engines (CARB 2000). The regulation is anticipated to result in an 80% decrease in statewide diesel health risk in 2020 compared with the diesel risk in 2000. Additional regulations apply to new trucks and diesel fuel, including the On-Road Heavy Duty Diesel Vehicle (In-Use) Regulation (CARB 2014), On-Road Heavy Duty (New) Vehicle Program (CARB 2005), In-Use Off-Road Diesel Vehicle Regulation (CARB 2011), and New Off-Road Compression-Ignition (Diesel) Engines and Equipment program (CARB 2008). These regulations and programs have timetables to which manufacturers must comply and existing operators must upgrade their diesel-powered equipment. There are several Airborne Toxic Control Measures that reduce diesel emissions, including In-Use Off-Road Diesel-Fueled Fleets (13 CCR 2449 et seq.) and In-Use On-Road Diesel-Fueled Vehicles (13 CCR 2025).

California Health and Safety Code Section 41700

This section of the Health and Safety Code states that a person shall not discharge from any source whatsoever quantities of air contaminants or other material that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public; or that endanger the comfort, repose, health, or safety of any of those persons or the public; or that cause, or have a natural tendency to cause, injury or damage to business or property. This section also applies to sources of objectionable odors.

Local

Air Quality Management Plan

The SCAQMD is the regional agency responsible for the regulation and enforcement of federal, state, and local air pollution control regulations in SCAB, where the proposed Project is located. The SCAQMD operates monitoring stations in SCAB, develops rules and regulations for stationary sources and equipment, prepares emissions inventory and air quality management planning documents, and conducts source testing and inspections. The SCAQMD's Air Quality Management Plans (AQMPs) include control measures and strategies to be implemented to attain state and federal ambient air quality standards in SCAB. The SCAQMD then implements these control measures as regulations to control or reduce criteria pollutant emissions from stationary sources or equipment.

The 2012 AQMP proposed policies and measures to achieve federal and state standards for improved air quality in SCAB and portions of the Salton Sea Air Basin (formerly named the Southeast Desert Air Basin) that are under SCAQMD jurisdiction. The 2012 AQMP is designed to meet applicable federal and state requirements for O_3 and particulate matter. The 2012 AQMP stated that attainment of the federal 24-hour $PM_{2.5}$ standard was impracticable by 2015 and that SCAB should be classified as a serious non-attainment area along with the appropriate federal requirements. The 2012 AQMP included the planning requirements to meet the 1-hour O_3 standard. The 2012 AQMP demonstrated a plan for attainment of the federal 24-hour $PM_{2.5}$ standard by 2014 in SCAB through adoption of all feasible measures. Finally, the 2012 AQMP updated the EPA-approved 8-hour O_3 control plan with new measures designed to reduce reliance on the Clean Air Act Section 182(e)(5) long-term measures for NO_x and VOC reductions. The 2012 AQMP reduction and control measures, which are outlined to mitigate emissions, are based on existing and projected land use and development. The EPA, with a final ruling on April 14, 2016, approved the Clean Air Act planning requirements for the 24-hour $PM_{2.5}$ standard portion and on September 3, 2014, approved the 1-hour O_3 Clean Air Act planning requirements. The 2012 AQMP was updated in 2016 (approved March 2017); this AQMP accounts for updates to CARB's and SCAQMD's emission reductions resulting from adopted rules and regulations since the 2012 AQMP, growth factors, and demographic trends.

The 2016 AQMP is a regional blueprint for achieving air quality standards and healthful air. The 2016 AQMP represents a new approach, focusing on available, proven, and cost-effective alternatives to traditional strategies, while seeking to achieve multiple goals in partnership with other entities promoting reductions in greenhouse gas emissions and toxic risk, as well as efficiencies in energy use, transportation, and goods movement (SCAQMD 2017a). Because mobile sources are the principal contributor to SCAB's air quality challenges, SCAQMD has been and will continue to be closely engaged with CARB and the EPA, who have primary responsibility for these sources. The 2016 AQMP recognizes the critical importance of working with other agencies to develop funding and other incentives that encourage the accelerated transition of vehicles, buildings, and industrial facilities to cleaner technologies in a manner that benefits not only air quality but also local businesses and the regional economy. These "win-win" scenarios are key to implementation of this 2016 AQMP with broad support from a wide range of stakeholders.

While striving to achieve the NAAQS for O_3 and $PM_{2.5}$ and the CAAQS for O_3, PM_{10}, and $PM_{2.5}$ through a variety of air quality control measures, the 2016 AQMP also accommodates planned growth in SCAB. Projects are considered consistent with, and would not conflict with or obstruct, implementation of the AQMP if growth in

socioeconomic factors (e.g., population, employment) is consistent with the underlying regional plans used to develop the AQMP. The demographic growth forecasts for various socioeconomic categories (e.g., population, housing, employment by industry) developed by the Southern California Association of Governments (SCAG) based on general plans for cities and counties in SCAB were used in the 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy (2016 RTP/SCS) (SCAG 2016) to estimate future emissions in the 2016 AQMP (SCAQMD 2017a).

SCAQMD Rules

Emissions that would result from mobile, area, and stationary sources during maintenance activities of the proposed program are subject to the rules and regulations of SCAQMD (2017b), which include the following:

- **Rule 401 – Visible Emissions:**[5] This rule establishes the limit for visible emissions from stationary sources.
- **Rule 402 – Nuisance:**[6] This rule prohibits the discharge of air pollutants from a facility that cause injury, detriment, nuisance, or annoyance to the public or damage to business or property.
- **Rule 403 – Fugitive Dust:**[7] This rule requires fugitive dust sources to implement best available control measures for all sources and prohibits all forms of visible particulate matter from crossing any property line. Rule 403 applies to any activity or human-made condition capable of generating fugitive dust, and identifies measures to reduce fugitive dust. This includes soil treatment for exposed soil areas. Treatment shall include, but not necessarily be limited to, periodic watering, application of environmentally safe soil stabilization materials, and/or roll compaction as appropriate.
- **Rule 431.2 – Sulfur Content of Liquid Fuels:**[8] The purpose of this rule is to limit the sulfur content in diesel and other liquid fuels for the purpose of reducing the formation of sulfur oxides (SO_x) and particulates during combustion and of enabling the use of add-on control devices for diesel-fueled internal combustion engines. The rule applies to all refiners, importers, and other fuel suppliers such as distributors, marketers, and retailers, as well as to users of diesel, low-sulfur diesel, and other liquid fuels for stationary-source applications in the SCAQMD. The rule also affects diesel fuel supplied for mobile sources.
- **Rule 1110.2 – Emissions from Gaseous- and Liquid-Fueled Engines:**[9] This rule applies to stationary and portable engines rated at greater than 50 horsepower. The purpose of Rule 1110.2 is to reduce NO_x, VOC, and CO emissions from engines. Emergency engines, including those powering standby generators, are generally exempt from the emissions and monitoring requirements of this rule because they have permit conditions that limit operation to 200 hours or less per year as determined by an elapsed operating time meter.

