4.2 AIR QUALITY

This EIR section analyzes the potential for adverse impacts on air quality resulting from implementation of the proposed project. The Initial Study/Notice of Preparation (IS/NOP [Appendix A]) identified the potential for the proposed project to result in air quality impacts associated with the following: conflict with or obstruct implementation of an applicable air quality plan; violate air quality standards or contribute substantially to an existing or projected air quality violation; result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard; or, expose sensitive receptors to substantial pollutant concentrations. Issues that were scoped out from further analysis include the potential for the proposed project to create objectionable odors affecting a substantial number of people; however, this issue is addressed briefly in this section. Data used to prepare this section were taken from various sources, including the South Coast Air Quality Management District (SCAQMD) CEQA Air Quality Handbook, and the 2007 Air Quality Management Plan (AQMP), as amended. Full bibliographic entries for all reference materials are provided in Section 4.2.5 (References) at the end of this section. In addition, Appendix B (Air Quality Data) contains the air quality datasheet that was used to calculate data for this section.

All comments received in response to the IS/NOP circulated for the proposed project were taken in to consideration during preparation of this EIR, and if relevant, have been addressed in this section or others within this document.

4.2.1 Environmental Setting

Climate

The City of Huntington Beach is located within the South Coast Air Basin (Basin), named so because its geographical formation is that of a basin, with the surrounding mountains trapping the air and its pollutants in the valleys or basins below. This area includes all of Orange County and the nondesert portions of Los Angeles, San Bernardino, and Riverside Counties. The regional climate within the Basin is considered semi-arid and is characterized by warm summers, mild winters, infrequent seasonal rainfall, moderate daytime onshore breezes, and moderate humidity. The air quality within the Basin is influenced by a wide range of emissions sources such as dense population centers, heavy vehicular traffic and industry, as well as meteorology.

The annual average temperature varies little throughout the Basin, ranging from the low to middle 60s, measured in degrees Fahrenheit (°F). Coastal areas have a more pronounced oceanic influence, and show less variability in annual minimum and maximum temperatures than inland areas. The City of Huntington Beach is located in northern coastal Orange County, which is in the southern portion of the Basin. The annual average temperature in the City ranges from approximately 47.0°F in December and January to 73.5°F in August (WRCC n.d.).

The majority of annual rainfall in the Basin occurs between November and April. Summer rainfall is minimal and generally limited to scattered thundershowers in coastal regions and slightly heavier showers in the eastern portion of the Basin, along the coastal mountain ranges. Average rainfall in the City ranges from approximately 0.01 inch in July to 2.42 inches in February, with an average annual total of 11.20 inches (WRCC n.d.).

The Basin experiences a persistent temperature inversion, which is characterized by increasing temperature with increasing altitude. This inversion limits the vertical dispersion of air contaminants, holding them relatively near the ground. As the sun warms the ground and the lower air layer, the temperature of the lower air layer approaches the temperature of the base of the inversion (upper) layer until the inversion layer finally breaks, allowing vertical mixing with the lower layer.

The vertical dispersion of air contaminants in the Basin is also affected by wind conditions. The combination of stagnant wind conditions and low inversions produces the greatest pollutant concentrations. On days of no inversion or high wind speeds, ambient air pollutant concentrations are the lowest. During periods of low inversions and low wind speeds, air pollutants generated in urbanized areas in the Basin are transported predominantly on-shore into Riverside and San Bernardino Counties. The Santa Ana winds, which are strong and dry north or northeasterly winds that occur during the fall and winter months, also disperse air contaminants in the Basin. The Santa Ana conditions tend to last for several days at a time.

Air Quality Background

Air pollutant emissions within the Basin are generated by stationary and mobile sources. Stationary sources can be divided into two major subcategories: point and area sources. Point sources are usually subject to a permit to operate from the South Coast Air Quality Management District (SCAQMD), occur at specific identified locations, and are usually associated with manufacturing and industry. Examples of point sources are boilers or combustion equipment that produce electricity or generate heat, such as heating, ventilation, and air conditioning (HVAC) units. Area sources are widely distributed and produce many small emissions, and they do not require permits to operate from the SCAQMD. Examples of area sources include residential and commercial water heaters, painting operations, portable generators, lawn mowers, agricultural fields, landfills, and consumer products, such as barbeque lighter fluid and hairspray, the area-wide use of which contributes to regional air pollution. Mobile sources refer to emissions from motor vehicles, including tailpipe and evaporative emissions, and are classified as either on-road or off-road. On-road sources are those that are legally operated on roadways and highways. Off-road sources include aircraft, ships, trains, racecars, and construction vehicles. Mobile sources account for the majority of the air pollutant emissions within the Basin. Air pollutants can also be generated by the natural environment, such as when fine dust particles are pulled off the ground surface and suspended in the air during high winds.

Both federal and State governments have established ambient air quality standards for outdoor concentrations of specific pollutants, referred to as "criteria pollutants," in order to protect public health. The national and state ambient air quality standards have been set at concentration levels to protect the most sensitive persons from illness or discomfort with a margin of safety. Applicable ambient air quality

standards are identified later in this section under Thresholds of Significance. The SCAQMD is responsible for bringing air quality within the Basin into attainment with the national and state ambient air quality standards.

The criteria pollutants for which federal and State standards have been promulgated and that are most relevant to air quality planning and regulation in the Basin are ozone, carbon monoxide, fine suspended particulate matter, sulfur dioxide, and lead. In addition, toxic air contaminants are of concern in the Basin. Each of these is briefly described below.

- **Ozone (O_3)** is a gas that is formed when volatile organic compounds (VOCs) and nitrogen oxides (NOx), both byproducts of internal combustion engine exhaust, undergo slow photochemical reactions in the presence of sunlight. Ozone concentrations are generally highest during the summer months when direct sunlight, light wind, and warm temperature conditions are favorable to the formation of this pollutant.
- **Carbon Monoxide (CO)** is a colorless, odorless gas produced by the incomplete combustion of fuels. CO concentrations tend to be the highest during the winter morning, with little to no wind, when surface-based inversions trap the pollutant at ground levels. Because CO is emitted directly from internal combustion engines, unlike ozone, motor vehicles operating at slow speeds are the primary source of CO in the Basin. The highest ambient CO concentrations are generally found near congested transportation corridors and intersections.
- **Respirable Particulate Matter (PM_{10}) and Fine Particulate Matter ($PM_{2.5}$)** consists of extremely small, suspended particles or droplets 10 microns and 2.5 microns or smaller in diameter, respectively. Some sources of particulate matter, like pollen and windstorms, are naturally occurring. However, in populated areas, most particulate matter is caused by road dust, diesel soot, combustion products, abrasion of tires and brakes, and construction activities.
- **Nitrogen dioxide (NO_2)** is a nitrogen oxide compound that is produced by the combustion of fossil fuels, such as in internal combustion engines (both gasoline and diesel powered), as well as point sources, especially power plants. Of the seven types of nitrogen oxide compounds, NO_2 is the most abundant in the atmosphere. As ambient concentrations of NO_2 are related to traffic density, commuters in heavy traffic may be exposed to higher concentrations of NO_2 than those indicated by regional monitors.
- **Sulfur dioxide (SO_2)** is a colorless, extremely irritating gas or liquid. It enters the atmosphere as a pollutant mainly as a result of burning high sulfur-content fuel oils and coal and from chemical processes occurring at chemical plants and refineries. When sulfur dioxide oxidizes in the atmosphere, it forms sulfates (SO_4). Collectively, these pollutants are referred to as sulfur oxides (SO_X).
- **Lead (Pb)** occurs in the atmosphere as particulate matter. The combustion of leaded gasoline is the primary source of airborne lead in the Basin. The use of leaded gasoline is no longer permitted for on road motor vehicles, so the majority of such combustion emissions are associated with off-road vehicles such as racecars. Other sources of lead include the manufacturing and recycling of batteries, paint, ink, ceramics, ammunition, and the use of secondary lead smelters.
- **Toxic Air Contaminants (TACs)** refer to a diverse group of air pollutants that are capable of causing chronic (i.e., of long duration) and acute (i.e., severe but of short duration) adverse effects on human health. They include both organic and inorganic chemical substances that may be

emitted from a variety of common sources including gasoline stations, motor vehicles, dry cleaners, industrial operations, painting operations, and research and teaching facilities. Toxic air contaminants are different than "criteria" pollutants in that ambient air quality standards have not been established for them, largely because there are hundreds of air toxics and their effects on health tend to be local rather than regional. TACs primarily are concentrated within ¼ mile of the emissions source, and accepted practice is to analyze TACs when receptors are located within this ¼-mile radius.

State standards have been promulgated for other criteria air pollutants, including SO_4, hydrogen sulfide, Pb, and visibility-reducing particles. California also recognizes vinyl chloride as a TAC with an undetermined threshold level of exposure for adverse health effects. Vinyl chloride and hydrogen sulfide emissions are generally generated from mining, milling, refining, smelting, landfills, sewer plants, cement manufacturing, or the manufacturing or decomposition of organic matter. California standards for sulfate- and visibility-reducing particles are not exceeded anywhere in the Basin. Pb is typically only emitted during demolition of structures expected to include Pb-based paint and materials.

