4.2 AIR QUALITY

This section of the EIR analyzes the potential environmental effects on air quality from implementation of the proposed plan. Two comment letters addressing air quality were received in response to the Notice of Preparation (NOP) circulated for the proposed plan.

Data for this section were obtained from the South Coast Air Quality Management District (SCAQMD) CEQA Air Quality Handbook, City of Los Angeles General Plan, San Pedro New Community Plan (proposed plan) Policies, Chapter 3 (Project Description) of this EIR, and traffic data provided by Iteris. Full reference-list entries for all cited materials are provided in Section 4.2.5 (References).

4.2.1 Environmental Setting

Location and Climate

The San Pedro Community Plan Area (CPA) contains approximately 3,674 acres in the southern portion of the City of Los Angeles. Los Angeles 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 6,600-square-mile area includes all of Orange County and the non-desert 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 emission sources, such as dense population centers, heavy vehicular traffic, industry, and meteorology.

A semi-permanent, subtropical high-pressure cell over the Pacific Ocean largely controls the climate of the Basin by moderating the difference in seasonal temperatures. The annual average temperature varies little throughout the Basin, with the average in the 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 San Pedro CPA is located in southern Los Angeles County, which is in the southwestern portion of the Basin. The annual average temperature in Los Angeles is 65.0°F, with average temperatures ranges from approximately 55.0°F in winter to 75.0°F in the summer with extremes ranging from 24°F in the winter to 110°F in the summer.[7]

Although the climate of the Basin can be characterized as semi-arid, the air near the land surface is quite moist on most days because of the presence of a marine layer. This shallow layer of sea air is an important modifier of Basin climate. Humidity restricts visibility in the Basin. The annual average relative humidity is 71 percent along the coast and 59 percent inland. Because the ocean effect is dominant, periods of heavy early morning fog are frequent and low stratus clouds are a characteristic feature. These effects decrease with distance from the coast. The majority of annual rainfall in the Basin occurs between November and March. 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 side of

[7] Weather Base, Summary: Los Angeles, CA (2011), http://www.weatherbase.com/weather/weather.php3?s=159227&refer= (accessed January 13, 2011).

the mountains. Average rainfall in Los Angeles is approximately 14 inches annually.[8] The influence of rainfall on the contaminant levels in the Basin is minimal.

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 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 mixing height for this inversion structure is normally situated 1,000 to 1,500 feet above mean sea level.

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.

Winds in the vicinity of the CPA blow predominantly from the south-southwest, with relatively low velocities. Wind speeds in the CPA average about 7.5 miles per hour (mph). Summer wind speeds are, on average, slightly higher than winter wind speeds. The Santa Ana winds are strong, dry, north or northeasterly winds that occur during the fall and winter months and disperse air contaminants in the Basin. The Santa Ana winds often 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 required to have a permit from the SCAQMD in order to operate. Point sources typically occur at specific identified locations, and are usually associated with manufacturing and industry. Some 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; thus, the SCAQMD does not require operating permits. The area-wide use of area sources contributes to regional air pollution. 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. Mobile sources are classified as either on-road or off-road sources. Examples of mobile sources are emissions from motor vehicles, including tailpipe and evaporative emissions. On-road sources are those that are legally operated on roadways and highways. Off-road sources include aircraft, ships, trains, and construction vehicles.

The Port of Los Angeles is located outside the CPA boundaries but adjacent to it, and represents a major source of off-road sources of air emissions. It encompasses 7,500 acres of land and water along 43 miles of waterfront and features twenty-five passenger and cargo terminals, including automobile, breakbulk, container, dry and liquid bulk, and warehouse facilities that handle billions of dollars worth of cargo each year. It includes the World Cruise Center, Ports O' Call Village, welcoming Vincent Thomas Bridge,

[8] Weather Base, Summary: Los Angeles, CA (2011), http://www.weatherbase.com/weather/weather.php3?s=159227&refer= (accessed January 13, 2011).