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5 Rule 401 Visible Emissions: http://www.aqmd.gov/docs/default-source/rule-book/rule-iv/rule-401.pdf?sfvrsn=4.

6 Rule 402 Nuisance: http://www.aqmd.gov/docs/default-source/rule-book/rule-iv/rule-402.pdf?sfvrsn=4.

7 Rule 403 Fugitive Dust: http://www.aqmd.gov/docs/default-source/rule-book/rule-iv/rule-403.pdf?sfvrsn=4.

8 Rule 431.2 Sulfur Content of Liquid Fuels: http://www.aqmd.gov/docs/default-source/rule-book/rule-iv/rule-431-2.pdf?sfvrsn=4.

9 Rule 1110.2 Emissions from Gaseous and Liquid-Fueled Engines: http://www.aqmd.gov/docs/default-source/rule-book/reg-xi/rule-1110-2.pdf.

- **Rule 1113 – Architectural Coatings:**[10] This rule requires manufacturers, distributors, and end users of architectural and industrial maintenance coatings to reduce VOC emissions from the use of these coatings, primarily by placing limits on the VOC content of various coating categories.
- **Rule 1403 – Asbestos Emissions from Demolition/Renovation Activities:**[11] This rule specifies work practices to limit asbestos emissions from building demolition and renovation activities, including removal and associated disturbance of asbestos-containing material (ACM).

Regional Transportation Plan/Sustainable Communities Strategy

The SCAG is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial Counties and serves as a forum for regional issues relating to transportation, the economy, community development, and the environment. SCAG serves as the federally designated metropolitan planning organization for the Southern California region and is the largest metropolitan planning organization in the United States.

With respect to air quality planning and other regional issues, SCAG has prepared the *Final 2008 Regional Comprehensive Plan: Helping Communities Achieve a Sustainable Future* (2008 RCP) for the region (SCAG 2008). The 2008 RCP sets the policy context in which SCAG participates in and responds to the SCAQMD air quality plans and builds off the SCAMQD AQMP processes that are designed to meet health-based criteria pollutant standards in several ways (SCAG 2008). First, it complements AQMPs by providing guidance and incentives for public agencies to consider best practices that support the technology-based control measures in AQMPs. Second, the 2008 RCP emphasizes the need for local initiatives that can reduce the region's GHG emissions that contribute to climate change, an issue that is largely outside the focus of local attainment plans, which it assessed in Section 3 of the plan. Third, the 2008 RCP emphasizes the need for better coordination of land use and transportation planning, which heavily influences the emissions inventory from the transportation sectors of the economy. This also minimizes land use conflicts, such as residential development near freeways, industrial areas, or other sources of air pollution.

On April 7, 2016, SCAG's Regional Council adopted the 2016 RTP/SCS. The 2016 RTP/SCS is a long-range visioning plan that balances future mobility and housing needs with economic, environmental, and public health goals. The 2016 RTP/SCS charts a course for closely integrating land use and transportation so that the region can grow smartly and sustainably. The 2016 RTP/SCS was prepared through a collaborative, continuous, and comprehensive process with input from local governments, county transportation commissions, tribal governments, nonprofit organizations, businesses, and local stakeholders within the Counties of Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura. In June 2016, SCAG received its conformity determination from the Federal Highway Administration and the Federal Transit Administration indicating that all air quality conformity requirements for the 2016 RTP/SCS and associated 2015 Federal Transportation Improvement Program Consistency Amendment through Amendment 15-12 have been met (SCAG 2016). As previously noted, SCAQMD's 2016 AQMP applies the updated SCAG growth forecasts assumed in the 2016 RTP/SCS.

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10 Rule 1113 Architectural Coatings: http://www.aqmd.gov/docs/default-source/rule-book/reg-xi/r1113.pdf?sfvrsn=17.

11 Rule 1403 Asbestos Emissions from Demolition/Renovation Activities: http://www.aqmd.gov/docs/default-source/rule-book/reg-xiv/rule-1403.pdf.

4.1.4 Thresholds of Significance

The significance criteria used to evaluate the Project impacts related to hazards and hazardous materials are based on Appendix G of the CEQA Guidelines. According to Appendix G of the CEQA Guidelines, a significant impact related to hazards and hazardous material would occur if the project would:

a) Conflict with or obstruct implementation of the applicable air quality plan.
b) 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.
c) Expose sensitive receptors to substantial pollutant concentrations.
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Through the analysis in the Initial Study (see Appendix A-1), it was determined that the proposed Project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people (i.e., Threshold d). Accordingly, this issue is not further analyzed in the EIR. Based on the remaining thresholds, a significant impact related to air quality would occur if the project would:

a) Conflict with or obstruct implementation of the applicable air quality plan.
b) 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.
c) Expose sensitive receptors to substantial pollutant concentrations.

Pursuant to the State CEQA Guidelines (Section 15064.7), a lead agency may consider using, when available, the significance criteria established by the applicable air quality management district or air pollution control district when making determinations of significance. The City of Los Angeles uses the SCAQMD's thresholds to evaluate proposed development projects and assess the significance of quantifiable impacts. The potential air quality impacts of a project are, therefore, evaluated according to the thresholds adopted by the SCAQMD in connection with its CEQA Air Quality Handbook, Air Quality Analysis Guidance Handbook, and subsequent SCAQMD guidance as discussed previously.

Threshold 1: Consistency with Air Quality Management Plan. The evaluation of whether the proposed Project would conflict with or obstruct implementation of the applicable air quality plan is based on the SCAQMD CEQA Air Quality Handbook (SCAQMD 1993), Chapter 12, Section 12.2 (Consistency Criterion No. 1), which asks whether the proposed Project would result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay the timely attainment of air quality standards of the interim emissions reductions specified in the AQMP. This issue is addressed in detail under Threshold 1 in Section 4.1.4, Impacts Analysis. Consistency Criterion No. 2 in the SCAQMD CEQA Air Quality Handbook, Chapter 12, Section 12.3, asks whether the proposed Project would exceed the assumptions in the AQMP or increments based on the year of proposed Project buildout and phase, as discussed further in Section 4.2.4.

