3.3 - Air Quality

This section describes the existing air quality conditions and potential effects from project implementation on the site and its surrounding area. Descriptions and analysis in this section are based on information contained in the Air Quality, Health Risk, and Greenhouse Gas Analysis Report prepared in March 2017 by FirstCarbon Solutions, included in this Draft EIR as Appendix B.

3.3.1 - Regulatory Setting

Federal Regulations

The United States Environmental Protection Agency (EPA) is responsible for setting and enforcing the National Ambient Air Quality Standards (NAAQS) for ozone (O_3), carbon monoxide (CO), nitrogen oxides (NO_x), sulfur dioxide (SO_2), particulate matter between 2.5 and 10 microns (PM_{10}), and lead. Collectively, these air pollutants are known as criteria pollutants. The EPA has jurisdiction over emissions sources that are under the authority of the federal government including aircraft, locomotives, and emissions sources outside state waters (Outer Continental Shelf). The EPA also establishes emission standards for motor vehicles sold in states other than California. Automobiles sold in California must meet the stricter emission requirements of the California Air Resources Board (ARB).

The Federal Clean Air Act (CAA) was first enacted in 1955, and has been amended numerous times in subsequent years (1963, 1965, 1967, 1970, 1977, and 1990). The CAA establishes the NAAQS and specifies future dates for achieving compliance with the NAAQS. The CAA also mandates that states submit and implement State Implementation Plans (SIPs) for local areas not meeting these standards. These plans must include discussions on current air quality conditions and pollution control measures that demonstrate how the standards will be met.

The 1990 amendments to the CAA that identify specific emission reduction goals for areas not meeting the NAAQS, require a demonstration of reasonable further progress toward attainment, and incorporate additional sanctions for failure to attain or to meet interim milestones. The sections of the CAA most directly applicable to the development of the project site include Title I (Non-Attainment Provisions) and Title II (Mobile Source Provisions). Title I provisions were established with the goal of attaining the NAAQS for the following criteria pollutants O_3, nitrogen dioxide (NO_2), SO_2, PM_{10}, CO, particulate matter less than 2.5 microns ($PM_{2.5}$), and lead. The NAAQS were amended in July 1997 to include an additional standard for O_3 and to adopt a NAAQS for $PM_{2.5}$.

Mobile source emissions are regulated in accordance with Title II provisions. These provisions require the use of cleaner burning gasoline and other cleaner burning fuels such as methanol and natural gas. Automobile manufacturers are also required to reduce tailpipe emissions of hydrocarbons and NO_x. NO_x is a collective term that includes all forms of nitrogen oxides (NO, NO_2, NO_3) which are emitted as byproducts of the combustion process.

State Regulations

The California Air Resources Board (ARB), which became part of the California Environmental Protection Agency (CalEPA) in 1991, is responsible for ensuring implementation of the California Clean Air Act (CCAA) (Assembly Bill [AB] 2595), responding to the federal CAA, and for regulating emissions from consumer products and motor vehicles. The ARB established the California Ambient Air Quality Standards (CAAQS) for all pollutants for which the federal government has NAAQS and, in addition, establishes standards for sulfates, visibility, hydrogen sulfide, and vinyl chloride. However, at this time, hydrogen sulfide and vinyl chloride are not measured at any monitoring stations in the South Coast Air Basin (SoCAB) because they are not considered a regional air quality problem. Generally, the CAAQS are more stringent than the NAAQS. The California CAA mandates achievement of the maximum degree of emissions reductions possible from vehicular and other mobile sources in order to attain the state ambient air quality standards by the earliest practical date.

Local air quality management districts, such as the South Coast Air Quality Management District (SCAQMD), regulate air emissions from commercial and light industrial facilities. All air pollution control districts have been formally designated as attainment or non-attainment for each NAAQS and CAAQS.

Serious non-attainment areas are required to prepare air quality management plans that include specified emission reduction strategies in an effort to meet clean air goals. These plans are required to include:

- Application of Best Available Retrofit Control Technology to existing sources.
- Developing control programs for area sources (e.g., architectural coatings and solvents) and indirect sources (e.g. motor vehicle use generated by residential and commercial development).
- A District permitting system designed to allow no net increase in emissions from any new or modified permitted sources of emissions.
- Implementing reasonably available transportation control measures and assuring a substantial reduction in growth rate of vehicle trips and miles traveled.
- Significant use of low emissions vehicles by fleet operators.
- Sufficient control strategies to achieve a five percent or more annual reduction in emissions or 15 percent or more in a period of three years for ROGs, NO_x, CO and PM_{10}. However, air basins may use alternative emission reduction strategy that achieves a reduction of less than five percent per year under certain circumstances.

Specifically, ARB has worked closely with the EPA, engine and vehicle manufacturers, and other interested parties to reduce emissions from heavy-duty diesel vehicles in California, through a combination of measures including regulations requiring the use of ultra-low sulfur diesel fuel, new emission standards, restrictions on idling, addition of post-combustion filter and catalyst equipment, and retrofits for diesel truck fleets. These programs are expected to result in significant reductions

in particulate matter (PM), NO_x, volatile organic compounds (VOC), and CO emissions as they are fully implemented.

Under the Truck and Bus Regulation, adopted by ARB in 2008, all diesel truck fleets operating in California are required to adhere to an aggressive schedule for upgrading and replacing heavy-duty truck engines. Pursuant to such regulation, older, heavier trucks—i.e., those with pre-2000 year engines and a gross vehicle weight rating (GVWR) greater than 26,000 pounds—are already required to have installed a PM filter and must be replaced with a 2010 engine between 2015 and 2020, depending on the model year. By 2015, all heavier pre-1994 trucks must be upgraded to 2010 engines and newer trucks are thereafter required to be replaced over the next 8 years. Older, more polluting trucks are required to be replaced first, while trucks that already have relatively clean 2007–2009 engines are not required to be replaced until 2023. Lighter trucks (those with a GVWR of 14,001 to 26,000 pounds) must adhere to a similar schedule, and will all be replaced by 2020.

Further, nearly all trucks that are not required under the Truck and Bus Regulation to be replaced by 2015 are required to be upgraded with a PM filter by that date.

Both the EPA and ARB have promulgated ambient air quality standards to protect public health and welfare. These standards undergo periodic updates and new scientific and medical data become available to warrant changes to the standards. The EPA and ARB standards, relevant effects, sources of pollutants are summarized below in Table 3.3-1.

Table 3.3-1: Description of Air Pollutants, Effects, and Sources of Emissions

Air Pollutant	Averaging Time	California Standard	Federal Standard[a]	Most Relevant Effects from Pollutant Exposure	Properties	Sources
Ozone	1 Hour	0.09 ppm	—	Irritate respiratory system; reduce lung function; breathing pattern changes; reduction of breathing capacity; inflame and damage cells that line the lungs; make lungs more susceptible to infection; aggravate asthma; aggravate other chronic lung diseases; cause permanent lung damage; some immunological changes; increased mortality risk; vegetation and property damage.	Ozone is a photochemical pollutant as it is not emitted directly into the atmosphere, but is formed by a complex series of chemical reactions between volatile organic compounds (VOC), NO_x, and sunlight. Ozone is a regional pollutant that is generated over a large area and is transported and spread by the wind.	Ozone is a secondary pollutant; thus, it is not emitted directly into the lower level of the atmosphere. The primary sources of ozone precursors (VOC and NO_x) are mobile sources (on-road and off-road vehicle exhaust).
	8 Hour	0.070 ppm	0.070 ppm			
Carbon monoxide (CO)	1 Hour	20 ppm	35 ppm	Ranges depending on exposure: slight headaches; nausea; aggravation of angina pectoris (chest pain) and other aspects of coronary heart disease; decreased exercise tolerance in persons with peripheral vascular disease and lung disease; impairment of central nervous system functions; possible increased risk to fetuses; death.	CO is a colorless, odorless, toxic gas. CO is somewhat soluble in water; therefore, rainfall and fog can suppress CO conditions. CO enters the body through the lungs, dissolves in the blood, replaces oxygen as an attachment to hemoglobin, and reduces available oxygen in the blood.	CO is produced by incomplete combustion of carbon-containing fuels (e.g., gasoline, diesel fuel, and biomass). Sources include motor vehicle exhaust, industrial processes (metals processing and chemical manufacturing), residential wood burning, and natural sources.
	8 Hour	9.0 ppm	9 ppm			
Nitrogen dioxide [b] (NO_2)	1 Hour	0.18 ppm	0.100 ppm	Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; contribution to atmospheric discoloration; increased visits to hospital for respiratory illnesses.	During combustion of fossil fuels, oxygen reacts with nitrogen to produce nitrogen oxides—NO_x (NO, NO_2, NO_3, N_2O, N_2O_3, N_2O_4, and N_2O_5). NO_x is a precursor to ozone, PM_{10}, and $PM_{2.5}$ formation. NO_x can react with compounds to form nitric acid and related small particles and result in PM related health effects.	NO_x is produced in motor vehicle internal combustion engines and fossil fuel-fired electric utility and industrial boilers. Nitrogen dioxide forms quickly from NO_x emissions. NO_2 concentrations near major roads can be 30 to 100 percent higher than those at monitoring stations.
	Annual	0.030 ppm	0.053 ppm			

Table 3.3-1 (cont.): Description of Air Pollutants

Air Pollutant	Averaging Time	California Standard	Federal Standard[a]	Most Relevant Effects from Pollutant Exposure	Properties	Sources
Sulfur dioxide[c] (SO_2)	1 Hour	0.25 ppm	0.075 ppm	Bronchoconstriction accompanied by symptoms which may include wheezing, shortness of breath and chest tightness, during exercise or physical activity in persons with asthma. Some population-based studies indicate that the mortality and morbidity effects associated with fine particles show a similar association with ambient sulfur dioxide levels. It is not clear whether the two pollutants act synergistically or one pollutant alone is the predominant factor.	Sulfur dioxide is a colorless, pungent gas. At levels greater than 0.5 ppm, the gas has a strong odor, similar to rotten eggs. Sulfur oxides (SO_x) include sulfur dioxide and sulfur trioxide. Sulfuric acid is formed from sulfur dioxide, which can lead to acid deposition and can harm natural resources and materials. Although sulfur dioxide concentrations have been reduced to levels well below state and federal standards, further reductions are desirable because sulfur dioxide is a precursor to sulfate and PM_{10}.	Human caused sources include fossil-fuel combustion, mineral ore processing, and chemical manufacturing. Volcanic emissions are a natural source of sulfur dioxide. The gas can also be produced in the air by dimethylsulfide and hydrogen sulfide. Sulfur dioxide is removed from the air by dissolution in water, chemical reactions, and transfer to soils and ice caps. The sulfur dioxide levels in the State are well below the maximum standards.
	3 Hour	—	0.5 ppm			
	24 Hour	0.04 ppm	0.14 (for certain areas)			
	Annual	—	0.030 ppm (for certain areas)			
Particulate matter (PM_{10})	24 hour	50 µg/m^3	150 µg/m^3	• Short-term exposure (hours/days): irritation of the eyes, nose, throat; coughing; phlegm; chest tightness; shortness of breath; aggravate existing lung disease, causing asthma attacks and acute bronchitis; those with heart disease can suffer heart attacks and arrhythmias. • Long-term exposure: reduced lung function; chronic bronchitis; changes in lung morphology; death.	Suspended particulate matter is a mixture of small particles that consist of dry solid fragments, droplets of water, or solid cores with liquid coatings. The particles vary in shape, size, and composition. PM_{10} refers to particulate matter that is between 2.5 and 10 microns in diameter, (1 micron is one-millionth of a meter). $PM_{2.5}$ refers to particulate matter that is 2.5 microns or less in diameter, about one-thirtieth the size of the average human hair.	Stationary sources include fuel or wood combustion for electrical utilities, residential space heating, and industrial processes; construction and demolition; metals, minerals, and petrochemicals; wood products processing; mills and elevators used in agriculture; erosion from tilled lands; waste disposal, and recycling. Mobile or transportation related sources are from vehicle exhaust and road dust. Secondary particles form from reactions in the atmosphere.
	Mean	20 µg/m^3	—			
Particulate matter ($PM_{2.5}$)	24 Hour	—	35 µg/m^3			
	Annual	12 µg/m^3	12 µg/m^3			
Visibility reducing particles	8 Hour	See note below [d]				

Table 3.3-1 (cont.): Description of Air Pollutants

Air Pollutant	Averaging Time	California Standard	Federal Standard[a]	Most Relevant Effects from Pollutant Exposure	Properties	Sources
Sulfates	24 Hour	25 µg/m^3	—	(a) Decrease in ventilatory function; (b) aggravation of asthmatic symptoms; (c) aggravation of cardio-pulmonary disease; (d) vegetation damage; (e) degradation of visibility; (f) property damage.	The sulfate ion is a polyatomic anion with the empirical formula SO_4^{2-}. Sulfates occur in combination with metal and/or hydrogen ions. Many sulfates are soluble in water.	Sulfates are particulates formed through the photochemical oxidation of sulfur dioxide. In California, the main source of sulfur compounds is combustion of gasoline and diesel fuel.
Lead [e]	30-day	1.5 µg/m^3	—	Lead accumulates in bones, soft tissue, and blood and can affect the kidneys, liver, and nervous system. It can cause impairment of blood formation and nerve conduction, behavior disorders, mental retardation, neurological impairment, learning deficiencies, and low IQs.	Lead is a solid heavy metal that can exist in air pollution as an aerosol particle component. Leaded gasoline was used in motor vehicles until around 1970. Lead concentrations have not exceeded state or federal standards at any monitoring station since 1982.	Lead ore crushing, lead-ore smelting, and battery manufacturing are currently the largest sources of lead in the atmosphere in the United States. Other sources include dust from soils contaminated with lead-based paint, solid waste disposal, and crustal physical weathering.
	Quarter	—	1.5 µg/m^3			
	Rolling 3-month average	—	0.15 µg/m^3			
Vinyl chloride[e]	24 Hour	0.01 ppm	—	Short-term exposure to high levels of vinyl chloride in the air causes central nervous system effects, such as dizziness, drowsiness, and headaches. Epidemiological studies of occupationally exposed workers have linked vinyl chloride exposure to development of a rare cancer, liver angiosarcoma, and have suggested a relationship between exposure and lung and brain cancers.	Vinyl chloride, or chloroethene, is a chlorinated hydrocarbon and a colorless gas with a mild, sweet odor. In 1990, ARB identified vinyl chloride as a toxic air contaminant and estimated a cancer unit risk factor.	Most vinyl chloride is used to make polyvinyl chloride plastic and vinyl products, including pipes, wire and cable coatings, and packaging materials. It can be formed when plastics containing these substances are left to decompose in solid waste landfills. Vinyl chloride has been detected near landfills, sewage plants, and hazardous waste sites.

Table 3.3-1 (cont.): Description of Air Pollutants

Air Pollutant	Averaging Time	California Standard	Federal Standard[a]	Most Relevant Effects from Pollutant Exposure	Properties	Sources
Hydrogen sulfide	1 Hour	0.03 ppm	—	High levels of hydrogen sulfide can cause immediate respiratory arrest. It can irritate the eyes and respiratory tract and cause headache, nausea, vomiting, and cough. Long exposure can cause pulmonary edema.	Hydrogen sulfide (H_2S) is a flammable, colorless, poisonous gas that smells like rotten eggs.	Manure, storage tanks, ponds, anaerobic lagoons, and land application sites are the primary sources of hydrogen sulfide. Anthropogenic sources include the combustion of sulfur containing fuels (oil and coal).
Volatile organic compounds (VOC)		There are no State or federal standards for VOCs because they are not classified as criteria pollutants.		Although health-based standards have not been established for VOCs, health effects can occur from exposures to high concentrations because of interference with oxygen uptake. In general, concentrations of VOCs are suspected to cause eye, nose, and throat irritation; headaches; loss of coordination; nausea; and damage to the liver, the kidneys, and the central nervous system. Many VOCs have been classified as toxic air contaminants.	Reactive organic gases (ROGs), or VOCs, are defined as any compound of carbon—excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate—that participates in atmospheric photochemical reactions. Although there are slight differences in the definition of ROGs and VOCs, the two terms are often used interchangeably.	Indoor sources of VOCs include paints, solvents, aerosol sprays, cleansers, tobacco smoke, etc. Outdoor sources of VOCs are from combustion and fuel evaporation. A reduction in VOC emissions reduces certain chemical reactions that contribute to the formulation of ozone. VOCs are transformed into organic aerosols in the atmosphere, which contribute to higher PM_{10} and lower visibility.
Diesel particulate matter (diesel PM)		There are no ambient air quality standards for diesel PM.		Some short-term (acute) effects of diesel PM exposure include eye, nose, throat, and lung irritation, coughs, headaches, light-headedness, and nausea. Studies have linked elevated particle levels in the air to increased hospital admissions, emergency room visits, asthma attacks, and premature deaths among those suffering from respiratory problems. Human	Diesel PM is a source of $PM_{2.5}$—diesel particles are typically 2.5 microns and smaller. Diesel exhaust is a complex mixture of thousands of particles and gases that is produced when an engine burns diesel fuel. Organic compounds account for 80 percent of the total particulate matter mass, which consists of compounds such as hydrocarbons and their derivatives, and polycyclic	Diesel exhaust is a major source of ambient particulate matter pollution in urban environments. Typically, the main source of diesel PM is from combustion of diesel fuel in diesel-powered engines. Such engines are in on-road vehicles such as diesel trucks, off-road construction vehicles, diesel electrical generators, and various pieces of stationary construction

Table 3.3-1 (cont.): Description of Air Pollutants

Air Pollutant	Averaging Time	California Standard	Federal Standard[a]	Most Relevant Effects from Pollutant Exposure	Properties	Sources
				studies on the carcinogenicity of diesel PM demonstrate an increased risk of lung cancer, although the increased risk cannot be clearly attributed to diesel exhaust exposure.	aromatic hydrocarbons and their derivatives. Fifteen polycyclic aromatic hydrocarbons are confirmed carcinogens, a number of which are found in diesel exhaust.	equipment.

Notes:
ppm = parts per million (concentration) $\mu g/m^3$ = micrograms per cubic meter Annual = Annual Arithmetic Mean 30-day = 30-day average Quarter = Calendar quarter

[a] Federal standard refers to the primary national ambient air quality standard, or the levels of air quality necessary, with an adequate margin of safety to protect the public health. All standards listed are primary standards except for 3 Hour SO_2, which is a secondary standard. A secondary standard is the level of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[b] To attain the 1-hour nitrogen dioxide national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 parts per billion (0.100 ppm).

