5.2 AIR QUALITY

This section of the Draft Environmental Impact Report (DEIR) evaluates the potential for the proposed Beach Boulevard Specific Plan (Proposed Project) to impact air quality in a local and regional context. This evaluation is based on the methodology recommended by the South Coast Air Quality Management District (SCAQMD). The analysis focuses on air pollution from regional emissions and localized pollutant concentrations. Criteria air pollutant emissions modeling for the Proposed Project is included in Appendix C of this DEIR. Transportation-sector impacts are based on trip generation and vehicle miles traveled provided by Fehr and Peers (see Appendix F). Cumulative impacts related to air quality are based on the regional boundaries of the South Coast Air Basin (SoCAB).

5.2.1 Environmental Setting

5.2.1.1 REGULATORY SETTING

Ambient air quality standards (AAQS) have been adopted at the state and federal levels for criteria air pollutants. In addition, both the state and federal government regulate the release of toxic air contaminants (TACs). The Project Area is in the South Coast Air Basin (SoCAB) and is subject to the rules and regulations imposed by the SCAQMD as well as the California Ambient Air Quality Standards (AAQS) adopted by California Air Resources Board (CARB) and National AAQS adopted by the United States Environmental Protection Agency (EPA). Federal, state, regional, and local laws, regulations, plans, or guidelines that are potentially applicable to the project are summarized in this section.

Federal and State

Ambient Air Quality Standards

The Clean Air Act was passed in 1963 by the US Congress and has been amended several times. The 1970 Clean Air Act amendments strengthened previous legislation and laid the foundation for the regulatory scheme of the 1970s and 1980s. In 1977, Congress again added several provisions, including nonattainment requirements for areas not meeting National AAQS and the Prevention of Significant Deterioration program. The 1990 amendments represent the latest in a series of federal efforts to regulate the protection of air quality in the United States. The Clean Air Act allows states to adopt more stringent standards or to include other pollution species. The California Clean Air Act, signed into law in 1988, requires all areas of the state to achieve and maintain the California AAQS by the earliest practical date. The California AAQS tend to be more restrictive than the National AAQS.

The National and California AAQS are the levels of air quality considered to provide a margin of safety in the protection of the public health and welfare. They are designed to protect "sensitive receptors" most susceptible to further respiratory distress, such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

5. Environmental Analysis
AIR QUALITY

Both California and the federal government have established health-based AAQS for seven air pollutants, which are shown in Table 5.2-1, *Ambient Air Quality Standards for Criteria Pollutants*. These pollutants are ozone (O_3), nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), coarse inhalable particulate matter (PM_{10}), fine inhalable particulate matter ($PM_{2.5}$), and lead (Pb). In addition, the state has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety.

Table 5.2-1 Ambient Air Quality Standards for Criteria Pollutants

Pollutant	Averaging Time	California Standard[1]	Federal Primary Standard[2]	Major Pollutant Sources
Ozone (O_3)[3]	1 hour	0.09 ppm	*	Motor vehicles, paints, coatings, and solvents.
	8 hours	0.070 ppm	0.070 ppm	
Carbon Monoxide (CO)	1 hour	20 ppm	35 ppm	Internal combustion engines, primarily gasoline-powered motor vehicles.
	8 hours	9.0 ppm	9 ppm	
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	0.030 ppm	0.053 ppm	Motor vehicles, petroleum-refining operations, industrial sources, aircraft, ships, and railroads.
	1 hour	0.18 ppm	0.100 ppm	
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	*	0.030 ppm	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
	1 hour	0.25 ppm	0.075 ppm	
	24 hours	0.04 ppm	0.14 ppm	
Respirable Coarse Particulate Matter (PM_{10})	Annual Arithmetic Mean	20 µg/m^3	*	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	50 µg/m^3	150 µg/m^3	
Respirable Fine Particulate Matter ($PM_{2.5}$)[4]	Annual Arithmetic Mean	12 µg/m^3	12 µg/m^3	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	*	35 µg/m^3	
Lead (Pb)	30-Day Average	1.5 µg/m^3	*	Present source: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline.
	Calendar Quarter	*	1.5 µg/m^3	
	Rolling 3-Month Average	*	0.15 µg/m^3	
Sulfates (SO_4)[5]	24 hours	25 µg/m^3	*	Industrial processes.

Table 5.2-1 Ambient Air Quality Standards for Criteria Pollutants

Pollutant	Averaging Time	California Standard[1]	Federal Primary Standard[2]	Major Pollutant Sources
Visibility Reducing Particles	8 hours	ExCo =0.23/km visibility of 10≥ miles	No Federal Standard	Visibility-reducing particles consist of suspended particulate matter, which is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size and chemical composition, and can be made up of many different materials such as metals, soot, soil, dust, and salt.
Hydrogen Sulfide	1 hour	0.03 ppm	No Federal Standard	Hydrogen sulfide (H_2S) is a colorless gas with the odor of rotten eggs. It is formed during bacterial decomposition of sulfur-containing organic substances. Also, it can be present in sewer gas and some natural gas, and can be emitted as the result of geothermal energy exploitation.
Vinyl Chloride	24 hour	0.01 ppm	No Federal Standard	Vinyl chloride (chloroethene), a chlorinated hydrocarbon, is a colorless gas with a mild, sweet odor. Most vinyl chloride is used to make polyvinyl chloride (PVC) plastic and vinyl products. Vinyl chloride has been detected near landfills, sewage plants, and hazardous waste sites, due to microbial breakdown of chlorinated solvents.

Source: CARB 2016a.
Notes: ppm: parts per million; $\mu g/m^3$: micrograms per cubic meter
* Standard has not been established for this pollutant/duration by this entity.
1 California standards for O_3, CO (except 8-hour Lake Tahoe), SO_2 (1 and 24 hour), NO_2, and particulate matter (PM_{10}, $PM_{2.5}$, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
2 National standards (other than O_3, PM, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The O_3 standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 $\mu g/m^3$ is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard.
3 On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.
4 On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 $\mu g/m^3$ to 12.0 $\mu g/m^3$. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 $\mu g/m^3$, as was the annual secondary standard of 15 $\mu g/m^3$. The existing 24-hour PM_{10} standards (primary and secondary) of 150 $\mu g/m^3$ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.
5 On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. The 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

California has also adopted a host of other regulations that reduce criteria pollutant emissions, including:

- AB 1493: Pavley Fuel Efficiency Standards
- California Code of Regulations (CCR), Title 20: Appliance Energy Efficiency Standards
- 24 CCR, Part 6: Building and Energy Efficiency Standards
- 24 CCR, Part 11: Green Building Standards Code

Tanner Air Toxics Act and Air Toxics Hots Information and Assessment Act

Public exposure to TACs is a significant environmental health issue in California. In 1983, the California legislature enacted a program to identify the health effects of TACs and reduce exposure to them. The California Health and Safety Code defines a TAC as "an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health" (17 CCR § 93000). A substance that is listed as a hazardous air pollutant pursuant to Section 112(b) of the federal Clean Air Act (42 US Code § 7412[b]) is a toxic air contaminant. Under state law, the California Environmental Protection Agency, acting through CARB, is authorized to identify a substance as a TAC if it is an air pollutant that may cause or contribute to an increase in mortality or serious illness, or may pose a present or potential hazard to human health.

California regulates TACs primarily through AB 1807 (Tanner Air Toxics Act) and AB 2588 (Air Toxics "Hot Spot" Information and Assessment Act of 1987). The Tanner Air Toxics Act set up a formal procedure for CARB to designate substances as TACs. Once a TAC is identified, CARB adopts an "airborne toxics control measure" for sources that emit that TAC. If there is a safe threshold for a substance (i.e., a point below which there is no toxic effect), the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate "toxics best available control technology" to minimize emissions. To date, CARB has established formal control measures for 11 TACs that are identified as having no safe threshold.

Under AB 2588, TAC emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High-priority facilities are required to perform a health risk assessment, and if specific thresholds are exceeded, are required to communicate the results to the public through notices and public meetings.

CARB has promulgated the following specific rules to limit TAC emissions:

- **13 CCR Chapter 10 § 2485.** Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling
- **13 CCR Chapter 10 § 2480.** Airborne Toxic Control Measure to Limit School Bus Idling and Idling at Schools
- **13 CCR § 2477 and Article 8.** Airborne Toxic Control Measure for In-Use Diesel-Fueled Transport Refrigeration Units (TRU) and TRU Generator Sets and Facilities Where TRUs Operate

Air Pollutants of Concern

Criteria Air Pollutants

The pollutants emitted into the ambient air by stationary and mobile sources are categorized as primary and/or secondary pollutants. Primary air pollutants are emitted directly from sources. Carbon monoxide (CO), volatile organic compounds (VOC), nitrogen oxides (NO_x), sulfur dioxide (SO_2), coarse inhalable

particulate matter (PM_{10}), fine inhalable particulate matter ($PM_{2.5}$), and lead (Pb) are primary air pollutants. Of these, CO, SO_2, NO_2, PM_{10}, and $PM_{2.5}$ are "criteria air pollutants," which means that AAQS have been established for them. VOC and NO_x are criteria pollutant precursors that form secondary criteria air pollutants through chemical and photochemical reactions in the atmosphere. Ozone (O_3) and nitrogen dioxide (NO_2) are the principal secondary pollutants.

A description of each of the primary and secondary criteria air pollutants and its known health effects is presented below.

- **Carbon Monoxide** is a colorless, odorless gas produced by incomplete combustion of carbon substances, such as gasoline or diesel fuel. CO is a primary criteria air pollutant. CO concentrations tend to be the highest during winter mornings with little to no wind, when surface-based inversions trap the pollutant at ground levels. The highest ambient CO concentrations are generally found near traffic-congested corridors and intersections. The primary adverse health effect associated with CO is interference with normal oxygen transfer to the blood, which may result in tissue oxygen deprivation (SCAQMD 2005; USEPA 2017). The SoCAB is designated under the California and National AAQS as being in attainment of CO criteria levels (CARB 2016b).

- **Volatile Organic Compounds** are composed primarily of hydrogen and carbon atoms. Internal combustion associated with motor vehicle usage is the major source of VOCs. Other sources include evaporative emissions from paints and solvents, asphalt paving, and household consumer products such as aerosols (SCAQMD 2005). There are no AAQS for VOCs. However, because they contribute to the formation of O_3, SCAQMD has established a significance threshold.

- **Nitrogen Oxides** are a by-product of fuel combustion and contribute to the formation of ground-level O_3, PM_{10}, and $PM_{2.5}$. The two major forms of NO_X are nitric oxide (NO) and nitrogen dioxide (NO_2). NO is a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperature and/or high pressure. The principal form of NO_X produced by combustion is NO, but NO reacts quickly with oxygen to form NO_2, creating the mixture of NO and NO_2 commonly called NO_X. NO_2 is an acute irritant and more injurious than NO in equal concentrations. At atmospheric concentrations, however, NO_2 is only potentially irritating. NO_2 absorbs blue light; the result is a brownish-red cast to the atmosphere and reduced visibility. NO_2 exposure concentrations near roadways are of particular concern for susceptible individuals, including asthmatics, children, and the elderly. Current scientific evidence links short-term NO_2 exposures, ranging from 30 minutes to 24 hours, with adverse respiratory effects, including airway inflammation in healthy people and increased respiratory symptoms in people with asthma. Also, studies show a connection between elevated short-term NO_2 concentrations and increased visits to emergency departments and hospital admissions for respiratory issues, especially asthma (SCAQMD 2005; USEPA 2017). The SoCAB is designated an attainment area for NO_2 under the National and California AAQS (CARB 2016b).