signature Fanfare Fountains and Water Features, historic Angels Gate Lighthouse, vintage Waterfront Red Car Line, and new green space at 22nd Street Park. Substantial expansion plans are underway throughout the Port, which include the terminal for TraPac, a unit of Japan-based Mitsui O.S.K. Lines Ltd. This 5-year, $274 million program will extend TraPac's wharves, deepen water depths at berths 144–147, involve a new on-dock rail facility, crane installations and upgrade of 50 acres of backlands. Also undergoing expansion is China Shipping's terminal, which is nearly doubling in size, to 142 acres. Refineries located in the neighboring communities of Wilmington and Carson contribute to emissions in the CPA during Santa Ana conditions. Mobile sources account for the majority of the air pollutant emissions within the Basin. However, 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 the federal and state governments have established ambient air quality standards for outdoor concentrations of specific pollutants that are 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 that will 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. The SCAQMD is responsible for bringing air quality in 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, nitrogen dioxide, 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 (NO_X), both byproducts of internal combustion engine exhaust, undergo slow photochemical reactions in the presence of sunlight. Ozone concentrations are generally highest during the summer months when direct sunlight, light wind, and warm temperature conditions are favorable to the formation of this pollutant.
- **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. Motor vehicles operating at slow speeds are the primary source of CO in the Basin because the CO is emitted directly from internal combustion engines. The highest ambient CO concentrations are generally found near congested transportation corridors and intersections.
- **Respirable Particulate Matter (PM_{10})** and **Fine Particulate Matter ($PM_{2.5}$)** consist 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. Commuters in heavy traffic may be exposed to higher concentrations of NO_2 than those indicated by regional monitors, because ambient concentrations of NO_2 are related to traffic density.

- **Sulfur Dioxide (SO_2)** is a colorless, extremely irritating gas or liquid which enters the atmosphere as a pollutant, mainly as a result of burning high sulfur-content fuel oils and coal, as well as 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)** is a solid heavy metal that can exist in air pollution as an aerosol particle component. An aerosol is a collection of solid, liquid, or mixed-phase particles suspended in the air. Lead was first regulated as an air pollutant in 1976. Leaded gasoline was first marketed in 1923 and was used in motor vehicles until around 1970. The exclusion of lead from gasoline helped to decrease emissions of lead in the United States from 219,000 to 4,000 short tons per year between 1970 and 1997. Even though leaded gasoline has been phased out in most countries, some still use leaded gasoline. Lead ore crushing, lead-ore smelting, and battery manufacturing are currently the largest sources of lead in the atmosphere in the United States. Other sources include dust from soils contaminated with lead-based paint, solid waste disposal, and crustal physical weathering. The mechanisms by which lead can be removed from the atmosphere (sinks) include deposition to soils, ice caps, oceans, and inhalation.

  Lead concentrations once exceeded the state and national air quality standards by a wide margin but have not exceeded state or national air quality standards at any regular monitoring station since 1982. Lead is no longer an additive to normal gasoline, which is the main reason concentration of lead in the air is low. Build-out of the proposed plan is not anticipated to emit lead, and therefore, lead is eliminated from further review in this analysis.
- **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. TACs 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.

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 exposure (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 responses described above. Animal studies suggest that exposure to a combination of pollutants that includes 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 fetuses, patients with diseases involving heart and blood vessels, and patients with chronic hypoxemia (oxygen deficiency) as seen at 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 exposure 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 air flow, 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 one pollutant alone is the predominant factor.

Lead

Fetuses, infants, and children are more sensitive than others to the adverse effects of lead exposure. Exposure to low levels of lead 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 blood Pb levels 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.

Odors

The science of odor as a health concern is still new. Merely identifying the hundreds of VOCs that cause odors poses a big challenge. Offensive odors can potentially affect human health in several ways. First, odorant compounds can irritate the eye, nose, and throat, which can reduce respiratory volume. Second, the VOCs that cause odors can stimulate sensory nerves and result in neurochemical changes that might influence health, for instance, by compromising the immune system. Finally, unpleasant odors can trigger memories or attitudes linked to unpleasant odors, causing cognitive and emotional effects such as stress.

Toxic Air Contaminant Emissions

Toxic Air Contaminants (TACs) are airborne substances that are capable of causing chronic and acute adverse effects on human health. They include both organic and inorganic chemical substances and the non-cancer health effects vary depending on the TAC.