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

[d] Visibility reducing particles: In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are “extinction of 0.23 per kilometer” and “extinction of 0.07 per kilometer” for the statewide and Lake Tahoe Air Basin standards, respectively.

[e] The ARB has identified lead and vinyl chloride as ‘toxic air contaminants’ with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

Source: see Appendix B

Regional Regulations

South Coast Air Quality Management District

Air Quality Management Plans

An Air Quality Management Plan (AQMP) is a plan prepared and implemented by an air pollution district for a county or region designated as nonattainment of the federal and/or California ambient air quality standards. The term nonattainment area is used to refer to an air basin where one or more ambient air quality standards are exceeded.

2003 AQMP

One of the purposes of the 2003 AQMP is to lead the SoCAB and portions of the Salton Sea Air Basin under SCAQMD jurisdiction into compliance with the 1-hour ozone and PM_{10} federal standards. One of the purposes of the 2007 AQMP is to lead the SoCAB into compliance of the federal 8-hour ozone and $PM_{2.5}$ standards.

The 2003 AQMP also replaced the 1997 attainment demonstration for the federal CO standard and provided a basis for a maintenance plan for CO for the future, and updated the maintenance plan for the federal NO_2 standard that the SoCAB has met since 1992.

The 2003 AQMP also incorporated new scientific data in the form of updated emissions inventories, ambient measurements, new meteorological episodes, and new air quality modeling tools. The 2003 AQMP utilized complex modeling to show that with the control measures, the SoCAB would be in compliance with the federal and state standards for all pollutants by 2010, except for the state ozone and PM_{10} standards and the state ozone and PM_{10} standard after 2010 or by the earliest practicable date, as mandated by the California Health and Safety Code Section 40462. The ARB approved the 2003 AQMP on August 1, 2003. The EPA's adequacy finding on the emissions budgets for conformity determination in the SoCAB was published in the Federal Register (69 FR 15325-15326).

2007 AQMP

The 2007 AQMP, which was adopted by the SCAQMD on June 1, 2007. On July 13, 2007, the SCAQMD Board adopted the 2007 Final AQMP Transportation Conformity Budgets and directed the Executive Officer to forward them to ARB for its approval and subsequent submittal to the EPA. On September 27, 2007, ARB adopted the State Strategy for the 2007 State Implementation Plan and the 2007 AQMP as part of the SIP. On January 15, 2009, the EPA's regional administrator signed a final rule to approve in part and disapprove in part the SCAQMD 2003 1-hour ozone plan and the nitrogen dioxide maintenance plan. The parts of the plan that were approved strengthen the SIP. The Clean Air Act does not require the disapproved portions of the plan, and the disapprovals do not start sanctions clocks.

The 2007 AQMP outlines a detailed strategy for meeting the federal health-based standards for $PM_{2.5}$ by 2015 and 8-hour ozone by 2024 while accounting for and accommodating future expected growth. The 2007 AQMP incorporates significant new emissions inventories, ambient measurements, scientific data, control strategies, and air quality modeling. Most of the reductions will be from mobile sources, which are currently responsible for about 75 percent of all smog and particulate forming emissions. The 2007 AQMP includes 37 control measures proposed for adoption by the SCAQMD, including

measures to reduce emissions from new commercial and residential developments, more reductions from industrial facilities, and reductions from wood burning fireplaces and restaurant charbroilers.

2012 AQMP

The 2012 AQMP was adopted December 7, 2012 (SCAQMD 2012a) and approved by the ARB on January 25, 2013. The purpose of the 2012 AQMP for the SoCAB is to set forth a comprehensive and integrated program that will lead the SoCAB into compliance with the federal 24-hour $PM_{2.5}$ air quality standard, and to provide an update of the SoCAB's projections in meeting the federal 8-hour ozone standards. On February 13, 2013, the AQMP was submitted to the EPA as the SIP for the federal 24-hour $PM_{2.5}$ standard and ozone standard. In addition, the AQMP will update specific elements of the previously approved 8-hour ozone SIP: (1) an updated emissions inventory and (2) new control measures and commitments for emissions reductions to help fulfill the Section 182(e)(5) portion of the 8-hour ozone SIP. The 2012 AQMP states, "The remarkable historical improvement in air quality since the 1970s is the direct result of Southern California's comprehensive, multiyear strategy of reducing air pollution from all sources as outlined in its AQMPs" (SCAQMD 2012a, page ES-1).

The 2012 AQMP proposes SoCAB-wide $PM_{2.5}$ measures that will be implemented by the 2014 attainment date, episodic control measures to achieve air quality improvements (would only apply during high $PM_{2.5}$ days), Section 182(e)(5) implementation measures (to maintain progress towards meeting the 2023 8-hour ozone national standard), and transportation control measures. Most of the control measures focus on incentives, outreach, and education.

Proposed $PM_{2.5}$ reduction measures in the 2012 AQMP include the following:

- Further NO_x reductions from RECLAIM
- Further reductions from residential wood burning devices
- Further reductions from open burning
- Emission reductions from under-fired charbroilers
- Further ammonia reductions from livestock waste
- Backstop measures for indirect sources of emissions from ports and port-related sources
- Further criteria pollutant reductions from education, outreach and incentives

There are multiple VOC and NO_x reductions in the 2012 AQMP to attempt to reduce ozone formation, including further VOC reductions from architectural coatings, miscellaneous coatings, adhesives, solvents, lubricants, mold release products, consumer products.

The 2012 also contains proposed mobile source implementation measures for the deployment of zero- and near-zero emission on-road heavy-duty vehicles, locomotives, and cargo handling equipment. There are measures for the deployment of cleaner commercial harbor craft, cleaner ocean-going marine vessels, cleaner off-road equipment, and cleaner aircraft engines.

The 2012 AQMP proposes the following mobile source implementation measures:

On-road mobile sources:

- Accelerated penetration of partial zero-emission and zero-emission vehicles and light-heavy and medium-heavy duty vehicles through funding assistance for purchasing the vehicles.
- Accelerated retirement of older light-, medium-, and heavy-duty vehicles through funding incentives.
- Further emission reductions from heavy-duty vehicles serving near-dock rail yards through a proposed control measure that calls for a requirement that any cargo container moved between the Ports of Los Angeles and Long Beach to the nearby rail yards with zero-emission technologies.

Off-road mobile sources:

- Extension of the SOON provision for construction/industrial equipment, which provides funding to repower or replace older Tier 0 and Tier 1 equipment.
- Further emission reductions from freight and passenger locomotives calls for an accelerated use of Tier 4 locomotives in the air basin.
- Further emission reductions from ocean-going marine vessels while at berth.
- Emission reductions from ocean-going marine vessels.

The 2012 AQMP also relies upon the Southern California Association of Governments regional transportation strategy, which is in its adopted 2012-2035 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) and 2011 Federal Transportation Improvement Program, which contains the following sections:

- Linking regional transportation planning to air quality planning: making sure that the regional transportation plan supports the goals and objectives of the AQMP/SIP.
- Regional transportation strategy and transportation control measures: the RTP/SCS contains improvements to the regional multimodal transportation system including the following: active transportation (non-motorized transportation—biking and walking); transportation demand management; transportation system management; transit; passenger and high-speed rail; goods movement; aviation and airport ground access; highways; arterials; and operations and maintenance.
- Reasonably available control measure analysis.

2016 AQMP

On March 3, 2017, the SCAQMD adopted the 2016 AQMP. The 2016 AQMP address strategies and measures to attain the 2008 federal 8-hour ozone standard by 2032, the 2012 federal annual $PM_{2.5}$ standard by 2021 to 2025, and the 2006 federal 24-hour $PM_{2.5}$ standard by 2019. The 2016 AQMP also examined the regulatory requirements for attaining the 2015 federal 8-hour ozone standard. The 2016 AQMP also updates previous attainment plans for ozone and $PM_{2.5}$ that have not yet been met (SCAQMD 2016). In general, the AQMP is updated every three to four years. However, the air

quality planning process for the AQMP is continuous and each iteration is an update of the previous plan.

To ensure air quality goals will be met while minimizing impacts to the regional economy, the following policy objectives guided the development of the plan:

- Eliminate reliance on "black box" (future technologies) to the maximum extent possible by providing specific pathways to attainment with specific control measures.
- Calculate and take credit for co-benefits from other planning efforts (e.g., GHG reduction targets, energy efficiency, transportation).
- Develop a strategy with fair-share emission reductions at the federal, state, & local levels such as a new federal engine emission standards and/or additional authority provided to the state or SCAQMD for mobile sources.
- Seek significant funding for incentives to implement early deployment and commercialization of known zero and near-zero technologies.
- Invest in strategies and technologies meeting multiple objectives regarding air quality, climate change, air toxic exposure, energy, and transportation.
- Enhance the socioeconomic analysis and select the most efficient and cost-effective path to achieve multi-pollutant and multi-deadline targets.
- Prioritize non-regulatory, innovative and "win-win" approaches for emission reductions.

The 2016 AQMP also demonstrates attainment of the 2008 Ozone Standard in Coachella Valley by 2026. The Plan also demonstrates compliance with all applicable Federal Clean Air Act requirements pertaining to nonattainment areas pursuant to the EPA-approved Implementation Rules, such as the annual average and summer planning emission inventory for criteria and precursor pollutants, attainment demonstrations, reasonably available control measure (RACM) and reasonably available control technology (RACT) analyses, reasonable further progress, PM precursor requirements, vehicle miles traveled (VMT) demonstrations, and transportation conformity budgets for the SoCAB and Coachella Valley.

The proposed control measures in the 2016 AQMP are based on implementing all feasible control measures through the accelerated deployment of available cleaner technologies, best management practices, co-benefits from existing programs, and incentive measures. The 2016 AQMP control measures consist of three main components: (1) the SCAQMD's Stationary and Mobile Source Control Measures; (2) suggested State and Federal Source Control Measures; and (3) Regional Transportation Plan Transportation Control Measures provided by Southern California Association of Governments. These measures rely on not only the traditional command-and-control approach but also public incentive programs, as well as advanced technologies expected to be developed and deployed in the next several years.

South Coast Air Quality Management District Rules

The AQMP for the SoCAB establishes a program of rules and regulations administered by SCAQMD to obtain attainment of the state and national air quality standards. The rules and regulations that apply to this project include, but are not limited to, the following rules.

SCAQMD Rule 402

Prohibits a person from discharging from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.

SCAQMD Rule 403

Governs emissions of fugitive dust during construction and operation activities. Compliance with this rule is achieved through application of standard best management practices, such as application of water or chemical stabilizers to disturbed soils, covering haul vehicles, restricting vehicle speeds on unpaved roads to 15 miles per hour, sweeping loose dirt from paved site access roadways, cessation of construction activity when winds exceed 25 miles per hour (mph), and establishing a permanent ground cover on finished sites.

Since the project would involve the disturbance of more than 50 acres, it would be considered a large operation and would fall under the requirements of Rule 403(e)—Additional Requirements for Large Operations. This may include but is not limited to Large Operation Notification, appropriate signage, additional dust control measures, and employment of a dust control supervisor who has successfully completed the dust control training class.

SCAQMD Rule 481

Applies to all spray painting and spray coating operations and equipment. This rule would apply to the application of architectural coatings to the exterior and interior of the building walls. The rule states that a person shall not use or operate any spray painting or spray coating equipment unless one of the following conditions is met:

(1) The spray coating equipment is operated inside a control enclosure, which is approved by the Executive Officer. Any control enclosure for which an application for permit for new construction, alteration, or change of ownership or location is submitted after the date of adoption of this rule shall be exhausted only through filters at a design face velocity not less than 100 feet per minute nor greater than 300 feet per minute, or through a water wash system designed to be equally effective for the purpose of air pollution control.

(2) Coatings are applied with high-volume low-pressure, electrostatic and/or airless spray equipment.

(3) An alternative method of coating application or control is used which has effectiveness equal to or greater than the equipment specified in the rule.

SCAQMD Rule 1108

Governs the sale, use, and manufacturing of asphalt and limits the VOC content in asphalt used in the SoCAB. This rule would regulate the VOC content of asphalt used during construction. Therefore, all asphalt used during construction of the project must comply with SCAQMD Rule 1108.

SCAQMD Rule 1113

Governs the sale, use, and manufacturing of architectural coating and limits the VOC content in paints and paint solvents. This rule regulates the VOC content of paints available during construction. Therefore, all paints and solvents used during construction and operation of the project must comply with SCAQMD Rule 1113 that requires use of architectural coatings consisting of 50 grams per liter of volatile organic carbon content.

SCAQMD Rule 1143

Governs the manufacture, sale, and use of paint thinners and solvents used in thinning of coating materials, cleaning of coating application equipment, and other solvent cleaning operations by limiting their VOC content. This rule regulates the VOC content of solvents used during construction. Solvents used during the construction phase must comply with this rule.

SCAQMD Rule 1186

Limits the presence of fugitive dust on paved and unpaved roads and sets certification protocols and requirements for street sweepers that are under contract to provide sweeping services to any federal, state, county, agency or special district such as water, air, sanitation, transit, or school district.

SCAQMD Rule 1303

Governs the permitting of re-located or new major emission sources, requiring Best Available Control Measures and setting significance limits for PM_{10} among other pollutants.

SCAQMD Rule 220

Sets forth "On-Road Motor Vehicle Mitigation Options"; provides employers with a menu of options to reduce mobile source emissions generated from employee commutes, to comply with federal and state Clean Air Act requirements, Health & Safety Code Section 40458, and Section 182(d)(1)(B) of the federal Clean Air Act. It applies to any employer who employs 250 or more employees on a full or part-time basis at a worksite for a consecutive six-month period, calculated as a monthly average.

Local Regulations

County of Riverside General Plan

The County of Riverside General Plan contains the following policies that address air quality and are applicable to the proposed project:

- **AQ 2.1:** The County land use planning efforts shall assure that sensitive receptors are separated and protected from polluting point sources to the greatest extent possible (AI 114).
- **AQ 2.2:** Require site plan designs to protect people and land uses sensitive to air pollution through the use of barriers and/or distance from emissions sources when possible (AI 114).
- **AQ 2.3:** Encourage the use of pollution control measures such as landscaping, vegetation and other materials, which trap particulate matter or control pollution (AI 114).

- **AQ 2.4:** Consider creating a program to plant urban trees on an Area Plan basis that removes pollutants from the air, provides shade and decreases the negative impacts of heat on the air (AI 114).
- **AQ 3.1:** Allow the market place, as much as possible, to determine the most economical approach to relieve congestion and cut emissions.
- **AQ 3.2:** Seek new cooperative relationships between employers and employees to reduce vehicle miles traveled.
- **AQ 3.3:** Encourage large employers and commercial/industrial complexes to create Transportation Management Associations (AI 115).
- **AQ 3.4:** Encourage employee rideshare and transit incentives for employers with more than 25 employees at a single location.
- **AQ 4.1:** Require the use of building materials/methods which reduce emissions.
- **AQ 4.2:** Require the use of efficient heating equipment and other appliances, such as water heaters, swimming pool heaters, cooking equipment, refrigerators, furnaces and boiler units.
- **AQ 4.3:** Require centrally heated facilities to utilize automated time clocks or occupant sensors to control heating.
- **AQ 4.7:** To the greatest extent possible, require every project to mitigate any of its anticipated emissions which exceed allowable emissions as established by the SCAQMD, MDAQMD, SCAB, the Environmental Protection Agency and the California Air Resources Board.
- **AQ 4.9:** Require compliance with SCAQMD Rules 403 and 403.1, and support appropriate future measures to reduce fugitive dust emanating from construction sites.
- **AQ 4.10:** Coordinate with the SCAQMD and MDAQMD to create a communications plan to alert those conducting grading operations in the County of first, second, and third stage smog alerts, and when wind speeds exceed 25 miles per hour. During these instances all grading operations should be suspended (AI 111).
- **AQ 5.1:** Utilize source reduction, recycling and other appropriate measures to reduce the amount of solid waste disposed of in landfills.
- **AQ 5.2:** Adopt incentives and/or regulations to enact energy conservation requirements for private and public developments (AI 62).
- **AQ 5.4:** Encourage the incorporation of energy-efficient design elements, including appropriate site orientation and the use of shade and windbreak trees to reduce fuel consumption for heating and cooling.
- **AQ 7.1:** Provide incentives to encourage new firms to locate within the County and existing firms to expand operations (AI 18).
- **AQ 7.2:** Work with SCAQMD and MDAQMD to develop a means to encourage the location of new commercial and industrial development in those localities where jobs are most needed (AI 18).
- **AQ 8.2:** Emphasize job creation and reductions in vehicle miles traveled in job-poor areas to improve air quality over other less efficient methods (AI 18).
- **AQ 8.6:** Encourage employment centers in close proximity to residential uses (AI 14).
- **AQ 8.8:** Promote land use patterns which reduce the number and length of motor vehicle trips (AI 26).
- **AQ 10.1:** Encourage trip reduction plans to promote alternative work schedules, ridesharing, telecommuting and work-at-home programs, employee education and preferential parking (AI 47).

City of Calimesa

A portion of land Assessor's Parcel Numbers (APNs) 413-270-012 and 413-270-013 will be used for an earthen trail along the western side of the project that will lead to existing trail features in the northern portion of the project site. This land is located in the City of Calimesa. The General Plan Land Use Map for the City of Calimesa designates this land Residential Low (RL), which allows for 2–4 dwelling units per acre. The area in which the earthen trail would be placed for the proposed project is vacant and undeveloped. Chapter 10 of the General Plan outlines the City's air quality goals and policies that include Reduced Air Pollution, Reduced Vehicle Trips, Energy, Fuel, and Water Conservation, Sensitive Uses, and Greenhouse Gases.

Western Riverside Council of Governments (WRCOG)

In 2005, the Western Riverside Council of Governments published a guidance document referred to as the "Good Neighbor Guidelines for Siting New and/or Modified Warehouse/Distribution Facilities" (WRCOG 2005). This document recommends guidelines that provide local governments and developers with a menu of options or strategies that can reduce exposure to diesel particulate from new and/or modified warehouse or distribution centers. The Guidelines include seven goals, and a variety of strategies for each goal that can be implemented in whole or part. There are a variety of benefits associated with adopting the guidelines, such as reducing the exposure of residents and sensitive receptors to diesel emissions.