- **Sulfur Dioxide** is a colorless, pungent, irritating gas formed by the combustion of sulfurous fossil fuels. It enters the atmosphere as a result of burning high-sulfur-content fuel oils and coal and chemical

processes at plants and refineries. Gasoline and natural gas have very low sulfur content and do not release significant quantities of SO_2. When sulfur dioxide forms sulfates (SO_4) in the atmosphere, together these pollutants are referred to as sulfur oxides (SO_X). Thus, SO_2 is both a primary and secondary criteria air pollutant. At sufficiently high concentrations, SO_2 may irritate the upper respiratory tract. Current scientific evidence links short-term exposures to SO_2, ranging from 5 minutes to 24 hours, with an array of adverse respiratory effects, including bronchoconstriction and increased asthma symptoms. These effects are particularly adverse for asthmatics at elevated ventilation rates (e.g., while exercising or playing) at lower concentrations and when combined with particulates, SO_2 may do greater harm by injuring lung tissue. Studies also show a connection between short-term exposure and increased visits to emergency facilities and hospital admissions for respiratory illnesses, particularly in at-risk populations such as children, the elderly, and asthmatics (SCAQMD 2005; USEPA 2017). The SoCAB is designated attainment under the California and National AAQS (CARB 2016b).

- **Suspended Particulate Matter** consists of finely divided solids or liquids such as soot, dust, aerosols, fumes, and mists. Two forms of fine particulates are now recognized and regulated. Inhalable coarse particles, or PM_{10}, include particulate matter with an aerodynamic diameter of 10 microns or less (i.e., ≤10 millionths of a meter or 0.0004 inch). Inhalable fine particles, or $PM_{2.5}$, have an aerodynamic diameter of 2.5 microns or less (i.e., ≤2.5 millionths of a meter or 0.0001 inch). Particulate discharge into the atmosphere results primarily from industrial, agricultural, construction, and transportation activities. Both PM_{10} and $PM_{2.5}$ may adversely affect the human respiratory system, especially in people who are naturally sensitive or susceptible to breathing problems. The EPA's scientific review concluded that $PM_{2.5}$, which penetrates deeply into the lungs, is more likely than PM_{10} to contribute to health effects and at far lower concentrations. These health effects include premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms (e.g., irritation of the airways, coughing, or difficulty breathing) (SCAQMD 2005). There has been emerging evidence that ultrafine particulates, which are even smaller particulates with an aerodynamic diameter of <0.1 microns or less (i.e., ≤0.1 millionths of a meter or <0.000004 inch), have human health implications, because their toxic components may initiate or facilitate biological processes that may lead to adverse effects to the heart, lungs, and other organs (SCAQMD 2013). However, the EPA or CARB has yet to adopt AAQS to regulate these particulates. Diesel particulate matter is classified by CARB as a carcinogen (CARB 1998). Particulate matter can also cause environmental effects such as visibility impairment,[1] environmental damage,[2] and aesthetic damage[3] (SCAQMD 2005; USEPA 2017). The SoCAB is a nonattainment area for $PM_{2.5}$ under California and National AAQS and a nonattainment area for PM_{10} under the California AAQS (CARB 2016b).[4]

[1] $PM_{2.5}$ is the main cause of reduced visibility (haze) in parts of the United States.

[2] Particulate matter can be carried over long distances by wind and then settle on ground or water, making lakes and streams acidic; changing the nutrient balance in coastal waters and large river basins; depleting the nutrients in soil; damaging sensitive forests and farm crops; and affecting the diversity of ecosystems.

[3] Particulate matter can stain and damage stone and other materials, including culturally important objects such as statues and monuments.

[4] CARB approved the SCAQMD's request to redesignate the SoCAB from serious nonattainment for PM_{10} to attainment for PM_{10} under the National AAQS on March 25, 2010, because the SoCAB did not violate federal 24-hour PM_{10} standards from 2004 to

- **Ozone** is commonly referred to as "smog" and is a gas that is formed when VOCs and NO_X, both by-products of internal combustion engine exhaust, undergo photochemical reactions in sunlight. O_3 is a secondary criteria air pollutant. O_3 concentrations are generally highest during the summer months when direct sunlight, light winds, and warm temperatures create favorable conditions for its formation. O_3 poses a health threat to those who already suffer from respiratory diseases as well as to healthy people. Breathing O_3 can trigger a variety of health problems, including chest pain, coughing, throat irritation, and congestion. It can worsen bronchitis, emphysema, and asthma. Ground-level O_3 also can reduce lung function and inflame the linings of the lungs. Repeated exposure may permanently scar lung tissue. O_3 also affects sensitive vegetation and ecosystems, including forests, parks, wildlife refuges, and wilderness areas. In particular, O_3 harms sensitive vegetation during the growing season (SCAQMD 2005; USEPA 2017). The SoCAB is designated extreme nonattainment under the California AAQS (1-hour and 8-hour) and National AAQS (8-hour) (CARB 2016b).

- **Lead** is a metal found naturally in the environment as well as in manufactured products. Once taken into the body, lead distributes throughout the body in the blood and accumulates in the bones. Depending on the level of exposure, lead can adversely affect the nervous system, kidney function, immune system, reproductive and developmental systems, and the cardiovascular system. Lead exposure also affects the oxygen-carrying capacity of the blood. The effects of lead most commonly encountered in current populations are neurological effects in children and cardiovascular effects in adults (e.g., high blood pressure and heart disease). Infants and young children are especially sensitive to even low levels of lead, which may contribute to behavioral problems, learning deficits, and lowered IQ (SCAQMD 2005; USEPA 2017). The major sources of lead emissions have historically been mobile and industrial sources. As a result of the EPA's regulatory efforts to remove lead from gasoline, emissions of lead from the transportation sector dramatically declined by 95 percent between 1980 and 1999, and levels of lead in the air decreased by 94 percent between 1980 and 1999. Today, the highest levels of lead in air are usually found near lead smelters. The major sources of lead emissions today are ore and metals processing and piston-engine aircraft operating on leaded aviation gasoline. However, in 2008 the EPA and CARB adopted more strict lead standards, and special monitoring sites immediately downwind of lead sources recorded very localized violations of the new state and federal standards.[5] As a result of these violations, the Los Angeles County portion of the SoCAB is designated as nonattainment under the National AAQS for lead (SCAQMD 2012; CARB 2016b). Because emissions of lead are found only in projects that are permitted by SCAQMD, lead is not a pollutant of concern for the Proposed Project.

Toxic Air Contaminants (TACs)

By the last update to the TAC list in December 1999, CARB had designated 244 compounds as TACs (CARB 1999). Additionally, CARB has implemented control measures for a number of compounds that pose high

2007. The EPA approved the State of California's request to redesignate the South Coast PM_{10} nonattainment area to attainment of the PM_{10} National AAQS, effective on July 26, 2013.

[5] Source-oriented monitors record concentrations of lead at lead-related industrial facilities in the SoCAB, which include Exide Technologies in the City of Commerce; Quemetco, Inc., in the City of Industry; Trojan Battery Company in Santa Fe Springs; and Exide Technologies in Vernon. Monitoring conducted between 2004 through 2007 showed that the Trojan Battery Company and Exide Technologies exceed the federal standards (SCAQMD 2012).

risks and show potential for effective control. The majority of the estimated health risks from TACs can be attributed to relatively few compounds, the most important of which is particulate matter from diesel-fueled engines.

Diesel Particulate Matter

In 1998, CARB identified diesel particulate matter as a TAC. Previously, the individual chemical compounds in diesel exhaust were considered TACs. Almost all diesel exhaust particles are 10 microns or less in diameter. Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lungs.

Air Quality Management Planning

SCAQMD is the agency responsible for improving air quality in the SoCAB and assuring that the National and California AAQS are attained and maintained. SCAQMD is responsible for preparing the air quality management plan (AQMP) for the SoCAB in coordination with the Southern California Association of Governments (SCAG). Since 1979, a number of AQMPs have been prepared.

2016 AQMP

On March 3, 2017, SCAQMD adopted the 2016 AQMP, which serves as an update to the 2012 AQMP. The 2016 AQMP addresses strategies and measures to attain the following National AAQS:

- 2008 National 8-hour ozone standard by 2031,
- 2012 National annual $PM_{2.5}$ standard by 2025[6],
- 2006 National 24-hour $PM_{2.5}$ standard by 2019,
- 1997 National 8-hour ozone standard by 2023, and the
- 1979 National 1-hour ozone standard by year 2022.

It is projected that total NO_X emissions in the SoCAB would need to be reduced to 150 tons per day (tpd) by year 2023 and to 100 tpd in year 2031 to meet the 1997 and 2008 federal 8-hour ozone standards. The strategy to meet the 1997 federal 8-hour ozone standard would also lead to attaining the 1979 federal 1-hour ozone standard by year 2022 (SCAQMD 2017a), which requires reducing NO_X emissions in the SoCAB to 250 tpd. This is approximately 45 percent additional reductions above existing regulations for the 2023 ozone standard and 55 percent additional reductions above existing regulations to meet the 2031 ozone standard.

Reducing NO_X emissions would also reduce $PM_{2.5}$ concentrations in the SoCAB. However, as the goal is to meet the 2012 federal annual $PM_{2.5}$ standard no later than year 2025, SCAQMD is seeking to reclassify the SoCAB from "moderate" to "serious" nonattainment under this federal standard. A "moderate" non-attainment would require meeting the 2012 federal standard by no later than 2021.

[6] The 2016 AQMP requests a reclassification from moderate to serious non-attainment for the 2012 National $PM_{2.5}$ standard.

Overall, the 2016 AQMP is composed of stationary and mobile-source emission reductions from regulatory control measures, incentive-based programs, co-benefits from climate programs, mobile-source strategies, and reductions from federal sources such as aircrafts, locomotives, and ocean-going vessels. Strategies outlined in the 2016 AQMP would be implemented in collaboration between CARB and the EPA (SCAQMD 2017a).

Lead Implementation Plan

In 2008, the EPA designated the Los Angeles County portion of the SoCAB as a nonattainment area under the federal lead classification due to the addition of source-specific monitoring under the new federal regulation. This designation was based on two source-specific monitors in the City of Vernon and the City of Industry that exceeded the new standard in the 2007-to-2009 period. The remainder of the SoCAB, outside the Los Angeles County nonattainment area, remains in attainment of the new 2008 lead standard. On May 24, 2012, CARB approved the State Implementation Plan (SIP) revision for the federal lead standard, which the EPA revised in 2008. Lead concentrations in this nonattainment area have been below the level of the federal standard since December 2011. The SIP revision was submitted to the EPA for approval.