Health Effects of Air Pollutants

Ozone

Individuals exercising outdoors, children, and people with preexisting lung disease such as asthma and chronic pulmonary lung disease are considered to be the most susceptible sub-groups for ozone effects. Short-term exposures (lasting for a few hours) to ozone at levels typically observed in Southern California can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes. Elevated ozone levels are associated with increased school absences. In recent years, a correlation between elevated ambient ozone levels and increases in daily hospital admission rates, as well as mortality, has also been reported. An increased risk for asthma has been found in children who participate in multiple sports and live in high ozone communities.

Ozone exposure under exercising conditions is known to increase the severity of the above-mentioned observed responses. Animal studies suggest that exposure to a combination of pollutants that include ozone may be more toxic than exposure to ozone alone. Although lung volume and resistance changes observed after a single exposure diminish with repeated exposures, biochemical and cellular changes appear to persist, which can lead to subsequent lung structural changes.

Carbon Monoxide

Individuals with a deficient blood supply to the heart are the most susceptible to the adverse effects of CO exposure. The effects observed include earlier onset of chest pain with exercise, and electrocardiograph changes indicative of worsening oxygen supply to the heart.

Inhaled CO has no direct toxic effect on the lungs, but exerts its effect on tissues by interfering with oxygen transport and competing with oxygen to combine with hemoglobin present in the blood to form carboxyhemoglobin (COHb). Hence, conditions with an increased demand for oxygen supply can be

adversely affected by exposure to CO. Individuals most at risk include patients with diseases involving heart and blood vessels, fetuses, and patients with chronic hypoxemia (oxygen deficiency) as seen in high altitudes.

Reduction in birth weight and impaired neurobehavioral development have been observed in animals chronically exposed to CO, resulting in COHb levels similar to those observed in smokers. Recent studies have found increased risks for adverse birth outcomes with exposure to elevated CO levels. These include pre-term births and heart abnormalities.

Particulate Matter

A consistent correlation between elevated ambient fine particulate matter (PM_{10} and $PM_{2.5}$) levels and an increase in mortality rates, respiratory infections, number and severity of asthma attacks, and the number of hospital admissions has been observed in different parts of the United States and various areas around the world. In recent years, some studies have reported an association between long-term exposure to air pollution dominated by fine particles and increased mortality, reduction in life span, and an increased mortality from lung cancer.

Daily fluctuations in $PM_{2.5}$ concentration levels have also been related to hospital admissions for acute respiratory conditions in children, to school and kindergarten absences, to a decrease in respiratory lung volumes in normal children and to increased medication use in children and adults with asthma. Recent studies show lung function growth in children is reduced with long-term exposure to particulate matter.

The elderly, people with pre-existing respiratory or cardiovascular disease and children appear to be more susceptible to the effects of high levels of PM_{10} and $PM_{2.5}$.

Nitrogen Dioxide

Population-based studies suggest that an increase in acute respiratory illness, including infections and respiratory symptoms in children (not infants), is associated with long-term exposures to NO_2 at levels found in homes with gas stoves, which are higher than ambient levels found in Southern California. Increase in resistance to air flow and airway contraction is observed after short-term exposure to NO_2 in healthy subjects. Larger decreases in lung functions are observed in individuals with asthma or chronic obstructive pulmonary disease (e.g., chronic bronchitis, emphysema) than in healthy individuals, indicating a greater susceptibility of these sub-groups.

In animals, exposure to levels of NO_2 considerably higher than ambient concentrations results in increased susceptibility to infections, possibly due to the observed changes in cells involved in maintaining immune functions. The severity of lung tissue damage associated with high levels of ozone exposure increases when animals are exposed to a combination of ozone and NO_2.

Sulfur Dioxide

A few minutes of exposure to low levels of SO_2 can result in airway constriction in some asthmatics, all of whom are sensitive to its effects. In asthmatics, increase in resistance to airflow, as well as reduction in

breathing capacity leading to severe breathing difficulties, are observed after acute exposure to SO_2. In contrast, healthy individuals do not exhibit similar acute responses even after exposure to higher concentrations of SO_2.

Animal studies suggest that despite SO_2 being a respiratory irritant, it does not cause substantial lung injury at ambient concentrations. However, very high levels of exposure can cause lung edema (fluid accumulation), lung tissue damage, and sloughing off of cells lining the respiratory tract.

Some population-based studies indicate that the mortality and morbidity effects associated with fine particles show a similar association with ambient SO_2 levels. In these studies, efforts to separate the effects of SO_2 from those of fine particles have not been successful. It is not clear whether the two pollutants act synergistically or if one pollutant alone is the predominant factor.

Lead

Fetuses, infants, and children are more sensitive than others to the adverse effects of Pb exposure. Exposure to low levels of Pb can adversely affect the development and function of the central nervous system, leading to learning disorders, distractibility, inability to follow simple commands, and lower intelligence quotient. In adults, increased Pb levels are associated with increased blood pressure.

Pb poisoning can cause anemia, lethargy, seizures, and death, although it appears that there are no direct effects of Pb on the respiratory system. Pb can be stored in the bone from early age environmental exposure, and elevated Pb levels in the blood can occur due to breakdown of bone tissue during pregnancy, hyperthyroidism (increased secretion of hormones from the thyroid gland) and osteoporosis (breakdown of bony tissue). Fetuses and breast-fed babies can be exposed to higher levels of Pb because of previous environmental Pb exposure of their mothers.

Toxic Air Contaminant Emissions

TACs are another class of air pollutants known to be hazardous to health even in small quantities. More specifically, TACs are airborne substances that are capable of causing chronic (i.e., of long duration) and acute (i.e., severe but of short duration) adverse effects on human health. TACs may be emitted from a variety of common sources including gasoline stations, motor vehicles, dry cleaners, industrial operations, painting operations, and research and teaching facilities. EPA and ARB studies have shown that particulate matter from diesel engines (DPM) and five other TACs (i.e., acrolein, acetaldehyde, formaldehyde, benzene, and 1.3-butadiene) emitted from the State's motor vehicle fleet are responsible for much of the overall cancer risk and other chronic or acute adverse health effects from TAC in California(Caltrans 2006) (California ARB 2005).

Odors

The science of odor as a health concern is still new. The adverse effects of odors on residential areas and other sensitive receptors, such as hospitals, day-care centers, and schools warrant the closest scrutiny; but consideration should also be given to other land use types where people congregate, such as recreational facilities, worksites, and commercial areas. Although the relative distance to a particular receptor(s)

ultimately determines if a project has significant odor impacts, a number of operational and environmental factors influence the extent to which those receptors are affected by odors.

The nature of operational activities and the types of odiferous compounds they produce (e.g., odor emissions from a wastewater treatment process, rendering plant, or coffee roaster) can affect the number of complaints differently depending on the type of odor produced. For example, odiferous compounds generated by a wastewater treatment plant or landfill are more likely to be perceived more offensive to receptors than those generated by a coffee roaster or bakery.

Meteorological conditions, such as those described above, affect the dispersion of odor emissions, which determines the exposure concentration of odiferous compounds at receptors. The predominant wind direction in an area influences which receptors are exposed to the odiferous compounds generated by a nearby source. Receptors located upwind from a large odor source may not be affected due the produced odiferous compounds being dispersed away from the receptors. Wind speed also influences the degree to which odor emissions are dispersed away from any area.

Existing Regional Air Quality

Measurements of ambient concentrations of the criteria pollutants are used by the United States Environmental Protection Agency (U.S. EPA) and the ARB to assess and classify the air quality of each air basin, county, or, in some cases, a specific urbanized area. The classification is determined by comparing actual monitoring data with national, federal, and state standards. If a pollutant concentration in an area is lower than the standard, the area is classified as being in "attainment" in that area. If the pollutant exceeds the standard, the area is classified as a "nonattainment" area. If there is not enough data available to determine whether the standard is exceeded in an area, the area is designated "unclassified."

The entire Basin is designated as a national-level nonattainment area for CO, PM_{10}, and $PM_{2.5}$. It is also a national-level extreme nonattainment area for ozone, meaning that national ambient air quality standards are not expected to be met for more than 17 years. The Basin is also a state-level nonattainment area for ozone, PM_{10}, and $PM_{2.5}$. As of July 2007, it is in attainment of both the national and state ambient air quality standards for SO_2, lead, and NO_2, which is a pure form of NO_X, and is in state attainment for CO.

The SCAQMD divides the Basin into thirty-eight source receptor areas (SRAs) in which thirty-two monitoring stations operate to monitor the various concentrations of air pollutants in the region. The City of Huntington Beach is located within SRA 18, which covers the Northern Coastal Orange County area. The ARB also collects ambient air quality data through a network of air monitoring stations throughout the state. These data are summarized annually and are published in the ARB's California Air Quality Data Summaries. The Costa Mesa-Mesa Verde Drive monitoring station is the nearest monitoring station to the project site, and is approximately seven miles to the east of the proposed project site. This station currently monitors emission levels of ozone, CO, NO_2, and SO_2 but does not monitor the pollutant levels of PM_{10} and $PM_{2.5}$.

Table 4.2-1 (Summary of Ambient Air Quality in the Proposed Project Vicinity) identifies the national and state ambient air quality standards for relevant air pollutants, along with the ambient pollutant concentrations that have been measured at the North Coastal Orange County monitoring station through the period from 2005 to 2007.