3.3.2 - Existing Environmental Conditions

The project is located in the County of Riverside and within the SoCAB. The San Gabriel, San Bernardino, and San Jacinto Mountains bound the SoCAB on the west, north, and east. The southern limit of the SoCAB is the San Diego County line. The SoCAB consists of Orange County, Los Angeles County (except for the Antelope Valley), the non-desert portion of western San Bernardino County, and the western and Coachella Valley portions of Riverside County.

There are a number of existing residences in close proximity to the project. The closest existing residences are located near the southeast corner of the project along Cherry Valley Boulevard. In addition, several areas adjacent to the project site are zoned for residential development. The shortest distances to any existing or proposed sensitive receptor is 25 meters, as future residences located within the proposed Sunny Cal Specific Plan are directly across Cherry Valley Boulevard (south from the project site).

Regional Climate

The regional climate has a substantial influence on air quality in the SoCAB. In addition, the temperature, wind, humidity, precipitation, and amount of sunshine influence the air quality. The annual average temperatures throughout the SoCAB vary from the low to middle 60s (degrees Fahrenheit). Due to a decreased marine influence, the eastern portion of the SoCAB shows greater variability in average annual minimum and maximum temperatures. January is the coldest month throughout the SoCAB, with average minimum temperatures of 47 degrees Fahrenheit (°F) in downtown Los Angeles and 36°F in San Bernardino. All portions of the SoCAB have recorded maximum temperatures above 100°F.

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

More than 90 percent of the SoCAB's rainfall occurs from November through April. The annual average rainfall varies from approximately nine inches in Riverside to fourteen inches in downtown Los Angeles. Monthly and yearly rainfall totals are extremely variable. Summer rainfall usually consists of widely scattered thunderstorms near the coast and slightly heavier shower activity in the eastern portion of the SoCAB with frequency being higher near the coast.

Due to its generally clear weather, about three-quarters of available sunshine is received in the SoCAB. The remaining one-quarter is absorbed by clouds. The ultraviolet portion of this abundant radiation is a key factor in photochemical reactions. On the shortest day of the year there are approximately 10 hours of possible sunshine, and on the longest day of the year there are approximately 14-1/2 hours of possible sunshine.

The importance of wind to air pollution is considerable. The direction and speed of the wind determines the horizontal dispersion and transport of the air pollutants. During the late autumn to early spring rainy season, the SoCAB is subjected to wind flows associated with the traveling storms moving through the region from the northwest. This period also brings five to ten periods of strong, dry offshore winds, locally termed "Santa Anas" each year. During the dry season, which coincides with the months of maximum photochemical smog concentrations, the wind flow is bimodal, typified by a daytime onshore sea breeze and a nighttime offshore drainage wind. Summer wind flows are created by the pressure differences between the relatively cold ocean and the unevenly heated and cooled land surfaces that modify the general northwesterly wind circulation over southern California. Nighttime drainage begins with the radiational cooling of the mountain slopes. Heavy, cool air descends the slopes and flows through the mountain passes and canyons as it follows the lowering terrain toward the ocean. Another characteristic wind regime in the SoCAB is the "Catalina Eddy," a low level cyclonic (counterclockwise) flow centered over Santa Catalina Island, which results in an offshore flow to the southwest. On most spring and summer days, some indication of an eddy is apparent in coastal sections.

In the SoCAB, there are two distinct temperature inversion structures that control vertical mixing of air pollution. During the summer, warm high-pressure descending (subsiding) air is undercut by a shallow layer of cool marine air. The boundary between these two layers of air is a persistent marine subsidence/inversion. This boundary prevents vertical mixing which effectively acts as an impervious lid to pollutants over the entire SoCAB. The mixing height for the inversion structure is normally situated 1,000 to 1,500 feet above mean sea level.

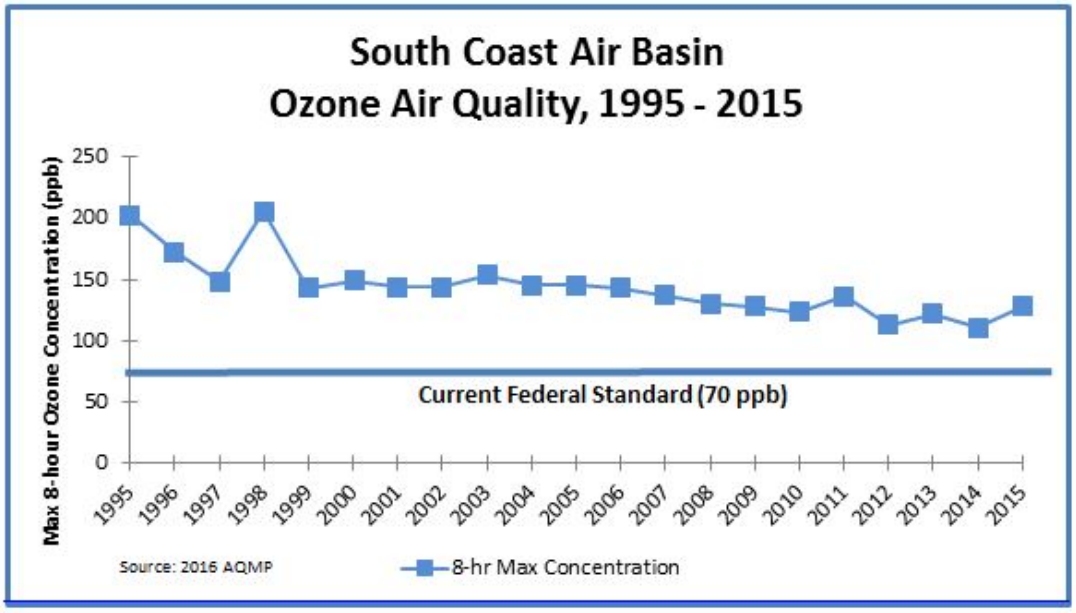
A second inversion-type forms in conjunction with the drainage of cool air off the surrounding mountains at night followed by the seaward drift of this pool of cool air. The top of this layer forms a sharp boundary with the warmer air aloft and creates nocturnal radiation inversions. These inversions occur primarily in the winter, when nights are longer and onshore flow is weakest. They are typically only a few hundred feet above mean sea level. These inversions effectively trap pollutants, such as NO_x and CO from vehicles, as the pool of cool air drifts seaward. Winter is therefore a period of high levels of primary pollutants along the coastline.

Existing Local Air Quality

Existing ambient air quality, historical trends, and future projections of air quality in the project area are best documented from measurements made near the project site. The SCAQMD maintains an extensive air-monitoring network that measures levels of several air pollutants throughout the SoCAB. Air quality in the South Coast region continues to improve over the long term, although the maximum concentration and number of days each year in which the federal ozone standard is exceeded fluctuates from year to year due to weather conditions.

In 2014, the South Coast region exceeded the federal ozone standard on 94 days, the second-lowest number ever recorded in the SoCAB. The maximum 1-hour ozone concentration of 0.142 parts per million (ppm) in 2014 was the lowest on record and the maximum 8-hour ozone concentration of 0.114 was the second-lowest recorded (see Figure 3.3-1). Similar improvements in basin air quality can be noted from Figure 3.3-2 through Figure 3.3-6 for other criteria pollutants.

Figure 3.3-1: Trends in South Coast Air Basin



Air pollution controls have significantly reduced levels of $PM_{2.5}$ across the region and data since 2011 show that the Southland is meeting the former 1997 annual $PM_{2.5}$ federal standard of 15 micrograms per cubic meter. EPA revised the annual average $PM_{2.5}$ standard from 15 micrograms per cubic meter down to 12 micrograms per cubic meter in March 2013 and the South Coast region is

continuing to make progress toward attainment of this annual standard. The region came close but did not meet the 24-hour federal $PM_{2.5}$ standard in 2014 (see Figure 3.3-2 and Figure 3.3-3).

Figure 3.3-2: Trends in South Coast Air Basin 24-hour Average $PM_{2.5}$ Levels

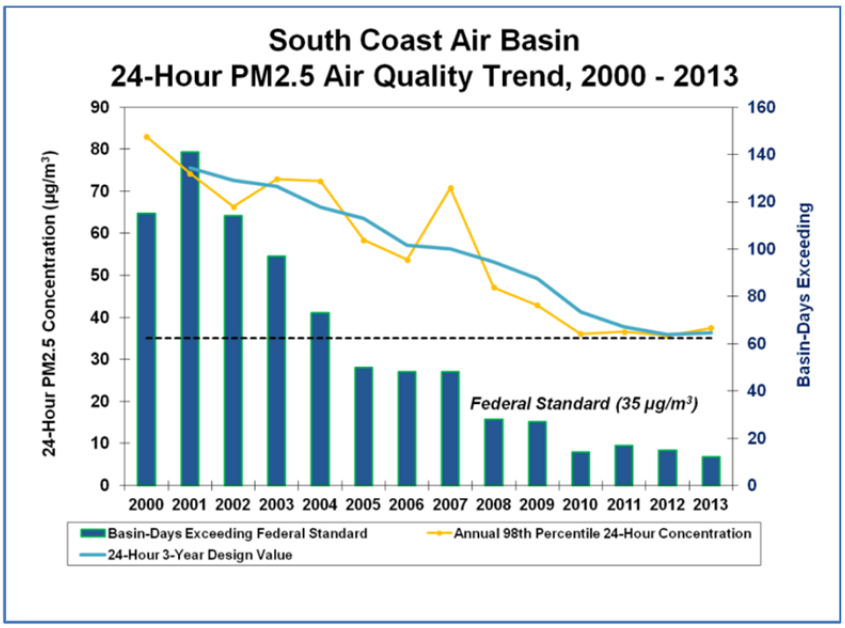


Figure 3.3-3: Trend in South Coast Air Basin Annual $PM_{2.5}$ Levels

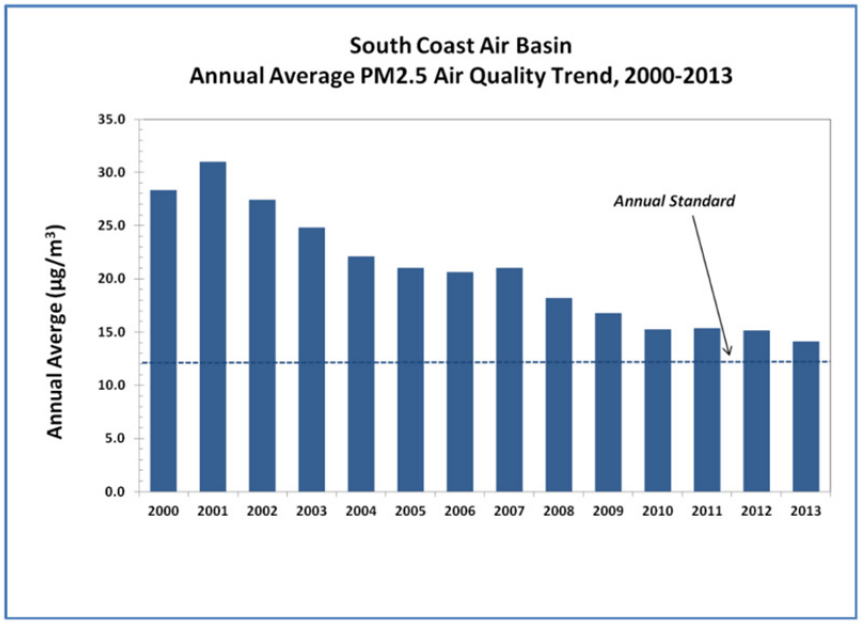


Figure 3.3-4: Trend in South Coast Air Basin PM_{10} Levels

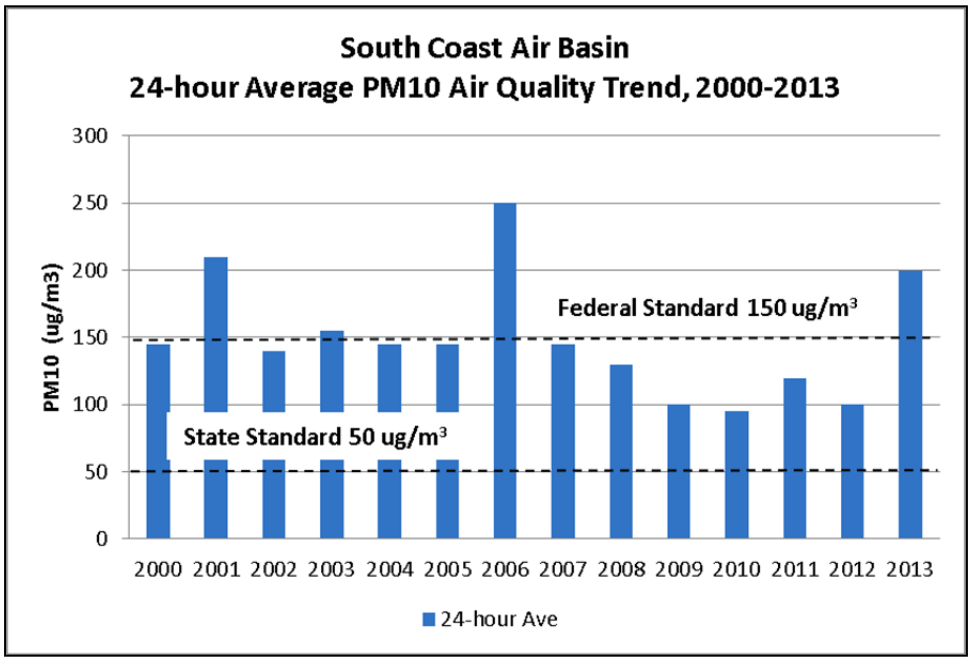


Figure 3.3-5: Trend in South Coast Air Basin Carbon Monoxide Levels

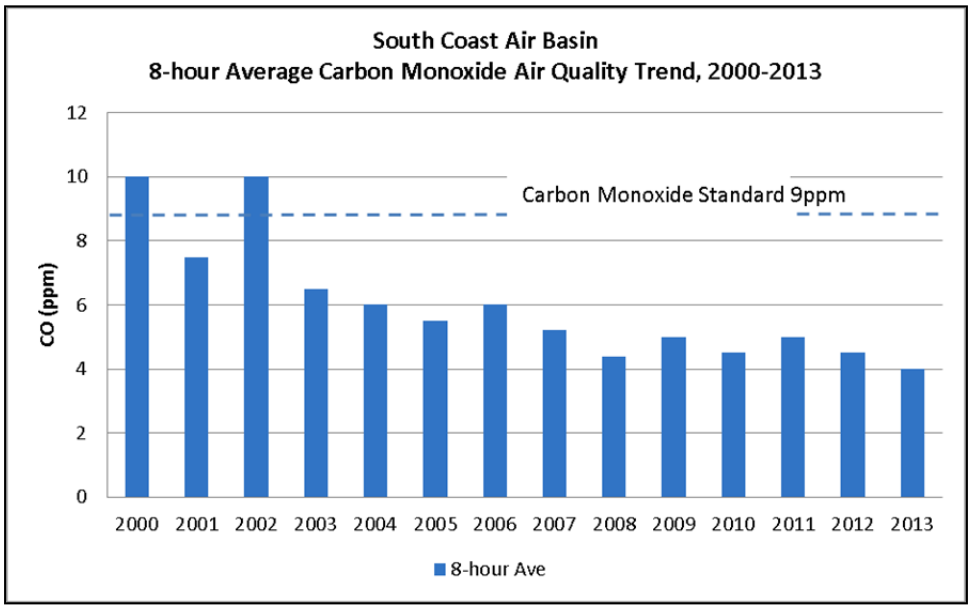
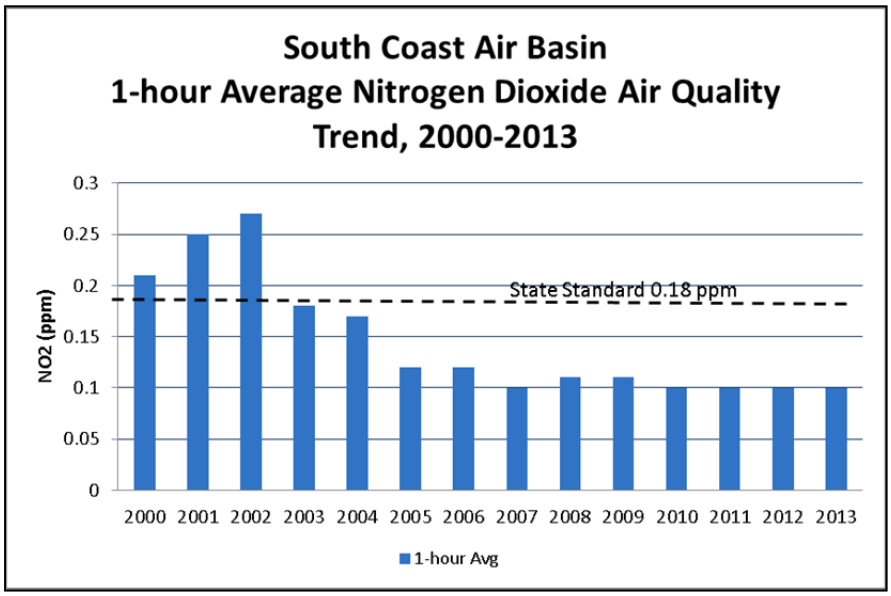


Figure 3.3-6: Trend in South Coast Air Basin Nitrogen Dioxide Levels



The SCAQMD has subdivided the SoCAB into 36 Source-Receptor Areas (SRAs), many containing one or more monitoring stations. These SRAs are designated to provide a general representation of the local meteorology, terrain, and air quality conditions within the particular geographical area. The project is located within SRA 29, "Banning Airport." During the latest 3-year period (2013-2015), various air pollutants were measured within SRA 29 at the SCAQMD's Banning Airport air monitoring station. The pollutant levels from SRA 29 were used to comprise a "background" for the project location.

Table 3.3-2 summarizes the air monitoring data for SRA 29 covering the period 2013–2015, the most current published 3-year monitoring period. Where data for a pollutant was not measured at the Banning Airport air monitoring station, the data from the nearest air monitoring station within the SoCAB measuring that pollutant was used.