SCAQMD Rules and Regulations

All projects are subject to SCAQMD rules and regulations in effect at the time of activity, including the following:

- **Rule 401, Visible Emissions.** This rule is intended to prevent the discharge of pollutant emissions from an emissions source that results in visible emissions. Specifically, the rule prohibits the discharge of any air contaminant into the atmosphere by a person from any single source of emission for a period or periods aggregating more than three minutes in any one hour that is as dark as or darker than designated No. 1 on the Ringelmann Chart, as published by the US Bureau of Mines.

- **Rule 402, Nuisance.** This rule is intended to prevent the discharge of pollutant emissions from an emissions source that results in a public nuisance. Specifically, this rule prohibits any person from discharging quantities of air contaminants or other material from any source such that it would result in an injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public. Additionally, the discharge of air contaminants would also be prohibited where it would endanger the comfort, repose, health, or safety of any number of persons or the public, or that cause, or have a natural tendency to cause, injury or damage to business or property. This rule does not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals.

- **Rule 403, Fugitive Dust.** This rule is intended to reduce the amount of particulate matter entrained in the ambient air as a result of anthropogenic (human-made) fugitive dust sources by requiring actions to prevent, reduce, or mitigate fugitive dust emissions. Rule 403 applies to any activity or human-made condition capable of generating fugitive dust, and requires best available control measures to be applied to earth moving and grading activities. In general, the rule prohibits new developments from the installation of wood-burning devices.

- **Rule 445, Wood Burning Devices.** This rule is intended to reduce the emission of particulate matter from wood-burning devices and applies to manufacturers and sellers of wood-burning devices, commercial sellers of firewood, and property owners and tenants that operates a wood-burning device.

- **Rule 1113, Architectural Coatings.** This rule serves to limit the VOC content of architectural coatings used on projects in the SCAQMD. Any person who supplies, sells, offers for sale, or manufactures any architectural coating for use on projects in the SCAQMD must comply with the current VOC standards set in this rule.

- **Rule 1401, New Source Review of Toxic Air Contaminants.** This rule specifies limits for maximum individual cancer risk, cancer burden, and noncancer acute and chronic hazard index from new permit units, relocations, or modifications to existing permit units that emit toxic air contaminants listed under the rule. The rule establishes allowable risks for permit units requiring new permits pursuant to Rules 201 or 203.

- **Rule 1403, Asbestos Emissions from Demolition/Renovation Activities.** The purpose of this rule is to specify work practice requirements to limit asbestos emissions from building demolition and renovation activities, including the removal and associated disturbance of asbestos-containing materials (ACM). The requirements for demolition and renovation activities include asbestos surveying, notification, ACM removal procedures and time schedules, ACM handling and clean-up procedures, and storage, disposal, and landfilling requirements for asbestos-containing waste materials. All operators are required to maintain records, including waste shipment records, and are required to use appropriate warning labels, signs, and markings.

Local Laws

City of Anaheim Municipal GHG Reduction Plan

The City of Anaheim's "Greenhouse Gas Reduction Plan: Sustainable Electric & Water Initiatives" (GHG Reduction Plan), approved on July 21, 2015, identifies reduction targets for years 2020 and 2030 to be achieved by the Anaheim Public Utilities Department (APU). The 2020 reduction target for GHG emissions from power generation is 20 percent below 1990 levels and 40 percent below 1990 levels for the 2030 reduction target. To meet these emissions targets, the GHG Reduction Plan also identifies renewables portfolio targets of increasing the APU power supply generated from renewable sources up to 33 percent by year 2020 and 40 to 50 percent by year 2030. The GHG Reduction Plan also establishes transportation-related goals for APU to convert its fleet vehicles to consist of 10 percent low to zero emissions vehicles by year 2020 and up to 20 percent by year 2030.

City of Anaheim Sustainability Programs

- Anaheim Public Utilities Incentive Programs: The program encompasses more than 45 rebates and incentive programs offered to businesses and residents in the City of Anaheim to assist them in water and energy savings.

- Electric Vehicle Charging: The City of Anaheim developed a streamlined process to promote use of EVs in addition to creation of a rebate program for installation of EV chargers. The City currently offers rebate programs of private and public use EV chargers.

- Green Building Program/Incentives: This program provides rebates for buildings certified as a green building by the US Green Building Council, California Green Build, Build It Green, or other rating programs.

5.2.1.2 EXISTING CONDITIONS

South Coast Air Basin

The Project Area is in the SoCAB, which includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties. The SoCAB is in a coastal plain with connecting broad valleys and low hills and is bounded by the Pacific Ocean in the southwest quadrant, with high mountains forming the remainder of the perimeter. The general region lies in the semi-permanent high-pressure zone of the eastern Pacific. As a result, the climate is mild, tempered by cool sea breezes. This usually mild weather pattern is interrupted infrequently by periods of extremely hot weather, winter storms, and Santa Ana winds (SCAQMD 2005).

Temperature and Precipitation

The annual average temperature varies little throughout the SoCAB, ranging from the low to middle 60s, measured in degrees Fahrenheit (°F). With a more pronounced oceanic influence, coastal areas show less variability in annual minimum and maximum temperatures than inland areas. The climatological station nearest to the Project Area is the Anaheim Monitoring Station (ID No. 040192). The average low is reported at 46.9°F in January, and the average high is 87.1°F in August (WRCC 2017).

In contrast to a very steady pattern of temperature, rainfall is seasonally and annually highly variable. Almost all rain falls from November through April. Summer rainfall is normally restricted to widely scattered thundershowers near the coast, with slightly heavier shower activity in the east and over the mountains. Rainfall averages 14.09 inches per year in the project area (WRCC 2017).

Humidity

Although the SoCAB has a semiarid climate, the air near the earth's surface is typically moist because of the presence of a shallow marine layer. Except for infrequent periods when dry, continental air is brought into the SoCAB by offshore winds, the "ocean effect" is dominant. Periods of heavy fog, especially along the coast, are frequent. Low clouds, often referred to as high fog, are a characteristic climatic feature. Annual average humidity is 70 percent at the coast and 57 percent in the eastern portions of the SoCAB (SCAQMD 2005).

Wind

Wind patterns across the south coastal region are characterized by westerly or southwesterly onshore winds during the day and by easterly or northeasterly breezes at night. Wind speed is somewhat greater during the dry summer months than during the rainy winter season.

Between periods of wind, periods of air stagnation may occur, both in the morning and evening hours. Air stagnation is one of the critical determinants of air quality conditions on any given day. During the winter and fall months, surface high-pressure systems over the SoCAB, combined with other meteorological conditions, can result in very strong, downslope Santa Ana winds. These winds normally continue a few days before predominant meteorological conditions are reestablished.

The mountain ranges to the east affect the transport and diffusion of pollutants by inhibiting their eastward transport. Air quality in the SoCAB generally ranges from fair to poor and is similar to air quality in most of coastal southern California. The entire region experiences heavy concentrations of air pollutants during prolonged periods of stable atmospheric conditions (SCAQMD 2005).

Inversions

In conjunction with the two characteristic wind patterns that affect the rate and orientation of horizontal pollutant transport, there are two similarly distinct types of temperature inversions that control the vertical depth through which pollutants are mixed. These are the marine/subsidence inversion and the radiation inversion. The combination of winds and inversions are critical determinants in leading to the highly degraded air quality in summer and the generally good air quality in the winter in the project area (SCAQMD 2005).

SoCAB Nonattainment Areas

The AQMP provides the framework for air quality basins to achieve attainment of the state and federal ambient air quality standards through the SIP. Areas are classified as attainment or nonattainment areas for particular pollutants depending on whether they meet the ambient air quality standards. Severity classifications for ozone nonattainment range in magnitude from marginal, moderate, and serious to severe and extreme.

- **Unclassified.** A pollutant is designated unclassified if the data are incomplete and do not support a designation of attainment or nonattainment.
- **Attainment.** A pollutant is in attainment if the AAQS for that pollutant was not violated at any site in the area during a three-year period.
- **Nonattainment.** A pollutant is in nonattainment if there was at least one violation of an AAQS for that pollutant in the area.

- **Nonattainment/Transitional.** A subcategory of the nonattainment designation. An area is designated nonattainment/transitional to signify that the area is close to attaining the AAQS for that pollutant.

The attainment status for the SoCAB is shown in Table 5.2-2, *Attainment Status of Criteria Pollutants in the South Coast Air Basin*.

Table 5.2-2 Attainment Status of Criteria Pollutants in the South Coast Air Basin

Pollutant	State	Federal
Ozone – 1-hour	Extreme Nonattainment	No Federal Standard
Ozone – 8-hour	Extreme Nonattainment	Extreme Nonattainment
PM_{10}	Serious Nonattainment	Attainment
$PM_{2.5}$	Nonattainment	Nonattainment
CO	Attainment	Attainment
NO_2	Attainment	Attainment/Maintenance
SO_2	Attainment	Attainment
Lead	Attainment	Nonattainment (Los Angeles County only)[1]
All others	Attainment/Unclassified	Attainment/Unclassified

Source: CARB 2016b.
[1] In 2010, the Los Angeles portion of the SoCAB was designated nonattainment for lead under the new 2008 federal AAQS as a result of large industrial emitters. Remaining areas in the SoCAB are unclassified.

Multiple Air Toxics Exposure Study IV

The Multiple Air Toxics Exposure Study (MATES) is a monitoring and evaluation study on ambient concentrations of TACs and the potential health risks from air toxics in the SoCAB. In 2008, SCAQMD conducted its third update, MATES III, based on the Office of Environmental Health Hazards Assessment's (OEHHA) 2003 Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments (2003 HRA Guidance Manual). The results showed that the overall risk for excess cancer from a lifetime exposure to ambient levels of air toxics was about 1,200 in a million. The largest contributor to this risk was diesel exhaust, which accounted for 84 percent of the cancer risk (SCAQMD 2008a).

SCAQMD recently released the fourth update, MATES IV, which was also based on OEHHA's 2003 HRA Guidance Manual. The results showed that the overall monitored risk for excess cancer from a lifetime exposure to ambient levels of air toxics decreased to approximately 418 in one million. Compared to the 2008 MATES III, monitored excess cancer risks decreased by approximately 65 percent. Approximately 90 percent of the risk is attributed to mobile sources, and 10 percent is attributed to TACs from stationary sources, such as refineries, metal processing facilities, gas stations, and chrome plating facilities. The largest contributor to this risk was diesel exhaust, which accounted for approximately 68 percent of the air toxics risk. Compared to MATES III, MATES IV found substantial improvement in air quality and associated decrease in air toxics exposure. As a result, the estimated, basinwide, population-weighted risk decreased by approximately 57 percent since MATES III (SCAQMD 2015a).

OEHHA updated the guidelines for estimating cancer risks on March 6, 2015 (OEHHA 2015). The new method uses higher estimates of cancer potency during early life exposures, which result in a higher calculation of risk. There are also differences in the assumptions on breathing rates and length of residential exposures. When combined, SCAQMD estimates that risks for a given inhalation exposure level will be about 2.7 times higher than the risk identified in MATES IV using the 2015 OEHHA guidance methodology (e.g., 2.7 times higher than 418 in one million overall excess cancer risk) (SCAQMD 2015a).