Table 4.2-1 Summary of Ambient Air Quality in the Proposed Project Vicinity

Air Pollutants Monitored Within SRA 18—Northern Coastal Orange County Area	*Year* 2005	2006	2007
Ozone (O_3)			
Maximum 1-hour concentration measured	0.085 ppm[a]	0.070 ppm	0.082 ppm
Number of days exceeding national 0.12 ppm[a] 1-hour standard	0	0	0
Number of days exceeding state 0.09 ppm 1-hour standard	2	0	0
Maximum 8-hour concentration measured	0.073 ppm	0.064 ppm	0.072 ppm
Number of days exceeding national 0.084 ppm 8-hour standard[b]	0	0	1
Nitrogen Dioxide (NO_2)			
Maximum 1-hour concentration measured	0.09 ppm	0.10 ppm	0.07 ppm
Number of days exceeding state 0.25 ppm 1-hour standard	0	0	0
Annual average	0.013 ppm	0.015 ppm	0.013 ppm
Does measured annual average exceed national 0.0534 ppm annual average standard?	No	No	No
Carbon Monoxide (CO)			
Maximum 1-hour concentration measured	5 ppm	4 ppm	5 ppm
Number of days exceeding national 35.0 ppm 1-hour standard	0	0	0
Number of days exceeding state 20.0 ppm 1-hour standard	0	0	0
Maximum 8-hour concentration measured	3.2 ppm	3.0 ppm	3.1 ppm
Number of days exceeding national 9.5 ppm 8-hour standard	0	0	0
Number of days exceeding state 9.0 ppm 8-hour standard	0	0	0
Sulfur Dioxide (SO_2)			
Maximum 24-hour concentration measured	0.008 ppm	0.004 ppm	0.004 ppm
Number of days exceeding national 0.14 ppm 24-hour standard	0	0	0
Number of days exceeding state 0.04 ppm 24-hour standard	0	0	0

SOURCE: SCAQMD. Air Quality Data Tables – 2005, 2006, 2007. http://www.aqmd.gov/smog/historicaldata.htm (accessed 6/24/09)

PM_{10} and $PM_{2.5}$ concentrations were not measured in the North Coastal Orange County monitoring station or in SRA 18.

a. ppm = parts by volume per million of air.

b. U.S. EPA revised the federal 8-hour ozone standard from 0.084 ppm to 0.075 ppm, effective May 27, 2008. Because the data predates the revised threshold, it is not applied to the 2005-2007 data.

According to air quality data shown in Table 4.2-1, the national 1-hour ozone standard has not been exceeded over the last three years in SRA 18, while the state 1-hour ozone standard was exceeded a total of two days over the last three years. The national 8-hour ozone standard was exceeded on one day over the last three years. No national or state standards for CO, NO_2, or SO_2 have been exceeded over the last three years within SRA 18.

Local Air Quality

Motor vehicles are the primary source of pollutants in the project site vicinity. Local emissions sources also include stationary activities, such as space and water heating, landscape maintenance from leaf blowers and lawn mowers, consumer products, and mobile sources. Traffic-congested roadways and intersections have the potential to generate localized high levels of CO. Localized areas where ambient concentrations exceed national and/or state standards for CO are termed "CO hotspots." Section 9.l4 of the SCAQMD's CEQA Air Quality Handbook identifies CO as a localized problem requiring additional analysis when a project is likely to subject sensitive receptors to CO hotspots. The SCAQMD defines typical sensitive receptors as residences, schools, playgrounds, childcare centers, athletic facilities, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes. Nearby sensitive receptors to the Specific Plan area would be the residences surrounding the project area.

The SCAQMD recommends the use of CALINE4, a dispersion model for predicting CO concentrations, as the preferred method of estimating pollutant concentrations at sensitive receptors near congested roadways and intersections. For each intersection analyzed, CALINE4 adds roadway-specific CO emissions calculated from peak hour turning volumes to ambient CO air concentrations. For this analysis, localized CO concentrations were calculated based on a simplified CALINE4 screening procedure developed by the Bay Area Air Quality Management District and accepted by the SCAQMD. The simplified model is intended as a screening analysis, which identifies a potential CO hotspot. This methodology assumes worst-case conditions and provides a screening of maximum, worst-case CO concentrations.

Maximum existing CO concentrations were calculated for the intersections evaluated in the project traffic report prepared by Austin-Foust Associates for the proposed project (Appendix F1) that currently operate at Level of Service (LOS) D or worse, as these intersections indicated the locations of highest potential CO concentrations due to vehicle idling. Fourteen study intersections currently operate at LOS D or worse. The results of these calculations are presented in Table 4.2-2 (Existing Localized Carbon Monoxide Concentrations) for representative receptor locations at roadway edge, 25 feet, and 50 feet from each roadway. These distances were selected because they represent locations where a person may be living or working for one to eight hours at a time. The National 1-hour standard is 35.0 parts per million (ppm), and the state 1-hour standard is 20.0 ppm. The 8-hour national and state standards are both 9.0 ppm.

As shown in Table 4.2-2, under worst-case conditions, existing CO concentrations in the project vicinity do not exceed national or state 1-hour and 8-hour ambient air quality standards. Therefore, CO hotspots do not currently exist near these intersections.

Table 4.2-2 Existing Localized Carbon Monoxide Concentrations

Intersection	CO Concentrations in Parts per Million[a,b]					
	Roadway Edge		25 Feet		50 Feet	
	1-Hour	8-Hour	1-Hour	8-Hour	1-Hour	8-Hour
Goldenwest Street and Bolsa Avenue	6.6	4.2	6.0	3.8	5.9	3.7
Beach Boulevard and Edinger Avenue	7.0	4.5	6.4	4.1	6.1	3.9
Beach Boulevard and Warner Avenue	6.9	4.4	6.3	4.0	6.1	3.9
Newland Street and Warner Avenue	6.2	4.0	5.8	3.7	5.7	3.6
Beach Boulevard and Slater Avenue	6.5	4.1	6.0	3.8	5.8	3.7
Beach Boulevard and Talbert Avenue	6.6	4.2	6.1	3.9	5.9	3.7
Beach Boulevard and Ellis Avenue	6.4	4.1	6.0	3.8	5.8	3.7
Beach Boulevard and Garfield Avenue	6.4	4.1	5.9	3.8	5.8	3.6
Beach Boulevard and Yorktown Avenue	6.3	4.0	5.9	3.7	5.7	3.6
Beach Boulevard and Adams Avenue	6.2	4.0	5.8	3.7	5.7	3.6
Brookhurst Street and Adams Avenue	6.6	4.2	6.1	3.8	5.9	3.7
Beach Boulevard and Atlanta Avenue	5.8	3.7	5.6	3.5	5.5	3.4
Beach Boulevard and Bolsa Avenue	6.8	4.3	6.2	3.9	6.0	3.8
Beach Boulevard and McFadden Avenue	6.7	4.3	6.2	3.9	6.0	3.8

SOURCE: PBS&J, 2009. Calculation sheets are provided in Appendix B.

a. National 1-hour standard is 35.0 parts per million. State 1-hour standard is 20.0 parts per million.

b. National 8-hour standard is 9.0 parts per million. State 8-hour standard is 9.0 parts per million.

4.2.2 Regulatory Framework

Air quality within the Basin is addressed through the efforts of various federal, State, regional, and local government agencies. These agencies work jointly, as well as individually, to improve air quality through legislation, regulations, planning, policy-making, education, and a variety of programs. The agencies responsible for improving the air quality within the Basin are discussed below.

Federal

United States Environmental Protection Agency

The U.S. Environmental Protection Agency (EPA) is responsible for setting and enforcing the National Ambient Air Quality Standards for atmospheric pollutants. It regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, and certain locomotives.

As part of its enforcement responsibilities, the EPA requires each state with federal nonattainment areas to prepare and submit a State Implementation Plan (SIP) that demonstrates the means to attain the national standards. The SIP must integrate federal, state, and local plan components and regulations to identify specific measures to reduce pollution, using a combination of performance standards and market-based programs within the time frame identified in the SIP.

State

California Air Resources Board

As part of the California EPA, the ARB is responsible for the coordination and administration of both federal and state air pollution control programs within California. In this capacity, the ARB conducts research, sets California Ambient Air Quality Standards, compiles emission inventories, develops suggested control measures, provides oversight of local programs, and prepares the SIP. The ARB establishes emissions standards for motor vehicles sold in California, consumer products (e.g., hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions.

Regional

South Coast Air Quality Management District

The SCAQMD is the agency principally responsible for comprehensive air pollution control in the Basin. To that end, the SCAQMD, a regional agency, works directly with the Southern California Association of Governments (SCAG), county transportation commissions, and local governments and cooperates actively with all federal and state government agencies. The SCAQMD develops rules and regulations, establishes permitting requirements for stationary sources, inspects emissions sources, and enforces such measures through educational programs or fines, when necessary.