Regional Air Quality

Measurements of ambient concentrations of the criteria pollutants are used by the United States Environmental Protection Agency (USEPA) and the California Air Resources Board (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, state, and federal standards. If a pollutant concentration in an area is lower than the standard, the area is classified as being in "attainment." If the pollutant exceeds the standard, the area is classified as a "nonattainment" area. If there are not enough data available to determine whether the standard is exceeded in an area, the area is designated "unclassified." Attainment status for the SCAQMD is shown in Table 4.2-1 (Attainment Status for the Basin).

Table 4.2-1 Attainment Status for the Basin

Pollutant	*State Status*	*Federal Status*
Ozone (1-hour)	Extreme Nonattainment	—[a]
Ozone (8-hour)	Extreme Nonattainment	Severe (17 years to attain) (may petition for Extreme)
PM_{10}	Nonattainment	Nonattainment
$PM_{2.5}$	Nonattainment	Nonattainment
CO	Attainment	Attainment/Maintenance
NO_2	Attainment	Attainment/Maintenance
SO_2	Attainment	Attainment
Lead (Pb)	Attainment	Attainment

SOURCE: California Air Resources Board, Area Designations Map/State and National (last reviewed September 2010), http://www.arb.ca.gov/desig/adm/adm.htm (accessed January 13, 2011).

a. The federal 1-hour ozone standard was revoked in 2005 and is no longer in effect for the state of California.

The entire Basin is designated as a federal-level severe nonattainment area for ozone, meaning that federal ambient air quality standards are not expected to be met for more than 18 years, and as nonattainment areas for PM_{10} and $PM_{2.5}$. It is in attainment or maintenance for the state and federal CO, NO_X, SO_2, and Pb standards. The Basin is a state-level extreme nonattainment area for ozone, and is a state-level nonattainment area for $PM_{2.5}$ and PM_{10}.[9]

The SCAQMD divides the Basin into forty source receptor areas (SRAs), in which thirty-six monitoring stations operate to monitor the various concentrations of air pollutants in the region. The San Pedro CPA is located within SRAs 3 and 4. The ARB also collects ambient air quality data through a network of

[9] California ARB, Area Designations Map/State and National, last reviewed September 2010. http://www.arb.ca.gov/desig/adm/adm.htm (accessed January 13, 2011).

air monitoring stations throughout the state. These data are summarized annually and are published in the ARB's California Air Quality Data Summaries. The Long Beach monitoring stations are the nearest monitoring stations to the CPA. The Long Beach stations currently monitor emission levels of ozone, CO, NO_2, PM_{10}, and $PM_{2.5}$, and SO_2.

Table 4.2-2 (Summary of Ambient Air Quality in the Proposed Plan Vicinity) identifies the national and state ambient air quality standards for the relevant air pollutants and identifies the ambient pollutant concentrations that have been measured at the Long Beach monitoring stations from 2007 through 2009. Monitoring data for 2009 are not currently available from the SCAQMD, but are available through California ARB. 2010 data are not currently available from either source.

According to air quality data shown in Table 4.2-2, the national 8-hour ozone standard has not been exceeded in the past three years in the CPA. The state 1-hour and 8-hour ozone standards were exceeded a total of 6 and 2 days respectively, over the past three years. No national or state standards for CO or NO_2 have been exceeded over the last three years within the project area. The Particulate Matter (PM_{10}) was not exceeded over the last three years for national 24-hour standards; however, the state 24-hour standard was exceeded a total of 11 days from 2007 through 2009. The national standard for Particulate Matter ($PM_{2.5}$) was exceeded 26 times over the last three years.

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 cardio-respiratory diseases. Residential areas are considered to be 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. Schools are also considered as sensitive, as children are present for extended durations and engage in regular outdoor activities. Recreational land uses are considered moderately sensitive to air pollution because exercise places a high demand on respiratory functions, which can be impaired by air pollution.

Standard Conditions and Uniform Codes

All projects constructed in the Basin are subject to Standard Conditions and Uniform Codes. Compliance with these provisions is mandatory and, as such, would not be required as mitigation under CEQA. Those conditions specific to air quality are included below:

- Adherence to SCAQMD Rule 403, which sets requirements for dust control associated with grading and construction activities.
- Adherence to SCAQMD Rules 431.1 and 431.2, which require the use of low sulfur fuel for stationary construction equipment.
- Adherence to SCAQMD Rule 1108, which sets limitations on ROG content in asphalt.
- Adherence to SCAQMD Rule 1113, which sets limitations on ROG content in architectural coatings.
- Adherence to Title 24 energy-efficient design requirements as well as the provision of window glazing, wall insulation, and efficient ventilation methods in accordance with the requirements of the Uniform Building Code.