Threshold 2: Cumulative Impacts on Air Quality. Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.) indicates that, where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied on to determine whether the proposed Project would have a significant impact on air quality.

The SCAQMD has established Air Quality Significance Thresholds, as revised in March 2015, which set forth quantitative emission significance thresholds below which a project would not have a significant impact on ambient air quality under existing and cumulative conditions. The quantitative air quality analysis provided herein applies the SCAQMD thresholds identified in Table 4.1-4 to determine the potential for the proposed Project to result in a significant impact under CEQA.

Table 4.1-4. South Coast Air Quality Management District Air Quality Significance Thresholds

Criteria Pollutants Mass Daily Thresholds		
Pollutant	*Construction (pounds per day)*	*Operation (pounds per day)*
VOCs	75	55
NO_x	100	55
CO	550	550
SO_x	150	150
PM_{10}	150	150
$PM_{2.5}$	55	55
Lead[a]	3	3
TACs and Odor Thresholds		
TACs[b]	Maximum incremental cancer risk ≥10 in 1 million Cancer Burden > 0.5 excess cancer cases (in areas ≥1 in 1 million) Chronic and acute hazard index ≥1.0 (project increment)	
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402	
Ambient Air Quality Standards for Criteria Pollutants[c]		
NO_2 1-hour average NO_2 annual arithmetic mean	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 0.18 ppm (state) 0.030 ppm (state) and 0.0534 ppm (federal)	
CO 1-hour average CO 8-hour average	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 20 ppm (state) and 35 ppm (federal) 9.0 ppm (state/federal)	
PM_{10} 24-hour average PM_{10} annual average	10.4 μg/m³ (construction)[d] 2.5 μg/m³ (operation) 1.0 μg/m³	
$PM_{2.5}$ 24-hour average	10.4 μg/m³ (construction)[d] 2.5 μg/m³ (operation)	

Source: SCAQMD 2015.

Notes: SCAQMD = South Coast Air Quality Management District; VOC = volatile organic compounds; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; TAC = toxic air contaminant; NO_2 = nitrogen dioxide; ppm = parts per million; μg/m³ = micrograms per cubic meter.

GHG emissions thresholds for industrial projects, as added in the March 2015 revision to the SCAQMD Air Quality Significance Thresholds, were not include included in Table 4.1-4 because they are addressed within the GHG emissions analysis and not the air quality study.

[a] The phaseout of leaded gasoline started in 1976. Since gasoline no longer contains lead, the proposed Project is not anticipated to result in impacts related to lead; therefore, it is not discussed in this analysis.

[b] TACs include carcinogens and noncarcinogens.

[c] Ambient air quality standards for criteria pollutants are based on SCAQMD Rule 1303, Table A-2, unless otherwise stated.

[d] Ambient air quality threshold are based on SCAQMD Rule 403.

A project would result in a substantial contribution to an existing air quality violation of the NAAQS or CAAQS for O_3, which is a non-attainment pollutant, if the project's construction or operational emissions would exceed the SCAQMD VOC or NO_x thresholds shown in Table 4.1-4. These emissions-based thresholds for O_3 precursors are intended to serve as a surrogate for an "ozone significance threshold" (i.e., the potential for adverse O_3 impacts to occur). This approach is used because O_3 is not emitted directly (see the discussion of O_3 and its sources in Section 4.1.1, Existing Conditions) and the effects of an individual project's emissions of O_3 precursors (VOC and NO_x) on O_3 levels in ambient air cannot be determined through air quality models or other quantitative methods.

Regarding cumulative impacts for non-attainment pollutants, if emissions exceed the thresholds shown in Table 4.1-4, the proposed Project could have the potential to result in a cumulatively considerable net increase in these pollutants and, thus, could have a significant impact on ambient air quality.

Threshold 3: Sensitive Receptors. The assessment of the proposed Project's potential to expose sensitive receptors to substantial pollutant concentrations (threshold criterion 4) includes a localized significance threshold (LST) analysis, as recommended by the SCAQMD, to evaluate the potential of localized air quality impacts to sensitive receptors in the immediate vicinity of the proposed Project. A LST analysis was performed to evaluate potential localized impacts associated with construction activities. For project sites of 5 acres or less the SCAQMD LST Methodology (2009) includes lookup tables that can be used to determine the maximum allowable daily emissions that would satisfy the localized significance criteria (i.e., the emissions would not cause an exceedance of the applicable concentration limits for NO_2, CO, PM_{10}, and $PM_{2.5}$) without performing project-specific dispersion modeling.

The LST significance thresholds for NO_2 and CO represent the allowable increase in concentrations above background levels in the vicinity of a project that would not cause or contribute to an exceedance of the relevant ambient air quality standards, while the threshold for PM_{10} represents compliance with Rule 403 (Fugitive Dust). The LST significance threshold for $PM_{2.5}$ is intended to ensure that construction emissions do not contribute substantially to existing exceedances of the $PM_{2.5}$ ambient air quality standards. The allowable emission rates depend on the following parameters:

- Source receptor area (SRA) in which the project is located
- Size of the project site
- Distance between the project site and the nearest sensitive receptor (e.g., residences, schools, hospitals)

The Project site is within SRA, 8 (West San Gabriel Valley). The SCAQMD provides guidance for applying California Emissions Estimator Model (CalEEMod) to the LSTs. LST pollutant screening level concentration data is currently published for 1-, 2-, and 5-acre sites for varying distances. The maximum number of acres disturbed on the peak day was estimated using the "Fact Sheet for Applying CalEEMod to Localized Significance Thresholds" (SCAQMD 2011), which provides estimated acres per 8-hour day for crawler tractors, graders, rubber tired dozers, and scrapers. The proposed Project would disturb approximately 1.5 based on the most intense construction equipment load. Therefore, using the LST for a 1-acre site was utilized as the thresholds are more conservative than using the 2-acre LST.