The SCAQMD is directly responsible for reducing emissions from stationary (area and point), mobile, and indirect sources. It has responded to this requirement by preparing a sequence of AQMPs. The most recent of these was adopted by the Governing Board of the SCAQMD on June 1, 2007, to update and revise the previous 2003 AQMP. The 2007 AQMP was prepared to comply with the federal and State Clean Air Acts and amendments, to accommodate growth, to reduce the high pollutant levels in the Basin, to meet federal and State ambient air quality standards, and to minimize the fiscal impact that pollution control measures have on the local economy. The purpose of the 2007 AQMP for the Basin is to set forth a comprehensive program that will lead the area into compliance with all federal and State air quality planning requirements. Compared with the 2003 AQMP, the 2007 AQMP utilizes revised emissions inventory projections that use 2003 as the base year, relies on the ARB on-road motor vehicle emissions model EMFAC2007 and the SCAG 2004 Regional Transportation Plan (RTP) forecast assumptions, updates the attainment demonstration for the federal standards for ozone, replaces the 2003 attainment demonstration for the federal CO standard and provides a basis for a maintenance plan for CO for the future, and updates the maintenance plan for the federal NO_2 standard that the Basin has met since 1992. In terms of working towards ozone attainment, the 2007 AQMP builds upon the 2003 AQMP. In terms of PM_{10} and $PM_{2.5}$ attainment, the PM_{10} and $PM_{2.5}$ control strategy in the 2007 AQMP has augmented the 2003 AQMP with a number of additional PM_{10} and $PM_{2.5}$ control measures.

The 2007 AQMP also addresses several State and federal planning requirements and incorporates significant new scientific data, primarily in the form of updated emissions inventories, ambient measurements, new meteorological episodes, and new air quality modeling tools. Specifically, the 2007

AQMP is designed to satisfy the California *Clean Air Act* (CCAA) tri-annual update requirements and fulfill the SCAQMD's commitment to update transportation emission budgets based on the latest approved motor vehicle emissions model and planning assumptions.

The 2007 AQMP control measures consist of (1) the District's Stationary and Mobile Source Control Measures, (2) ARB's Proposed State Strategy, (3) District Staff's Proposed Policy Options to Supplement ARB's Control Strategy, and (4) Regional Transportation Strategy and Control Measures provided by SCAG. Overall, there are thirty-one stationary and thirty mobile source measures that are defined under the 2007 AQMP. These measures primarily rely on the traditional command-and-control approach facilitated by market incentive programs, as well as advanced technologies expected to be implemented in the immediate future. The proposed control measures in the 2007 AQMP are based on implementation of all feasible control measures through the application of available technologies and management practices, as well as advanced technologies and control methods. The basic principles used in designing the District's control strategy were to (1) meet at least the same overall remaining emissions target of the 2003 SIP; (2) replace long-term measures with more specific near-term measures, where feasible; and (3) develop new short-term control measures and long-term strategies to achieve the needed reductions for attainment demonstration. Principal control measures of the 2007 AQMP focus on adoption of new regulations or enhancement of existing 2003 AQMP regulations for stationary sources and implementation/facilitation of advanced transportation technologies (i.e., zero emission and alternative-fueled vehicles and infrastructure; fuel cell vehicles; heavy-duty electric and hybrid-electric vehicles; and both capital and noncapital transportation improvements). Capital improvements consist of high-occupancy vehicle (HOV) lanes; transit improvements; traffic flow improvements; park-and-ride and intermodal facilities; and freeway, bicycle, and pedestrian facilities. Noncapital improvements consist of rideshare matching and transportation demand management activities derived from the congestion management program.

Programs set forth in the 2007 AQMP require the cooperation of all levels of government: local, regional, State, and federal. Each level is represented in the Plan by the appropriate agency or jurisdiction that has the authority over specific emissions sources. Accordingly, each agency or jurisdiction is associated with specific planning and implementation responsibilities.

Local

City of Huntington Beach General Plan

Local jurisdictions, such as the City of Huntington Beach, have the authority and responsibility to reduce air pollution through their police power and decision-making authority. Specifically, the City is responsible for the assessment and mitigation of air emissions resulting from its land use decisions. The City of Huntington Beach is also responsible for the implementation of transportation control measures as outlined in the AQMP. Examples of such measures include bus turnouts, energy-efficient streetlights, and synchronized traffic signals. In accordance with CEQA requirements and the CEQA review process, the City assesses the air quality impacts of new development projects, requires mitigation of potentially significant air quality impacts by conditioning discretionary permits, and monitors and enforces implementation of such mitigation.

In accordance with CEQA requirements, the City does not, however, have the expertise to develop plans, programs, procedures, and methodologies to ensure that air quality within the City and region will meet federal and state standards. Instead, the City relies on the expertise of the SCAQMD and utilizes the CEQA Air Quality Handbook as the guidance document for the environmental review of plans and development proposals within its jurisdiction. Applicable goals, objectives, and policies from the Air Quality Element of the General Plan are identified below.

Goal AQ 1 Improve regional air quality by a) decreasing reliance on single occupancy vehicular trips, b) increasing efficiency of transit, c) shortening vehicle trips through a more efficient jobs-housing balance and a more efficient land use pattern, and d) increasing energy efficiency.

Objective AQ 1.8 Reduce particulate emissions from paved and unpaved roads, parking lots, and road and building construction by 50 percent by 2000 as required by Southern California Air Quality Management District.

Policy AQ 1.8.1 Continue to enforce construction site guidelines that require truck operators to minimize particulate emission.

Policy AQ 1.8.2 Require installation of temporary construction facilities (such as wheel washers) and implementation of construction practices that minimize dirt and soil transfer onto public roadways.

Policy AQ 1.8.3 Encourage developers to maintain the natural topography, to the maximum extent possible, and limit the amount of land clearing, blasting, grading, and ground excavation operations needed for development.

Objective AQ 1.9 Minimize sensitive uses (residential, hospitals, schools, etc.) exposure to toxic emissions.

Policy AQ 1.9.1 Assure that sufficient buffer areas exist between a sensitive use and a potential toxic emission source.

Objective AQ 1.10 Reduce the amount of energy consumed by commercial uses by 15 percent by 2000 and 30 percent by 2010. Reduce the amount of energy consumed by residential use by 4.5 percent by 1994 and 30 percent by 2010 as required by Southern California Air Quality Management District.

Policy AQ 1.10.1 Continue to require the utilization and installation of energy conservation features in all new construction.

Consistency Analysis

The proposed Specific Plan would allow for the development of mixed uses along Beach Boulevard and Edinger Avenue. One of the primary objectives of the proposed project is to focus development opportunities within the Specific Plan area on mixed-use development and the improvement of alternative transportation and pedestrian opportunities. As stated below and shown in Section 4.13 (Transportation/Traffic), the proposed Specific Plan would reduce the number of vehicle trips within the Specific Plan compared to build-out of the uses allowed under the current General Plan designations and zoning. Therefore, the average daily VMT, and thereby emissions, associated with uses within the Specific Plan area would be expected to also decrease compared to General Plan build-out for the Specific Plan area. Further, incorporation of the mitigation measures listed below and in Section 4.14 (Utilities and Service Systems) and Section 4.15 (Climate Change) would assist in the reduction of nonvehicular emissions. As such, the proposed project would be considered consistent with the goals, objectives, and polices of the General Plan.

4.2.3 Project Impacts and Mitigation

Analytic Method

The analysis in this section focuses on the nature and magnitude of the change in the air quality environment due to implementation of the proposed project. Air pollutant emissions associated with the proposed project would result from construction activities, operation of uses allowed under the proposed Specific Plan, and project-related traffic volumes. Air quality impacts are also estimated in relationship to the nearest schools, hospitals, convalescent homes, and sensitive uses. The health of people on these properties may be adversely impacted if air emissions exceed a level deemed significant by federal and state agencies. The net increase in project site emissions generated by these activities and other secondary sources have been quantitatively estimated and compared to thresholds of significance recommended by the SCAQMD.

Construction Emissions

Construction emissions are calculated by estimating the types and number of pieces of equipment that would be used to grade, excavate, and surcharge the project site, and construct the uses allowed under the proposed Specific Plan. Construction emissions are analyzed according to the thresholds established by the SCAQMD. The construction activities associated with the proposed mixed-use project would temporarily increase diesel emissions, and would generate particulate matter (dust). Construction equipment within the project site that would generate VOC and NO_X pollutants could include graders, dump trucks, and bulldozers. Some of this equipment would be used during grading activities as well as when the structure is developed on the project site. It is assumed that all construction equipment used would be diesel-powered.

Operational Emissions

Operational emissions associated with the proposed project are estimated using the URBEMIS 2007 computer model developed for the ARB and information provided in the traffic study prepared by Austin-Foust Associates for the proposed project. Operational emissions would be comprised of mobile source emissions and area source emissions. Mobile source emissions would be generated by any increase in motor vehicle trips to and from new uses within the Specific Plan area. Area source emissions would be generated by natural gas consumption for space and water heating, and landscape maintenance equipment. To determine if an air quality impact would occur, the increase in emissions was compared with the SCAQMD's recommended thresholds.