Table 3.3-2: Air Quality Monitoring Summary

Air Pollutant	Averaging Time	Air Standard	2013	2014	2015
Ozone[1]	1 Hour	Max 1 Hour (ppm)	0.115	0.114	0.124
		Days > State Standard (0.09 ppm)	24	22	16
	8 Hour	Max 8 Hour (ppm)	0.103	0.097	0.097
		Days > State Standard (0.07 ppm)	66	58	49
		Days > National Standard (0.07 ppm)	66	58	49
Carbon monoxide[2]	8 Hour	Max 8 Hour (ppm)	1.60	1.40	ID
		Days > State Standard (9.0 ppm)	0	0	ID
		Days > National Standard (9 ppm)	0	0	ID

Table 3.3-2 (cont.): Air Quality Monitoring Summary

Air Pollutant	Averaging Time	Air Standard	2013	2014	2015
Nitrogen dioxide[1]	Annual	Annual Average (ppm)	ID	0.008	0.008
	1 Hour	Max 1 Hour (ppm)	0.052	0.052	0.050
		Days > State Standard (0.18 ppm)	0	0	0
		98th Percentile	0.045	0.046	0.044
Inhalable coarse particles (PM_{10})[1]	Annual	Annual Average (µg/m^3)	18.9	ID	20.3
	24 hour	24 Hour (µg/m^3)	64.0	45.0	139.0
		Days > State Standard (50 µg/m^3)	1	0	1
		Days > National Standard (150 µg/m^3)	0	0	0
Fine particulate matter ($PM_{2.5}$)[1]	Annual	Annual Average (µg/m^3)	ID	13.2	ID
	24 Hour	24 Hour (µg/m^3)	65.3	38.8	27.9
		Days > National Standard (35 µg/m^3)	ID	ID	ID

Notes and Abbreviations:
> = exceed; ppm = parts per million; µg/m^3 = micrograms per cubic meter
ID = insufficient data; ND = no data; max = maximum
State Standard = California Ambient Air Quality Standard
National Standard = National Ambient Air Quality Standard
[1] Ozone, nitrogen dioxide, and $PM_{2.5}$, and PM_{10} data from Banning Airport station
[2] Carbon monoxide data from Riverside-Magnolia station, 21 miles west of the project site
Source: see Appendix B.

Criteria pollutants are pollutants that are regulated through the development of human health-based and/or environmentally based criteria for setting permissible levels. Examples of sources and effects of the criteria pollutants are identified below:

- **CO** is a colorless, odorless gas produced by the incomplete combustion of carbon-containing fuels, such as gasoline or wood. CO concentrations tend to be the highest during the winter morning, when little to no wind and surface-based inversions trap the pollutant at ground levels. Because CO is emitted directly from internal combustion engines, unlike ozone, motor vehicles operating at slow speeds are the primary source of CO in the SoCAB. The highest ambient CO concentrations are generally found near congested transportation corridors and intersections.
- **SO_2** is a colorless, extremely irritating gas or liquid. It enters the atmosphere as a pollutant mainly as a result of burning high sulfur-content fuel oils and coal and from chemical processes occurring at chemical plants and refineries. When SO_2 oxidizes in the atmosphere, it forms sulfates (SO_4). Collectively, these pollutants are referred to as sulfur oxides (SO_x).
- **Nitrogen oxides (oxides of nitrogen or NO_x)** consist of nitric oxide (NO), nitrogen dioxide (NO_2) and nitrous oxide (N_2O) and are formed when nitrogen combines with oxygen. Their lifespan

in the atmosphere ranges from 1 to 7 days for NO and NO_2, to 170 years for N_2O. Nitrogen oxides are typically created during combustion processes, and are major contributors to smog formation and acid deposition. NO_2 is a criteria air pollutant, and may result in numerous adverse health effects; it absorbs blue light, resulting in a brownish-red cast to the atmosphere and reduced visibility. Of the seven types of nitrogen oxide compounds, NO_2 is the most abundant in the atmosphere. As ambient concentrations of NO_2 are related to traffic density, commuters in heavy traffic may be exposed to higher concentrations of NO_2 than those indicated by regional monitors.

- **O_3:** a highly reactive and unstable gas that is formed when volatile organic compounds (VOCs) and nitrogen oxides (NO_x), both byproducts of internal combustion engine exhaust, undergo slow photochemical reactions in the presence of sunlight. Ozone concentrations are generally highest during the summer months when direct sunlight, light wind, and warm temperature conditions are favorable to the formation of this pollutant.

- **PM_{10}:** A major air pollutant consisting of tiny solid or liquid particles of soot, dust, smoke, fumes, and aerosols. The size of the particles (10 microns or smaller, about 0.0004 inches or less) allows them to easily enter the lungs where they may be deposited, resulting in adverse health effects. PM_{10} also causes visibility reduction and is a criteria air pollutant.

- **$PM_{2.5}$:** A similar air pollutant consisting of tiny solid or liquid particles which are 2.5 microns or smaller (which is often referred to as fine particles). These particles are formed in the atmosphere from primary gaseous emissions that include sulfates formed from SO_2 release from power plants and industrial facilities and nitrates that are formed from NO_x release from power plants, automobiles and other types of combustion sources. The chemical composition of fine particles highly depends on location, time of year, and weather conditions. $PM_{2.5}$ is a criteria air pollutant.

- **Volatile organic compounds (VOCs):** hydrocarbon compounds (any compound containing various combinations of hydrogen and carbon atoms) that exist in the ambient air. VOCs contribute to the formation of smog through atmospheric photochemical reactions and/or may be toxic. Compounds of carbon (also known as organic compounds) have different levels of reactivity; that is, they do not react at the same speed or do not form ozone to the same extent when exposed to photochemical processes. VOCs often have an odor, and some examples include gasoline, alcohol, and the solvents used in paints. Exceptions to the VOC designation include CO, CO_2, carbonic acid, metallic carbides, or carbonates, and ammonium carbonate. VOCs are a criteria pollutant since they are a precursor to O_3, which is a criteria pollutant.

- **Reactive organic gases (ROG):** Similar to VOC, ROG are also precursors in forming ozone and consist of compounds containing methane, ethane, propane, butane, and longer chain hydrocarbons, which are typically the result of some type of combustion/decomposition process. Smog is formed when ROG and nitrogen oxides react in the presence of sunlight. ROGs are a criteria pollutant since they are a precursor to O_3, which is a criteria pollutant.

- **Lead (Pb)** is a heavy metal that is highly persistent in the environment. In the past, the primary source of lead in the air was emissions from vehicles burning leaded gasoline. As a result of the

removal of lead from gasoline, there have been no violations at any of the SCAQMD's regular air monitoring stations since 1982. Currently, emissions of lead are largely limited to stationary sources such as lead smelters. It should be noted that the project is not anticipated to generate a quantifiable amount of lead emissions. Lead is a criteria air pollutant.

Toxic Air Contaminants

A toxic air contaminant, or TAC, is defined as an air pollutant which may cause or contribute to an increase in mortality or serious illness, or which may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air. However, their high toxicity or health risk may pose a threat to public health even at very low concentrations. For those TACs that may cause cancer, there is no concentration that does not present some risk. In other words, there is no threshold level below which adverse health impacts are not expected to occur. This contrasts with the criteria pollutants for which acceptable levels of exposure can be determined, and for which the state and federal governments have set ambient air quality standards. The majority of the estimated health risk from TACs can be attributed to a relatively few compounds, the most important being particulate matter (PM) from diesel-fueled engines, known as diesel particulate matter (DPM). In addition to DPM, benzene and 1,3-butadiene are also significant contributors to overall ambient public health risk in California.

The health risks can be defined in terms of the probability of developing cancer as a result of exposure to carcinogens at a given concentration. The Office of Environmental Health Hazard Assessment (OEHHA) *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments* (OEHHA Guidance) recommends the incorporation of several factors to quantify the carcinogenic compound dose via the inhalation pathway. The cancer risk values for diesel exhaust particulate matter, which is the primary TAC of concern, consider exposure via inhalation only. The potential exposure through other pathways (e.g., ingestion) requires substance and site-specific data, and the specific parameters for diesel exhaust are not known for these pathways. All of the carcinogenic compounds in this assessment result in exposures to the public via the inhalation pathway.

Both SCAQMD and ARB have monitoring networks within the SoCAB that measure ambient concentrations of certain TACs that are associated with important health-related effects, and are present in appreciable concentrations in the SoCAB. The SCAQMD uses this information to determine health risks for a particular area. The ARB publishes annual Statewide, air basin, and location-specific summaries of the concentration levels of several TACs and their resulting cancer risks.[1] The most recent summary is the ARB Air Quality Almanac for 2009. The Almanac presents the relevant concentration and cancer risk data for the ten TACs that pose the most substantial health risk in California based on available data. These TACs are acetaldehyde, benzene, 1,3-butadiene, carbon tetrachloride, hexavalent chromium, para-dichlorobenzene, formaldehyde, methylene chloride, and perchloroethylene. Diesel particulate matter is not directly measured, but is indirectly estimated based on fine particulate matter measurements and special studies on the chemical speciation of ambient fine particulate data, along with receptor modeling techniques. ARB estimates that 78 percent of the known statewide cancer risks are from the top 10 outdoor air toxics, in addition to DPM.

[1] Cancer risk is expressed as a probability of an individual out of a population of one million contracting cancer via a continuous exposure to TACs over a 70-year lifetime.

Estimates of total cancer risk Statewide have shown a steady decline from the early 1990s, when the cancer risk from diesel PM was estimated to be 1,696 in one million. By the year 2000, the cancer risk was estimated to be 1,005 in one million, or a reduction of 41 percent. Reductions in cancer risk are expected to continue into the future as new emission controls are implemented that further reduce DPM emissions, which are the major component of the total airborne cancer risk.

Table 3.3-3 provides a summary of TACs and health risk information from the ARB Annual Toxic Summary for the most recent three-year period, 2012–2014 for the Riverside-Rubidoux air monitoring station, which is located approximately 23 miles west of the project site. The cancer risk attributable to the non-DPM chemicals (i.e., the 10 TACs measured by the ARB described above) has dropped significantly at the Rubidoux location, declining from an estimated cancer risk of 429 in one million in 1990 to 104 in one million in 2011, a reduction of 76 percent.

Table 3.3-3: TAC Concentration Levels and Associated Health Risks—Riverside

TAC	Conc.[1]/Risk[2]	2012	2013	2014
Acetaldehyde	Annual Average Health Risk	1.39 7	1.27 6	1.17 6
Benzene	Annual Average Health Risk	0.32 30	0.31 28	0.29 27
1,3-Butadiene	Annual Average Health Risk	0.050 19	0.065 24	0.056 21
Carbon tetrachloride	Annual Average Health Risk	0.084 22	0.082 22	0.097 26
Chromium, Hex	Annual Average Health Risk	0.030 5	0.58 9	0.070 6
Para-dichlorobenzene	Annual Average Health Risk	ID ID	ID ID	ID ID
Formaldehyde	Annual Average Health Risk	3.70 27	3.57 26	3.56 26
Methylene chloride	Annual Average Health Risk	2.41 8	1.33 5	1.49 5
Perchloroethylene	Annual Average Health Risk	0.020 0.8	0.022 0.9	0.026 1
Diesel PM	No monitoring data available			
Total Health Risk (without DPM)		119	121	118

Notes:
[1] Concentrations for Hexavalent Chromium are expressed as ng/m^3, and concentrations for Diesel PM are expressed as µg/m^3. Concentrations for all other TACs are expressed as ppb.
[2] Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information is not available.
ID = insufficient data
Source: see Appendix B.

In addition to the measurements presented in the ARB almanac and the Annual Air Toxics Summary, the SCAQMD has conducted a detailed TAC emission inventory, air sampling, and dispersion modeling study called the "Multiple Air Toxics Exposure Study in the South Coast Air SoCAB" (MATES-II, SCAQMD 2000), MATES-III (SCAQMD 2008a), and MATES-IV (SCAQMD 2014) (collectively, "MATES Studies").

The MATES Studies provided information on the importance of various TACs in terms of their relative health risks, as well as their spatial distribution across the SoCAB. The MATES-IV information can be used to characterize the "background" health risks from both regional and local TAC emission sources based on the available toxics emission inventory for the year 2012. The MATES-IV program results indicate that the existing cancer risk attributable to TACs in the area where the project site is located is estimated to be 158 in one million, of which DPM contributes approximately 68 percent of the total cancer risk. This cancer risk level is approximately 54 percent lower than the background cancer risks based on the MATES-III study that used the toxics emission inventory for the year 2005, which further illustrates the trend of declining health risk from TACs.

This sharp decline is attributable largely to emission reduction programs implemented by the SCAQMD, ARB, and EPA, particularly with regard to DPM.

Odors

Odors can cause a variety of responses. The impact of an odor results from interacting factors, such as frequency (how often), intensity (strength), duration (in time), offensiveness (unpleasantness), location, and sensory perception.

Odor is typically a warning system that prevents animals and humans from consuming spoiled food or toxic materials. Odor-related symptoms reported in a number of studies include nervousness, headache, sleeplessness, fatigue, dizziness, nausea, loss of appetite, stomach ache, sinus congestion, eye irritation, nose irritation, runny nose, sore throat, cough, and asthma exacerbation (SCAQMD 2007.

The SCAQMD's role is to protect the public's health from air pollution by overseeing and enforcing regulations (SCAQMD 2007). The SCAQMD's resolution activity for odor compliance is mandated under California Health & Safety Code Section 41700, and falls under SCAQMD Rule 402. This rule on Public Nuisance Regulation states: "A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property. The provisions of this rule shall not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals."

The SCAQMD indicates that the number of overall complaints has declined over the last five years. Over the last four years, odor complaints make up 50 to 55 percent of the total nuisance complaints. Over the past decade, odors from paint and coating operations have decreased from 27 to 7 percent, and odors from refuse collection stations have increased from 9 to 34 percent (SCAQMD 2007).

Local Sources of Air Pollutants

The project site is currently vacant except for the private use of some unpaved roads. The only emissions expected from the current site are the occasional fugitive dust from exposed soil areas.

Within a radius of about 3 miles from the project, there are numerous residential areas. Emissions from the surrounding residences include the following: space and water heating, landscape maintenance, consumer products, and motor vehicles. Two main freeways, Interstate 10 (I-10) and State Route 60, with their associated traffic and emissions, are within this 3-mile radius.

3.3.3 - Attainment Status

The EPA and the ARB designate air basins where ambient air quality standards are exceeded as "nonattainment" areas. If standards are met, the area is designated as an "attainment" area. If there is inadequate or inconclusive data to make a definitive attainment designation, they are considered "unclassified." National nonattainment areas are further designated as marginal, moderate, serious, severe, or extreme as a function of deviation from standards. Each standard has a different definition, or 'form' of what constitutes attainment, based on specific air quality statistics. For example, the federal 8-hour CO standard is not to be exceeded more than once per year; therefore, an area is in attainment of the CO standard if no more than one 8-hour ambient air monitoring values exceeds the threshold per year. In contrast, the federal annual $PM_{2.5}$ standard is met if the three-year average of the annual average $PM_{2.5}$ concentration is less than or equal to the standard.

The current attainment designations for the SoCAB are shown in Table 3.3-4.

Table 3.3-4: South Coast Air Basin Attainment Status

Pollutant	State Status	National Status
Ozone	Nonattainment	Nonattainment—Extreme
Carbon monoxide	Attainment	Attainment
Nitrogen dioxide	Attainment	Unclassified/Attainment
Sulfur dioxide	Attainment	Unclassified/Attainment
PM_{10}	Nonattainment	Attainment
$PM_{2.5}$	Nonattainment	Nonattainment—Serious
Lead	Attainment	Nonattainment (Los Angeles County Only)
Sulfates	Attainment	No national standard
Visibility Reducing Particles	Unclassified	No national standard
Hydrogen Sulfide	Unclassified	No national standard
Source: see Appendix B.		

3.3.4 - Thresholds of Significance

The County of Riverside utilizes Appendix G of the State CEQA Guidelines as its thresholds of significance for CEQA analysis. Further, the County provides a number of additional environmental considerations as part of the County's Environmental Assessment Checklist.

Would the project:

e) Involve the construction of a sensitive receptor located within one mile of an existing substantial point source emitter?

According to the State CEQA Guidelines Appendix G Thresholds, to determine whether impacts to air quality are significant, the following questions are analyzed and evaluated. Would the project:

a) Conflict with or obstruct implementation of the applicable air quality plan?

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

d) Expose sensitive receptors to pollutant concentrations?

e) Create objectionable odors affecting a substantial number of people?

To assist in the establishment of a quantitative determination of what is considered "significant," the SCAQMD has published a number of significance thresholds that apply to new projects constructed or operated within the SCAQMD. The SCAQMD recommends that lead agencies apply these thresholds in determining whether a proposed project would result in a significant air quality impact. If the lead agency finds that a proposed project has the potential to exceed these air pollution thresholds, the project would be considered significant. These thresholds have been defined by SCAQMD for the SoCAB, based on scientific data the SCAQMD has obtained and factual data within the federal and State Clean Air Acts. Since the project is located within the SoCAB, these thresholds are applicable to this project. The SCAQMD has defined thresholds for NO_2, VOC, Oxides of Sulfur (SO_x), CO, PM_{10}, and $PM_{2.5}$, hereinafter referred to as "criteria" pollutants, and for health risk in terms of cancer and non-cancer risk.

From the perspective of this analysis, four types of significance thresholds were evaluated in terms of impacts on air quality from the construction and operation of the project. These thresholds are the Regional Significance Thresholds, Local Significance Thresholds (LSTs), Health Risk Significance Thresholds, and CO "Hot Spot" Thresholds, which are discussed below.

3.3.5 - Regional Air Quality Significance Thresholds

The SCAQMD has regional significance thresholds for VOC, NO_x, SO_x, CO, PM_{10}, and $PM_{2.5}$. Projects located within the SoCAB with construction- or operational-related emissions in excess of any of the thresholds presented in Table 3.3-5 would be considered significant.

Table 3.3-5: SCAQMD Regional Thresholds

Pollutant	Construction (pounds per day)	Operation (pounds per day)
Oxides of nitrogen (NO_x)	100	55
Reactive organic gases (ROG)	75	55
Particulate matter (PM_{10})	150	150
Particulate matter ($PM_{2.5}$)	55	55
Oxides of sulfur (SO_x)	150	150
Carbon monoxide (CO)	550	550
Source: see Appendix B.		

3.3.6 - Local Air Quality Significance Thresholds (LSTs)

LSTs were developed in response to the SCAQMD Governing Board's environmental justice (EJ) initiatives (EJ initiative I-4) in recognition of the fact that criteria pollutants such as CO, NO_x, and PM_{10} and $PM_{2.5}$ in particular, can have local impacts as well as regional impacts. The goal of significance thresholds is to ensure that no source creates, or receptor endures, a significant adverse impact from any project. The evaluation of localized air quality impacts determines the potential of the project to violate any air quality standard, contribute substantially to an existing or projected air quality violation, or expose sensitive receptors to substantial pollutant concentrations. LSTs represent the maximum emissions or air concentrations from a project that will not cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard, at any nearby sensitive or worker receptor. LSTs are defined separately for construction and operational activities.