Table 4.2-2 Summary of Ambient Air Quality in the Proposed Plan Vicinity

Air Pollutants Monitored Within SRA 3 and SRA 4	*Year*		
	2007	*2008*	*2009*
Ozone (O_3)			
Maximum 1-hour concentration measured	0.099 ppm	0.093 ppm	0.089 ppm
Number of days exceeding state 0.09 ppm 1-hour standard	3	3	0
Maximum 8-hour concentration measured	0.074 ppm	0.075 ppm	0.070 ppm
Number of days exceeding national 0.075 ppm 8-hour standard	0	0	0
Number of days exceeding state 0.07 ppm 8-hour standard	1	1	0
Nitrogen Dioxide (NO_2)			
Maximum 1-hour concentration measured	0.11 ppm	0.13 ppm	0.111 ppm
Number of days exceeding state 0.18 ppm 1-hour standard	0	0	0
Annual average	0.0207 ppm	0.0208 ppm	0.0212 ppm
Number of days exceeding state 0.03 ppm annual average	0	0	
Number of days exceeding national 0.0534 ppm annual average	0	0	--
Carbon Monoxide (CO)			
Maximum 1-hour concentration measured	3 ppm	3 ppm	3 ppm
Number of days exceeding national 35.0 ppm 1-hour standard	0	0	--
Number of days exceeding state 20.0 ppm 1-hour standard	0	0	--
Maximum 8-hour concentration measured	2.6 ppm	2.6 ppm	2.2 ppm
Number of days exceeding national 9.0 ppm 8-hour standard	0	0	0
Number of days exceeding state 9.0 ppm 8-hour standard	0	0	0
Suspended Particulates (PM_{10})			
Maximum 24-hour concentration measured	75+ µg/m^3	62 µg/m^3	62 µg/m^3
Number of days exceeding national 150 µg/m^3 24-hour standard	0+	0	0
Number of days exceeding state 50.0 µg/m^3 24-hour standard	5	1	5
Annual Average Concentration µg/m^3	30.2 µg/m^3	29.1 µg/m^3	30.5 µg/m^3
Suspended Particulates ($PM_{2.5}$)			
Maximum 24-hour concentration measured	82.9 µg/m^3	57.2 µg/m^3	63 µg/m^3
Number of days exceeding national 35 µg/m^3 24-hour standard	12	8	6
Sulfur Dioxide (SO_2)			
Maximum 24-hour concentration measured	0.011 ppm	0.012 ppm	0.005 ppm
Number of days exceeding state 0.04 ppm 24-hour standard	0	0	0

SOURCE: California ARB, Air Quality Data Statistics 2009, Top 4 Measurements and Days Above the Standard (2009), http://www.arb.ca.gov/adam/welcome.html (accessed January 2011); SCAQMD, Historical Data by Year (2007), http://www.aqmd.gov/smog/historicaldata.htm; SCAQMD, *CEQA Air Quality Handbook and Thresholds of Significance* (2008), http://www.aqmd.gov/ceqa/hdbk.html.

ppm = parts by volume per million of air; µg/m^3 = micrograms per cubic meter

* Data recorded is the highest value obtained from SCAQMD for SRA 3 (Southwest Costal LA County), and SRA4 (South Coastal LA County 1).

Construction of development projects pursuant to the proposed plan would be subject to SCAQMD Rule 403 (fugitive dust) during construction activities. SCAQMD Rule 403 does not require a permit for construction activities, per se, but sets forth general and specific requirements for all construction sites (as well as other fugitive dust sources) in the Basin. The general requirement prohibits a person from causing or allowing emissions of fugitive dust from construction (or other fugitive dust source) such that the presence of dust remains visible in the atmosphere beyond the property line of the emissions source. SCAQMD Rule 403 also prohibits a construction site from causing an incremental PM_{10} concentration impact at the property line of more than 50 micrograms per cubic meter as determined through PM_{10} high-volume sampling, but the concentration standard and associated PM_{10} sampling do not apply if specific measures identified in the rules are implemented and appropriately documented.