Localized CO Concentrations for Operation

The SCAQMD recommends the use of CALINE4, a dispersion model for predicting CO concentrations, as the preferred method of estimating pollutant concentrations at sensitive receptors near congested roadways and intersections. For each intersection analyzed, CALINE4 adds roadway-specific CO emissions calculated from peak-hour turning volumes to the existing ambient CO air concentrations. For this analysis, CO concentrations were calculated based on a simplified CALINE4 screening procedure developed by the Bay Area Air Quality Management District and allowed by the SCAQMD and traffic volumes provided in the traffic report, which is included in its entirety as Appendix F1 of this EIR. The simplified model is intended as a screening analysis in order to identify a potential CO hotspot. This methodology assumes worst-case conditions and provides a screening of maximum, worst-case CO concentrations. For this analysis, CO concentrations from roadway intersections determined to operate at LOS D, E, or F at buildout (2016 and/or 2030 conditions) of the Specific Plan were analyzed. All other roadway intersections are expected to generate lower CO concentrations that would not exceed the federal or state 1-hour and 8-hour standards and, as such, were not modeled.

Localized Significance Thresholds for Construction

In addition to the daily air emissions thresholds established by SCAQMD, potential localized impacts for certain criteria pollutants with regard to project-related emissions are calculated using a separate method. LSTs represent the maximum emissions from a project that are not expected to cause or contribute to an exceedance of the most stringent applicable federal or State ambient air quality standard, and are developed based on the ambient concentrations of that pollutant for each source receptor area and distance to the nearest sensitive receptor. For project sites larger than 5 acres, the SCAQMD recommends that dispersion modeling be performed for CO, NO_x, PM_{10}, and $PM_{2.5}$. Currently, dispersion modeling is done on a voluntary basis to determine whether or not a project may generate significant adverse localized air quality impacts. Dispersion modeling was not conducted for the proposed Specific Plan due to the lack of specificity regarding construction of the uses under the proposed Specific Plan. Subsequent project-level environmental analysis for projects within the Specific Plan area will include dispersion modeling results specific to each project site.

Thresholds of Significance

The following thresholds of significance are based on Appendix G of the 2009 CEQA Guidelines. For purposes of this EIR, implementation of the proposed project may have a significant adverse impact on air quality if it would:

- Conflict with or obstruct implementation of the applicable air quality plan
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or State ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)
- Expose sensitive receptors to substantial pollutant concentrations
- Create objectionable odors affecting a substantial number of people

As the agency principally responsible for comprehensive air pollution control in the Basin, the SCAQMD recommends that projects should be evaluated in terms of air pollution control thresholds established by the SCAQMD and published in the CEQA Air Quality Handbook. These thresholds were developed by the SCAQMD to provide quantifiable levels to which all projects can be compared. The City utilizes the SCAQMD's thresholds that are in effect at the time that development is proposed in order to assess the significance of quantifiable impacts. The following quantifiable thresholds are currently recommended by the SCAQMD. The City has identified these SCAQMD thresholds as appropriate for the determination of the significance of impacts.

Construction Emissions

The SCAQMD currently recommends that projects with construction-related emissions that exceed any of the following emissions thresholds should be considered significant. The SCAQMD also recommends that any construction-related emissions from individual development projects that exceed these thresholds be considered cumulatively considerable. These thresholds apply to individual development projects only; they do not apply to the emissions collectively generated by related projects:

- 550 pounds per day of CO
- 75 pounds per day of VOC
- 100 pounds per day of NO_X
- 150 pounds per day of SO_X
- 150 pounds per day of PM_{10}
- 55 pounds per day of $PM_{2.5}$

Operational Emissions

The SCAQMD currently recommends that projects with operational emissions that exceed any of the following emissions thresholds should be considered significant. The SCAQMD also recommends that any operational emissions from individual projects that exceed these thresholds be considered

cumulatively considerable. These thresholds apply to individual development projects only; they do not apply to the emissions collectively generated by related projects:

- 550 pounds per day of CO
- 55 pounds per day of VOC
- 55 pounds per day of NO_X
- 150 pounds per day of SO_X
- 150 pounds per day of PM_{10}
- 55 pound per day of $PM_{2.5}$

In order to assess cumulative impacts, the SCAQMD recommends that projects be evaluated to determine whether they would be consistent with 2007 AQMP performance standards and project-specific emissions thresholds. In the case of the proposed project, air pollutant emissions would be considered to be cumulatively considerable if the new sources of emissions exceed SCAQMD project-specific emissions thresholds.

Effects Not Found to Be Significant

Although the Initial Study determined that the threshold associated with objectionable odors did not require further analysis in the EIR, it is included in the impacts discussion below because it was not identified as "No Impact."

Impacts and Mitigation

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

Impact 4.2-1 **The proposed project would provide new sources of regional air emissions but would not conflict with or obstruct implementation of the SCAQMD Air Quality Management Plan. This impact is considered *less than significant*.**

The 2007 AQMP, discussed previously, was prepared to accommodate growth, to reduce the high levels of pollutants within the areas under the jurisdiction of SCAQMD, and to return clean air to the region. Projects that are considered to be consistent with the AQMP would not interfere with attainment, because this growth is included in the projections used to formulate the AQMP. Therefore, projects, uses, and activities that are consistent with the applicable assumptions used in the development of the AQMP would not jeopardize attainment of the air quality levels identified in the AQMP, even if they exceed the SCAQMD's recommended daily emissions thresholds.

Projects that are consistent with the projections of population forecasts identified in the Growth Management chapter of SCAG's Regional Comprehensive Plan and Guide (RCPG) are considered consistent with the AQMP growth projections. This is because the Growth Management chapter of the RCPG forms the basis of the land use and transportation control portions of the 2007 AQMP. Implementation of the proposed Specific Plan would introduce new residential housing that would

directly induce population growth within the project area. As a result, the proposed Specific Plan would result in an estimated direct population increase of 17,024 residents. Based on SCAG population projection for 2030 (as shown in Table 4.10-1), the City's population is anticipated to increase by approximately 22,795 residents through build-out of the project.[4] As implementation of the Specific Plan would result in increased population that is within that projected for the City of Huntington Beach, the proposed residential development would not be expected to result in an exceedance by the City for SCAG population projections. Further, the City is located in a highly urbanized area and large plots of undeveloped land do not exist within City limits. As a result, the majority of development would come from smaller redevelopment projects, and other larger developments that could result in substantial increases in population are not anticipated. Therefore, as the AQMP is based on SCAG growth projections, the proposed project would be consistent with the 2007 AQMP population growth projections.

Based on the consistency of the proposed Specific Plan with current SCAG projections and AQMP forecasts, as discussed above, the proposed project would not impair implementation of the AQMP, and this impact would be ***less than significant***. No mitigation measures are required.

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

Impact 4.2-2 **Implementation of the proposed project could violate an air quality standard and contribute substantially to an existing or projected air quality violation for criteria air pollutants. Even with mitigation measures, this impact is considered *significant and unavoidable*.**

Construction

During construction of individual projects, four basic types of activities could potentially occur and generate emissions. First, demolition of existing structures within the Specific Plan area could occur and some debris from the demolished buildings would be exported from the area. Second, individual sites would be prepared, excavated, and graded to accommodate new building foundations and new parking, and project sites would be graded. Next, projects would be constructed. Finally, new landscaping would be planted around new facilities and the facilities would be readied for use, including the application of architectural coatings and the paving of surfaces, including new roadways and surface parking. The thresholds of significance that have been recommended by the SCAQMD for construction emissions were developed for individual development projects and are based on the SCAQMD's New Source Review emissions standards for individual sources.

Many of the individual projects that could be developed under the proposed project would be small and thus would not generate construction emissions that exceed the SCAQMD's recommended thresholds of significance. To the extent that construction of these individual projects overlaps, then the combined emissions from these small, individual projects could exceed the recommended SCAQMD thresholds, particularly for CO, NO_X, and PM_{10}, for which the Basin is currently in nonattainment. In addition to the

[4] SCAG 2030 population (224,788) - DOF 2008 population (201,993) = 22,795 persons

smaller-scale projects, some of the individual development projects could also be large enough to generate construction emissions that exceed the SCAQMD thresholds. As the specific size, location, and construction techniques and scheduling that will be utilized for each individual development project occurring within the Specific Plan area from implementation of the proposed project is not currently known, the provision of precise emission estimates for each individual development project, or a combination of these projects, is not currently feasible and would require the City to speculate regarding such potential future projects' potential environmental impacts. The City is not required to engage in such speculation (CEQA Guidelines, Section 15145). Nevertheless, construction activities conducted as part of the implementation of the Specific Plan could exceed SCAQMD thresholds and result in a potentially significant impact.

Mitigation measures MM4.2-1 through MM4.2-11 would be implemented to reduce these emissions. While implementation of mitigation measures MM4.2-1 through MM4.2-11 would reduce construction-related emissions, they may not reduce these emissions to levels below the SCAQMD thresholds, as the amount of emissions generated for each project would vary depending on its size, the land area that would need to be disturbed during construction, and the length of the construction schedule, as well as the number of developments being constructed concurrently as part of the Specific Plan. Under these conditions, no further feasible mitigation measures are available and this impact would be considered ***significant and unavoidable***. The City will make site-specific determinations of significance during the review of these individual development projects to determine which projects would result in construction emissions that exceed significance thresholds.