Existing Ambient Air Quality

Existing levels of ambient air quality and historical trends and projections in the vicinity of the Project Area are best documented by measurements made by SCAQMD. The majority of the Project Area is in Source Receptor Area 16 – Metropolitan (North Orange County). The air quality monitoring station closest to the Project Area is the Anaheim-Pampa Lane Monitoring Station. As this station does not have information for SO_2, information for this criteria air pollutant was obtained from the Costa Mesa-Mesa Verde Drive monitoring station. Data from these stations are summarized in Table 5.2-3, *Ambient Air Quality Monitoring Summary*. The data show that the concentration levels of O_3, PM_{10}, and $PM_{2.5}$ of the area regularly exceed the state and federal one-hour and eight-hour O_3 standards as well as the state PM_{10} and federal $PM_{2.5}$ standards. The CO, SO_2, and NO_2 standards have not been exceeded in the last five years in the project vicinity.

Table 5.2-3 Ambient Air Quality Monitoring Summary

Pollutant/Standard	Number of Days Thresholds Were Exceeded and Maximum Levels				
	2012	2013	2014	2015	2016
Ozone (O_3)[1]					
State 1-Hour ≥ 0.09 ppm (days exceed threshold)	0	0	2	1	2
State 8-hour ≥ 0.07 ppm (days exceed threshold)	0	0	6	1	4
Federal 8-Hour > 0.075 ppm (days exceed threshold)	0	0	4	1	0
Max. 1-Hour Conc. (ppm)	0.079	0.084	0.111	0.100	0.103
Max. 8-Hour Conc. (ppm)	0.067	0.070	0.081	0.080	0.074
Carbon Monoxide (CO)[1]					
State 8-Hour > 9.0 ppm (days exceed threshold)	0	*	*	*	*
Federal 8-Hour ≥ 9.0 ppm (days exceed threshold)	0	*	*	*	*
Max. 8-Hour Conc. (ppm)	2.34	*	*	*	*
Nitrogen Dioxide (NO_2)[1]					
State 1-Hour ≥ 0.18 ppm (days exceed threshold)	0	0	0	0	0
Max. 1-Hour Conc. (ppb)	0.0673	0.0815	0.0758	0.0591	0.0643
Sulfur Dioxide (SO_2)[2]					
State 24-Hour ≥ 0.04 ppm (days exceed threshold)	0	0	*	*	*
Federal 24-Hour ≥ 0.14 ppm (days exceed threshold)	0	0	*	*	*
Max 24-Hour Conc. (ppm)	0.001	0.001	*	*	*
Coarse Particulates (PM_{10})[1]					
State 24-Hour > 50 µg/m^3 (days exceed threshold)	0	1	2	2	*
Federal 24-Hour > 150 µg/m^3 (days exceed threshold)	0	0	0	0	0
Max. 24-Hour Conc. (µg/m^3)	48.0	77.0	85.0	59.0	74.0

Table 5.2-3 Ambient Air Quality Monitoring Summary

Pollutant/Standard	Number of Days Thresholds Were Exceeded and Maximum Levels				
	2012	2013	2014	2015	2016
Fine Particulates ($PM_{2.5}$)[1]					
Federal 24-Hour > 35 µg/m³ (days exceed threshold)	4	1	4	3	1
Max. 24-Hour Conc. (µg/m³)	50.1	37.8	45.0	45.8	44.4

Source: CARB 2017.
Notes: ppm = parts per million; ppb = parts per billion; µg/m³ = micrograms per cubic meter
* Data not available.
[1] Data obtained from the Anaheim – Pampa Lane Monitoring Station at 1630 Pampas Lane in the City of Anaheim.
[2] Data obtained from the Costa Mesa – Mesa Verde Drive Monitoring Station at 2850 Mesa Verde Drive East in the City of Costa Mesa.

Existing Emissions

The Project Area consists of commercial, retail, and single- and multi-family residences. These uses currently generate criteria air pollutant emissions from natural gas use for energy, heating and cooking, vehicle trips associated with each land use, and area sources such as landscaping equipment and consumer cleaning products. Table 5.2-4, *Existing Beach Boulevard Specific Plan Daily Emissions Inventory*, shows the average daily emissions inventory currently associated with the Project Area.

Table 5.2-4 Existing Beach Boulevard Specific Plan Daily Emissions Inventory

Phase	Operation-Related Regional Emissions (pounds/day)					
	VOC	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Area	220	27	316	<1	25	25
Energy	2	15	10	<1	1	1
Transportation	40	71	490	1	109	30
Total	**262**	**112**	**815**	**2**	**136**	**56**

Source: CalEEMod Version 2016.3.1. Based on highest winter or summer emissions using 2016 transportation emission rates. Totals may not equal 100 percent due to rounding. Excludes permitted sources of emissions that are covered under SCAQMD regulations.

Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. Sensitive population groups include children, the elderly, the acutely ill, and the chronically ill, especially those with cardiorespiratory diseases.

Residential areas are also considered sensitive to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Other sensitive receptors include retirement facilities, hospitals, and schools. Recreational land uses are considered moderately sensitive to air pollution. Although exposure periods are generally short, exercise places a high demand on respiratory functions, which can be impaired by air pollution. In addition, noticeable air pollution can detract from the enjoyment of recreation. Industrial, commercial, retail, and office areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent, because

the majority of the workers tend to stay indoors most of the time. In addition, the workforce is generally the healthiest segment of the population.

The nearest off-site sensitive receptors to the Project Area include the surrounding residences and the adjacent Twila Reid Elementary School, Schweitzer Elementary School, and Baden and Powell Headstart. In addition to the off-site sensitive receptors, there are also existing sensitive receptors, consisting of single- and multi-family residences who are in the Project Area.

5.2.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

AQ-1 Conflict with or obstruct implementation of the applicable air quality plan.

AQ-2 Violate any air quality standard or contribute substantially to an existing or projected air quality violation.

AQ-3 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).

AQ-4 Expose sensitive receptors to substantial pollutant concentrations.

AQ-5 Create objectionable odors affecting a substantial number of people.

5.2.2.1 SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT THRESHOLDS

The analysis of the Proposed Project's air quality impacts follows the guidance and methodologies recommended in SCAQMD's *CEQA Air Quality Handbook* and the significance thresholds on SCAQMD's website (SCAQMD 1993).[7] CEQA allows the significance criteria established by the applicable air quality management or air pollution control district to be used to assess impacts of a project on air quality. SCAQMD has established thresholds of significance for regional air quality emissions for construction activities and project operation. In addition to the daily thresholds listed above, projects are also subject to the AAQS. These are addressed through an analysis of localized CO impacts and localized significance thresholds (LSTs).

Regional Significance Thresholds

SCAQMD has adopted regional construction and operational emissions thresholds to determine a project's cumulative impact on air quality in the SoCAB, shown in Table 5.2-5, *SCAQMD Regional Significance Thresholds*. The table lists thresholds that are applicable for all projects uniformly, regardless of size or scope. There is growing evidence that although UFPs contribute a very small portion of the overall atmospheric mass

[7] SCAQMD's Air Quality Significance Thresholds are current as of March 2015 and can be found at: http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook.

concentration, they represent a greater proportion of the health risk from PM. However, the EPA and CARB have not adopted AAQS to regulate UFPs; therefore, SCAQMD has not developed thresholds for them.

Table 5.2-5 SCAQMD Significance Thresholds

Air Pollutant	Construction Phase	Operational Phase
Reactive Organic Gases (ROGs)/Volatile Organic Compounds (VOCs)	75 lbs/day	55 lbs/day
Nitrogen Oxides (NO_X)	100 lbs/day	55 lbs/day
Carbon Monoxide (CO)	550 lbs/day	550 lbs/day
Sulfur Oxides (SO_X)	150 lbs/day	150 lbs/day
Particulates (PM_{10})	150 lbs/day	150 lbs/day
Particulates ($PM_{2.5}$)	55 lbs/day	55 lbs/day

Source: SCAQMD 2015b.

Projects that exceed the regional significance threshold contribute to the nonattainment designation of the SoCAB. The attainment designations are based on the AAQS, which are set at levels of exposure that are determined to not result in adverse health effects. Exposure to fine particulate pollution and ozone causes myriad health impacts, particularly to the respiratory and cardiovascular systems:

- Increases cancer risk ($PM_{2.5}$, TACs)
- Aggravates respiratory disease (O_3, $PM_{2.5}$)
- Increases bronchitis (O_3, $PM_{2.5}$)
- Causes chest discomfort, throat irritation, and increased effort to take a deep breath (O_3)
- Reduces resistance to infections and increases fatigue (O_3)
- Reduces lung growth in children ($PM_{2.5}$)
- Contributes to heart disease and heart attacks ($PM_{2.5}$)
- Contributes to premature death (O_3, $PM_{2.5}$)
- Contributes to lower birth weight in newborns ($PM_{2.5}$) (SCAQMD 2015c)

Exposure to fine particulates and ozone aggravates asthma attacks and can amplify other lung ailments such as emphysema and chronic obstructive pulmonary disease. Exposure to current levels of $PM_{2.5}$ is responsible for an estimated 4,300 cardiopulmonary-related deaths per year in the SoCAB. In addition, University of Southern California scientists, in a landmark children's health study, found that lung growth improved as air pollution declined for children aged 11 to 15 in five communities in the SoCAB (SCAQMD 2015d).

Mass emissions in Table 5.2-5 are not correlated with concentrations of air pollutants but contribute to the cumulative air quality impacts in the SoCAB. Therefore, regional emissions from a single project do not single-handedly trigger a regional health impact, and it is speculative to identify how many more individuals in the air basin would be affected by the health effects listed above. In addition, the analysis to determine how exceeding the regional thresholds would affect the number of days the region is in nonattainment is within the scope of the AQMP. SCAQMD is the primary agency responsible for ensuring the health and welfare of

sensitive individuals exposed to elevated concentrations of air pollutants in the SoCAB. To achieve the health-based standards established by the EPA, SCAQMD prepares an AQMP that details regional programs to attain the AAQS.

Localized Significance Thresholds

SCAQMD developed LSTs to determine if emissions of NO_2, CO, PM_{10}, or $PM_{2.5}$ generated at a project site (offsite mobile-source emissions are not included the LST analysis) would expose sensitive receptors to substantial concentrations of criteria air pollutants. LSTs are the maximum emissions at a project site that are not expected to cause or contribute to an exceedance of the most stringent federal or state AAQS. LSTs are based on the ambient concentrations of that pollutant in the project source receptor area and the distance to the nearest sensitive receptor. LST analysis for construction is applicable to all projects of five acres or less; however, it can be used to screen larger projects to determine whether or not dispersion modeling may be required. Table 5.2-6, *SCAQMD Localized Significance Thresholds*, shows the localized significance thresholds for projects in the SoCAB.