As described in Section 2, Environmental Setting, the Project site consists of two primary areas, as shown on Figure 2-1, Local Vicinity and Regional Location, including Area 2, Diversion and Intake Replacement and Area 3, Spreading Basin Improvements, which are connected by the North Arroyo Boulevard (i.e. Gabrielino Trail/Access Road). The proposed Project involves construction activity and facility improvements in Areas 2 and 3, as well as construction truck traffic along portions of the Gabrielino Trail/Access Road. The former Travelling Screen and Chlorine Building (Screen Building) adjacent to Area 2 and the Behner WTP adjacent to Area 3 would be used for temporary construction materials and equipment staging only.

Area 2. The nearest homes to Area 2 are approximately 800 feet to the east on Canyon Dell Drive in Altadena, part of unincorporated Los Angeles County. Residential neighborhoods to the west in the City of La Cañada Flintridge are more than 1,700 feet from Area 2.

Area 3. Single-family residential neighborhoods exist to the east of Area 3. Some homes are in the City of Pasadena and others are in Altadena. The closest homes to Area 3 are on Ridgeview Drive in Altadena and Crestford Drive in Pasadena, approximately 250 feet from the Project site. North Windsor Avenue, between the I-210 freeway and Explorer Drive, would be used by traffic generated by the proposed Project. There are homes adjacent to North Windsor Avenue in the City of Pasadena and in the community of Altadena. Passive and active recreational areas, including the Gabrielino Trail, are near all Project areas and are described in Section 4.7, Recreation.

Because the nearest sensitive-receptor is located approximately 250 feet from the Project site, the LST receptor distance was assumed to be 164 feet (50 meters), which is the closest available distance provided by the SCAQMD lookup tables. The construction LST values from the SCAQMD lookup tables for Source Receptor Area (SRA) 8, West San Gabriel Valley, for a 1-acre construction site and a receptor distance of 50 meters are shown in Table 4.1-5.

Table 4.1-5. Localized Significance Thresholds for Source Receptor Area 8 (West San Gabriel Valley)

Pollutant	Threshold (pounds per day)
NO_2	69
CO	783
PM_{10}	11
$PM_{2.5}$	4

Source: SCAQMD 2008.

Notes: NO_2 = nitrogen dioxide; CO = carbon monoxide; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter.

LST thresholds were determined based on the values for 1-acre site at a distance of 50 meters from the nearest sensitive receptor.

The assessment of the proposed Project's potential to expose sensitive receptors to substantial pollutant concentrations (threshold criterion 3) also includes an evaluation of CO hotspots, and an assessment of the potential health effects of criteria air pollutants.

4.1.5 Environmental Impacts Analysis

Threshold 4.1a. Would the project conflict with or obstruct implementation of the applicable air quality plan?

As previously discussed, the Project site is located within the SCAB under the jurisdiction of the SCAQMD, which is the local agency responsible for administration and enforcement of air quality regulations for the area. The SCAQMD has established criteria for determining consistency with the AQMP, currently the 2016 AQMP, in Chapter 12, Sections 12.2 and 12.3, in the SCAQMD CEQA Air Quality Handbook (SCAQMD 1993). The criteria are as follows (SCAQMD 1993):

- **Consistency Criterion No. 1:** The proposed Project will not result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay the timely attainment of air quality standards of the interim emissions reductions specified in the AQMP.
- **Consistency Criterion No. 2:** The proposed Project will not exceed the assumptions in the AQMP or increments based on the year of project buildout and phase.

Consistency Criterion No. 1

Threshold 4.1b evaluates the Project's potential to violate air quality standards or contribute substantially to an existing or projected air quality violation impact analysis. As discussed under Threshold 4.1b , the proposed Project would not result in a cumulatively considerable net increase of any criteria pollutant for which the region is non-attainment under an applicable federal or state ambient air quality standard. Because the Project would not result in an increase in the frequency and severity of existing air quality violations, the Project would not conflict with Consistency Criterion No. 1 of the SCAQMD CEQA Air Quality Handbook.

Consistency Criterion No. 2

While striving to achieve the NAAQS for O_3 and $PM_{2.5}$ and the CAAQS for O_3, PM_{10}, and $PM_{2.5}$ through a variety of air quality control measures, the 2016 AQMP also accommodates planned growth in the SCAB. Projects are considered consistent with, and would not conflict with or obstruct implementation of, the AQMP if the growth in socioeconomic factors (e.g., population, employment) is consistent with the underlying regional plans used to develop the AQMP (per Consistency Criterion No. 2 of the SCAQMD CEQA Air Quality Handbook).

The SCAQMD primarily uses demographic growth forecasts for various socioeconomic categories (e.g., population, housing, employment by industry) developed by the SCAG for its RTP/SCS (SCAG 2016), which is based on general plans for cities and counties in the SCAB, for the development of the AQMP emissions inventory (SCAQMD 2017a).[12] The SCAG 2016 RTP/SCS, and associated Regional Growth Forecast, are

[12] Information necessary to produce the emission inventory for the SCAB is obtained from the SCAQMD and other governmental agencies, including CARB, Caltrans, and SCAG. Each of these agencies is responsible for collecting data (e.g., industry growth factors, socioeconomic projections, travel activity levels, emission factors, emission speciation profile, and emissions) and developing methodologies (e.g., model and demographic forecast improvements) required to generate a comprehensive emissions inventory. SCAG incorporates these data into their Travel Demand Model for estimating/projecting vehicle miles

generally consistent with the local plans; therefore, the 2016 AQMP is generally consistent with local government plans. The proposed Project site is zoned for open space use within the Pasadena General Plan. Therefore, the Project would be consistent with the current zoning and land use designation. Accordingly, the Project would meet Consistency Criterion No. 2 of the SCAQMD CEQA Air Quality Handbook.

Therefore, implementation of the Project would not result in a conflict with, or obstruct implementation of, the applicable air quality plan (i.e., the 2016 AQMP). Accordingly, the Project would meet Consistency Criterion No. 2 of the SCAQMD CEQA Air Quality Handbook.

Summary

As described previously, the proposed Project would not result in a significant increase in the frequency and severity of existing air quality violations and would not conflict with Consistency Criterion No. 1. Additionally, implementation of the Project would not exceed the demographic growth forecasts in the SCAG 2016 RTP/SCS; therefore, the Project would be consistent with the SCAQMD 2016 AQMP, which based future emission estimates on the SCAG 2016 RTP/SCS. Thus, the Project would not conflict with Consistency Criterion No. 2. Based on these considerations, impacts related to the Project's potential to conflict with or obstruct implementation of the applicable air quality plan would be less than significant.