The following mitigation measures shall be implemented:

MM4.2-1 *Project applicants shall require by contract specifications that all diesel-powered equipment used will be retrofitted with after-treatment products (e.g., engine catalysts). Contract specifications shall be included in project construction documents, which shall be reviewed by the City of Huntington Beach prior to issuance of a grading permit.*

MM4.2-2 *Project applicants shall require by contract specifications that all heavy-duty diesel-powered equipment operating and refueling at the project site use low-NO_X diesel fuel to the extent that it is readily available and cost effective (up to 125 percent of the cost of California Air Resources Board diesel) in the South Coast Air Basin (this does not apply to diesel-powered trucks traveling to and from the project site). Contract specifications shall be included in project construction documents, which shall be reviewed by the City of Huntington Beach prior to issuance of a grading permit.*

MM4.2-3 *Project applicants shall require by contract specifications that construction equipment engines be maintained in good condition and in proper tune per manufacturer's specification for the duration of construction. Contract specifications shall be included in project construction documents, which shall be reviewed by the City of Huntington Beach prior to issuance of a grading permit.*

MM4.2-4 *Project applicants shall require by contract specifications that construction operations rely on the electricity infrastructure surrounding the construction site rather than electrical generators powered by internal combustion engines. Contract specifications shall be included in project construction documents, which shall be reviewed by the City of Huntington Beach prior to issuance of a grading permit.*

MM4.2-5 *As required by South Coast Air Quality Management District Rule 403—Fugitive Dust, all construction activities that are capable of generating fugitive dust are required to implement dust control measures during each phase of project development to reduce the amount of particulate matter entrained in the ambient air. These measures include the following:*

- *Application of soil stabilizers to inactive construction areas*
- *Quick replacement of ground cover in disturbed areas*
- *Watering of exposed surfaces three times daily*
- *Watering of all unpaved haul roads three times daily*
- *Covering all stock piles with tarp*
- *Reduction of vehicle speed on unpaved roads*
- *Post signs on-site limiting traffic to 15 miles per hour or less*
- *Sweep streets adjacent to the project site at the end of the day if visible soil material is carried over to adjacent roads*
- *Cover or have water applied to the exposed surface of all trucks hauling dirt, sand, soil, or other loose materials prior to leaving the site to prevent dust from impacting the surrounding areas*
- *Install wheel washers where vehicles enter and exit unpaved roads onto paved roads to wash off trucks and any equipment leaving the site each trip*

MM4.2-6 *Project applicants shall require by contract specifications that construction-related equipment, including heavy-duty equipment, motor vehicles, and portable equipment, shall be turned off when not in use for more than 30 minutes. Diesel-fueled commercial motor vehicles with gross vehicular weight ratings of greater than 10,000 pounds shall be turned off when not in use for more than 5 minutes. Contract specifications shall be included in the proposed project construction documents, which shall be approved by the City of Huntington Beach.*

MM4.2-7 *Project applicants shall require by contract specifications that construction parking be configured to minimize traffic interference during the construction period and, therefore, reduce idling of traffic. Contract specifications shall be included in the proposed project construction documents, which shall be approved by the City of Huntington Beach.*

MM4.2-8 *Project applicants shall require by contract specifications that temporary traffic controls are provided, such as a flag person, during all phases of construction to facilitate smooth traffic flow. Contract specifications shall be included in the proposed project construction documents, which shall be approved by the City of Huntington Beach.*

MM4.2-9 *Project applicants shall require by contract specifications that construction activities that affect traffic flow on the arterial system be scheduled to off-peak hours (10:00 A.M. to 4:00 P.M.). Contract specifications shall be included in the proposed project construction documents, which shall be approved by the City of Huntington Beach.*

MM4.2-10 *Project applicants shall require by contract specifications that dedicated on-site and off-site left-turn lanes on truck hauling routes be utilized for movement of construction trucks and equipment on site*

and off site to the extent feasible during construction activities. Contract specifications shall be included in the proposed project construction documents, which shall be approved by the City of Huntington Beach.

MM4.2-11 *Upon issuance of building or grading permits, whichever is issued earlier, notification shall be mailed to owners and occupants of all developed land uses within 300 feet of a project site within the Specific Plan providing a schedule for major construction activities that will occur through the duration of the construction period. In addition, the notification will include the identification and contact number for a community liaison and designated construction manager that would be available on site to monitor construction activities. The construction manager shall be responsible for complying with all project requirements related to PM_{10} generation. The construction manager will be located at the on-site construction office during construction hours for the duration of all construction activities. Contract information for the community liaison and construction manager will be located at the construction office, City Hall, the police department, and a sign on site.*

In addition, emission levels of VOCs, which are a precursor for ozone, would potentially exceed SCAQMD significance thresholds during the application of architectural coatings (paint and primer) during build-out of the proposed project. In order to reduce the VOC emissions levels associated with architectural coatings, the following mitigation measures would be implemented:

MM4.2-12 *Project applicants shall require by contract specifications that the architectural coating (paint and primer) products used would have a VOC rating of 125 grams per liter or less. Contract specifications shall be included in the proposed project construction documents, which shall be reviewed and approved by the City of Huntington Beach.*

MM4.2-13 *Project applicants shall require by contract specifications that materials that do not require painting be used during construction to the extent feasible. Contract specifications shall be included in the proposed project construction documents, which shall be reviewed and approved by the City of Huntington Beach.*

MM4.2-14 *Project applicants shall require by contract specifications that pre-painted construction materials be used to the extent feasible. Contract specifications shall be included in the proposed project construction documents, which shall be reviewed and approved by the City of Huntington Beach.*

However, because construction emissions for an individual project developed under the Specific Plan may exceed the SCAQMD's recommended thresholds of significance and result in short-term air quality impacts, the impact of the proposed project, which takes into consideration the construction emissions generated from all of the development proposed under the proposed project, is anticipated to be ***significant and unavoidable***.

Operation

Operational emissions generated by both stationary and mobile sources would result from normal day-to-day activities in the Specific Plan area after buildout. Stationary area source emissions would be generated by space and water heating devices, and the operation of landscape maintenance equipment. Mobile emissions would be generated by the motor vehicles traveling to and from the project site. As stated earlier, although the proposed Specific Plan would reduce vehicle trips in comparison to buildout

of the existing General Plan for the Specific Plan area, the proposed project would increase vehicle trips in the area above existing conditions.

The analysis of daily operational emissions from the proposed project has been prepared utilizing the URBEMIS 2007 computer model recommended by the SCAQMD. The results of the URBEMIS 2007 calculations for the daily operational emissions of the proposed project are presented in Table 4.2-3 (Specific Plan Area Net Daily Operational Emissions) (refer to Appendix B for URBEMIS 2007 outputs). The emissions shown below reflect the net increase in emissions anticipated by implementation of the proposed project.

Table 4.2-3 Specific Plan Area Net Daily Operational Emissions

	Emissions in Pounds per Day[a,b]				
Emissions Source	***VOC***	***NO_X***	***CO***	***SO_X***	***PM_{10}***
Water and Space Heating (Natural gas)	4.7	60.63	24.92	0	0.11
Landscape Maintenance (no winter emissions)	0	0	0	0	0
Consumer Products	328.32	—	—	—	—
Architectural Coatings	9.53	—	—	—	—
Motor Vehicles	100.3	84.11	981.6	2.91	469.09
Maximum Daily Emissions	***442.85***	***144.74***	***1006.52***	***2.91***	***469.20***
SCAQMD Thresholds (lb/day)	55.00	55.00	550.00	150.00	150.00
Significant Impact	**Yes**	**Yes**	**Yes**	No	**Yes**

SOURCE: PBS&J 2009. Calculation sheets are provided in Appendix B.

a. It is assumed that 78 percent of residential development would have natural gas fireplaces.

b. Net emissions reflect the decrease in commercial/office space and increase in residential and other use types.

As shown, operation of the proposed project would generate emissions that exceed the thresholds of significance recommended by the SCAQMD for VOC, NO_X, CO, and PM_{10}. The exceedance of the SCAQMD thresholds for these four criteria pollutants is primarily due to the increase in motor vehicles traveling to and from the project site. As no feasible mitigation is available to reduce these emissions, this impact would remain ***significant and unavoidable***.

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

Impact 4.2-3 **Implementation of the proposed project would result in a cumulatively considerable net increase of criteria pollutants for which the proposed project region is in nonattainment under an applicable federal or state ambient air quality standard. This impact is considered *significant and unavoidable*.**

A significant impact may occur if a project would add a cumulatively considerable contribution of a federal or state nonattainment pollutant. Because the Basin is currently in nonattainment for ozone (for which VOC and NO_X are precursors) and PM_{10} under national and State standards, and is in nonattainment for CO under national standards, projects could cumulatively exceed an air quality standard or contribute to an existing or projected air quality exceedance. With regard to determining the significance of the proposed project contribution, the SCAQMD neither recommends quantified analyses of cumulative construction or operational emissions nor provides separate methodologies or thresholds of significance to be used to assess cumulative construction or operational impacts. Instead, the SCAQMD recommends that a project's potential contribution to cumulative impacts should be assessed using the same significance criteria as those for project-specific impacts; that is, individual development projects that generate construction-related or operational emissions that exceed the SCAQMD-recommended daily thresholds for project-specific impacts would also cause a cumulatively considerable increase in emissions for those pollutants for which the Basin is in nonattainment.