In accordance with Rule 403, the SCAQMD requires that contractors implement Best Available Control Technology (BACT) for construction activities. Rule 403 identifies a set of specific measures for projects less than 50 acres. The BACTs also contain contingency measures that shall be applied to those periods where instantaneous wind gusts meet or exceed 25 mph. These requirements are included in Appendix B.

Local Air Quality

The Basin has experienced improved air quality in recent years due to more stringent vehicle emissions standards, the elimination of older polluting vehicles, and cleaner burning fuels. In addition, larger stationary emission sources are gradually being eliminated or undergoing retrofitting with best available pollution control technology (BACT).

Motor vehicles (off highway and highway) are the primary source of pollutants in CPA. 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." Chapter 5 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 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. This methodology assumes worst-case conditions and provides a screening of maximum, worst-case CO concentrations.

Maximum existing CO concentrations were calculated for ten of the intersections within the CPA that would be affected by project-related traffic and represent the lowest level of service (F) and the most daily traffic as determined from the traffic report prepared by Iteris (Appendix G). As all other intersections are expected to operate at a better LOS, those intersections would produce lower CO concentrations. The results of these calculations are presented in Table 4.2-3 (Existing Localized Carbon Monoxide Concentrations). 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, no intersection currently exceeds national or state standards for 1-hour or 8-hour CO concentrations. Therefore, CO hotspots do not currently exist in the project area.

Toxic Air Contaminants

Toxic air contaminants 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. 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 from the "criteria" pollutants previously discussed, 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.

Lifetime cancer risk is defined as the increased chance of contracting cancer over a 70-year period as a result of exposure to a toxic substance or substances. It is the product of the estimated daily exposure of each suspected carcinogen by its respective cancer unit risk. The end result represents a worst-case

Table 4.2-3 Existing Localized Carbon Monoxide Concentrations

Intersection	*Level of Service*	*Peak Hour Volume*	*1-Hr Conc. (ppm)*	*8-Hr Conc. (ppm)*	*Exceeds Standard*
State Standards	—	—	20	9	—
Gaffey Street and Sepulveda Street	F	11,255	12.0	6.3	No
Gaffey Street and 1st Street	F	8,744	9.9	4.8	No
Western Avenue and 1st Street	F	7,112	8.2	3.6	No
Gaffey Street and 7th Street	F	6,100	8.0	3.5	No
Channel Street and Gaffey Street	F	6,056	8.2	3.6	No
Gaffey Street and 9th Street	F	6,001	7.9	3.4	No
Gaffey Street and 5th Street	F	5,755	8.2	3.6	No
Western Avenue and Santa Cruz Street	F	5,056	7.8	3.4	No
Gaffey Street and 23rd Street	F	3,283	6.0	2.1	No
1st Street and Patton Avenue	F	3,244	6.2	2.2	No

SOURCE: Atkins (2011) (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, AM peak hour or PM peak hour, whichever is greater.

estimate of cancer risk. The California ARB has produced a series of estimated inhalation cancer risk maps based on modeled levels of outdoor composite toxic pollutant levels that are available on California ARB's website.[10] The 2010 estimated map indicates that people in the area in and around the San Pedro CPA are exposed to an estimated inhalation cancer risk of more than 250 cases per million. These risk

[10] California ARB, Maps of Estimated Cancer Risk From Air Toxics (2011), http://www.arb.ca.gov/ch/communities/hlthrisk/hlthrisk.htm (accessed January 17, 2011).

maps depict inhalation cancer risk due to modeled outdoor toxic pollutant levels, and do not account for cancer risk due to other types of exposure. The largest contributors to inhalation cancer risk are diesel engines from trucks and ships operating in and out of the adjacent ports of Los Angeles and Long Beach. The SCAQMD provides a more detailed analysis of existing health risks within the District in the Mates II and Mates III studies. According to the Mates III study (SCAQMD 2008b) the existing cancer risk within the CPA is between 603 and 2117 cases in a million.

4.2.2 Regulatory Framework

Federal

U.S. Environmental Protection Agency (USEPA)

The Clean Air Act (CAA) of 1970 and the CAA Amendments of 1971 required the USEPA to establish National Ambient Air Quality Standards (NAAQS), with states retaining the option to adopt more stringent standards or to include other specific pollutants.