Threshold 4.1b Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

Construction of the proposed Project would result in emissions of criteria air pollutants from mobile, area, and/or stationary sources, which may cause exceedances of federal and state ambient air quality standards or contribute to existing non-attainment of ambient air quality standards. The following discussion identifies potential short-term construction impacts that would result from implementation of the Project.

Short-Term Construction Impacts

Construction of the Project would result in the temporary addition of pollutants to the local airshed caused by on-site sources (i.e., off-road construction equipment, soil disturbance, and VOC off-gassing) and off-site sources (i.e., vendor trucks and worker vehicle trips). Construction emissions can vary substantially from day to day depending on the level of activity, the specific type of operation, and for dust, and the prevailing weather conditions. Therefore, such emission levels can only be approximately estimated with a corresponding uncertainty in precise ambient air quality impacts.

Construction criteria air pollutant emissions associated with temporary construction activity were quantified using CalEEMod (CAPCOA 2017). Construction emissions were calculated for the estimated worst-case day over the construction period associated with each phase and reported as the maximum daily emissions estimated during each year of construction (2021, and 2022). Construction schedule assumptions, including phase type, duration,

traveled (VMT) and driving speeds. SCAG's socioeconomic and transportation activities projections in their 2016 RTP/SCS are integrated in the 2016 AQMP (SCAQMD 2017a).

and sequencing, were based on information provided by the City and default values provided in CalEEMod and are intended to represent a reasonable scenario based on the best information available.

To estimate Project emissions, and based on information provided by the City, it is assumed that construction in Area 2 would begin in August 2021 and would last approximately 3 months, ending in October 2021. Construction in Area 3 would begin in March 2022 and would last approximately 9 months. The inputs into CalEEMod include the following assumptions (duration of phases is approximate):

- Area 2
  - Site preparation: 1 Week (August 2021 – August 2021)
  - Dewatering: 2 Months (August 2021 – September 2021)
  - Demolition: 1 Week (August 2021)
  - Grading/Excavation: 2 Months (July 2021 – December 2021)
  - Building Construction: 2 Months (August 2021 – October 2021)
  - Paving: 1 Week (October 2021)
- Area 3
  - Site Preparation: 1 Week (March 2022)
  - Demolition: 2 Weeks (March 2022 – April 2022)
  - Grading/Excavation 6 Months (April 2022 – August 2022)
  - Building Construction 2 Months (August 2022 – October 2022)
  - Paving: 2 Months (August 2022 – October 2022)
  - Architectural Coating 1 Week (November 2022)

Construction of the Project would commence with site preparation, grading and earthwork excavation. It is anticipated that approximately 1,608 cubic yards of earthwork material would be exported to support the construction of Area 2. Additionally, it is anticipated that approximately 11,000 cubic yards and 37,000 cubic yards of earthwork material would be required to be exported and imported respectively during Area 3 construction. The material is assumed to be transported during the grading and excavation phases. Upon completion of these phases, vertical building construction and paving/concrete installation would commence. Construction activity is assumed to occur at the site for approximately 8 hours per day, 5 days per week (22 days a month), during Project construction. CalEEMod default trip length values were used for all worker and vendor trips and earthwork import trips. Demolition and exported material will be disposed of at the Vulcan Durbin landfill in Irwindale which is approximately 18 miles from the Project. Therefore, an 18-mile trip distance was used for exported material and demolition haul truck trips. The construction equipment mix and vehicle trips used for estimating the Project-generated construction emissions are shown in Table 4.1-6.

Table 4.1-6. Construction Scenario Assumptions

Construction Phase	One-Way Vehicle Trips			Equipment		
	Average Daily Worker Trips	*Average Daily Vendor Truck Trips*	*Total Haul Truck Trips*	*Equipment Type*	*Quantity*	*Usage Hours*
Area 2: Site Preparation	8	2	14	Rubber-tired dozers	1	7
				Graders	1	8
				Tractors/loaders/backhoes	5	8
Area 2: Dewatering	5	0	0	Tractors/loaders/backhoes	1	8
				Pump	1	24
Area 2: Demolition	13	2	64	Concrete/Industrial Saws	1	8
				Rubber-tired dozers	1	8
				Tractors/loaders/backhoes	3	8
Area 2: Grading and Excavation	10	2	420	Excavators	1	8
				Rubber Tired Dozers	1	6
				Rubber Tired Loaders	1	8
				Tractors/loaders/backhoes	1	7
Area 2: Building Construction	26	2	0	Cranes	1	6
				Excavators	1	8
				Tractor/loaders/backhoes	1	6
				Trenchers	1	8
				Tractors/loaders/backhoes	1	8
Area 2: Paving	18	2	0	Pavers	1	6
				Cement and Mortar Mixers	1	6
				Pressure Washers	1	8
				Paving Equipment	1	8
				Rollers	1	7
				Tractor/loader/backhoe	1	8
Area 3: Site Preparation	5	2	0	Rubber Tired Dozers	1	7
				Tractor/loader/backhoes	1	8
Area 3: Demolition	10	2	142	Concrete/industrial saws	1	8
				Tractor/loaders/backhoes	3	8
Area 3: Grading and Excavation	10	2	4,746	Shaker	1	8
				Rubber Tired Dozers	1	6
				Rubber Tired Loaders	1	8
				Tractors/loaders/backhoes	1	7

Table 4.1-6. Construction Scenario Assumptions

Construction Phase	One-Way Vehicle Trips			Equipment		
	Average Daily Worker Trips	*Average Daily Vendor Truck Trips*	*Total Haul Truck Trips*	*Equipment Type*	*Quantity*	*Usage Hours*
Area 3: Building Construction				Cranes	1	6
				Forklifts	1	6
				Generator Sets	1	8
				Tractors/loaders/backhoes	1	6
Area 3: Paving	15	2	0	Pavers	1	6
				Cement and Mortar Mixers	1	8
				Pressure Washers	1	6
				Paving Equipment	1	8
				Rollers	1	7
				Tractor/loader/backhoe	1	8
Area 3: Architectural Coating	5	0	0	Air Compressors	1	6

Notes: See Appendix C.