Table 5.2-6 SCAQMD Localized Significance Thresholds

Air Pollutant (Relevant AAQS)	Concentration
1-Hour CO Standard (CAAQS)	20 ppm
8-Hour CO Standard (CAAQS)	9.0 ppm
1-Hour NO_2 Standard (CAAQS)	0.18 ppm
Annual NO_2 Standard (CAAQS)	0.03 ppm
24-Hour PM_{10} Standard – Construction (SCAQMD)[1]	10.4 µg/m^3
24-Hour $PM_{2.5}$ Standard – Construction (SCAQMD)[1]	10.4 µg/m^3
24-Hour PM_{10} Standard – Operation (SCAQMD)[1]	2.5 µg/m^3
24-Hour $PM_{2.5}$ Standard – Operation (SCAQMD)[1]	2.5 µg/m^3
Annual Average PM_{10} Standard (SCAQMD)[1]	1.0 µg/m^3

Source: SCAQMD 2015b.
ppm = parts per million; µg/m^3 = micrograms per cubic meter
[1] Threshold is based on SCAQMD Rule 403. Since the SoCAB is in nonattainment for PM_{10} and $PM_{2.5}$, the threshold is established as an allowable change in concentration. Therefore, background concentration is irrelevant.

CO Hotspots

Areas of vehicle congestion have the potential to create pockets of CO called hotspots. These pockets have the potential to exceed the state one-hour standard of 20 parts per million (ppm) or the eight-hour standard of 9.0 ppm. Because CO is produced in greatest quantities from vehicle combustion and does not readily disperse into the atmosphere, adherence to ambient air quality standards is typically demonstrated through an analysis of localized CO concentrations. Hotspots are typically produced at intersections, where traffic congestion is highest because vehicles queue for longer periods and are subject to reduced speeds. Typically, for an intersection to exhibit a significant CO concentration, it would need operate at level of service (LOS) E or worse without improvements (Caltrans 1997). However, at the time of the 1993 Handbook, the SoCAB was designated nonattainment under the California AAQS and National AAQS for CO. With the turnover of

older vehicles, introduction of cleaner fuels, and implementation of control technology on industrial facilities, CO concentrations in the SoCAB and in the state have steadily declined.

Health Risk Analysis

Whenever a project would require use of chemical compounds that have been identified in SCAQMD Rule 1401, placed on CARB's air toxics list pursuant to AB 1807, or placed on the EPA's National Emissions Standards for Hazardous Air Pollutants, a health risk assessment is required by the SCAQMD. Table 5.2-7, *SCAQMD Toxic Air Contaminants Incremental Risk Thresholds*, lists the SCAQMD's TAC incremental risk thresholds for operation of a project. Residential, commercial, and office uses do not use substantial quantities of TACs, and these thresholds typically apply to new industrial projects.

Table 5.2-7 SCAQMD Toxic Air Contaminants Incremental Risk Thresholds

Maximum Incremental Cancer Risk	≥ 10 in 1 million
Cancer Burden (in areas ≥ 1 in 1 million)	> 0.5 excess cancer cases
Hazard Index (project increment)	≥ 1.0

Source: SCAQMD 2015b.

Although the Proposed Project would not be a major source of toxic air contaminants, vehicle traffic and other project emissions will contribute to existing sources of TACs. Under the California Supreme Court's decision in *California Building Industry Association v. Bay Area Air Quality Management District* (2015) 62 Cal.4th 369 (Case No. S213478), where a project will exacerbate an existing environmental hazard, CEQA requires an analysis of the worsened condition on future project residents and the public at large. Projects that do not generate emissions that exceed the values in Table 5.2-7 would not substantially contribute to cumulative air quality hazards or exacerbate an existing environmental hazard. Residential, commercial, office, and institutional uses (such as the hospital land uses) do not use substantial quantities of TACs and typically do not exacerbate existing hazards, so these thresholds are typically applied to new industrial projects and are not applicable to the Proposed Project.

5.2.3 Environmental Impacts

5.2.3.1 METHODOLOGY

This air quality evaluation was prepared in accordance with the requirements of CEQA to determine if significant air quality impacts are likely to occur in conjunction with future development that would be accommodated by the Proposed Project. SCAQMD has published the *CEQA Air Quality Handbook* (Handbook) and updates on its website that are intended to provide local governments with guidance for analyzing and mitigating project-specific air quality impacts (SCAQMD 2017b). The Handbook provides standards, methodologies, and procedures for conducting air quality analyses in EIRs, and they were used in this analysis. The following provides a summary of the assumptions utilized for the Proposed Project analysis.

- **Transportation:** Based on the annual average trip generation and vehicle miles traveled data provided by Fehr and Peers (see Appendix F of this DEIR). An average trip distance of 7.0 and 6.0 miles per trip are utilized for the existing and project buildout scenarios, respectively (Fehr and Peers 2017). Based on the estimated 20,289 average daily trips (ADT) generated under existing conditions and the 77,256 ADTs generated under full buildout conditions, approximately 142,023 vehicle miles per day are generated currently and 463,533 vehicle miles per day would be generated under full buildout conditions (Fehr and Peers 2017).

- **Area Sources:** Area sources generated from use of consumer products and cleaning supplies are based on CalEEMod default emission rates and on the assume building square footages. For fireplaces, it is assumed that condominiums, townhomes, and single-family are equipped with gas fireplaces per SCAQMD 445. In addition, it is assumed that apartment units and mobile homes do not and would not have fireplaces.

- **Energy:** Criteria air pollutant emissions from energy use (natural gas used for cooking, heating, etc.) are based on the CalEEMod defaults for natural gas usage by residential and nonresidential land uses. New buildings are assumed to comply with the 2016 Building Energy Efficiency Standards, which are 28 percent more energy efficient for residential buildings and 5 percent more energy efficient for nonresidential buildings and residential buildings of four stories or more than the 2013 Building Energy Efficiency Standards while existing buildings are assumed to comply with the 2005 Building Energy Efficiency Standards.

- **Construction:** Development of the Proposed Project would generally commence beginning of 2018. The construction phasing utilizes the CalEEMod default schedule based on the anticipated new land uses and the duration of each activity is normalized to an 18-year building period (2018 to 2035). In addition, while the specific timeline in how the land uses accommodated in the Proposed Project would be developed is unknown, this analysis assumes that the various construction activities (e.g., site preparation, demolition, building construction) would overlap. Furthermore, some of the existing residential and non-residential land uses in the Project Area would be demolished (see Appendix C for further details). Construction assumptions were based on CalEEMod defaults such as construction equipment mix and worker, vendor, and haul trips. Table 5.2-8, *Construction Activities, Phasing, and Equipment*, shows the assumed construction activities and the start and end dates (based on 18-year buildout) and equipment mix for each of the activities.

Table 5.2-8 Construction Activities, Phasing and Equipment

Activities[1]	Start/End Dates[1]	Equipment[2]
Demolition	1/1/2018 – 11/14/2018	1 concrete/industrial saw; 3 excavators; 2 rubber tired dozers; 1 water truck
Site Preparation	1/1/2018 – 7/10/2018	3 rubber tired dozers; 4 tractors/loaders/backhoes; 1 water truck
Grading	1/1/2018 – 5/8/2019	2 excavators; 1 grader; 1 rubber tired dozer; 2 scrapers; 2 tractors/loaders/backhoes; 1 water truck
Building Construction	1/1/2018 – 7/16/2031	1 crane; 3 forklifts; 1 generator set; 3 tractors/loaders/backhoes; 1 welder
Asphalt Paving	1/1/2018 – 12/17/2018	2 pavers; 2 paving equipment; 2 rollers
Architectural Coating	1/1/2018 – 12/17/2021	1 air compressor

[1] Based on CalEEMod defaults and normalized to an 18-year buildout duration. Start/end dates represent the total number of workdays per activity condensed to begin on January 1, 2018, since actual dates of construction activities are unknown.
[2] Based on CalEEMod defaults.

5.2.3.2 IMPACT ANALYSIS

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

Impact 5.2-1: The Proposed Project would result in growth and associated emissions that exceed the emissions forecasts assumed for the project area in the Air Quality Management Plan (AQMP). Therefore, despite consistency with state and regional goals to increase density along major transportation corridors, the Proposed Project would not be consistent with the AQMP. [Threshold AQ-1]

Impact Analysis: The following describes potential air quality impacts and consistency with the AQMP from the implementation of the Proposed Project.

SCAQMD is directly responsible for reducing emissions from area, stationary, and mobile sources in the SoCAB to achieve the National and California AAQS. SCAQMD has responded to this requirement by preparing an AQMP. On December 7, 2012, the SCAQMD Governing Board adopted the 2012 AQMP, which is a regional and multiagency effort (SCAQMD, CARB, SCAG, and EPA). SCAQMD also recently adopted the 2016 AQMP. A consistency determination with the AQMP plays an important role in local agency project review by linking local planning and individual projects to the AQMP. It fulfills the CEQA goal of informing decision makers of the environmental efforts of the project under consideration early enough to ensure that air quality concerns are fully addressed. It also provides the local agency with ongoing information as to whether they are contributing to the clean air goals in the AQMP.

The two principal criteria for conformance with an AQMP are:

1. Whether the project would exceed the assumptions in the AQMP.

2. Whether the project would result in an increase in the frequency or severity of existing air quality violations, cause or contribute to new violations, or delay timeline attainment of air quality standards.

SCAG is SCAQMD's partner in the preparation of the AQMP, providing the latest economic and demographic forecasts and developing transportation measures. Regional population, housing, and employment projects developed by SCAG are based, in part, on a city's general plan land use designations. These projections form the foundation for the emissions inventory of the AQMP and are incorporated into the regional transportation plan/sustainable communities strategy (RTP/SCS) prepared by SCAG to determine priority transportation projects and vehicle miles traveled in the SCAG region. Because the AQMP strategy is based on projections from local general plans, projects that are consistent with the local general plan are considered consistent with the air quality-related regional plan. Additionally, only large projects have the potential to substantially affect the demographic forecasts in the AQMP.

Criterion 1

CEQA Guidelines Section 15206(b) states that a proposed project is of statewide, regional, or area-wide significance if the project is a residential development or more than 500 dwelling units or a commercial office building of 250,000 square feet or more or that employs 1,000 or more employees. The Proposed Project would introduce a net increase of approximately 2,272,743 square feet of non-residential building space, 3,584 new dwelling units, and 4,103 new jobs; therefore, it is a project of statewide, regional, or area-wide significance. Additionally, as shown in Table 5.10-6, *Projected Growth, Orange County and Anaheim*, buildout of the proposed Specific Plan would exceed future projected growth without it. Thus, implementation of the Proposed Project would have the potential to substantially affect demographic projections beyond what is accounted for in the current 2016 AQMP. Therefore, the Proposed Project would be considered inconsistent with the AQMP under the first criterion.

Criterion 2

With respect to the second criterion, the analyses in the response to Impact 5.2-3 demonstrate that the Proposed Project would generate long-term emissions of criteria air pollutants that would exceed SCAQMD's regional operation-phase significance thresholds, which were established to determine whether a project has the potential to cumulatively contribute to the SoCAB's nonattainment designations. Thus, implementation of the Proposed Project would result in an increase in the frequency or severity of existing air quality violations; cause or contribute to new violations; or delay timely attainment of the AAQS. Therefore, overall, the Proposed Project would be considered inconsistent with the AQMP under the second criterion.