The project is located in SRA 29 (Banning Airport). Therefore, the LSTs for this SRA were selected for the LST assessment. The project size is generally represented as the maximum area disturbed during a day from which emissions are calculated. The building activity requiring the most construction equipment is associated with the mass grading of the project site. Based on the construction equipment required during the grading activity, a maximum area of 6 acres would be disturbed during a single day. The SCAQMD LST methodology provides a series emission lookup tables that can be used to determine a project's construction LSTs. However, the emission lookup tables are applicable for projects with disturbed areas of 5 acres or less. Therefore, to provide a conservative

estimate of the LSTs for project construction, the LSTs for a project with a maximum daily disturbed area of 5 acres was used in the LST assessment[2].

Health Risk Significance Thresholds

In addition to the thresholds established above for pollutants, the SCAQMD has also defined health risk thresholds. These thresholds are represented as a cancer risk to the public and a non-cancer hazard from exposures to TACs. Cancer risk represents the probability (in terms of risk per million individuals) that an individual would contract cancer resulting from exposure to TACs continuously over a period of 70 years for sensitive receptors. Thus, an individual located in an area with a cancer risk of one would experience one chance out of a population of one million of contracting cancer over a 70-year time period, assuming that individual lives in that area continuously for the entire 70-year time period.

TACs can also cause chronic (long-term) related non-cancer illnesses such as reproductive effects, respiratory effects, eye sensitivity, immune effects, kidney effects, blood effects, central nervous system effects, birth defects, or other adverse environmental effects. Risk characterization for non-cancer health hazards from TACs is expressed as a hazard index (HI). The HI is a ratio of the predicted concentration of the project's emissions to a concentration considered acceptable to public health professionals, termed the Reference Exposure Level (REL). The SCAQMD has established the following health risk thresholds.

Project-Specific Health Risk Significance Thresholds

The SCAQMD has established the following project-specific health risk significance thresholds (SCAQMD 2015b):

- Maximum Incremental Cancer Risk: >=10 in 1 million.
- Hazard Index (project increment) >=1.0.

A significant impact would occur if a project's impacts exceeded any of these thresholds.

Cumulative Health Risk Significance Thresholds

The SCAQMD has published a report on how to address cumulative impacts from air pollution: White Paper on Potential Control Strategies to Address Cumulative Impacts from Air Pollution (SCAQMD 2003c). In this report the SCAQMD clearly states (page D-3):

> . . . the AQMD uses the same significance thresholds for project specific and cumulative impacts for all environmental topics analyzed in an Environmental Assessment or EIR. The only case where the significance thresholds for project specific and cumulative impacts differ is the Hazard Index (HI) significance threshold for toxic air contaminant (TAC) emissions. The project specific (project increment) significance threshold is HI >1.0 while the cumulative (facility-wide) is HI >3.0. It should be noted that the HI is only one of three TAC emission significance thresholds

[2] The values of the LSTs are proportional to the size of the disturbed area. The larger the disturbed area, the higher the value of the LST. Therefore, the LSTs that would be appropriate for a 6 acre disturbed area would be larger than the LSTs for a 5 acre disturbed area. Using the LSTs for a 5 acre disturbed area provides a conservative estimate of the LSTs for the project.

considered (when applicable) in a CEQA analysis. The other two are the maximum individual cancer risk (MICR) and the cancer burden, both of which use the same significance thresholds (MICR of 10 in 1 million and cancer burden of 0.5) for project specific and cumulative impacts.

Projects that exceed the project-specific significance thresholds are considered by the SCAQMD to be cumulatively considerable. This is the reason project-specific and cumulative significance thresholds are the same. Conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant.

Carbon Monoxide "Hot Spot" Thresholds

The largest contributor of CO emissions during project operations is typically from motor vehicles. A CO hot spot represents a condition wherein high concentrations of CO may be produced by motor vehicles accessing a congested traffic intersection under heavy traffic volume conditions. The CO hot spot thresholds are represented by the most restricted state or federal CO ambient air quality standards:

- 1-hour CO standard: 20 ppm; and
- 8-hour CO standard: 9 ppm.

If the CO contributed by the project in combination with CO produced by non-project traffic exceeds the above standards, then the project would have a significant impact.

3.3.7 - Project Impact Analysis and Mitigation Measures

This section discusses potential impacts associated with the proposed project and provides mitigation measures where necessary.

Air Quality Plan

Impact AQ-1:	**The project would conflict with or obstruct implementation of the applicable air quality plan.**

Impact Analysis

The project site is located within the SoCAB, which is characterized by relatively poor air quality. The SCAQMD has jurisdiction over an approximately 12,000-square-mile area consisting of the four-county Basin and the Los Angeles County and Riverside County portions of what used to be referred to as the Southeast Desert Air Basin. In these areas, the SCAQMD is principally responsible for air pollution control, and works directly with the Southern California Association of Governments (SCAG), county transportation commissions, local governments, as well as state and federal agencies, to reduce emissions from stationary, mobile, and indirect sources to meet state and federal ambient air quality standards.

Currently, the state and federal air quality standards are exceeded in most parts of the SoCAB principally for ozone and particulate matter. In response, the SCAQMD has adopted a series of

AQMPs to meet the state and federal ambient air quality standards. AQMPs are updated regularly in order to more effectively reduce emissions, accommodate growth, and to minimize any negative fiscal impacts of air pollution control on the economy.

The Final 2016 AQMP was adopted by the AQMD Governing Board on March 3, 2017. The 2016 AQMP incorporates the latest scientific and technological information and planning assumptions, including SCAG's 2016 Regional Transportation Plan (RTP)/Sustainable Communities Strategy (SCS) and updated emission inventory methodologies for various source categories.

The 2016 AQMP was based on assumptions provided by both ARB and SCAG in the latest available EMFAC model for the most recent motor vehicle and demographics information, respectively. The air quality levels projected in the 2016 AQMP are based on several assumptions. For example, the 2016 AQMP has assumed that development associated with general plans, specific plans, residential projects, and wastewater facilities will be constructed in accordance with population growth projections identified by SCAG in its 2012 RTP.

The 2016 AQMP also has assumed that such development projects will implement strategies to reduce emissions generated during the construction and operational phases of development. The project's consistency with the 2016 AQMP is discussed below.

Criteria for determining consistency with the AQMP are defined in Chapter 12, Section 12.2 and Section 12.3 of the SCAQMD's CEQA Air Quality Handbook (1993). These indicators are discussed as follows:

- **Consistency Criterion No. 1:** Whether the 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 timely attainment of air quality standards or the interim emission reductions specified in the AQMP.

Violations of the CAAQS and NAAQS could occur if LSTs, regional significance thresholds, or the CO hot spot significance thresholds were exceeded.

Construction Impacts

As evaluated as part of the project LST analysis (see Impact AQ-2), the project's localized construction-source emissions would not exceed applicable LSTs. In addition, the project would not exceed the applicable SCAQMD regional construction thresholds after application of mitigation (see Impact AQ-3). Therefore, the project would not conflict with the AQMP according to this criterion during construction.

Operational Impacts

The project LST analysis demonstrates that project operational-source emissions would not exceed applicable LSTs, and are, therefore, less than significant (see Impact AQ-2). However, the project would exceed the applicable SCAQMD regional numeric thresholds for ROG and NO_x emissions under project operations even after mitigation (see Impact AQ-3). Therefore, during project operations, the project would conflict with the AQMP according to this criterion.

- Consistency Criterion No. 2: A project would conflict with the AQMP if it will exceed the assumptions in the AQMP in 2016 or increments based on the year of project build-out and phase.

Consistency with Current General Plans

The development of emission burdens used in air quality management plans to demonstrate compliance with ambient air quality standards is based, in part, on land use patterns contained within local general plans. Therefore, it is reasonable to conclude that if a project is consistent with the applicable general plan land use designation, and if the general plan was adopted prior to the applicable air quality management plan, then the growth of VMT and/or population generated by said project would be consistent with the growth in VMT and population assumed within the air quality management plan. The current air quality management plan was adopted in 2016 by the SCAQMD. The current General Plan land use for the project site through the Pass Area Plan and the Cherry Valley Gateway Policy Area is Very Low Density Residential (VLDR) within the County, and Residential Low (RL) with the City of Calimesa.

In terms of relative air quality impacts, the construction of the project would disturb roughly the same amount of ground surface and involve roughly the same amount of grading and building construction activity as the current General Plan land use designation, when taking into account the need for internal roadway and sidewalk improvements and other infrastructure that would be necessary to serve a residential development. Therefore, the project construction emissions and consequential impacts would be roughly similar to the construction emissions from the General Plan land use.

Implementation of the General Plan land use would involve development of the project site with 216 single-family homes on 110 acres, in the following configurations and under the following, existing General Plan land use designations:

- Rural Mountainous: 1 custom lot/unit
- Very Low Density Residential (VLDR): 39 custom lots/units
- Low Density Residential (LDR): 176 units (7,000 sf lot minimum)

Internal street, sidewalk and utility improvements would also be installed under the General Plan land use (see Section 6, Alternatives of the Draft Environmental Impact Report).

The General Plan land use would generate 2,056 daily PCE trips, thereby decreasing total operational vehicle trips by approximately 58 percent (from a total of 4,905 total daily PCE trips) and reducing estimated total long-term air quality emissions as compared to the project. CalEEMod version 2016.3.1 was used to estimate operational emissions for the General Plan land use. The General Plan land use would avoid the significant and unavoidable impact from regional operational ROG and NO_x emissions that would occur under the project as shown in Table 3.3-6.

Table 3.3-6: General Plan Land Use Air Pollutant Operational Emissions

Source	Emissions (pounds per day)					
	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Mobile	5.2	24.0	70.3	0.2	15.8	4.4
Area	9.0	0.2	18.0	0.0	0.1	0.1
Energy	0.2	2.0	0.9	0.0	0.2	0.2
Total General Plan Emissions	**14.4**	**26.2**	**89.1**	**0.2**	**16.1**	**4.6**
Project Emissions—Mitigated	**65.4**	**299.2**	**183.2**	**1.6**	**14.9**	**7.2**
Significance Threshold	55	55	550	150	150	55
Would Project Result in Significant Impact?	**Yes**	**Yes**	No	No	No	No
Would the General Plan Result in Significant Impact?	No	No	No	No	No	No

Notes:
ROG = reactive organic gases; NO_x = nitrogen oxides; CO = carbon monoxide
SO_x = sulfur oxides; PM_{10} and $PM_{2.5}$ = particulate matter; Area = painting and consumer products
Source of emissions: Appendix A: CalEEMod Output.
Source of project emissions: see Appendix A. (mitigated summer)
Source of General Plan Land Use: see Appendix F.

Therefore, growth supported by development of the project would not be accounted for in the air quality management plan. The project is potentially significant under this criterion.

Control Measures

This step involves assessing the project's compliance with the control measures in the AQMPs.

2003 AQMP. The 2003 AQMP contains a number of land use and transportation control measures including the following: the District's Stationary and Mobile Source Control Measures; State Control Measures proposed by ARB; and Transportation Control Measures provided by SCAG. ARB's strategy for reducing mobile source emissions include the following approaches: new engine standards; reduce emissions from in-use fleet, require clean fuels, support alternative fuels and reduce petroleum dependency, work with EPA to reduce emissions from national and state sources, and pursue long-term advanced technology measures (SCAQMD 2003, page 4-25). Transportation control measures provided by SCAG include those contained in the Regional Transportation Plans, the most current version of which is the 2012 Regional Transportation Plan. The Regional Transportation Plan has control measures to reduce emissions from on-road sources by incorporating strategies such as high occupancy vehicle interventions, transit, and information-based technology interventions (SCAQMD 2003, page 4–19). The project indirectly would comply with the control measures set by ARB and SCAG.

2007 AQMP. The focus of the 2007 AQMP is to demonstrate attainment of the federal $PM_{2.5}$ ambient air quality standard by 2015 and the federal 8-hour ozone standard by 2024, while making

expeditious progress toward attainment of state standards. This is to be accomplished by building upon improvements from the previous plans and incorporating all feasible control measures while balancing costs and socioeconomic impacts. The 2007 AQMP indicates that $PM_{2.5}$ is formed mainly by secondary reactions or sources. Therefore, instead of reducing fugitive dust, the strategy for reducing $PM_{2.5}$ focuses on reducing precursor emissions of SO_x, directly emitted $PM_{2.5}$, NO_x, and ROG.

The Final 2007 AQMP control measures consist of four components. The first component is SCAQMD's Stationary and Mobile Source Control Measures. The Final 2007 AQMP includes 30 short-term and mid-term stationary and seven mobile source control measures for SCAQMD implementation. A complete listing of the measures is provided in the 2007 AQMP and includes measures such as VOC reductions from gasoline transfer and dispensing facilities, further NO_x reductions from space heaters, localized control program for PM emission hot spots, urban heat island, energy efficiency and conservation, etc. Some of the measures will become new rules and some will be amendments to existing rules. When the rules pass, the owner-operator will follow the applicable rules.

The second component is ARB's Proposed State Strategy, which includes short- and mid-term control measures aimed at reducing emissions from sources that are primarily under state jurisdiction, including on-road and off-road mobile sources, and consumer products. These measures are required in order to achieve the remaining emission reductions necessary for $PM_{2.5}$ attainment. ARB's strategy includes measures such as improvements to California's Smog Check Program, expanded passenger vehicle retirement, cleaner in-use heavy-duty trucks, reductions from port related sources, cleaner off-road equipment, evaporative and exhaust strategies, pesticide strategies, etc. When these measures are implemented by the ARB, the project would be required to follow them.

The third component is SCAQMD Staff's Proposed Policy Options to Supplement ARB's Control Strategy. SCAQMD staff believes that a combination of regulatory actions and public funding is the most effective means of achieving emission reductions. As such, the 2007 Final AQMP proposes three policy options for the decision makers to consider in achieving additional reductions. The first option is to incorporate the SCAQMD proposed additional control measures as a menu of selections further reducing emissions from sources primarily under state and national jurisdiction. The second option is to have the State fulfill its NO_x emission reduction obligations under the 2003 AQMP by 2010, for its short-term defined control measures plus additional reductions needed to meet the NO_x emission target between 2010 and 2014. The third option is based on the same rate of progress under Policy Option 1, but it relies heavily on public funding assistance to achieve the needed NO_x reductions via accelerated fleet turnover, to post-2010 on-road emission standards or the cleanest off-road engine standards in effect today or after 2010. This strategy is adopted as part of the mitigation measures recommended for this project.

The fourth component consists of Regional Transportation Strategy and Control Measures provided by SCAG. Transportation plans within the SoCAB are statutorily required to conform to air quality plans in the region, as established by the 1990 Federal Clean Air Act and reinforced by other Acts. The region must demonstrate that its transportation plans and programs conform to the mandate to meet the federal ambient air quality standards in a timely manner. The Regional Transportation

Plan, prepared by the SCAG, is developed every 4 years with a 20-year planning horizon to meet the long-term transportation planning requirements for emission reductions from on-road mobile sources within the SoCAB. The biennial Regional Transportation Improvement Program requires that the short-term implementation requirements of the Transportation Conformity Rule be met by SCAG. The first 2 years of the program are fiscally constrained and demonstrate timely implementation of a special category of transportation projects called Transportation Control Measures. In general, Transportation Control Measures are those projects that provide emission reductions from on-road mobile sources, based on changes in the patterns and modes by which the regional transportation system is used. Strategies are grouped into three categories: high occupancy vehicle strategy, transit and systems management, and information-based technology (traveling during a less congested time of day). SCAG approved the transportation measures in the Regional Transportation Plan, which have been included in the region's air quality plans. The Transportation Control Measures will be implemented and will subsequently reduce emissions in the SoCAB.

2012 AQMP. The 2012 AQMP was adopted December 7, 2012. The purpose of the 2012 AQMP for the SoCAB is to set forth a comprehensive and integrated program that will lead the SoCAB into compliance with the federal 24-hour $PM_{2.5}$ air quality standards, and to provide an update of the SoCAB's projections in meeting the federal 8-hour ozone standards. Similarly to the prior AQMPs, the project would comply with all applicable rules and regulations enacted as part of the AQMP. In addition, as discussed in the Regulatory section, the AQMP relies upon the SCAG regional transportation strategy, which is in its adopted 2012-2035 RTP/SCS and 2011 Federal Transportation Improvement Program. Included in the RTP/SCS are regional transportation strategy and transportation control measures including the following: active transportation (non-motorized transportation—biking and walking); transportation demand management; transportation system management; transit; passenger and high-speed rail; goods movement; aviation and airport ground access; highways; arterials; and operations and maintenance.

2016 AQMP. The 2016 AQMP was adopted March 3, 2017. The 2016 AQMP address strategies and measures to attain the 2008 federal 8-hour ozone standard by 2032, the 2012 federal annual $PM_{2.5}$ standard by 2021 to 2025, and the 2006 federal 24-hour $PM_{2.5}$ standard by 2019. The 2016 AQMP also examined the regulatory requirements for attaining the 2015 federal 8-hour ozone standard. The 2016 AQMP also updates previous attainment plans for ozone and $PM_{2.5}$ that have not yet been met. In general, the AQMP is updated every 3 to 4 years. However, the air quality planning process for the AQMP is continuous and each iteration is an update of the previous plan.

Summary

In summary, the project would comply with all applicable rules and regulations. However, the project could impede attainment because the project is inconsistent with the current General Plan land use designation and the project's emissions exceed the SCAQMD regional significance thresholds.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Implement Mitigation Measures AQ-1a through AQ-1h below through adoption of a Mitigation Monitoring and Reporting Program (MMRP) that is designed to ensure compliance with mitigation measures during the project implementation. The MMRP shall be enforced through the preparation permit conditions, agreements, or other measures as a condition of development.

Construction Mitigation Measures

MM AQ-1a During mass grading and building construction, all off-road diesel-powered construction equipment greater than 50 horsepower shall meet or exceed United States Environmental Protection Agency (EPA) Tier 3 off-road emissions standards.

MM AQ-1b All Heavy-Heavy Duty Haul Trucks (HHD) accessing the project site shall use year 2007 or newer engines during all construction activities.