Entrained dust results from the exposure of earth surfaces to wind from the direct disturbance and movement of soil, resulting in PM_{10} and $PM_{2.5}$ emissions. The Project would be required to comply with SCAQMD Rule 403 to control dust emissions generated during the grading activities. Standard construction practices that would be employed to reduce fugitive dust emissions include watering of the active sites three times per day, depending on weather conditions. Internal-combustion engines used by construction equipment, vendor trucks (i.e., delivery trucks), and worker vehicles would result in emissions of VOCs, NO_x, CO, PM_{10}, and $PM_{2.5}$. The application of architectural coatings, such as exterior application and other finishes, and asphalt pavement would also produce VOC emissions; however, the contractor is required to procure architectural coatings from a supplier in compliance with the requirements of SCAQMD's Rule 1113 (Architectural Coatings).

Table 4.1-7 presents the estimated maximum daily construction emissions generated during construction of the Project. The values shown are the maximum summer or winter daily emissions results from CalEEMod. Details of the emissions are provided in Appendix C.

Table 4.1-7. Estimated Maximum Daily Construction Criteria Air Pollutant Emissions

Year	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	Pounds per Day					
2021	5.02	45.17	38.88	0.08	5.10	3.36
2022	3.62	26.20	19.68	0.06	3.71	2.05
Maximum	*5.02*	*45.17*	*38.88*	*0.08*	*5.10*	*2.36*
SCAQMD threshold	*75*	*100*	*550*	*150*	*150*	*55*
Threshold exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

Notes: VOC = volatile organic compound; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; SCAQMD = South Coast Air Quality Management District.

See Appendix C for complete results.

The values shown are the maximum summer or winter daily emissions results from CalEEMod. The PM_{10} and $PM_{2.5}$ emissions reflect CalEEMod "mitigated" output, which accounts for compliance with SCAQMD Rule 403 (Fugitive Dust).

As shown in Table 4.1-7, construction activities would not generate emissions in excess of the SCAQMD daily construction emissions thresholds for VOCs, NO_x, CO SO_x, PM_{10}, and $PM_{2.5}$.

Air pollution is largely a cumulative impact. The non-attainment status of regional pollutants is a result of past and present development, and the SCAQMD develops and implements plans for future attainment of ambient air quality standards. A cumulative analysis must evaluate a project's contribution to the cumulative increase in pollutants for which the SCAB is designated as non-attainment for the CAAQS and NAAQS. As discussed in Section 2.3.1, South Coast Air Basin Attainment Designation, the SCAB has been designated as a national non-attainment area for O_3 and $PM_{2.5}$ and a California non-attainment area for O_3, PM_{10}, and $PM_{2.5}$. Of these non-attainment pollutants, construction of the Project would generate VOC and NO_x emissions (which are precursors to O_3) and emissions of PM_{10} and $PM_{2.5}$.

If a project's emissions would not exceed the SCAQMD significance thresholds for criteria pollutants, it would be expected to not have a cumulatively considerable contribution to the non-attainment status in the SCAB. As indicated in Table 4.1-7, Project-generated construction emissions, would not exceed the SCAQMD emission-based significance thresholds for any criteria air pollutant, and no mitigation is required. Additionally, the Project would not conflict with or obstruct implementation of the SCAQMD 2016 AQMP.

However, even if a project does not exceed thresholds, it may still contribute to a significant cumulative impact on air quality, depending on whether the project's contribution accounts for a significant proportion of the cumulative total emissions (i.e., it represents a "cumulatively considerable contribution" to the cumulative air quality impact) and whether it is consistent with the SCAQMD 2016 AQMP, which addresses the cumulative emissions in the SCAB.

Cumulative localized impacts would potentially occur if a construction project were to occur concurrently with another off-site but nearby project. The geographic scope of the area potentially affected by cumulative air quality impacts from construction and operation consists of sensitive receptor locations that could be exposed to localized air pollution from the proposed Project and from related projects. In general, air quality emissions attenuate over distance, with emissions levels dropping back to background levels within approximately 200

meters (656 feet) when upwind from a source and within approximately 500 meters (1,640 feet) (WHO 2013) As discussed in greater detail in Section 4, Environmental Impact Analysis of this Draft EIR, the cumulative projects were chosen based on direction from the City. ASCP Area 1 construction, while relatively near Area 2, is anticipated to begin in 2023 (and thus, after the completion of the proposed Project). The Devil's Gate Reservoir Sediment Removal and Management Project is located to the southwest of Area 3; sediment removal and placement is ongoing and expected to conclude in Fall 2022, with habitat restoration continuing through Fall 2023; the Oak Grove Area Improvements Projects could begin construction as early as 2021 if funds become available, but is located over 2,218 feet from the Project site. The LACFCD Pumpback/Intake at Devil's Gate (Devil's Gate Dam to Eaton) project would begin after the Devil's Gate and the proposed Project; and the Explorer Groundwater Well construction could potentially be concurrent with proposed Project Area 3, although no CEQA documentation has yet been prepared. Of the projects identified and described in Section 4, Environmental Impact Analysis, the Devil's Gate Reservoir Sediment Removal and Management Project is the one nearest to the Project site[13] and with a potential overlap in construction activities. Therefore, the Devil's Gate project is the one with the greatest potential to result in localized cumulative air quality impacts with regards to the proposed Project.

Localized construction air pollution emissions are assessed under Threshold 4.1c below. It was determined that at sensitive receptors nearest to Area 3 (the portion of the Project site nearest to the Devil's Gate project), during the more intensive phases of construction, the estimated pollutant emissions of NO_x, CO, PM_{10}, and $PM_{2.5}$ would not exceed the SCAQMD LSTs and localized construction air quality impacts would be less than significant. The Devil's Gate project's localized construction emissions were also deemed to be less than significant; furthermore, the closest portion of the Project site representing an active work area (Basin J) is located approximately 500 feet from the Devil's Gate project site to the southwest. Therefore, it is unlikely that construction emissions from the two projects would combine in a measurable fashion at nearby receptors receivers, which are located approximately 250 feet or more further to the east of the Project site and approximately 1,000 from the northern boundary of the Devil's Gate project. This is considered to be a less than significant impact, and not cumulatively considerable.

Otherwise, construction schedules from other potential future projects near the Project site are currently unknown; therefore, potential construction impacts associated with future projects would be considered speculative.[14] However, future projects would be subject to CEQA and would require air quality analysis and, where necessary, mitigation if the project would exceed SCAQMD thresholds. Criteria air pollutant emissions associated with construction activity of future projects would be reduced through implementation of control measures required by the SCAQMD. Cumulative PM_{10} and $PM_{2.5}$ emissions would be reduced because all future projects would be subject to SCAQMD Rule 403 (Fugitive Dust), which sets forth general and specific requirements for all construction sites in the SCAQMD.