These standards are the levels of air quality considered safe, with an adequate margin of safety, to protect the public health and welfare. They are designed to protect those "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.

The CAA (and its subsequent amendments) requires each state to prepare an air quality control plan referred to as the State Implementation Plan (SIP). The CAA Amendments dictate that states containing areas violating the NAAQS revise their SIPs to include extra control measures to reduce air pollution. The SIP includes strategies and control measures to attain the NAAQS by deadlines established by the CAA. The SIP is periodically modified to reflect the latest emissions inventories, plans, and rules and regulations of air basins as reported by the agencies with jurisdiction over them. The USEPA has the responsibility to review all SIPs to determine if they conform to the requirements of the CAA.

State

California Air Resources Board (California ARB)

The California ARB, a part of the California EPA (Cal/EPA), is responsible for the coordination and administration of both federal and state air pollution control programs within California. In this capacity, California ARB conducts research, sets state ambient air quality standards (California Ambient Air Quality Standards), compiles emission inventories, develops suggested control measures, and provides oversight of local programs. California ARB establishes emissions standards for motor vehicles sold in California, consumer products (such as hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions. California ARB has primary responsibility for the development of California's State Implementation Plan (SIP), and works closely with the federal government and the local air districts.

Regional

South Coast Air Quality Management District (SCAQMD)

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.

Air Quality Management Plan (AQMP)

The SCAQMD and the SCAG are the agencies responsible for preparing the AQMP for the Basin. Since 1979, a number of AQMPs have been prepared. The 1997 AQMP, updated in 1999 and replaced in 2003, was based on the 1994 and 1991 AQMPs, and was designed to comply with state and federal requirements, reduce the high level of pollutant emissions in the Basin, and ensure clean air for the region through various control measures. To accomplish its task, the AQMP relied on a multilevel partnership of governmental agencies at the federal, state, regional, and local level. These agencies (i.e., the USEPA, the California ARB, local governments, SCAG, and SCAQMD) are the cornerstones that implement the AQMP programs.

The 2003 AQMP, adopted in August 2003, updated the attainment demonstration for the federal standards for ozone and PM_{10}; replaced the 1997 attainment demonstration for the federal CO standard and provided a basis for a maintenance plan for CO for the future, and updated the maintenance plan for the federal NO_2 standard that the Basin has met since 1992.

The most recent comprehensive plan is the 2007 AQMP, adopted on July 13, 2007. The 2007 AQMP is designed to meet the state and federal Clean Air Act planning requirements and focuses on ozone and $PM_{2.5}$. The 2007 AQMP incorporates significant new emissions inventories, ambient measurements, scientific data, control strategies, and air quality modeling.

Local

City of Los Angeles General Plan

In November 1992, the City of Los Angeles adopted its General Plan Air Quality Element. The General Plan Air Quality Element's primary objectives were to aid the region in attaining and maintaining the NAAQS while continuing to foster economic growth and the improvement of the quality of life of City residents. Further the Air Quality Element described how the City planned to implement local programs that were contained in the regional plan. The purpose of the proposed plan is to update the Land Use Element of the Los Angeles General Plan. The following goals in the 1992 Los Angeles General Plan Air Quality Element pertain to Air Quality:

Table 4.2-4 General Plan Policies Relevant to Air Quality

No.	*Goal/Objective/Policy*
	AIR QUALITY ELEMENT
Policy 1.1.1	Encourage demonstration projects which involve creative and innovative uses of market incentives mechanisms to achieve air quality objectives.
Policy 1.2.1	Implement the Air Quality Element policies set forth in this Chapter through adoption of the Clean Air Program which shall be amended as Council sees necessary without General Plan Amendment.
Policy 1.2.2	Pursue the City's air quality objectives in cooperation with regional and other local jurisdictions.
Policy 1.2.3	Monitor and assess the progress of the City's air quality improvement programs.
Policy 1.3.1	Minimized particulate emissions from construction sites.
Policy 1.3.2	Minimize particulate emissions from unpaved roads and parking lots which are associated with vehicular traffic.
Policy 2.1.1	Utilize compressed work weeks and flextime, telecommuting, carpooling, vanpooling, public transit, and improve walking/bicycling related facilities in order to reduce Vehicle Trips and/ or Vehicle Miles Traveled (VMT) as an employer and encourage the private sector to do the same to reduce work trips and traffic congestion.
Policy 2.1.2	Facilitate and encourage the use of telecommunications (i.e. telecommuting), in both the public and private sectors, in order to reduce work trips.
Policy 2.2.1	Discourage single-occupant vehicle use through a variety of measures such as market incentive strategies, mode-shift incentives, trip reduction plans and ridesharing subsidies.
Policy 2.2.2	Encourage multi-occupant vehicle travel and discourage single-occupant vehicle travel by instituting parking management practices.
Policy 2.2.3	Minimize the use of single-occupant vehicles associated with special events or in areas and times of high levels of pedestrian activities.
Policy 3.1.1	Implement programs to finance and improve public transit facilities and service.
Policy 3.1.2	Address public safety concerns as part of transit improvement programs, such as guarded and/or well lit transit facilities, emergency equipment and safe-driving training for operators, in order to increase transit ridership.
Policy 3.1.3	Cooperate with regional transportation agencies in expediting the development and implementation of regional transit systems.
Policy 3.2.1	Manage traffic congestion during peak hours.
Policy 3.3.1	Implement the best available system management techniques, and transportation management and mobility action plans to improve the efficiency of existing transportation facilities, subject to availability of funding.
Policy 4.1.1	Coordinate with all appropriate regional agencies the implementation of strategies for the integration of land use, transportation, and air quality policies.
Policy 4.1.2	Ensure that project level review and approval of land use development remain at the local level.
Policy 4.2.1	Revise the City's General Plan/Community Plans to achieve a more compact, efficient urban form and to promote more transit-oriented development and mixed- use development.
Policy 4.2.2	Improve accessibility for the City's residents to places of employment, shopping centers and other establishments.
Policy 4.2.3	Ensure that new development is compatible with pedestrians, bicycles, transit, and alternative fuel vehicles.
Policy 4.2.4	Require that air quality impacts be consideration in the review and approval of all discretionary projects.
Policy 4.2.5	Emphasize trip reduction, alternative transit and congestion management measures for discretionary projects.
Policy 4.3.1	Revise the City's General Plan/ Community Plans to ensure that new or relocated sensitive receptors are located to minimize significant health risks to sensitive receptors.

Table 4.2-4 General Plan Policies Relevant to Air Quality	
No.	***Goal/Objective/Policy***
Policy 4.3.2	Revise the City's General Plan/ Community Plans to ensure that new or relocated major air pollution sources are located to minimize significant health risks so sensitive receptors.
Policy 5.1.1	Make improvements in harbor and airport operations and facilities in order to reduce air emission.
Policy 5.1.2	Effect a reduction in energy consumption and shift to nonpolluting source of energy it its buildings and operations.
Policy 5.1.3	Have the Department of Water and Power make improvements at its in-basin power plants in order to reduce air emission.
Policy 5.1.4	Reduce energy consumption and associated air emissions by encouraging waste reduction and recycling.
Policy 5.2.1	Reduce emissions from its own vehicles by continuing scheduled maintenance, inspection and vehicle replacement programs; by adhering to the state of California's emissions testing and monitoring programs; by using alternative fuel powered vehicles wherever feasible, in accordance with regulatory agencies and City Council policies.
Policy 5.3.1	Support the development and use of equipment powered by electric of low-emitting fuels.
Policy 6.1.1	Raise awareness through public information and education programs of the actions that individuals can take to reduce air emissions.
SOURCE:	Los Angeles Department of City Planning, *General Plan of the City of Los Angeles*, Air Quality Element (adopted November 24, 1992).

San Pedro Specific Plan

The San Pedro Specific Plan was adopted in 1990. The San Pedro Specific Plan has no regulations or policies that specifically address air quality.

San Pedro Coastal Land Use Plan

The San Pedro Coastal Land Use Plan was adopted in 1991 to set forth General Plan and other citywide objectives, policies, standards, and programs for land use and new development, Circulation and Public access, and Service Systems for the Community as a whole. The San Pedro Coastal Land Use Plan, together with the San Pedro Specific Plan, which is the Coastal Local Implementation Plan, comprises the City's Local Coastal Program for the San Pedro Coastal Zone. The following policies will result in the reduction if air quality impacts from a reduction in vehicle miles traveled:

Table 4.2-5 San Pedro Coastal Land Use Plan Policies Related to Air Quality	
Policy No.	***Policy***
Commerce	
Policy 1	High-intensity commercial facilities, along with high-density residential uses, be located within the Community Center which is shown for Regional Commercial Land Use of the Plan map.
Policy 2	Residential use of the upper floors of commercial buildings be encouraged, especially within the Community Center.
Policy 6	A rapid transit station be developed to serve the Community, located convenient to both the community Center and Ports of Call areas as designated on the Plan map, and utilizing the railroad right-of-way adjacent to Harbor Boulevard.