MM AQ-1c The following measures shall be applied to all projects during construction of the project:

a) Use paints with a volatile organic compound (VOC) content 50 grams per Liter or lower for both interior and exterior surfaces, if painted.
b) Recycle leftover paint. Take any leftover paint to a household hazardous waste center; do not mix leftover water-based and oil-based paints.
c) Keep lids closed on all paint containers when not in use to prevent VOC emissions and excessive odors.
d) For water-based paints, clean up with water only. Whenever possible, do not rinse the cleanup water down the drain or pour it directly into the ground or the storm drain. Set aside the can of cleanup water and take it to the hazardous waste center (www.cleanup.org).
e) Use compliant low-VOC cleaning solvents to clean paint application equipment.
f) Keep all paint- and solvent-laden rags in sealed containers to prevent VOC emissions.
g) Contractors shall construct/build with materials that do not require painting and use pre-painted construction materials to the extent practicable: and
h) Use high-pressure/low-volume paint applicators with a minimum transfer efficiency of at least 50 percent or other application techniques with equivalent or higher transfer efficiency.

MM AQ-1d Prior to issuance of any grading permits, the developer shall provide a traffic control plan to the County of Riverside that describes in detail the location of equipment staging areas, stockpiling/storage areas, construction parking areas, safe detours around the project construction site, as well as provide temporary traffic control (e.g., flagperson) during construction-related truck hauling activities. The traffic control plan is intended to minimize traffic congestion and delays that increase idling and acceleration emissions. The applicant shall maintain one copy on-site in the construction trailer to the satisfaction of the County of Riverside.

MM AQ-1e During project construction, the following measures shall be implemented to the satisfaction of the County of Riverside. Construction equipment maintenance records and data sheets of equipment design specifications (including the emission control tier of the equipment) shall be kept on-site during construction and subject to inspection by the County of Riverside.

a) Construction equipment shall be properly maintained according to manufacturer specifications.
b) All contractors shall turn off all construction equipment and delivery vehicles when not in use, or limit on-site idling for no more than 5 minutes in any 1 hour.
c) On-site electrical hook ups to a power grid shall be provided for electric construction tools including saws, drills, and compressors, where feasible, to reduce the need for diesel-powered electric generators.
d) The project shall demonstrate compliance with South Coast Air Quality Management District (SCAQMD) Rule 403 concerning fugitive dust and provide appropriate documentation to the County of Riverside.
e) Traffic speeds on all unpaved roads to be reduced to 15 miles per hour or less.
f) Sweep streets at the end of the day if visible soil is carried onto adjacent public paved roads (recommend water sweepers with reclaimed water).
g) Use street sweepers that comply with SCAQMD Rules 1186 and 1186.1.
h) All exposed surfaces shall be watered at a frequency adequate to maintain minimum soil moisture of 12 percent. Moisture content can be verified by lab samples or moisture probe.
i) All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 miles per hour (mph); wind breaks (e.g., trees, fences) shall be installed on the windward side(s) of actively disturbed areas of construction; and vegetative ground cover (e.g., fast-germinating native grass seed) shall be planted in disturbed areas as soon as possible and watered appropriately until vegetation is established.
j) All trucks and equipment, including their tires, shall be washed off prior to leaving the site; site accesses to a distance if 100 feet from paved roads shall be treated with a 6- to 12-inch compacted layer of wood chips, mulch, or gravel.

Operational Mitigation Measures

MM AQ-1f Prior to operation of each warehouse building, the applicant shall demonstrate to the County of Riverside that vehicles can access the building using paved roads and parking lots. Further, the applicant shall work with the County of Riverside and will provide signage to ensure that no trucks are queuing outside of the facility.

MM AQ-1g The project shall implement the following measures to reduce emissions from on-site heavy duty trucks within six months after operations commence:

a) Post signs informing truck drivers about the health effects of diesel particulates, the California Air Resources Board diesel idling regulations, and the importance of being a good neighbor by not parking in residential areas.

b) Post signs in all dock and delivery areas containing the following: truck drivers shall turn off engines when not in use; trucks shall not idle for more than five minutes; telephone numbers of the building facilities manager and the California Air Resources Board to report violations.
c) Tenants shall maintain records on its fleet equipment and vehicle engine maintenance to ensure that equipment and vehicles serving the warehouses within the project are in good condition, and in proper tune pursuant to manufacturer's specifications. Tenants shall maintain records on its fleet equipment and ensure that all Heavy-Heavy Duty Trucks (HHD) accessing the project site use year 2010 or newer engines. The records shall be maintained on-site and be made available for inspection by the County.
d) The facility operator will ensure that site enforcement staff in charge of keeping the daily log and monitoring for excess idling will be trained/certified in diesel health effects and technologies, for example, by requiring attendance at California Air Resources Board-approved courses (such as the free, one-day Course #512).
e) Require facility operator to become a SmartWay Partner.
f) Require facility operator to incorporate incentives and requirements such that the maximum feasible number of truck trips will be carried by SmartWay 1.0 or greater carriers.
g) Prior to issuance of occupancy permits, signs shall be installed at each exit driveway, providing directional information to the County's truck route. Text on the sign shall read "To Truck Route" with a directional arrow. Truck routes shall be clearly marked pursuant to the Municipal code.
h) The site shall be designed such that any check-in point for trucks is well inside the facility to ensure that there are no trucks queuing outside the facility.

MM AQ-1h The following measures shall be incorporated into each building to reduce motor vehicle emissions:

a) All tenants shall participate in Riverside County's Rideshare Program. The purpose of the program would be to discourage single-occupancy vehicle trips and encourage alternate modes of transportation such as carpooling, transit, walking, and biking. The program shall provide employees with assistance in using alternate modes of travel, including carpooling encouragement, ride-matching assistance, and vanpool assistance.
b) A minimum of two electric vehicle-charging stations for automobiles or light-duty trucks shall be provided at each building.
c) Each building shall provide secure bicycle storage space equivalent to two percent of the automobile parking spaces provided.
d) Each building shall provide a minimum of two shower and changing facilities within 200 yards of a building entrance.

e) Each building shall provide preferred parking for electric, low-emitting and fuel-efficient vehicles equivalent to 5 percent of the required number of parking spaces.
f) All on-site forklifts and yard trucks shall be electric with the necessary electrical charging stations provided.

Level of Significance After Mitigation

Significant and unavoidable impact. The project would comply with all applicable rules and regulations. However, the project could impede attainment of the AQMP because its emissions will exceed the SCAQMD regional significance thresholds for NO_x and ROG during operations, even after implementation of all feasible mitigation. The predominant source of operational emissions are generated by project truck traffic, and, at present, there are no additional feasible mitigation measures that would reduce these emissions to levels that are less than significant even though the project will require as mitigation the use of the cleanest heavy-duty diesel trucks under current regulations.

Even if all passenger (employee) car trips to the site were eliminated, this would result in a negligible percentage reduction in NO_x emissions. Federal and state agencies are charged with regulating and enforcing vehicle emission standards, which is not within the County's control. Requiring an accelerated phase-in for non-diesel powered trucks would not be feasible, as it is not feasible for the County of Riverside or the project applicant to effectively enforce a prohibition on trucks from entering the property that are otherwise permitted to operate in California and access other properties in the County, region, and State. Even if the County or the project applicant were to apply such a restriction, it would merely cause warehouse operators using older truck fleets to locate in another area within in the SoCAB where the restriction does not apply, thereby resulting in no improvement to regional air quality. Furthermore, if a truck that did not meet this requirement were to attempt access to the site and be denied, there would be more idling emissions and travel emissions associated with that truck.

Likewise, imposing a "trip cap" on the number of trucks that may access the site in a given day would also be infeasible to enforce, and would not avoid or substantially lessen the estimated NO_x emissions; in fact, if trucks could be turned away for exceeding a trip cap, this measure could result in the unintended adverse effect of trucks queuing on surrounding streets in the vicinity of the project until midnight of the following day. Reducing the number of loading docks provided by the project would also likely result in similar unintended queuing impacts.

The provision of additional electric vehicle charging stations and infrastructure that would be needed for future increase in the use of electrical and hybrid vehicles would likely not result in any demonstrable, quantifiable reduction in NO_x emissions, and would therefore not avoid or substantially lessen the significant impact. Providing more extensive electric vehicle charging facilities for trucks, based on the assumption that commercial electrical trucks will be in common use in the future, is speculative because technology for commercial electrical trucks is not currently available on a widespread basis. It is possible that electrical infrastructure installed now would not support future, presently unknown technology for commercial electrical trucks. No mid- or long-

range parking for trucks will be provided on the project site, as trucks are expected to spend only a minimal amount of time on-site (enough time to unload/load their trailer and complete any necessary administrative tasks). It is not anticipated that trucks will spend enough time on-site to connect to a charging station and recharge a battery. Given the level of current existing technology, this is an infeasible and unrealistic requirement.

SCAQMD, which is the agency charged with managing air quality for the SoCAB, has not adopted any sort of "indirect source rule" to reduce and mitigate emissions from large sources of indirect air pollution (e.g., operational vehicle emissions). The San Joaquin Valley Air Pollution Control District (SJVAPCD) has adopted such a rule (Rule 9510), which requires implementation of certain measures or the payment of an in-lieu fee that the Air District must use to achieve pollution reductions elsewhere in the air basin. SJVAPCD's Rule 9510 contains a complex formula intended to achieve equivalent emission reductions off-site as would have occurred through direct compliance on-site, based on the average statewide cost of emission reductions. Because SCAQMD has not adopted any similar regulation or rule, there is no mechanism to require similar emissions reductions for this project through the payment of fees.

In conclusion, based on the regulatory changes discussed in Section 3.3.1, Regulatory Setting, most heavy-duty trucks entering the project site will meet or exceed EPA 2007 (for construction haul trucks) and 2010 (for operation al heavy-heavy-duty delivery trucks) emission standards within a relatively short time after the project becomes operational in 2018, and all such trucks entering the property will meet or exceed such standards by 2023. Suggesting that the County of Riverside or the project applicant require more stringent controls than required by either the federal government or State of California is neither practical nor feasible for the County to effectively enforce. Beyond these regulatory changes, which will serve to reduce emissions over time, there are no additional feasible mitigation measures, as it is not feasible to reduce the number of truck trips or associated emissions due to the logistics/warehouse nature of the project.

Air Quality Standards/Violations

Impact AQ-2:	**The project would not violate any air quality standard or contribute substantially to an existing or projected air quality violation.**

Impact Analysis

Two criteria are used to assess the significance of this impact: (1) the localized construction and operational significance analysis; and (2) the local traffic intersection CO hot spot analysis.

Localized Construction Analysis

The SCAQMD Governing Board adopted a methodology for calculating localized air quality impacts through the use of localized significance thresholds (also referred to as a LST analysis). LSTs represent the maximum emissions from a project that would not cause or contribute to an exceedance of the most stringent applicable state or federal ambient air quality standards. LSTs were developed in recognition of the fact that criteria pollutants such as CO and NO_x—and PM_{10} and $PM_{2.5}$ in particular—can have local impacts at nearby sensitive receptors as well as regional impacts.

The localized assessment methodology limits the emissions in the analysis to those generated from on-site activities. The on-site emissions during construction are compared with the localized significance thresholds and are summarized in Table 3.3-7. As shown in Table 3.3-7, unmitigated emissions during construction would not exceed the SCAQMD localized construction significance thresholds.

Table 3.3-7: Localized Significance Analysis (Construction: Unmitigated)

Activity	On-site Emissions (pounds per day)			
	NO_x	CO	PM_{10}	$PM_{2.5}$
Site Preparation	52.3	23.5	9.8	6.5
Mass Grading	89.0	58.7	6.4	3.9
Building Construction	26.7	17.6	1.8	1.7
Tenant Improvements	8.4	7.7	0.6	0.6
Paving	17.5	14.8	1.0	0.9
Maximum Daily Emissions[(1)]	**89.0**	**58.7**	**9.8[(2)]**	**6.5[(2)]**
Localized Significance Threshold	236	2,817	21	11
Exceed Threshold?	No	No	No	No

Notes:
(1) The maximum daily emissions refer to the maximum emissions that would occur in one day; it was assumed that the site preparation and grading activities do not occur at the same time as the other construction activities; therefore, their emissions are not summed; the maximum daily emissions would occur during grading activities for NO_x and CO and during the site preparation activity for particulate matter.
(2) Indicated emissions are unmitigated except for fugitive dust, which incorporates measures required under SCAQMD Rule 403.
Source of emissions: Appendix B.
Source of thresholds: South Coast Air Quality Management District 2009, for Source Receptor Area 29, at a distance of 25 meters and an area disturbed of 5 acres per day.

Localized Operational Analysis

The localized impacts during project operations are summarized in Table 3.3-8. As shown in this table, the operation of the project would not exceed any SCAQMD operational localized significance threshold. Additionally, the project would utilize electric trailer movers in place of traditional diesel-powered movers to move trailers throughout the project site, which would reduce the amount of emissions generated during operation.

Table 3.3-8: Localized Significance Analysis (Operations: Unmitigated)

Air Pollutant	Averaging Time, Units	Local Project Impact	Background Air Quality	Total	Standard/ Threshold	Significant Impact?
Carbon monoxide (CO)	1-hour, ppm	0.03	2.29	2.32	20	No
	8-hour, ppm	0.02	1.60	1.62	9.0	No
Nitrogen dioxide (NO_2)	1-hour, ppm	0.017	0.052	0.069	0.18	No
	1-hour 98th percentile, ppm	0.013	0.045	0.058	0.100	No
	Annual	0.001	0.010	0.011	0.03	No
Particulate matter (PM_{10})	24-hour, µg/m^3	1.5	NA	1.5	2.5	No
	Annual, µg/m^3	0.6	NA	0.6	1.0	No
Particulate matter ($PM_{2.5}$)	24-hour, µg/m^3	0.5	NA	0.5	2.5	No

Notes:
Concentration units for each air pollutant are shown in the second column; the AERMOD model estimates pollutant concentrations in units of micrograms per cubic meter; to estimate pollutant concentrations for NO_2 and CO which are in units of parts per million by volume, the NO_2 pollutant concentrations in micrograms per cubic meter are divided by 1,880 and the CO pollutant concentrations are divided by 1,100; these multiplication factors are based on a standard temperature of 25 degrees centigrade and a standard atmospheric pressure of 760 millibars.

NA=Not Applicable; as noted above, since the SCAQMD exceeds the federal or State PM_{10} and $PM_{2.5}$ standards, determining background levels of PM_{10} and $PM_{2.5}$ are unnecessary (SCAQMD 2008); the PM_{10} and $PM_{2.5}$ significance thresholds are based on the requirements of SCAQMD Rule 403—Fugitive Dust from construction and SCAQMD Rule 1303 requirements:

ppm = parts per million (a unit of concentration); µg/m^3 = micrograms per cubic meter (a unit of concentration)

Total = local project impact + background air quality

Sources:
Local project impacts are from project specific dispersion modeling; model output is in Appendix B, Localized Criteria Pollutant Assessment.
Background air quality for CO and NO_2 are from Table 3.3-1 of this EIR.

Carbon Monoxide Hot Spot Analysis

A CO hot spot is a localized concentration of CO that is above the state or federal 1-hour or 8-hour CO ambient air standards. Localized high levels of CO are associated with traffic congestion and idling or slow-moving vehicles. To provide a worst-case scenario, CO concentrations are estimated at project-impacted intersections, where the concentrations would be the greatest.

CO hot spot thresholds ensure that emissions of CO associated with traffic impacts from a project, in combination with CO emissions from existing and forecasted regional traffic, do not exceed state or federal standards for CO at any traffic intersection impacted by the project. Project concentrations may be considered significant if a CO hot spot intersection analysis determines that project generated CO concentrations cause a localized violation of the state CO 1-hour standard of 20 ppm,

state CO 8-hour standard of 9 ppm, federal CO 1-hour standard of 35 ppm, or federal CO 8-hour standard of 9 ppm.

This analysis follows guidelines recommended by the CO Protocol and the SCAQMD. According to the CO Protocol, intersections with Level of Service (LOS) E or F require detailed analysis. In addition, intersections that operate under LOS D conditions in areas that experience meteorological conditions favorable to CO accumulation require a detailed analysis. The SCAQMD recommends that a local CO hot spot analysis be conducted if the intersection meets one of the following criteria: (1) the intersection is at LOS D or worse and where the project increases the volume to capacity ratio by 2 percent, or (2) the project decreases LOS at an intersection from C to D.

The Traffic Study prepared for this project by Urban Crossroads analyzed four project scenarios: Existing plus Project (E+P, 2017), Existing plus Ambient Growth plus Project (EAP, 2018), Existing plus Ambient Growth plus Project plus Cumulative (EAPC, 2018), and Horizon Year plus Project (2040). The E+P and EAP scenarios resulted in two intersections operating at LOS below D (i.e., E or F), while the EAPC scenario resulted in five intersections operating at LOS below D. The Horizon Year plus Project scenario resulted in seven intersections operating at LOS below D.

Using the CALINE4 model, potential CO hot spots were analyzed at the intersections listed in Table 3.3-9. Two intersections from each analysis year (2017, 2018, and 2040) were chosen to investigate potential near-term and long-term impacts from the project's CO emissions. These intersections were chosen because they operate at LOS F and had the highest traffic volumes for the given scenario year. There are several inputs to the CALINE4 model. One input is the traffic volumes, which are from the project-specific traffic report. Emission factors were generated using the EMFAC2014 model for the applicable scenario year.

As shown in Table 3.3-9, the estimated 1-hour and 8-hour average CO concentrations at build-out in combination with background concentrations from non-project-related emission sources are below the state and federal standards. No CO hot spots are anticipated because of traffic-generated emissions by the project in combination with other anticipated development in the area. The mobile emissions of CO from the project are not anticipated to contribute substantially to an existing or projected air quality violation of CO. Therefore, according to this criterion, air pollutant emissions during operation of the project would result in a less than significant impact related to CO hot spots.