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13 Note that construction equipment assumptions associated with specific components in Areas 2 and 3 that are approved to move forward without additional environmental review have been incorporated as part of the construction noise analysis addressed in Section 4.6.5, and are thus not considered as part of this cumulative impacts discussion.

14 The CEQA Guidelines state that if a particular impact is too speculative for evaluation, the agency should note its conclusion and terminate discussion of the impact (14 CCR 15145). This discussion is nonetheless provided in an effort to show good-faith analysis and comply with CEQA's information disclosure requirements.

Based on the Project-generated construction emissions of criteria air pollutants, which did not exceed the SCAQMD daily thresholds, the Project would not result in generation of a cumulatively considerable net increase of any criteria pollutant for which the region is non-attainment under an applicable federal or state ambient air quality standard due to short-term construction. Impacts would be less than significant and no mitigation is required.

Long-Term Operational Impacts

As described in Section 3, Project Description, PWP's future schedule of operation and maintenance activities for Project-related facilities would not substantively differ from the current maintenance routine and procedures. No new employees are required for the long-term operation of the Project components. The proposed Project would include new hydraulic motors and winches are part of the design for Area 2 but they would be electrically powered. Electricity use would contribute indirectly to criteria air pollutant emissions; however, the emissions from electricity use are only quantified for greenhouse gases in CalEEMod, since criteria pollutant emissions occur at the site of the power plant, which is typically off site. As such, the Project not result in generation of a cumulatively considerable net increase of any criteria pollutant for which the region is non-attainment under an applicable federal or state ambient air quality standard due to long-term operations. Impacts would be less than significant and no mitigation is required.

Threshold 4.1c Would the project expose sensitive receptors to substantial pollutant concentrations?

As discussed under Sensitive Receptors in Section 4.1.2, sensitive receptors are those individuals more susceptible to the effects of air pollution than the population at large. According to SCAQMD, sensitive receptors include residences, schools, playgrounds, childcare centers, long-term healthcare facilities, rehabilitation centers, convalescent centers, and retirement homes (SCAQMD 1993). The nearest off-site sensitive receptors would be single-family homes approximately 250 feet east from Area 3.

Short-Term Construction Impacts

Localized Significance Thresholds Analysis

LST analysis has been prepared to determine potential impacts to nearby sensitive receptors during construction of the Project. As indicated in Section 4.1.4, Thresholds of Significance, the SCAQMD recommends the evaluation of localized NO_2, CO, PM_{10}, and $PM_{2.5}$ impacts to sensitive receptors in the immediate vicinity of the Project site that would occur as a result of construction activities. The impacts were analyzed using methods consistent with those in the SCAQMD's Final LST Methodology (2008). According to the Final LST Methodology, "off-site mobile emissions from the project should not be included in the emissions compared to the LSTs" (SCAQMD 2008). Hauling of construction materials associated with Project construction is not expected to cause substantial air quality impacts to sensitive receptors along off-site roadways. Emissions from the trucks would be relatively brief in nature and would cease once the trucks pass through the main streets.

Construction activities associated with the Project would result in temporary sources of on-site fugitive dust and construction equipment emissions. Off-site emissions from vendor trucks and worker vehicle trips are not included in the LST analysis. The maximum allowable daily emissions that would satisfy the SCAQMD LSTs for SRA 8 are presented in Table 4.1-8 and compared with the maximum daily on-site construction emissions generated during the Project.

Table 4.1-8. Localized Significance Thresholds Analysis for Project Construction

Pollutant	Project Construction Emissions (Pounds per Day)	LST Criteria (Pounds per Day)	Exceeds LST?
NO_2	37.12	69	No
CO	22.05	783	No
PM_{10}	4.41	11	No
$PM_{2.5}$	3.00	4	No

Source: SCAQMD 2008.

Notes: LST = localized significance threshold; NO_2 = nitrogen dioxide; CO = carbon monoxide; PM_{10} = particulate matter; $PM_{2.5}$ = fine particulate matter.

See Appendix C for detailed results.

Localized significance thresholds are shown for 1-acre Project sites corresponding to a distance to a sensitive receptor of 50 meters.

These estimates reflect control of fugitive dust required by Rule 403.

Greatest on-site NO_x, CO, PM_{10}, and $PM_{2.5}$ emissions are associated with the overlap of the Area 2 Building Construction and Grading phases.

As shown in Table 4.1-8, construction activities would not exceed the SCAQMD daily LSTs for NO_2, Co PM_{10} and $PM_{2.5}$ emissions in excess of site-specific LSTs; therefore, site-specific construction impacts during construction of the Project would be less than significant.

CO Hotspots

Traffic-congested roadways and intersections have the potential to generate localized high levels of CO. Localized areas where ambient concentrations exceed federal and/or state standards for CO are termed CO "hotspots." CO transport is extremely limited, because CO disperses rapidly with distance from the source. Under certain extreme meteorological conditions, however, CO concentrations near a congested roadway or intersection may reach unhealthy levels, affecting sensitive receptors. Typically, high CO concentrations are associated with severely congested intersections. Projects contributing to adverse traffic impacts may result in the formation of a CO hotspot. Additional analysis of CO hotspot impacts would be conducted if a project would result in a significant impact or contribute to an adverse traffic impact at a signalized intersection that would potentially subject sensitive receptors to CO hotspots.

During construction of the Project, construction traffic would affect the intersections near the Project site. However, the proposed Project would be temporary and would not be a source of daily, long-term mobile-source emissions. In addition, due to continued improvement in vehicular emissions at a rate faster than the rate of vehicle growth and/or congestion, the potential for CO hotspots in the SCAB is steadily decreasing. Finally, as discussed in Section 4.8 of this Draft EIR, transportation impacts would be less than significant with mitigation.

Toxic Air Contaminants

Toxic air contaminants (TACs) are defined as substances that may cause or contribute to an increase in deaths or in serious illness, or that may pose a present or potential hazard to human health. As discussed under the LST analysis, the nearest sensitive receptors to the proposed Project are residences located adjacent to the Project as it passes through residential neighborhoods.