Summary

The Proposed Project includes objectives that emphasizes development of mixed-use areas and increased development intensity along the Beach Boulevard corridor. It would create a Mixed-Use Medium and a Mixed-Use High Development Areas in the Project Area in addition to integrating a Neighborhood Commercial Development Area. These planning areas would permit daily services and amenities in addition to residences and businesses to be in proximity of each other. In addition to creating and emphasizing mixed-use areas, the Proposed Project also outlines improvements to active and public transit facilities, such as increasing the amount of designated bike lanes in the Project Area. Development of mixed-use areas and improvement of active and public transit infrastructure would contribute to reducing vehicle trips and vehicle miles traveled (VMT). In addition to these proposed changes related to land use and transportation

infrastructure improvements, Action Item S.14 of the Proposed Project would also promote installation of more EV charging stations, which would contribute to and support the use of more EVs. However, the project would represent a substantial increase in emissions compared to existing conditions. The estimated long-term emissions generated under full buildout of the Proposed Project would exceed the SCAQMD's regional operational significance thresholds (see Table 5.2-5) and would cumulatively contribute to the nonattainment designations in the SoCAB. In addition, implementation of the Proposed Project would contribute to exceedances of the current population and employment estimates for the Project Area. Therefore, the Proposed Project would be considered inconsistent with the AQMP, resulting in a significant impact in this regard.

Impact 5.2-2: Construction activities associated with the Proposed Project could generate short-term emissions that would exceed SCAQMD's regional significance thresholds and cumulatively contribute to the nonattainment designations of the South Coast Air Basin (SoCAB). [Thresholds AQ-2 and AQ-3]

Impact Analysis: Construction activities would temporarily increase PM_{10}, $PM_{2.5}$, VOC, NO_X, SO_X, and CO regional emissions in the SoCAB. The primary source of NO_x, CO, and SO_x emissions is the operation of construction equipment. The primary sources of particulate matter (PM_{10} and $PM_{2.5}$) emissions are activities that disturb the soil, such as grading and excavation, road construction, and building demolition and construction. The primary source of VOC emissions is the application of architectural coating and off-gas emissions associated with asphalt paving. A discussion of health impacts associated with air pollutant emissions generated by construction activities is included in section 5.2.1, *Environmental Setting, Air Pollutants of Concern*.

Construction activities associated with buildout of the Proposed Project are anticipated to occur sporadically over approximately 17 to 18 years or longer. Buildout would consist of multiple smaller projects, each having its own construction timeline and activities. Development of multiple properties could occur at the same time. However, there is no defined development schedule for these future projects at this time. For this analysis, the estimate of maximum daily emissions is based on a very conservative scenario, where several construction projects occur at one time, and all construction phases overlap. The amount of construction assumed is consistent with the 17- to 18-year anticipated buildout of the Proposed Project. An estimate of maximum daily construction emissions is provided in Table 5.2-9, *Beach Boulevard Specific Plan Maximum Daily Regional Construction Emissions Estimate*. The table shows the highest daily emissions that would be generated over the anticipated development period.

Table 5.2-9 Beach Boulevard Specific Plan Maximum Daily Regional Construction Emissions Estimate

Construction Phase(s)	Criteria Air Pollutants (pounds per day)[1, 2]					
	VOC	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Demolition[3]	4	45	25	<1	4	2
Site Preparation	5	48	23	<1	11	7
Grading	5	60	36	<1	7	4
Building Construction	22	118	168	1	40	12
Paving	2	18	15	<1	1	1
Architectural Coating	165	4	27	<1	7	2
Worst-Case Day[4]	203	294	294	1	70	28
SCAQMD Regional Thresholds	75	100	550	150	150	55
Significant?	**Yes**	**Yes**	No	No	No	No

Source: CalEEMod Version 2016.3.1. Highest winter or summer emissions are reported.
1 Construction equipment mix is based on CalEEMod default construction mix. See Appendix C for a list of assumptions on emissions generated on a worst-case day.
2 Includes implementation of fugitive dust control measures required by SCAQMD under Rule 403, including watering disturbed areas a minimum of two times per day, reducing speed limit to 15 miles per hour on unpaved surfaces, replacing ground cover quickly, and street sweeping with Rule 1186–compliant sweepers.
3 For purposes of this analysis, it is assumed that up to 1,068,952 building square feet of existing land structures would be demolished.
4 Based on overlap of all the construction phases for year 2018.

As shown in the table, construction activities associated with development of the project could potentially exceed the SCAQMD regional threshold for VOC and NO_X. The primary source of NO_X emissions is vehicle and construction equipment exhaust. NO_X is a precursor to the formation of both O_3 and particulate matter (PM_{10} and $PM_{2.5}$). VOC is a precursor to the formation of O_3. Project-related emissions of VOC and NO_X would contribute to the O_3, NO_2, PM_{10}, and $PM_{2.5}$ nonattainment designations of the SoCAB. Therefore, project-related construction activities would result in significant regional air quality impacts.

Impact 5.2-3: Buildout in accordance with the Proposed Project would generate long-term emissions that would exceed SCAQMD's regional significance thresholds and cumulatively contribute to the nonattainment designations of the SoCAB. [Thresholds AQ-2 and AQ-3]

Impact Analysis: Buildout of the Proposed Project would result in direct and indirect criteria air pollutant emissions from transportation, energy (e.g., natural gas use), and area sources (e.g., aerosols and landscaping equipment). Mobile-source criteria air pollutant emissions are based on the traffic analysis conducted by Fehr and Peers (see Appendix F of this DEIR). The Specific Plan objectives emphasize development of mixed-use areas and improvements to active and public transit facilities that would contribute to reducing vehicle trips and VMT. As an example, the Proposed Project would create Mixed-Use Medium and Mixed-Use High Development Areas and integrate a Neighborhood Commercial Development Area that would provide daily services and amenities for the nearby residences and businesses. In addition to the proposed land use changes and focus, the City's Bicycle Master Plan (adopted in 2017) proposes new bicycle facilities in the Plan Area, such as a Class I bicycle lane along Carbon Creek Channel; a Class II lane along Lincoln Avenue and Orange Avenue; and upgrades to the existing Class III segment on Ball Road between Beach Boulevard and Western Avenue to Class II. Furthermore, the Orange County Transit Authority has identified portions of Beach Boulevard and Lincoln Avenue in the Plan Area as opportunity areas for future high-quality transit service

(e.g., streetcar, bus rapid transit). The Proposed Project also includes Action Items S.14 through S.16, which promote the installation of more EV charging stations and hydrogen and compressed-natural-gas fueling stations to support increases in the number of alternative-fueled cars.

Overall, the general proposed guiding principles and objectives for land use planning and the proposed land use changes and transportation improvements would contribute to reducing vehicle trips and VMT per service population to the extent feasible compared to a no-project buildout scenario. However, when compared to the existing land uses, due to the magnitude of planned growth in the Plan Area, implementation of the Proposed Project would generate a net increase of 56,967 ADT and 321,510 daily VMT (see Appendix C). The results of the CalEEMod modeling are shown in Table 5.2-10, *Beach Boulevard Specific Plan Maximum Daily Regional Operation-Phase Emissions*. The emissions associated with the existing land uses assumed for demolition are subtracted from the emissions associated with the new and remaining land uses to determine the net change in emissions.

Table 5.2-10 Beach Boulevard Specific Plan Maximum Daily Regional Operational Phase Emissions

Phase	Operation-Related Regional Emissions (pounds/day)					
	VOC	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Existing (Year 2035)						
Area	219	26	313	<1	25	25
Energy	2	15	10	<1	1	1
Transportation	14	22	168	1	108	29
Total	**235**	**63**	**491**	**1**	**135**	**56**
BBSP (Year 2035)[1]						
Area	297	86	572	1	26	26
Energy	4	37	24	<1	3	3
Transportation	3	4	29	<1	18	5
Total	**352**	**200**	**1,158**	**3**	**373**	**124**
Net Change (Project – Existing)						
Net Change	**117**	**137**	**666**	2	**248**	**68**
SCAQMD Regional Thresholds	55	55	550	150	150	55
Significant?	**Yes**	**Yes**	**Yes**	No	**Yes**	**Yes**

Source: CalEEMod Version 2016.3.1. Based on highest winter or summer emissions using 2035 transportation emission rates. Totals may not equal 100 percent due to rounding. Excludes permitted sources of emissions that are covered under SCAQMD regulations.
[1] It is assumed that approximately 968,552 building square feet of the existing nonresidential structures as well as 89 dwelling units would be demolished.

As shown in this table, due to the magnitude of the proposed growth, operation of the land uses accommodated under the Proposed Project at buildout would generate air pollutant emissions that exceed SCAQMD's regional significance thresholds for VOC, NO_x, CO, PM_{10}, and $PM_{2.5}$ at buildout. Emissions of VOC and NO_x that exceed the SCAQMD regional threshold would cumulatively contribute to the O_3 nonattainment designation of the SoCAB. Emissions of NO_x that exceed SCAQMD's regional significance thresholds would cumulatively contribute to the O_3 and particulate matter (PM_{10} and $PM_{2.5}$) nonattainment designations of the SoCAB. Emissions of PM_{10} and $PM_{2.5}$ would contribute to the $PM_{2.5}$ nonattainment designations. Therefore, the project would result in a potentially significant impact because it would significantly contribute to the nonattainment designations of the SoCAB.

Impact 5.2-4: Long-term operation of the land uses associated with buildout of the Proposed Project would not expose sensitive receptors to substantial concentrations of criteria air pollutants or toxic air contaminants. [Threshold AQ-4]

Impact Analysis: Operation of new land uses that would be accommodated under the Proposed Project could generate new sources of criteria air pollutants and TACs in the Project Area from area/stationary sources and mobile sources. Unlike the mass of construction emissions shown in Table 5.2-10, described in pounds per day, localized concentrations refer to an amount of pollutant in a volume of air (ppm or $\mu g/m^3$) and can be correlated to potential health effects.

Operation Phase Localized Significance Thresholds (LSTs)

LSTs are the amount of project-related stationary and area sources of emissions at which localized concentrations (ppm or $\mu g/m^3$) would exceed the ambient air quality standards for criteria air pollutants for which the SoCAB is designated a nonattainment area. The Proposed Project would permit residential, office, and commercial land uses. Typical sources of criteria air pollutant emissions within the Specific Plan from stationary and area sources include energy use (natural gas used for cooking and water heating) and landscaping fuel and aerosols. The purpose of the Specific Plan is to allow for a range of housing that activates the Beach Boulevard corridor and to promote the establishment of hospitality uses that cater to tourists. Types of land uses that typically generate substantial quantities of criteria air pollutants and TACs include industrial (stationary sources) and warehousing (truck idling) land uses. These types of major air pollutant emissions sources are not permitted in the Project Area. Thus, the Proposed Project would not result in creation of land uses that would generate substantial concentrations of criteria air pollutant emissions. Therefore, localized operation-related air quality impacts are considered less than significant.

Operational Phase Toxic Air Contaminants (TACs)

Types of land uses that typically generate substantial quantities of criteria air pollutants and TACs include industrial (stationary sources) and warehousing (truck idling) land uses. These types of major air pollutant emissions sources are not permitted in the Project Area. Therefore, the Specific Plan would not result in creation of land uses that would generate substantial concentrations of TACs.