As discussed previously in Impact 4.2-2, construction activities associated with the proposed project have the potential to exceed SCAQMD's recommended thresholds of significance and result in short-term air quality impacts; thus, the impact of the proposed project is anticipated to be significant. Many of the individual projects that could be developed under the proposed project may be small and thus would not generate construction emissions that exceed the SCAQMD's recommended thresholds of significance. However, to the extent that construction of these individual projects overlaps, the combined emissions from these small, individual projects could exceed the recommended SCAQMD thresholds, particularly for CO, NO_X, and PM_{10}, for which the Basin is currently in nonattainment. In addition to the smaller-scale projects, some of the individual development projects could be large enough to generate construction emissions that exceed the SCAQMD thresholds. Therefore, the emissions generated by construction of the proposed project would be cumulatively considerable and would constitute a substantial contribution to an existing or projected air quality violation. As described above in Impact 4.2-2, implementation of mitigation measures MM4.2-1 through MM4.2-14 would reduce these emissions, but not to a less-than-significant level.

Also discussed in Impact 4.2-2, operation of the proposed project would generate emissions that exceed the thresholds of significance recommended by the SCAQMD for VOC, NO_X, CO, and PM_{10}. Because the Basin is in nonattainment for PM_{10}, VOC, and NO_X (VOC and NO_X being precursors of ozone), the proposed project would make a cumulatively considerable contribution to criteria pollutant emissions.

Because the proposed project would exceed SCAQMD thresholds for the pollutants and precursors of ozone for which the Basin is in nonattainment, the proposed project would make cumulatively considerable contributions of these pollutants during both construction and operation of the proposed project. Because no feasible mitigation beyond what is proposed for Impact 4.2-2 is available to further reduce these contributions to levels below SCAQMD thresholds, this impact is considered to be ***significant and unavoidable***.

For clarification, and as evident by the above analysis, this threshold essentially repeats the analysis provided in Impact 4.2-2 and applies it to the cumulative condition, whereby any individual project that exceeds the SCAQMD recommended daily thresholds for project-specific impacts is considered to cause

a cumulatively considerable increase in emissions for those pollutants for which the Basin is in nonattainment.

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

Impact 4.2-4 **Operation of the proposed project would increase local traffic volumes above existing conditions, but would not expose sensitive receptors to substantial localized carbon monoxide (CO) concentrations. This impact is considered *less than significant*.**

Similar to existing CO concentrations, the simplified CALINE4 screening procedure was used to predict future CO concentrations. CO concentrations were calculated for 29 intersections under 2016 conditions evaluated in the traffic report (included in its entirety as Appendix F1) that are expected to operate at LOS D, E, or F (unacceptable levels) under near-term conditions (2016 with Specific Plan scenario in the traffic report). Intersections operating at LOS D, E, or F typically generate high CO concentrations that could exceed the federal or state 1-hour and 8-hour standards and are analyzed to show the maximum effect of implementation of the Specific Plan on ambient CO concentrations. It should be noted that long-term (2030) conditions are analyzed later in this section as part of the cumulative condition analysis. The results of the 2016 air emissions modeling are shown in Table 4.2-4 (Specific Plan [2016] Localized Carbon Monoxide Concentrations). As shown, future CO concentrations near these intersections would not exceed the national 35.0 ppm and State 20.0 ppm 1-hour ambient air quality standards or the national or State 9.0 ppm 8-hour ambient air quality standards in 2016 with the proposed Specific Plan. Therefore, sensitive receptors located in close proximity to these intersections would not be exposed to substantial pollutant concentrations, and the potential impacts of the Specific Plan would be ***less than significant***. No mitigation is required. It should be noted that the CO concentrations shown in Table 4.2-4 are lower than the existing CO concentrations shown in Table 4.2-2 (Existing Localized Carbon Monoxide Concentrations) due to anticipated improvements in vehicle emission rates projected for the future by the ARB.

Threshold	Would the project create objectionable odors affecting a substantial number of people?

Impact 4.2-5 **Construction and operation of the proposed project would not create objectionable odors affecting a substantial number of people. This impact is considered *less than significant*.**

The proposed Specific Plan does not propose, and would not facilitate, the development of uses that would be significant sources of objectionable odors. Potential sources of odor associated with the proposed project may result from construction equipment exhaust and application of asphalt and architectural coatings during construction activities, the temporary storage of typical household solid waste (refuse) associated with residential (long-term operational) uses, as well as odors produced from various commercial uses, including restaurants. Standard construction requirements would be imposed upon each applicant to minimize odors from construction. The construction odor emissions would be

Table 4.2-4 Specific Plan (2016) Localized Carbon Monoxide Concentrations

Intersection	CO Concentrations in Parts per Million[a, b]					
	Roadway Edge		25 Feet		50 Feet	
	1-Hour[c]	8-Hour	1-Hour[c]	8-Hour	1-Hour[c]	8-Hour
Goldenwest Street and Bolsa Avenue	6.0	3.8	5.7	3.6	5.6	3.5
I-405 SB Ramps and Center Avenue	5.7	3.6	5.4	3.4	5.3	3.3
Beach Blvd and Edinger Avenue	6.3	4.0	5.9	3.7	5.7	3.6
Newland Street and Edinger Avenue	5.6	3.5	5.4	3.4	5.3	3.3
Beach Boulevard and Heil Avenue	6.1	3.9	5.8	3.6	5.6	3.5
Goldenwest Street and Slater Avenue	6.0	3.8	5.6	3.5	5.5	3.4
Beach Boulevard and Warner Avenue	6.2	3.9	5.8	3.7	5.7	3.6
Newland Street and Warner Avenue	5.8	3.7	5.6	3.5	5.4	3.4
Goldenwest Street and Slater Avenue	5.7	3.6	5.5	3.4	5.4	3.4
Beach Boulevard and Slater Avenue	5.9	3.7	5.6	3.5	5.5	3.5
Gothard Street and Talbert Avenue	5.7	3.6	5.4	3.4	5.3	3.3
Beach Boulevard and Talbert Avenue	6.0	3.8	5.7	3.6	5.6	3.5
Newland Street and Talbert Avenue	5.7	3.6	5.5	3.4	5.4	3.4
Beach Boulevard and Garfield Avenue	5.9	3.7	5.6	3.5	5.5	3.5
Brookhurst Street and Garfield Avenue	5.9	3.7	5.6	3.5	5.5	3.4
Ward Street and Garfield Avenue	5.5	3.5	5.3	3.3	5.2	3.3
Beach Boulevard and Yorktown Avenue	5.8	3.7	5.6	3.5	5.5	3.4
Beach Boulevard and Adams Avenue	5.8	3.6	5.5	3.5	5.4	3.4
Magnolia Avenue and Adams Avenue	5.8	3.7	5.6	3.5	5.4	3.4
Brookhurst Street and Adams Avenue	6.1	3.9	5.7	3.6	5.6	3.5
Beach Boulevard and Atlanta Avenue	5.6	3.5	5.4	3.4	5.3	3.3
Brookhurst Street and PCH	6.0	3.8	5.7	3.6	5.5	3.5
Beach Boulevard and Westminster Avenue	6.1	3.9	5.8	3.6	5.6	3.5
Beach Boulevard and Bolsa Avenue	6.2	4.0	5.8	3.7	5.7	3.6
Beach Boulevard and McFadden Avenue	6.2	3.9	5.8	3.7	5.6	3.5
Magnolia Street and Warner Avenue	5.9	3.7	5.6	3.5	5.5	3.4
Magnolia Street and Talbert Avenue	5.7	3.6	5.4	3.4	5.4	3.3
Bushard Street and Talbert Avenue	5.7	3.6	5.5	3.4	5.4	3.4
Brookhurst Street and Talbert Avenue	6.1	3.8	5.7	3.6	5.6	3.5

SOURCE: PBS&J 2009. Calculation sheets are provided in Appendix B.

a. National 1-hour standard is 35.0 parts per million. State 1-hour standard is 20.0 parts per million.

b. National 8-hour standard is 9.0 parts per million. State 8-hour standard is 9.0 parts per million.

c. Data for the 1-hour concentration was taken from the highest peak hour result, A.M. Peak Hour or P.M. Peak Hour, whichever is greater.

temporary, short-term, and intermittent in nature, and impacts associated with construction-generated odors are expected to be less than significant. It is expected that the Specific Plan will contain requirements to store any project-generated refuse in covered containers and remove trash at regular intervals in compliance with the City's solid waste regulations. Therefore, odors associated with the proposed project construction and operation would be ***less than significant***. No mitigation is required.

4.2.4 Cumulative Impacts

The geographic context for cumulative air quality impacts is SRA 18, which covers the Northern Coastal Orange County area. This analysis, therefore, accounts for all anticipated cumulative growth within this geographic area, including ambient growth along with development of the related projects provided in Table 3-2 (List of Related Development Projects) in Chapter 3 (Project Description) of this EIR. As discussed in Impact 4.2-3, the significance of cumulative air quality impacts is typically determined according to the project-specific impact methodology recommended by the SCAQMD.