Health effects from carcinogenic air toxics are usually described in terms of cancer risk. The SCAQMD recommends an incremental cancer risk threshold of 10 in 1 million. "Incremental cancer risk" is the net increased likelihood that a person continuously exposed to concentrations of TACs resulting from a project over a 9-, 30-, and 70-year exposure period will contract cancer based on the use of standard Office of Environmental Health Hazard Assessment risk-assessment methodology (OEHHA 2015). In addition, some TACs have non-carcinogenic effects. The SCAQMD recommends a Hazard Index of 1 or more for acute (short-term) and chronic (long-term) non-carcinogenic effects. [15] TACs that would potentially be emitted during construction activities associated with the proposed Project would be diesel particulate matter.

Diesel particulate matter emissions would be emitted from heavy equipment operations and heavy-duty trucks. Heavy-duty construction equipment is subject to a CARB Airborne Toxics Control Measure for in-use diesel construction equipment to reduce diesel particulate emissions. As described for the LST analysis, PM10 and PM2.5 (representative of diesel particulate matter) exposure would be minimal. According to the Office of Environmental Health Hazard Assessment, health risk assessments (which determine the exposure of sensitive receptors to toxic emissions) should be based on a 30-year exposure period for the maximally exposed individual resident; however, such assessments should also be limited to the period/duration of activities associated with the Project. The duration of the proposed construction activities would constitute a small percentage of the total 30-year exposure period. The construction period for the proposed Project would be approximately 16 months, after which construction-related TAC emissions would cease. However, because of the nature of the proposed Project, emissions would not be concentrated in any one work area for the entire construction duration. Project construction would not generally remain in a single location for more than a few weeks. Due to this relatively short period of exposure and minimal particulate emissions on-site, TACs generated during construction would not be expected to result in concentrations causing significant health risks.

Health Effects of Criteria Air Pollutants

Construction emissions of the Project would not exceed the SCAQMD thresholds for any criteria air pollutants, including VOC, NO_x, CO, SO_x, PM_{10}, and $PM_{2.5}$.

Health effects associated with O_3 include respiratory symptoms, worsening of lung disease leading to premature death, and damage to lung tissue (CARB 2019c). VOCs and NO_x are precursors to O_3, for which the SCAB is designated as non-attainment with respect to the NAAQS and CAAQS. The contribution of VOCs and NO_x to regional ambient O_3 concentrations is the result of complex photochemistry. The increases in O_3 concentrations in the SCAB due to O_3 precursor emissions tend to be found downwind of the source location because of the time required for the photochemical reactions to occur. Further, the potential for exacerbating excessive O_3 concentrations would also depend on the time of year that the VOC emissions would occur, because exceedances of the O_3 NAAQS and CAAQS tend to occur between April and October when solar radiation is highest. Due to the lack of quantitative methods to assess this complex photochemistry, the holistic effect of a single project's emissions of O_3 precursors is speculative. That being said, because the proposed Project would not exceed the SCAQMD thresholds, the proposed Project would not contribute to health effects associated with O_3.

[15] Non-cancer adverse health risks are measured against a hazard index, which is defined as the ratio of the predicted incremental exposure concentrations of the various non-carcinogens from the project to published reference exposure levels that can cause adverse health effects.

Health effects associated with NO_x include lung irritation and enhanced allergic responses (CARB 2019c). Because Project-related NO_x emissions would not exceed the SCAQMD mass daily thresholds, and because the SCAB is a designated attainment area for NO_2 and the existing NO_2 concentrations in the area are well below the NAAQS and CAAQS standards, it is not anticipated that the proposed Project would cause an exceedance of the NAAQS and CAAQS for NO_2 or result in potential health effects associated with NO_2 and NO_x.

Health effects associated with CO include chest pain in patients with heart disease, headache, light-headedness, and reduced mental alertness (CARB 2019c). CO tends to be a localized impact associated with congested intersections. The associated potential for CO hotspots was discussed previously and determined to be less than significant. Thus, the Project's CO emissions would not contribute to significant health effects associated with CO.

Health effects associated with PM_{10} include premature death and hospitalization, primarily for worsening of respiratory disease (CARB 2019c). Construction of the Project would not exceed thresholds for PM_{10} or $PM_{2.5}$, would not contribute to exceedances of the NAAQS and CAAQS for particulate matter, and would not obstruct the SCAB from coming into attainment for these pollutants. The Project would also not result in substantial diesel particulate matter emissions during construction. Additionally, the Project would be required to comply with SCAQMD Rule 403, which limits the amount of fugitive dust generated during construction. Due to the minimal contribution of particulate matter during construction, the Project is not anticipated to result in health effects associated with PM_{10} or $PM_{2.5}$.

In summary, construction of the proposed Project would not result in exceedances of the SCAQMD significance thresholds for certain criteria pollutants. Therefore, the Project would not expose sensitive receptors to substantial pollutant concentrations or potential health effects associated with criteria air pollutants due to short-term construction. Impacts would be less than significant and no mitigation is required.

Long-Term Operational Impacts

As described in Section 3, Project Description, PWP's future schedule of operation and maintenance activities for Project-related facilities would not substantively differ from the current maintenance routine and procedures. No new employees are required for the long-term operation of the Project components; therefore, no long-term operational air quality impacts from traffic would result. No new emissions-generating land uses are proposed; therefore, no long-term operational air quality emissions from mobile equipment or stationary machinery would result. As such, the Project would not expose sensitive receptors to substantial pollutant concentrations or potential health effects associated with criteria air pollutants due to long-term operations. Impacts would be less than significant and no mitigation is required.

4.1.6 Cumulative Impacts

Because of the cumulative nature of air quality impacts, cumulative impacts to air quality are addressed in Section 4.1 under Threshold 4.1b. As discussed in Threshold 4.1b, impacts resulting from the proposed Project air pollutant emissions would not be cumulatively considerable and no mitigation is required.

4.1.7 Mitigation Measures

No mitigation measures are required.

4.1.8 Level of Significance After Mitigation

The proposed Project would not result in any potentially significant impacts related to Air Quality, and all impacts would be less than significant with Project implementation.

4.1.9 References

13 CCR 2449–2449.3 and Appendix A. General Requirements for In-Use Off-Road Diesel-Fueled Fleets.

14 CCR 15000–15387 and Appendices A–N. Guidelines for Implementation of the California Environmental Quality Act, as amended.

17 CCR 93000. Substances Identified as Toxic Air Contaminants. In Subchapter 7, Toxic Air Contaminants.

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