Table 3.3-9: Localized Carbon Monoxide Concentrations

Scenario	Intersection	Peak Hour	Estimated CO Concentration (ppm)				Significant Impact?
			1 Hour Impact[(1)]	Significance Threshold	8 Hour Impact[(2)]	Significance Threshold	
E + P (2017)	I-10 EB Ramps and Cherry Valley Blvd.	PM	2.9	20.0	1.9	9.0	No
E + P (2017)	I-10 WB Ramps and Cherry Valley Blvd.	AM	3.0	20.0	2.0	9.0	No
EAP(2018)	I-10 EB Ramps and Cherry Valley Blvd.	PM	2.8	20.0	1.8	9.0	No

Table 3.3-9 (cont.): Localized Carbon Monoxide Concentrations

Scenario	Intersection	Peak Hour	Estimated CO Concentration (ppm)				Significant Impact?
			1 Hour Impact[1]	Significance Threshold	8 Hour Impact[2]	Significance Threshold	
EAP (2018)	I-10 WB Ramps and Cherry Valley Blvd.	AM	3.0	20.0	2.0	9.0	No
EAPC (2018)	I-10 WB Ramps and Cherry Valley Blvd.	AM	3.1	20.0	2.0	9.0	No
EAPC (2018)	I-10 WB Ramps and Cherry Valley Blvd.	PM	3.0	20.0	2.0	9.0	No
Horizon Year Plus Project (2040)	I-10 EB Ramps and Cherry Valley Blvd.	PM	3.1	20.0	2.0	9.0	No
Horizon Year Plus Project (2040)	I-10 WB Ramps and Cherry Valley Blvd.	PM	3.0	20.0	2.0	9.0	No

Notes:
(1) The 1-hour concentration is the CALINE4 project increment (see Appendix D for model output) plus the 1-hour background concentration of 2.5 ppm (from Table 3.3-1). 1-hour background calculated by dividing 8-hour background CO by 0.7 (persistence factor).
(2) The 8-hour concentration is the CALINE4 project increment (see Appendix D) multiplied by 0.7 (persistence factor to convert the 1-hour average CALINE4 model output to an 8-hour average), then adding the 8 hour background concentration of 1.6 ppm (from Table 3.3-1).
Source: see Appendix B.

In addition, a supplemental analysis was conducted to determine whether any of the interim traffic improvements identified in Section 3.19, Transportation would result in CO hot spots or exceed air quality significance thresholds.

For purposes of this assessment, a CO hot spot assessment was prepared for the intersections that are to receive the interim improvements or would be affected by the improvements indicated below:

- Add traffic signals at I-10 Eastbound and Westbound Off-ramps at the Cherry Valley Boulevard Interchange.
- Restripe to provide eastbound and westbound left-turn pockets within the existing width of the Cherry Valley Boulevard bridge.
- Add a southbound right turn lane on the off ramp at the intersection of I-10 eastbound ramps at Cherry Valley Boulevard.
- Realign Calimesa Boulevard approximately 550 feet east of I-10 westbound ramps at Cherry Valley Boulevard intersection.
- Add an eastbound left-turn lane at the intersection of Calimesa Boulevard at Cherry Valley Boulevard.
- Convert the all-way stop at Roberts Road at Cherry Valley Boulevard intersection to a cross-street stop until the ultimate realignment of Roberts Road.

The Supplemental Traffic Study prepared for the project by Urban Crossroads analyzed three project traffic scenarios: Existing Plus Ambient Growth Plus Project (EAP 2017), Near Term (2022), and Near Term Plus Sunny-Cal (2022).

A screening process was carried out to identify the intersection that would have the highest potential for a CO hot spot for each traffic condition year. To establish which intersections to model for a potential CO hot spot, the traffic data for the intersections receiving interim improvements were ranked by total cumulative delay (intersection volume times average vehicle delay). This provides a good metric to compare which intersections are most affected by traffic.

Table 3.3-10 summarizes the estimated 1-hour and 8-hour average CO concentrations attributable to project vehicle emissions with improvements in combination with background CO concentrations from other emission sources in the region. As indicated in Table 3.3-10, potential CO emissions would not exceed the SCAQMD's CO hot spot significance thresholds, and no CO hot spots are anticipated at this intersection. Therefore, the project's CO mobile emissions attributable to the interim traffic improvements, in combination with CO emissions from existing and future emission sources, would not contribute substantially to an existing or projected air quality violation of CO.

Table 3.3-10: Localized Carbon Monoxide Concentrations—with Interim Traffic Improvements

Traffic Condition	Intersection	Peak Hour	Estimated CO Concentration (ppm)				Significant Impact?
			1-Hour Impact[1]	Significance Threshold	8-Hour Impact[2]	Significance Threshold	
EAP (2018)	I-10 EB Ramps and Cherry Valley Blvd.	PM	2.8	20.0	1.8	9.0	No
Near Term (2022)	I-10 EB Ramps and Cherry Valley Blvd.	AM	2.8	20.0	1.8	9.0	No
Near Term Plus Sunny-Cal (2022)	I-10 WB Ramps and Cherry Valley Blvd.	AM	2.9	20.0	1.8	9.0	No

Notes:
(1) The 1-hour concentration is the CALINE4 project increment plus the 1-hour background concentration of 2.5 ppm. The 1-hour background calculated by dividing 8-hour background CO by 0.7 (persistence factor).
(2) The 8-hour concentration is the CALINE4 1-hour project increment multiplied by 0.7 (persistence factor to convert the 1-hour average CALINE4 model output to an 8-hour average), then adding the 8 hour background concentration of 1.6 ppm.

The interim traffic improvements would not result in any new significant air quality impact, and would result in CO concentrations well below the appropriate significance thresholds.

Finally, it should be noted the CO air concentration estimates provided in Table 3.3-9 and Table 3.3-10 are conservative estimates (over-predictions) because the traffic intersection volumes

available from the traffic study are in terms of passenger car equivalents (PCEs). To represent the impact large trucks, buses, and recreational vehicles have on traffic flow, all trucks were converted into PCEs. By their size alone, these vehicles occupy the same space as two or more passenger cars. In addition, the time it takes for them to accelerate and decelerate is greater than for passenger cars, and varies according to the type of vehicle and number of axles. For the purpose of this analysis, a PCE factor of 1.5 has been applied to 2-axle trucks, 2.0 for 3-axle trucks and 3.0 for 4+-axle trucks. Thus, the number of trucks counted as part of traffic volumes at an intersection are greatly overestimated compared with the actual number of trucks at the intersection.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than significant impact.

Criteria Pollutant

Impact AQ-3:	**The project would result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).**

Impact Analysis

To result in a less than significant impact, the following criteria must be true:

1. Regional analysis: emissions of nonattainment pollutants must be below the regional significance thresholds. This is an approach recommended by the SCAQMD in its comment letters on similar projects.
2. Summary of projections: the project must be consistent with current air quality attainment plans including control measures and regulations. This is an approach consistent with Section 15130(b) of the State CEQA guidelines.
3. Cumulative health impacts: the project must result in less than significant cumulative health effects from the nonattainment pollutants. This approach correlates the significance of the regional analysis with health effects, consistent with the court decision, *Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 124 Cal.App.4th 1184, 1219-20.

Step 1: Regional Analysis

If an area is in nonattainment for a criteria pollutant, then the background concentration of that pollutant has historically exceeded the ambient air quality standard. It follows that if a project exceeds the regional threshold for that nonattainment pollutant, then it would result in a cumulatively considerable net increase of that pollutant and result in a significant cumulative impact.

The SoCAB is in nonattainment for PM_{10}, $PM_{2.5}$, and ozone. Therefore, if the project exceeds the regional thresholds for PM_{10}, or $PM_{2.5}$, then it would contribute to a cumulatively considerable impact for those pollutants. Likewise, if the project exceeds the regional threshold for NO_x or ROG, then it follows that the project would contribute to a cumulatively considerable impact for ozone and particulate matter since a portion of the atmospheric particulate matter is formed in the atmosphere from emissions from NO_x and ROG.

Regional emissions include those generated from all on-site and off-site activities. Regional significance thresholds have been established by the SCAQMD because emissions from projects in the Basin can potentially contribute to the existing emission burden and possibly affect the attainment and maintenance of ambient air quality standards.

Construction Regional Emissions

Table 3.3-11 summarizes construction-related emissions (without mitigation). For the assumptions used in generating the emissions, please refer to Section 4 of the Air Quality and Greenhouse Gas Analysis Report (Appendix B). The information shown in Table 3.3-11 indicates that the SCAQMD regional emission thresholds would be exceeded for ROG emissions during project construction. Therefore, without mitigation, the short-term construction emissions are considered to have a potentially significant regional impact.

Table 3.3-11: Unmitigated Regional Construction Air Pollutant Emissions

Source	Emissions (pounds per day)					
	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Site Preparation	5.1	52.4	24.5	0.0	10.1	6.6
Mass Grading	7.7	89.1	60.4	0.1	6.7	4.0
Building Construction	10.2	75.1	79.5	0.2	14.4	5.5
Tennant Improvements	61.3	10.0	28.7	0.0	21.6	5.9
Paving	5.1	28.8	32.1	0.0	1.6	1.5
Maximum Daily Emissions[(1)]	**76.6**	**113.9**	**140.3**	**0.2**	**37.6[(2)]**	**12.9[(2)]**
Significance Threshold	75	100	550	150	150	55
Significant Impact?	**Yes**	**Yes**	No	No	No	No

Notes:
(1) The maximum daily emissions refer to the maximum emissions that would occur in one day; it was assumed that the site preparation and grading activities do not occur at the same time as the other construction activities; therefore, their emissions are not summed; the maximum daily emissions would occur during the overlapping of the building construction, tenant improvements, and paving construction activities for all other pollutants during 2018.
(2) PM_{10} and $PM_{2.5}$ emissions reflect application of fugitive dust controls required under SCAQMD Rule 403.
ROG = reactive organic gases NO_x = nitrogen oxides CO = carbon monoxide
SO_x = sulfur oxides PM_{10} and $PM_{2.5}$ = particulate matter
Source of emissions: Appendix B.
Source of thresholds: South Coast Air Quality Management District 2011a.

Operational Regional Emissions

Maximum daily operational emissions from emission sources generated both on-site and off-site as derived from CalEEMod are shown in Table 3.3-12 and Table 3.3-13 for the summer and winter seasons, respectively. As shown in Table 3.3-12 and Table 3.3-13, the project's operational emissions would exceed the SCAQMD's regional thresholds for ROG and NO_x. The project would utilize electric trailer movers in place of traditional diesel-powered movers to move trailers throughout the project site, which would reduce the amount of emissions generated during operation.

Table 3.3-12: Unmitigated Regional Operational Emissions—Summer

Source	Emissions (pounds per day)					
	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Mobile—Passenger Vehicles	4.0	5.8	72.3	0.2	2.4	1.1
Mobile—Heavy Duty Trucks	16.1	442.7	118.5	1.3	13.3	7.0
Area	49.0	0.0	0.3	0.0	0.0	0.0
Energy	0.1	1.0	0.9	0.0	0.1	0.1
Total	**69.2**	**449.6**	**192.0**	**1.5**	**15.8**	**8.1**
Significance Threshold	55	55	550	150	150	55
Significant Impact?	**Yes**	**Yes**	No	No	No	No

Notes:
ROG = reactive organic gases NO_x = nitrogen oxides CO = carbon monoxide
SO_x = sulfur oxides PM_{10} and $PM_{2.5}$ = particulate matter Area = painting and consumer products
Source of emissions: Appendix B.
Source of thresholds: South Coast Air Quality Management District 2011a.

Table 3.3-13: Unmitigated Regional Operational Emissions—Winter

Source	Emissions (pounds per day)					
	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Mobile—Passenger Vehicles	3.8	6.4	66.3	0.2	2.5	1.1
Mobile—Heavy Duty Trucks	16.3	454.6	121.9	1.3	13.4	7.0
Area	49.0	0.0	0.3	0.0	0.0	0.0
Energy	0.1	1.0	0.9	0.0	0.1	0.1
Total	**69.2**	**462.0**	**189.4**	**1.5**	**16.0**	**8.2**
Significance Threshold	55	55	550	150	150	55
Significant Impact?	**Yes**	**Yes**	No	No	No	No

Notes:
ROG = reactive organic gases NO_x = nitrogen oxides CO = carbon monoxide
SO_x = sulfur oxides PM_{10} and $PM_{2.5}$ = particulate matter Area = painting and consumer products
Source of emissions: Appendix B.
Source of thresholds: South Coast Air Quality Management District 2011a.

In summary, without mitigation, the project contributes to a cumulatively significant regional air quality impact with respect to ROG and NO_x.

Step 2: Plan Approach

Section 15130(b) of the State CEQA Guidelines states the following:

> The following elements are necessary to an adequate discussion of significant cumulative impacts: 1) Either: (A) A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency, or (B) A summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or area wide conditions contributing to the cumulative impact.

In accordance with State CEQA Guidelines 15130(b), this analysis of cumulative impacts is based on a summary of projections analysis. This analysis considers the current State CEQA Guidelines, which includes the recent amendments approved by the Natural Resources Agency and effective on March 18, 2010. The SoCAB is in nonattainment for ozone, and particulate matter (PM_{10} and $PM_{2.5}$) which means that concentrations of those pollutants currently exceed the ambient air quality standards for those pollutants.

Under the amended State CEQA Guidelines, cumulative impacts may be analyzed using other plans that evaluate relevant cumulative effects. The AQMPs describe and evaluate the future projected emissions sources in the SoCAB and set forth strategies to meet both state and federal Clean Air Act planning requirements and federal ambient air quality standards. Therefore, the AQMPs are relevant plans for a CEQA cumulative impacts analysis. The 2003 AQMP updates the attainment demonstration for the federal standards for ozone and PM_{10}; replaces the 1997 attainment demonstration for the federal CO standard and provides a basis for a maintenance plan for CO for the future; and updates the maintenance plan for the federal NO_2 standard that the SoCAB has met since 1992. The 2007 AQMP focuses on ozone and $PM_{2.5}$ while the 2012 AQMP's primary focus is to further address the SoCAB's attainment with the federal $PM_{2.5}$ standard. The 2016 AQMP further analyzes and identifies additional strategies to meet ozone and $PM_{2.5}$ standards. The AQMP also incorporates significant new scientific data, emission inventories, ambient measurements, control strategies, and air quality modeling.

The geographic scope for cumulative criteria pollution from air quality impacts is the SoCAB, because that is the area in which the air pollutants generated by the sources within the SoCAB circulate and are often trapped. The SCAQMD is required to prepare and maintain an AQMP and SIP to document the strategies and measures to be undertaken to reach attainment of ambient air quality standards. While the SCAQMD does not have direct authority over land use decisions, it is recognized that changes in land use and circulation planning are necessary to maintain clean air. The SCAQMD evaluated the entire SoCAB when it developed the AQMP.

In accordance with State CEQA Guidelines Section 15064, subdivision (h)(3), a lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively

considerable if the project complies with the requirements in a previously approved plan or mitigation program. As identified in Impact AQ-1, the project complies with the control measures in the 2003 and the 2007 AQMP and all of the SCAQMD's applicable rules and regulations. However, because the project exceeds the SCAQMD's CEQA significance thresholds, the analysis contained in Impact AQ-1 demonstrates that the project is not consistent with the most recent AQMP and SIP without mitigation. Therefore, the project would result in a significant impact according to this criterion.

Step 3: Cumulative Health Impacts

The SoCAB is in nonattainment for ozone, PM_{10}, and $PM_{2.5}$, which means that the background levels of those pollutants are at times higher than the ambient air quality standards. The air quality standards were set to protect public health, including the health of sensitive individuals (such as the elderly, children, and the sick). Therefore, when the concentration of those pollutants exceeds the standard, it is likely that some sensitive individuals in the population would experience health effects that were described in Draft EIR Appendix B, Air Quality, Health Risk, and Greenhouse Gas Analysis Report. Based on that information, health effects from ozone, PM_{10}, and $PM_{2.5}$ are summarized briefly below. Issues from ozone include irritation of the respiratory system and lung problems; issues from NO_2 include the potential to aggravate chronic respiratory disease; issues from PM_{10} and $PM_{2.5}$ include short-term irritation and long-term reduction in lung function. However, the health effects are a factor of the dose-response curve. Concentration of the pollutant in the air (dose), the length of time exposed, and the response of the individual are factors involved in the severity and nature of health impacts. If a significant health impact results from project emissions, it does not mean that 100 percent of the population would experience health effects.

The regional analysis indicates that without mitigation, the project would exceed the SCAQMD regional significance thresholds for ROG and NO_x (ozone, PM_{10}, and $PM_{2.5}$ precursors). Because ozone is a secondary pollutant (it is not emitted directly but formed by chemical reactions in the air), it can be formed miles downwind of the project site. Emissions of ROG and NO_x can also particulate in the formation of secondary organic and nitrate particulate matter. Project emissions of ROG and NO_x may contribute to the background concentration of ozone and cumulatively cause health effects. Impacts may include the following: irrigation to respiratory system; reduce lung function; breathing pattern changes; reduction of breathing capacity; inflame and damage cells that line the lungs; make lungs more susceptible to infection; aggravate asthma; aggravate other chronic lung diseases; cause permanent lung damage; some immunological changes; increased mortality risk; vegetation and property damage. Children who live in high ozone communities and who participate in multiple sports have been observed to have a higher asthma risk. This is a significant cumulative health impact associated with ground-level ozone concentrations.

Additionally, the project could result in a significant cumulative contribution to PM_{10} and $PM_{2.5}$. Sensitive individuals may experience health impacts when concentrations of this pollutant exceed the ambient air quality standards. Health impacts from particulate matter may include the following:

- Short-term exposure (hours/days): irritation of the eyes, nose, throat; coughing; phlegm; chest tightness; shortness of breath; aggravate existing lung disease, causing asthma attacks and acute bronchitis; those with heart disease can suffer heart attacks and arrhythmias.

The project could result in a significant cumulative contribution to NO_2 emissions. The potential effects from NO_2 may include the following:

- Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups;
- Risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; and/or
- Contribution to atmospheric discoloration.

As shown by the CO hot spot analysis in Impact AQ-2, the project, in combination with CO emissions from other regional emission sources, would not result in an exceedance of the CO ambient air quality standard at project-impacted intersections. The standards are set to protect the health of sensitive individuals. Therefore, the project would not result in cumulative health effects from CO exposure.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Mitigation Measures AQ-1a through AQ-1h are required. The mitigated construction emissions are shown in Table 3.3-14. After mitigation, the construction activities would not exceed any daily threshold, and construction emissions would be less than significant.