Development of the commercial land uses that are allowed under the Specific Plan may result in stationary sources of TACs emissions—e.g., dry cleaners, restaurants with charbroilers, or buildings with emergency generators and boilers. However, these sources are not considered by SCAQMD to be large emitters. Furthermore, these types of stationary sources are subject to SCAQMD's new source review through their permitting requirements and would be subject to further study and health risk assessment prior to the issuance of any necessary air quality permits under SCAQMD Rule 1401. The permitting process ensures that stationary source emissions would be below the SCAQMD significance thresholds of 10 in a million cancer risk and 1 for acute risk at the maximally exposed individual. Therefore, overall, impacts related to TACs are considered less than significant.

Operational Phase CO Hotspots

Areas of vehicle congestion have the potential to create pockets of CO called hotspots. In 2007, the SoCAB was designated in attainment for CO under both the California AAQS and National AAQS. The CO hotspot analysis conducted for the attainment by SCAQMD did not predict a violation of CO standards at the busiest intersections in Los Angeles during the peak morning and afternoon periods.[8] As identified in SCAQMD's 2003 AQMP and the 1992 Federal Attainment Plan for Carbon Monoxide, peak carbon monoxide concentrations in the SoCAB in previous years, prior to redesignation, were a result of unusual meteorological and topographical conditions and not of congestion at a particular intersection (SCAQMD 1992; SCAQMD 2003).

Under existing and future vehicle emission rates, a project would have to increase traffic volumes at a single intersection by more than 44,000 vehicles per hour—or 24,000 vehicles per hour where vertical and/or horizontal air does not mix—in order to generate a significant CO impact (BAAQMD 2017). Full buildout of the Proposed Project would result in approximately 77,256 average daily trips, which would be an increase of 56,967 total daily vehicle trips over existing conditions. Assuming the standard assumption that peak hour trips represent 10 percent of the average daily trips, implementation of the Proposed Project would result in an increase of about 5,697 peak hour vehicle trips. Furthermore, distributing the total daily vehicle trips in the proposed Project Area and region and by peak hour would result in smaller traffic volumes at the various intersections. Thus, implementation of the Proposed Project would not produce the volume of traffic required (i.e., 24,000 to 44,000 peak hour vehicle trips) to generate a CO hotspot. Therefore, implementation of the Specific Plan would not have the potential to substantially increase CO hotspots at intersections in the vicinity of the Project Area, and impacts would be less than significant.

Impact 5.2-5: Construction-related emissions associated with land uses accommodated under the Proposed Project could expose sensitive receptors to substantial concentrations of criteria air pollutants and toxic air contaminants. [Threshold AQ-4]

Impact Analysis: Development of new land uses that would be accommodated under the Proposed Project could generate new sources of criteria air pollutants from construction equipment exhaust and fugitive dust (criteria air pollutants only). Implementation of the Proposed Project could expose sensitive receptors to elevated pollutant concentrations during construction activities if it would cause or contribute significantly to elevating those levels.

Construction Phase Localized Significance Thresholds (LSTs)

LSTs are the amount of project-related emissions at which localized concentrations (ppm or $\mu g/m^3$) would exceed the ambient air quality standards for criteria air pollutants for which the SoCAB is designated a nonattainment area. Buildout of the Proposed Project would occur over approximately 17 to 18 years or longer and would consist of several smaller projects with their own construction time frames and equipment.

[8] The four intersections were: Long Beach Boulevard and Imperial Highway; Wilshire Boulevard and Veteran Avenue; Sunset Boulevard and Highland Avenue; and La Cienega Boulevard and Century Boulevard. The busiest intersection evaluated (Wilshire and Veteran) had a daily traffic volume of approximately 100,000 vehicles per day with LOS E in the morning peak hour and LOS F in the evening peak hour.

Per the LST methodology, information regarding specific development projects and the locations of receptors would be needed in order to quantify the levels of localized operation and construction-related impacts associated with future development projects. Because the Proposed Project is a broad-based policy plan, it is not possible to calculate individual, project-related, operation emissions at this time. The LST analysis can only be conducted at a project level; per SCAQMD methodology, quantification of LSTs is not applicable for this program-level environmental analysis. However, because potential development and redevelopment could occur close to existing sensitive receptors, the Proposed Project has the potential to expose sensitive receptors to substantial pollutant concentrations. Construction equipment exhaust combined with fugitive particulate matter emissions have the potential to expose sensitive receptors to substantial concentrations of criteria air pollutant emissions and result in a significant impact.

Construction Phase Toxic Air Contaminants (TACs)

SCAQMD currently does not require health risk assessments to be conducted for short-term emissions from construction equipment. Health risks associated with emissions from construction equipment primarily are due to diesel particulate matter (DPM). OEHHA adopted new guidance for the preparation of health risk assessments that was issued in March 2015 (OEHHA 2015). OEHHA has developed a cancer risk factor and non-cancer chronic reference exposure level for DPM, but these factors are based on continuous exposure over a 30-year time frame. No short-term acute exposure levels have been developed for DPM.

Construction of the Proposed Project would be implemented over a period of 17 to 18 years. It is anticipated that construction of individual developments accommodated under the plans would likely be spread out incrementally over this period of time, which would limit the exposure of on- and off-site receptors to elevated concentrations of DPM. However, similar to the LST analysis, construction health risk can only be conducted at a project level; therefore, quantification of construction-related health risk is not applicable for this program-level environmental analysis. Because potential development and redevelopment could occur close to existing sensitive receptors, the Proposed Project has the potential to expose sensitive receptors to substantial pollutant concentrations. Construction equipment exhaust has the potential to expose sensitive receptors to substantial concentrations of TACs and result in a significant impact.

Impact 5.2-6: Buildout of the Proposed Project would not have the potential to create objectionable odors that could affect a substantial number of people. [Threshold AQ-5]

Impact Analysis: Growth in the Project Area could generate new sources of odors. Nuisance odors from land uses in the SoCAB are regulated under SCAQMD Rule 402, Nuisance, which states:

> A person shall not discharge from any source whatsoever such quantifies 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.

Industrial and SCAQMD Permitted Land Uses

Industrial land uses have the potential to generate objectionable odors. Examples of industrial projects are wastewater treatment plants, compost facilities, landfills, solid-waste transfer stations, fiberglass manufacturing facilities, paint/coating operations (e.g., auto body shops), dairy farms, petroleum refineries, asphalt batch manufacturing plants, chemical manufacturing, and food manufacturing facilities. Industrial-type land uses would generally be prohibited within the Project Area. Therefore, impacts related to objectionable odors as it relates to industrial-type land uses for the Proposed Project would be less than significant.

Residential and Other Non-residential Land Uses

Residential and other non-residential (excluding industrial) land uses could result in generation of odors such as exhaust from landscaping equipment and cooking. However, unlike industrial land uses, these are not considered potential generators of odor that could affect a substantial number of people. Additionally, for uses that could generate food odors such as restaurants, coffee roasters, and breweries, these types of uses would be subject to SCAQMD Rule 402 which would minimize and provide a control for odors. Therefore, impacts from potential odors generated from residential and other non-residential land uses associated with the Proposed Project are considered less than significant.

Construction

During construction activities, construction equipment exhaust and application of asphalt and architectural coatings would temporarily generate odors. Any construction-related odor emissions would be temporary and intermittent. Additionally, noxious odors would be confined to the immediate vicinity of the construction equipment. By the time such emissions reached any sensitive receptor sites, they would be diluted to well below any level of air quality concern. Furthermore, short-term construction-related odors are expected to cease upon the drying or hardening of odor-producing materials. Therefore, impacts associated with construction-generated odors are considered less than significant.

5.2.4 Cumulative Impacts

In accordance with SCAQMD's methodology, any project that produces a significant project-level regional air quality impact in an area that is in nonattainment contributes to the cumulative impact. Cumulative projects in the local area include new development and general growth in the project area. The greatest source of emissions in the SoCAB is mobile sources. Due to the extent of the area potentially impacted from cumulative project emissions (i.e., the SoCAB), SCAQMD considers a project cumulatively significant when project-related emissions exceed the SCAQMD regional emissions thresholds shown in Table 5.2-5. No significant cumulative impacts were identified with regard to CO hotspots.

Construction

The SoCAB is designated nonattainment for O_3 and $PM_{2.5}$ under the California and National AAQS and nonattainment for PM_{10} and lead (Los Angeles County only) under the National AAQS. Construction of cumulative projects will further degrade the regional and local air quality. Air quality will be temporarily

impacted during construction activities. Implementation of mitigation measures for related projects would reduce cumulative impacts. However, project-related construction emissions could still potentially exceed the SCAQMD significance thresholds on a project and cumulative basis. Consequently, the Proposed Project's contribution to cumulative air quality impacts would be cumulatively considerable and would therefore be significant.

Operation

For operational air quality emissions, any project that does not exceed or can be mitigated to less than the daily regional threshold values is not considered by SCAQMD to be a substantial source of air pollution and does not add significantly to a cumulative impact. Operation of the project would result in emissions in excess of the SCAQMD regional emissions thresholds for VOC, CO, NO_X, PM_{10}, and $PM_{2.5}$. Therefore, the air pollutant emissions associated with the Proposed Project would be cumulatively considerable and therefore significant.

5.2.5 Existing Regulations and Standard Conditions

State

- Clean Car Standards – Pavley (AB 1493)
- California Advanced Clean Cars CARB (Title 13 CCR)
- Low-Emission Vehicle Program – LEV III (Title 13 CCR)
- Statewide Retail Provider Emissions Performance Standards (SB 1368).
- Airborne Toxics Control Measure to Limit School Bus Idling and Idling at Schools (13 CCR 2480)
- Airborne Toxic Control Measure to Limit Diesel-Fuel Commercial Vehicle Idling (13 CCR 2485)
- In-Use Off-Road Diesel Idling Restriction (13 CCR 2449)
- Building Energy Efficiency Standards (Title 24, Part 6)
- California Green Building Code (Title 24, Part 11)
- Appliance Energy Efficiency Standards (Title 20)

SCAQMD

- SCAQMD Rule 201: Permit to Construct
- SCAQMD Rule 402: Nuisance Odors
- SCAQMD Rule 403: Fugitive Dust
- SCAQMD Rule 445: Wood-Burning Devices
- SCAQMD Rule 1113: Architectural Coatings
- SCAQMD Rule 1186: Street Sweeping
- SCAQMD Rule 1401: New Source Review of Toxic Air Contaminants
- SCAQMD Rule 1403: Asbestos Emissions from Demolition/Renovation Activities

5.2.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, the following impacts would be less than significant: 5.2-4 and 5.2-6.

Without mitigation, these impacts would be **potentially significant**:

- **Impact 5.2-1** The Proposed Project would result in growth and associated emissions that exceed the emissions forecasts assumed for the project area in the AQMP. Therefore, despite consistency with state and regional goals to increase density along major transportation corridors, the Proposed Project would not be consistent with the AQMP.

- **Impact 5.2-2** Construction activities associated with the Proposed Project could generate short-term emissions that would exceed SCAQMD's regional significance thresholds and cumulatively contribute to the nonattainment designations of the SoCAB.