As discussed in Impact 4.2-1, growth considered to be inconsistent with the AQMP could interfere with attainment of federal or State ambient air quality standards because this growth is not included in the projections utilized in the formulation of the AQMP. Consequently, as long as growth in the Basin is within the projections for growth identified in the Growth Management chapter of the RCPG, implementation of the AQMP would not be obstructed by such growth. Should projections exceed the anticipated growth forecasts of the RCPG, impacts with respect to AQMP consistency would occur. However, as noted above, growth under the proposed project would be considered consistent with the overall growth assumptions of the City of Huntington Beach General Plan (discussed in detail in Section 4.10 [Population and Housing]) and is therefore consistent with the RCPG (see Impact 4.2-1), and the 2007 AQMP. The proposed project, with respect to potential conflicts with the AQMP, would not represent a cumulatively considerable contribution and the cumulative impact would be considered ***less than significant***.

As the Basin is currently in nonattainment for ozone, CO, NO_X, PM_{10}, and $PM_{2.5}$, cumulative development could violate an air quality standard or contribute to an existing or projected air quality violation. Therefore, this is considered to be a significant cumulative impact within the Basin. With regard to determining the significance of the proposed project contribution, SCAQMD recommends that individual projects that exceed the SCAQMD recommended daily thresholds for project-specific impacts be considered to cause a cumulatively considerable increase in emissions for those pollutants for which the Basin is in nonattainment (Smith, 2005). As discussed previously under Impact 4.2-2, construction of the proposed project would cause an increase in daily, construction-related emissions of criteria air pollutants that would exceed the thresholds of significance recommended by the SCAQMD even with implementation of mitigation measures MM4.2-1 through MM4.2-14. Therefore, construction under the proposed project would make a cumulatively considerable contribution to this significant impact. In addition, operation at full build-out of the proposed project would result in quantities of air emissions that exceed the SCAQMD thresholds for VOC, NO_X, CO, and PM_{10}, and would, therefore, make a cumulatively considerable contribution to this significant impact. Consequently, the cumulative impact of implementation of the proposed project would be ***significant and unavoidable***.

It is unlikely that future projects will result in long-term future exposure of sensitive receptors to substantial pollutant concentrations, because CO levels are projected to be lower in the 2030 (build-out year of the Specific Plan) due to improvements in vehicle emission rates predicted by the ARB. Nonetheless, as discussed above under Impact 4.2-4, intersections operating at LOS D, E, or F may generate high CO concentrations that could exceed the federal or State 1-hour and 8-hour standards. As a result, Table 4.2-5 (Specific Plan [2030] Localized Carbon Monoxide Concentrations) analyzes CO concentrations at 39 intersections at project build-out (2030) to show the maximum effect of implementation of the Specific Plan on ambient CO concentrations. The results of air emissions modeling are shown in Table 4.2-5. As shown, future CO concentrations near these intersections would not exceed the national 35.0 ppm and State 20.0 ppm 1-hour ambient air quality standards or the national or State 9.0 ppm 8-hour ambient air quality standards when the Specific Plan is fully implemented in 2030. Therefore, sensitive receptors located in close proximity to these intersections would not be exposed to substantial pollutant concentrations, and the contribution of the Specific Plan to CO concentrations at these intersections would not be cumulatively considerable. The cumulative impact would be ***less than significant***.

Table 4.2-5 Specific Plan (2030) Localized Carbon Monoxide Concentrations

	CO Concentrations in Parts per Million[a, b]					
	Roadway Edge		25 Feet		50 Feet	
Intersection	1-Hour[c]	8-Hour	1-Hour[c]	8-Hour	1-Hour[c]	8-Hour
Springdale Street and Bolsa Avenue	5.3	3.3	5.2	3.2	5.2	3.2
Goldenwest Street and Bolsa Avenue	5.4	3.4	5.3	3.3	5.2	3.3
Springdale Street and McFadden Avenue	5.3	3.3	5.2	3.2	5.2	3.2
I-405 SB Ramps and Center Avenue	5.3	3.3	5.2	3.2	5.1	3.2
Beach Blvd and Edinger Avenue	5.6	3.5	5.4	3.4	5.3	3.3
Newland Street and Edinger Avenue	5.3	3.3	5.2	3.2	5.1	3.2
Beach Boulevard and Heil Avenue	5.5	3.4	5.3	3.3	5.3	3.3
Goldenwest Street and Slater Avenue	5.4	3.4	5.3	3.3	5.2	3.2
Beach Boulevard and Warner Avenue	5.5	3.5	5.4	3.4	5.3	3.3
Newland Street and Warner Avenue	5.4	3.4	5.2	3.3	5.2	3.2
Goldenwest Street and Slater Avenue	5.3	3.3	5.2	3.3	5.2	3.2
Gothard Street and Slater Avenue	5.3	3.3	5.2	3.2	5.1	3.2
Beach Boulevard and Slater Avenue	5.4	3.4	5.3	3.3	5.2	3.3
Gothard Street and Talbert Avenue	5.5	3.5	5.2	3.3	5.1	3.3
Beach Boulevard and Talbert Avenue	5.4	3.4	5.3	3.3	5.2	3.3
Newland Street and Talbert Avenue	5.3	3.3	5.2	3.2	5.2	3.2
Beach Boulevard and Garfield Avenue	5.4	3.4	5.3	3.3	5.2	3.3
Brookhurst Street and Garfield Avenue	5.4	3.4	5.3	3.3	5.2	3.3
Ward Street and Garfield Avenue	5.2	3.3	5.1	3.2	5.1	3.2
Beach Boulevard and Yorktown Avenue	5.4	3.4	5.2	3.3	5.2	3.2
Newland Street and Yorktown Avenue	5.2	3.3	5.2	3.2	5.1	3.2

Table 4.2-5 Specific Plan (2030) Localized Carbon Monoxide Concentrations

Intersection	CO Concentrations in Parts per Million[a, b]					
	Roadway Edge		25 Feet		50 Feet	
	1-Hour[c]	8-Hour	1-Hour[c]	8-Hour	1-Hour[c]	8-Hour
Beach Boulevard and Adams Avenue	5.3	3.3	5.2	3.3	5.2	3.2
Magnolia Avenue and Adams Avenue	5.4	3.4	5.2	3.3	5.2	3.2
Bushard Street and Adams Avenue	5.4	3.4	5.2	3.3	5.2	3.2
Brookhurst Street and Adams Avenue	5.5	3.5	5.3	3.3	5.3	3.3
Beach Boulevard and Atlanta Avenue	5.3	3.3	5.2	3.2	5.1	3.2
Brookhurst Avenue and Hamilton Avenue	5.4	3.4	5.3	3.3	5.2	3.2
Seapoint Avenue and PCH	5.4	3.4	5.3	3.3	5.2	3.2
Brookhurst Street and PCH	5.4	3.4	5.3	3.3	5.2	3.3
Beach Boulevard and Westminster Avenue	5.5	3.5	5.4	3.3	5.3	3.3
Beach Boulevard and Hazard Avenue	5.5	3.4	5.3	3.3	5.3	3.3
Beach Boulevard and Bolsa Avenue	5.6	3.5	5.4	3.4	5.3	3.3
Beach Boulevard and McFadden Avenue	5.5	3.5	5.4	3.4	5.3	3.3
Magnolia Street and Warner Avenue	5.4	3.4	5.3	3.3	5.2	3.2
Magnolia Avenue and Slater Avenue	5.3	3.3	5.2	3.2	5.1	3.2
Magnolia Street and Talbert Avenue	5.3	3.3	5.2	3.2	5.2	3.2
Bushard Street and Talbert Avenue	5.4	3.3	5.2	3.3	5.2	3.2
Brookhurst Street and Talbert Avenue	5.5	3.4	5.3	3.3	5.2	3.3
Brookhurst Street and Ellis Avenue	5.4	3.4	5.3	3.3	5.2	3.2

SOURCE: PBS&J 2009. Calculation sheets are provided in Appendix B.

a. National 1-hour standard is 35.0 parts per million. State 1-hour standard is 20.0 parts per million.

b. National 8-hour standard is 9.0 parts per million. State 8-hour standard is 9.0 parts per million.

c. Data for the 1-hour concentration was taken from the highest peak hour result, A.M. Peak Hour or P.M. Peak Hour, whichever is greater.

The relevant geographic area for odor impacts is the City, and related projects projected to be built include primarily residential, commercial, and office uses, and could include restaurants. Odors resulting from the construction of these projects are not likely to affect a substantial number of people, due to the fact that construction activities do not usually emit offensive odors. As discussed in Impact 4.2-5, although construction activities occurring in association with the proposed project could generate airborne odors associated with the operation of construction vehicles (e.g., diesel exhaust) and the application of interior and exterior architectural coatings, these emissions would only occur during daytime hours, would generally be restricted to the immediate vicinity of the construction site and activity, and standard construction requirements would be imposed on the developers/applicants associated with these construction projects. Odors from construction activities would not affect a substantial number of people. The odor impacts resulting from residential and office projects are not expected to affect a substantial amount of people, as activities typically associated with these uses do not emit offensive odors and solid waste from these projects would be stored in special areas and in containers. In addition, restaurants are typically required to have ventilation systems that prevent

substantial adverse odor impacts. Any odors originating from industrial uses would not be created as part of the proposed project; thus, the project's contribution to the cumulative odor impact is not considerable. Therefore, this cumulative impact is considered ***less than significant***.

4.2.5 References

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