Table 3.3-14: Mitigated Regional Construction Air Pollutant Emissions

Source	Emissions (pounds per day)					
	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Site Preparation	1.0	19.2	24.0	0.0	8.2	4.9
Mass Grading	2.5	44.5	57.0	0.1	4.7	2.3
Building Construction	7.7	62.1	79.1	0.2	13.4	4.6
Tennant Improvements	60.2	7.2	28.7	0.0	21.4	5.7
Paving	2.1	11.4	18.1	0.0	0.8	0.6
Maximum Daily Emissions[(1)]	**70.0**	**80.7**	**125.9**	**0.2**	**35.6**	**10.9**
Significance Threshold	75	100	550	150	150	55
Significant Impact?	No	No	No	No	No	No

Notes:
(1) The maximum daily emissions refer to the maximum emissions that would occur in one day; it was assumed that the site preparation and grading are independent activities that do not occur at the same time as the other construction activities; therefore, their emissions are not summed; the maximum daily emissions would occur during the overlapping of the building construction, tenant improvements, and paving construction activities for all pollutants.
ROG = reactive organic gases NO_x = nitrogen oxides CO = carbon monoxide
SO_x = sulfur oxides PM_{10} and $PM_{2.5}$ = particulate matter
Source of emissions: Appendix B
Source of thresholds: South Coast Air Quality Management District 2011a.

Mitigated maximum daily operational emissions are shown in Table 3.3-15 for the summer and Table 3.3-16 for the winter. As shown, the project's mitigated operational emissions would continue to exceed the SCAQMD's regional thresholds for ROG and NO_x in both season scenarios; therefore, these impacts are significant and unavoidable.

Table 3.3-15: Mitigated Regional Operational Emissions—Summer

Source	Emissions (pounds per day)					
	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Mobile—Passenger Vehicles	4.0	5.8	72.3	0.3	2.5	1.1
Mobile—Heavy Duty Trucks	12.3	292.4	109.7	1.3	12.3	6.0
Area	49.0	0.0	0.3	0.0	0.0	0.0
Energy	0.1	1.0	0.9	0.0	0.1	0.1
Total	**65.4**	**299.2**	**183.2**	**1.6**	**14.9**	**7.2**
Significance Threshold	55	55	550	150	150	55
Significant Impact?	**Yes**	**Yes**	No	No	No	No

Notes:
Mitigation Measure AQ-1b requires all Heavy Heavy-Duty Trucks to use model year 2010 or newer engines.
ROG = reactive organic gases NO_x = nitrogen oxides CO = carbon monoxide
SO_x = sulfur oxides PM_{10} and $PM_{2.5}$ = particulate matter
Source of emissions: Appendix B.
Source of thresholds: see Table 3.3-8.

Table 3.3-16: Mitigated Regional Operational Emissions—Winter

Source	Emissions (pounds per day)					
	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Mobile—Passenger Vehicles	3.8	6.4	66.3	0.2	2.5	1.1
Mobile—Heavy Duty Trucks	12.5	300.7	112.8	1.3	12.3	6.0
Area	49.0	0.0	0.3	0.0	0.0	0.0
Energy	0.1	1.0	0.9	0.0	0.1	0.1
Total	**65.4**	**308.1**	**180.3**	**1.5**	**14.9**	**7.2**
Significance Threshold	55	55	550	150	150	55
Significant Impact?	**Yes**	**Yes**	No	No	No	No

Notes:
Mitigation Measure AQ-1b requires all Heavy Heavy-Duty Trucks to use model year 2010 or newer engines.
ROG = reactive organic gases NO_x = nitrogen oxides CO = carbon monoxide
SO_x = sulfur oxides PM_{10} and $PM_{2.5}$ = particulate matter
Source of emissions: Appendix B.

Level of Significance After Mitigation

Significant and unavoidable impact. As discussed under Impact AQ-1, the project would comply with all applicable rules and regulations, as well as Mitigation Measures AQ-1a through AQ-1h. However, the project would exceed the SCAQMD's regional thresholds for ROG and NO_x, even after implementation of all feasible mitigation. The predominance of operational emissions are generated by project truck traffic, and, at present, there are no additional feasible mitigation measures that would reduce these emissions to levels that are less than significant.

Even if all passenger (employee) car trips to the site were eliminated, this would result in a negligible percentage reduction in NO_x emissions. Federal and state agencies are charged with regulating and enforcing vehicle emission standards, which is not within the County's control. Based on the regulatory changes discussed in Section 3.3.1, Regulatory Setting, most heavy-duty trucks entering the project site will meet or exceed EPA 2007 (for construction haul trucks) and 2010 (for operational heavy-heavy duty delivery trucks) emission standards within a relatively short time after the project becomes operational in 2018, and all such trucks entering the property will meet or exceed such standards by 2023. Beyond these regulatory changes, which will serve to reduce emissions over time, there are no additional feasible mitigation measures, as it is not feasible to reduce the number of truck trips or associated emissions due to the logistics/warehouse nature of the project.

Sensitive Receptors

Impact AQ-4:	**The project would not expose sensitive receptors to substantial pollutant concentrations.**

Impact Analysis

The Air Quality and Greenhouse Gas Analysis Report (Appendix B) prepared for the proposed project includes a Health Risk Assessment to evaluate the potential impacts of project emissions on adjoining residential areas, as well as other sensitive receptors.

Those individuals who are sensitive to air pollution include children, the elderly, and persons with preexisting respiratory or cardiovascular illness. For purposes of CEQA, the SCAQMD considers a sensitive receptor to be a location where a sensitive individual could remain for 24 hours, such as residences, hospitals, or convalescent facilities. Commercial and industrial facilities are not included in the definition because employees do not typically remain on-site for 24 hours. However, when assessing the impact of pollutants with 1-hour or 8-hour standards (such as NO_2 and CO), commercial and/or industrial facilities would be considered sensitive receptors for those purposes.

The closest sensitive receptors are existing residences located to the east of the project along Cherry Valley Boulevard and proposed residential developments (e.g., Sunny Cal Specific Plan) located across Cherry Valley Boulevard, approximately 50 meters south of the project.

LST Analysis

The localized construction analysis uses thresholds that represent the maximum emissions for a project that would not cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard. The thresholds are developed based on the ambient concentrations of that pollutant for each source receptor area, and the location of the sensitive

receptors. If the project results in emissions under those thresholds, it follows that the project would not cause or contribute to an exceedance of the standard. The standards are set to protect the health of sensitive individuals. If the standards are not exceeded at the sensitive receptor locations, it follows that the receptors would not be exposed to substantial pollutant concentrations.

As identified in Impact AQ-2, the localized construction analysis demonstrated that the project would not exceed the localized thresholds for CO, NO_x, PM_{10}, or $PM_{2.5}$. Therefore, during construction, the project would not expose sensitive receptors to substantial pollutant concentrations of CO, NO_2, PM_{10}, or $PM_{2.5}$. Further, as identified in Impact AQ-2, the operation of the project would not exceed either of the SCAQMD's operational localized significance thresholds for CO, NO_2, PM_{10}, or $PM_{2.5}$ or create a localized CO hot spot. Since the relevant localized significance thresholds would not be exceeded, then the sensitive individuals would not be significantly impacted. Therefore, according to this criterion, air pollutant emissions during operation would result in a less than significant impact.

Toxic Air Pollutants—Project Construction

The greatest potential for toxic air contaminant (TAC) emissions during construction are diesel particulate emissions associated with heavy equipment operations during construction activities. The SCAQMD does not consider diesel-related cancer risks from construction equipment to be an issue because of the short-term nature of construction activities. Construction activities associated with the proposed project would be short term (approximately 2 years). The assessment of cancer risk is typically based on a 70-year exposure period. Because exposure to diesel exhaust would be well below the 70-year exposure period, construction of the proposed project is not anticipated to result in an elevated cancer risk to exposed persons due to the short-term nature of construction. Furthermore, the operational health risk analysis captures applicable emissions from construction and amortizes it over the exposure period. As demonstrated in the following paragraphs, impacts would be less than significant.

Toxic Air Pollutants—Project Operation

The ARB Air Quality and Land Use Handbook contains recommendations that will "help keep California's children and other vulnerable populations out of harm's way with respect to nearby sources of air pollution" (ARB 2005), including recommendations for distances between sensitive receptors and certain land uses. The Handbook states that its recommendations are advisory and should not be interpreted as "buffer zones." The ARB recognizes the opportunity for more detailed site-specific analyses and there is no "one size fits all" solution to land use planning. The Handbook recommends avoiding siting new sensitive land uses within 1,000 feet (305 meters) of a distribution center. The nearest existing sensitive receptors are located along Cherry Valley Boulevard to the east of the project, while the nearest planned sensitive receptors are approximately 25 to 50 meters south, west, and east from the project site. Therefore, since the project involves the construction of a warehouse approximately 25 to 50 meters from the nearest sensitive receptor, a more detailed site-specific Health Risk Assessment has been prepared. The Health Risk Assessment quantifies the cancer risk from project operational toxic air pollutant emissions, primarily from delivery truck exhaust from traffic and truck idling emissions at loading docks.

The results of the Health Risk Assessment for cancer risks are provided in Table 3.3-17. These results reflect emissions from on-site vehicle travel and idling, as well as traveling along Cherry Valley

Boulevard to and from the project. The methodology used to estimate the cancer risks are based on the current CEQA guidance from the SCAQMD that assumes an exposure over a 70-year lifetime. As noted from this table, the operation of the project would not exceed the SCAQMD's cancer risk significance threshold of 10 in one million at any of the locations identified in the analysis. The maximum cancer risk at any existing or planned sensitive receptor is 1.1 in one million and is across Cherry Valley Boulevard area of the Sunny Cal Specific Plan. The highest cancer risk is estimated as 1.2 in one million near the project's future driveway #1 at Cherry Valley Boulevard where there are no sensitive receptors located there. The maximum chronic and acute non-cancer hazard indices from the operation of the project are estimated to be less than 0.002 and 0.02, respectively, values less than the SCAQMD's significance threshold of 1.0. Therefore, the project's health risks and hazards are less than significant.

Table 3.3-17: Estimates of Lifetime Cancer Risk from Project Operations—Current SCAQMD Guidance

Location	Cancer Risk (per million)		Exceeds Significance Threshold?
	Maximum Lifetime Project Risk	Significance Threshold	
37163 Cherry Valley Boulevard	1.1	10	No
36240 Cherry Valley Boulevard	0.2	10	No
37101 Cherry Valley Boulevard	0.2	10	No
37251 Cherry Valley Boulevard	0.2	10	No
37255 Cherry Valley Boulevard	0.1	10	No
37275 Cherry Valley Boulevard	0.1	10	No
37303 Cherry Valley Boulevard	0.1	10	No
37321 Cherry Valley Boulevard	0.1	10	No
9865 Roberts Street	0.1	10	No
9975 Roberts Street	0.1	10	No
Sunny Cal Specific Plan (Cherry Valley Boulevard)	1.1	10	No
Holbert Ranch	0.1	10	No
Tournament Hills Elementary School	0.0	10	No
Brookside Elementary School	0.0	10	No
Beaumont High School	0.0	10	No
Bonstein Property	0.3	10	No
Sunset Ranch	0.3	10	No
TR31966	0.1	10	No

Notes:
The maximum cancer risk at any receptor location regardless of whether the location is an existing residence, or zoned for residential, or zoned for non-residential is 1.2 in one million; the location of this maximum risk is near future project driveway 1 and Cherry Valley Boulevard.
Cancer risks are based on the current SCAQMD CEQA guidance that assumes an exposure duration of 70 years.
Source: See Appendix B.

Toxic Air Pollutants—Cumulative

The SCAQMD has not defined a cumulative significance threshold for TACs; however, it assumes that a project that does not exceed the project-level significance threshold would also not result in a cumulatively significant impact. Considering that, this assessment of the project's cumulative impacts uses the following two-step methodology to determine significance:

- **Step One:** quantify the sum of the existing risk in the project area, probable new projects within a ¼ mile radius from the project, and the project's impacts. The sum is compared with the 10 in a million cancer risk significance threshold. If the cumulative total impacts are below this threshold, a finding of non-significance can be made. If the total impacts exceed the threshold, then such impacts are potentially cumulatively significant and step two comes into play.
- **Step Two:** If the project's cancer risk is less than the 10 in a million threshold, then the project impacts are not cumulatively significant.

Step One

Existing Contribution to Cumulative Health Impacts

The SCAQMD has conducted an analysis of the cumulative effects of TACs within the Basin as part of its "Multiple Air Toxics Exposure Study in the South Coast Air Basin" (MATES-IV, the latest version of this MATES study series). The MATES studies express cumulative TAC impacts in terms of potential increased cancer risks. The MATES-IV study estimates that the Basin-wide average excess cancer risk level resulting from exposure to cumulative TACs is approximately 367 incidents per one million population. The MATES-IV Study estimates the cumulative TAC-source cancer risk for the localized area encompassing the project site at 157 in one million. DPM-source cancer risks are reflected in the area's ambient cumulative cancer risk along with all other TAC source risks, and account for the predominance (68 percent) of the total risk shown in MATES-IV. The cancer risk of 157 in a million constitutes the existing impact from TAC emission sources in the region without the impacts from the project.

Related Projects Contribution to Cumulative Health Impacts

In addition to the MATES-IV cumulative TAC-source cancer risk noted above, other new or proposed potential TAC-generating projects (related projects) in the project area not included in the MATES IV study could contribute to cumulative TAC impacts. These related projects, because of their recent and/or tentative nature, are not reflected in the cumulative TAC impacts identified in the MATES-IV study.

Based on a review of the cumulative development project listing contained in the project traffic study (Urban Crossroads 2017), five development projects were identified within the 0.25-mile radius from the project. These development projects are all single-family residential projects and include the following:

- Holbert Ranch—131 dwelling units
- Bornstein Property—209 dwelling units
- Sunny Cal Specific Plan—497 dwelling units
- Sunset Ranch (Osborne/Dunham)—231 dwelling units
- TR 31966—60 dwelling units

Since these projects are residential, they are not expected to generate TAC emissions that could impact nearby health risk levels.

Project Contribution to Cumulative Health Impacts

Project-level TACs would incrementally increase the background cancer risk by a maximum of 1.1 incidents per million population.

Summary of the Total Cumulative Cancer Risk for Step One

The total cumulative cancer risk under Step One of the cumulative assessment is 158 in a million (157 in a million from existing, ambient sources, plus 1.1 in a million attributable to the project). Because the existing, ambient health risk already exceeds the 10 in a million cumulative significance threshold by a large margin, a cumulatively significant TAC impact exists even without the project. Therefore, a second step is required to determine whether the project makes a cumulatively considerable contribution to this cumulatively significant impact.

Step Two

Identification of a specific amount of risk that constitutes a cumulatively considerable contribution to an existing cumulative impact is necessary in order to avoid a potential conflict with CEQA provisions, which state that any increase within an already-impacted area is not necessarily significant (i.e., "one additional molecule" is not the appropriate standard). According to current SCAQMD recommendations, an individual project's contribution of 10 in one million or more would be considered a cumulatively considerable contribution to an existing significant cumulative impact. Since the project's maximum cancer risk (1.1 in a million) does not exceed the 10 in one million threshold, the project's health risk impacts are determined to be less than significant on a project-level, and would not result in a considerable contribution to the existing cumulatively significant TAC impact.

Toxic Air Pollutants—Supplemental Cancer Risk Assessment

In March 2015, the OEHHA published updated guidance for estimating cancer risks. The OEHHA guidance uses recent scientific findings to include a child's greater sensitivity and susceptibility to exposures to TACs. In general, residential cancer risks from pollutants like diesel particulate matter are found to be higher with the application of the updated OEHHA guidance than the cancer risks estimated using the methodology currently recommended by the SCAQMD, which does not take into account child sensitivity and susceptibility. To this end, a supplemental assessment of cancer risk was prepared that applies the updated OEHHA guidance in updating the cancer risk estimates from the project.

Currently, the SCAQMD has not officially adopted the OEHHA cancer risk guidance for evaluating cancer risks for purposes of CEQA assessments. However, while this supplemental assessment is not required under CEQA by the SCAQMD, it is presented below for informational purposes. A complete discussion of the OEHHA cancer risk guidance is provided in Appendix B of this report.

The results of this supplemental assessment are summarized in Table 3.3-18. As noted from the table, the maximum cancer risk is 6.0 in one million at any existing or forecasted sensitive receptor, less than the 10 in one million health risk significance threshold. Therefore, under the

OEHHA/SCAQMD guidance, the project's construction and operational emissions would have a less than significant health risk impact on a project-level basis and cumulative basis.

Table 3.3-18: Estimates of Lifetime Cancer Risks Using the OEHHA Cancer Risk Guidance

Location	Cancer Risk (OEHHA Cancer Risk Guidance) WITH MITGATION (per million)		Exceeds Significance Threshold?
	Maximum Lifetime Project Risk	Significance Threshold	
37163 Cherry Valley Boulevard	5.8	10	No
36240 Cherry Valley Boulevard	1.5	10	No
37101 Cherry Valley Boulevard	2.6	10	No
37251 Cherry Valley Boulevard	0.4	10	No
37255 Cherry Valley Boulevard	1.2	10	No
37275 Cherry Valley Boulevard	1.2	10	No
37303 Cherry Valley Boulevard	1.3	10	No
37321 Cherry Valley Boulevard	1.3	10	No
9865 Roberts Street	0.4	10	No
9975 Roberts Street	0.4	10	No
Sunny Cal Specific Plan (Cherry Valley Boulevard)	6.0	10	No
Holbert Ranch	0.4	10	No
Tournament Hills Elementary School	0.1	10	No
Brookside Elementary School	0.1	10	No
Beaumont High School	0.1	10	No
Borstein Property	6.0	10	No
Sunset Ranch	1.8	10	No
TR 31966	1.5	10	No

Note:
Mitigated emissions include Tier III construction equipment and MY2010 for heavy-heavy duty diesel Trucks
Source: See Appendix B.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than significant impact.

Objectionable Odors

Impact AQ-5: The project would not create objectionable odors affecting a substantial number of people.

Impact Analysis

The SCAQMD recommends that odor impacts be addressed in a qualitative manner. Such an analysis shall determine whether the project would result in excessive nuisance odors, as defined under the California Code of Regulations and Section 41700 of the California Health and Safety Code, and thus constitute a public nuisance related to air quality.

Land uses typically associated with odors include wastewater treatment facilities, waste disposal facilities, or agricultural operations. The project does not contain land uses typically associated with emitting objectionable odors. The project would involve the use of diesel construction equipment and diesel trucks during construction, as well as asphalt paving and application of architectural coatings, which would be temporary and short-term in nature. Emissions from these sources would rapidly disperse in the atmosphere and not be noticeable to the nearby public. Likewise, during operations, the project would not be anticipated to emit any objectionable odors. Project-generated refuse would be stored in covered containers and removed at regular intervals in compliance with County solid waste regulations. The project would also be required to comply with SCAQMD Rule 402 to prevent occurrences of public nuisances. Therefore, odors associated with the project construction and operations would be less than significant and no mitigation is required.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than significant impact.