- **Impact 5.2-3** Buildout in accordance with the Proposed Project would generate long-term emissions that would exceed SCAQMD's regional significance thresholds and cumulatively contribute to the nonattainment designations of the SoCAB.

- **Impact 5.2-5** Construction-related emissions associated with land uses accommodated under the Proposed Project could expose sensitive receptors to substantial concentrations of criteria air pollutants and toxic air contaminants.

5.2.7 Mitigation Measures

5.2.7.1 MITIGATION MEASURES

Impact 5.2-1

When incorporated into future development projects for operation and construction phases, mitigation measures for Impact 5.2-3, described below, would contribute to reduced criteria air pollutant emissions associated with buildout of the Proposed Project The guiding principles, design guidelines, and proposed land use designations of the Proposed Project would promote the development of mixed uses along the Beach Boulevard corridor and increase capacity for alternative transportation modes, which would contribute to reducing vehicle trips, VMT, and emissions from internal combustion vehicles. However, no further mitigation measures are available that would reduce impacts to below SCAQMD significance thresholds due to the magnitude of growth and associated emissions that would be generated by the buildout of the Proposed Project.

Impact 5.2-2

AQ-1 Applicants for new development projects in the Beach Boulevard Area Specific Plan that are subject to the California Environmental Quality Act (i.e., non-exempt projects) shall require the construction contractor to use equipment that meets the US Environmental Protection Agency (EPA) Tier 4 emissions standards for off-road diesel-powered construction equipment with more than 50 horsepower, unless it can be demonstrated to the City of Anaheim that such equipment is not available. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 4 diesel emissions control strategy for a similarly sized engine, as defined by the California Air Resources Board's regulations. Prior to issuance of any construction permits, documentation shall be provided by the applicant to the City of Anaheim that verifies, to the satisfaction of the City, the use of construction equipment as stated in this mitigation measure.

AQ-2 Prior to issuance of grading, demolition or building permits whichever occurs first, the property owner/developer shall provide a list of all construction equipment proposed to be used on the project site for projects that are subject to the California Environmental Quality Act (i.e., non-exempt projects). This list may be provided on the building plans. The construction equipment list shall state the make, model, and equipment identification number of all the equipment.

AQ-3 During construction activities, for projects that are subject to the California Environmental Quality Act (i.e., non-exempt projects), the construction contractors shall ensure that the equipment shall be properly serviced and maintained in accordance with the manufacturer's recommendations; and, that all nonessential idling of construction equipment is restricted to five minutes or less in compliance with Section 2449 of the California Code of Regulations, Title 13, Article 4.8, Chapter 9.

AQ-4 Prior to issuance of a building permit for projects that subject to the California Environmental Quality Act (i.e., non-exempt projects), the property owner/developer shall require the construction contractor and provide a note on construction plans indicating that:

a) All coatings and solvents will have a volatile organic compound (VOC) content lower than required under Rule 1113 (i.e., super-compliant paints).

b) All architectural coatings shall be applied either by (1) using a high-volume, low-pressure spray method operated at an air pressure between 0.1 and 10 pounds per square inch gauge to achieve a 65 percent application efficiency; or (2) manual application using a paintbrush, hand-roller, trowel, spatula, dauber, rag, or sponge, to achieve a 100 percent applicant efficiency.

c) The construction contractor shall also use precoated/natural colored building materials, where feasible.

The City shall verify compliance during normal construction site inspections.

Impact 5.2-3

Stationary Source

AQ-5 Prior to the issuance of building permits for new development projects in the Project Area, the project applicant shall show on the building plans that all major appliances (dishwashers, refrigerators, clothes washers, and dryers) to be provided/installed are Energy Star-certified appliances or appliances of equivalent energy efficiency. Installation of Energy Star or equivalent appliances shall be verified by the City of Anaheim prior to the issuance of a Certificate of Occupancy.

Transportation and Motor Vehicles

AQ-6 Prior to issuance of building permits for non-single-family residential and mixed-use residential development projects in the Project Area, the project applicant shall indicate on the building plans that the following features have been incorporated into the design of the building(s). Proper installation of these features shall be verified by the City of Anaheim prior to the issuance of a Certificate of Occupancy.

- Electric vehicle charging shall be provided as specified in Section A4.106.8.2 (Residential Voluntary Measures) of the CALGreen Code.
- Bicycle parking shall be provided as specified in Section A4.106.9 (Residential Voluntary Measures) of the CALGreen Code.

AQ-7 Prior to the issuance of building permits for nonresidential development projects in the Project Area, project applicants shall indicate on the building plans that the following features have been incorporated into the design of the building(s). Proper installation of these features shall be verified by the City of Anaheim Building Division prior to the issuance of a Certificate of Occupancy.

- For buildings with more than ten tenant-occupants, changing/shower facilities shall be provided as specified in Section A5.106.4.3 (Nonresidential Voluntary Measures) of the CALGreen Code.
- Preferential parking for low-emitting, fuel-efficient, and carpool/van vehicles shall be provided as specified in Section A5.106.5.1 (Nonresidential Voluntary Measures) of the CALGreen Code.

- Facilities shall be installed to support future electric vehicle charging at each non-residential building with 30 or more parking spaces. Installation shall be consistent with Section A5.106.5.3 (Nonresidential Voluntary Measures) of the CALGreen Code.

Mitigation Measures T-1 through T-3 from Section 5.13, *Transportation and Traffic*, as listed below, would also reduce operational emissions of the Proposed Project.

T-1 Prior to the first final building and zoning inspection for any non-residential project generating 50 or more employees, the property owners/developer shall complete the following steps below to develop, implement and administer a comprehensive Transportation Demand Management (TDM) program.

a) The property owner/developer shall provide to the City of Anaheim, for review and approval, a comprehensive TDM program that includes a menu of TDM program strategies and elements for both existing and future employees' commute options.

b) The property owner/developer shall record a covenant on the property that requires ongoing implementation of the approved TDM program and designation of an on-site contact that will be responsible for coordinating the TDM program.

c) The form of the covenant shall be approved by the City Attorney's Office prior to recordation.

T-2 Prior to the first final building and zoning inspection for any non-residential project generating 50 or more employees, the property owner/developer shall join and financially participate in a clean fuel shuttle program, if established. The property owner/developer shall record a covenant on the property that requires participation in the program ongoing during project operation. The form of the covenant shall be approved by the City Attorney's Office prior to recordation.

T-3 Prior to the first final building and zoning inspection for any non-residential project generating 50 or more employees, the property owner/developer shall participate in the Anaheim Transportation Network (ATN)/Transportation Management Association. The property owner/developer shall record a covenant on the property that requires ongoing participation in the program and designation of an on-site contact that will be responsible for coordinating and representing the project with the ATN. The form of the covenant shall be approved by the City Attorney's Office prior to recordation.

Impact 5.2-5

Mitigation measures applied for Impact 5.2-2 would also reduce the Proposed Project's localized construction-related criteria air pollutant emissions to the extent feasible in addition to the following:

AQ-8 Prior to issuance of grading, demolition, or building permits, whichever occurs first, for projects that subject to the California Environmental Quality Act (i.e., non-exempt projects),

the property owner/developer shall submit a dust control plan that implements the following measures during ground-disturbing activities, in addition to the existing requirements for fugitive dust control under South Coast Air Quality Management District Rule 403, to further reduce PM_{10} and $PM_{2.5}$ emissions:

a) Following all grading activities, the construction contractor shall reestablish ground cover on the construction site through seeding and watering.

b) During all construction activities, the construction contractor shall sweep streets with Rule 1186–compliant, PM_{10}-efficient vacuum units on a daily basis if silt is carried over to adjacent public thoroughfares or occurs as a result of hauling.

c) During all construction activities, the construction contractor shall maintain a minimum 24-inch freeboard on trucks hauling dirt, sand, soil, or other loose materials and tarp materials with a fabric cover or other cover that achieves the same amount of protection.

d) During all construction activities, the construction contractor shall water exposed ground surfaces and disturbed areas a minimum of every three hours on the construction site and a minimum of three times per day.

e) During all construction activities, the construction contractor shall limit onsite vehicle speeds on unpaved roads to no more than 15 miles per hour.

The City shall verify compliance during normal construction site inspections.

5.2.8 Level of Significance After Mitigation

Impact 5.2-1

Components of and improvements proposed under the Proposed Project would contribute to minimize criteria air pollutant emissions from transportation and energy use. In addition, mitigation measures applied for Impact 5.2-3 would also further reduce the project's regional operational phase criteria air pollutant emissions to the extent feasible. However, given the potential increase in growth and associated increase in criteria air pollutant emissions, the project would continue to be potentially inconsistent with the assumptions in the AQMP. Therefore, Impact 5.2-1 would remain ***significant and unavoidable***.

Impact 5.2-2

Buildout of the Proposed Project would occur over approximately 17 to 18 years or longer. Construction activities associated with buildout of the Proposed Project could generate short-term emissions that exceed the SCAQMD'S significance thresholds during this time and cumulatively contribute to the nonattainment designations of the SoCAB. Implementation of Mitigation Measures AQ-1 to AQ-4 would reduce criteria air pollutant emissions from construction-related activities to the extent feasible. However, construction time frames and equipment for individual site-specific projects are not available and there is a potential for multiple

developments to be constructed at any one time, resulting in significant construction-related emissions. Therefore, despite adherence to Mitigation Measures AQ-1 to AQ-4, Impact 5.2-2 would remain ***significant and unavoidable***.

Impact 5.2-3

Buildout in accordance with the Proposed Project would generate long-term emissions that would exceed SCAQMD's regional significance thresholds and cumulatively contribute to the nonattainment designations of the SoCAB. Mitigation Measure AQ-5 would contribute in reducing criteria air pollutant emissions from stationary sources while Mitigation Measures AQ-6 and AQ-7 in addition to Mitigation Measures T-1 through T-3 would contribute in reducing mobile-source criteria air pollutant emissions to the extent feasible. However, due to the magnitude of emissions generated by residential, office, and commercial land uses, no mitigation measures are available that would reduce impacts below SCAQMD's thresholds. Therefore, Impact 5.2-3 would remain ***significant and unavoidable***.

Impact 5.2-5

Mitigation Measures AQ-1 to AQ-4 (applied for Impact 5.2-2) would reduce the Proposed Project's regional construction emissions and therefore, also result in a reduction of localized construction-related criteria air pollutant and TACs emissions to the extent feasible. In addition, Mitigation Measure AQ-8 would also contribute to reducing localized construction-related fugitive emissions. However, because existing sensitive receptors may be close to project-related construction activities, construction emissions generated by individual development projects have the potential to exceed SCAQMD's LSTs and health risk thresholds. Furthermore, because of the scale of development activity associated with buildout of the Proposed Project, it is not possible to determine whether the scale and phasing of individual development projects would result in the exceedance of the localized emissions thresholds and cancer risk and contribute to known health effects. Therefore, Impact 5.2-5, regarding construction-related localized impacts associated with buildout of the Proposed Project, would remain ***significant and unavoidable***.

5.2.9 References

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5. Environmental Analysis
AIR QUALITY

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