Table 4.2-5 San Pedro Coastal Land Use Plan Policies Related to Air Quality	
Policy No.	***Policy***
Highway and Street System	
Policy 7	a. Where feasible, bikeways shall be provided and make use of off-street right-of-ways. Where bikeways must be in the useable roadway and the pavement is sufficiently wide, the creation of a lane for the exclusive use of bikeways, identified and designated by striping and signs, will be considered. c. Bike routes should be landscaped where feasible and where consistent with public safety. Landscaping may be used to emphasize the separation from motor vehicle traffic and/or from pedestrian traffic. Rest areas, including lockable bicycle parking, telephone and educational material shall be provided where feasible and appropriate.
Public Transportation System	
Policy 1	Regular bus service be provided on Major and Secondary Highways throughout the Community with special routing and emphasis given to the needs of those areas having greater transit dependency.
Policy 2	Park-and-Ride lots be conveniently located outside of the community center, on Major Highways between local and rapid transit routes, and include parking for both automobiles and bicycles.
Policy 3	Any rapid transit terminal serving San Pedro be located conveniently to both the Community Center and Ports of Call areas as designated on the Plan Map, utilizing the railroad right-of-way adjacent to Harbor Boulevard.
Policy 4	Park-and Ride, shuttle, or other non-automobile-oriented systems should be utilized for transit to the beach to mitigate congestion problems during peak beach days.
SOURCE: Los Angeles Department of City Planning, *San Pedro Coastal Land Use Plan* (June 1991).	

Proposed Plan Policies

In Los Angeles, thirty-five Community Plans, including the San Pedro Community Plan, comprise the City's Land Use Element. The proposed plan sets a new direction for the future of San Pedro using a collaborative effort between City staff and residents, businesses, developers, design professionals, and property owners to achieve the community's vision. The following proposed plan policies would help reduce air quality impacts within the San Pedro CPA.

Table 4.2-6 Proposed San Pedro Community Plan Policies	
Policy No.	***Policy***
Policy LU1.7 (also Policy LU5.10, Policy LU13.6, Policy 14.6, Policy LU16.5)	Build Green. Developments should be sustainable, attractive and incorporate green building design, systems, and materials to the greatest extent feasible.
Policy LU5.18	Promote sustainability. Support efforts that promote healthy eating, strengthen regional agriculture and food security, and reduce the environmental and financial costs of long distance shipping. Encourage the cultivation and sale of locally sourced produce.
Policy LU5.19	Co-location of services. Promote the joint location of health services and social services facilities in schools, community centers, senior centers and other public facilities, and locate near transit whenever feasible.
Policy LU11.7	Develop a multi-modal center. Develop a multi-modal transportation center (Multi-modal transportation considers various modes such as walking, cycling, automobile, public transit, etc.) in or near Downtown.
Policy LU13.3	Green the Port. Support efforts to "Green the Ports," including measures that improve air and water quality, reduce vehicle emissions, and enhance coastal resources.

Table 4.2-6 Proposed San Pedro Community Plan Policies

Policy No.	*Policy*
Policy LU16.2	Encourage green industries. Plan for and facilitate the location of industries and businesses that develop or utilize clean and green technologies and capitalize on Los Angeles' competitive advantages; incentives should be available for such uses.
Policy LU16.3	Encourage sustainable industry. Industries that are environmentally sustainable businesses, and employ green or clean technologies, building practices, and processes and provide jobs for San Pedro's residents should be encouraged to locate in this district.
Policy M1.1	Complete streets. Ensure the community is served by a complete street system with some streets strategically prioritized for target user(s) and other streets that connect the complement of arterials together to serve all users, as shown in Table 4.1.
Policy M1.2	Mobility for Challenged Users. Support wherever feasible, transportation programs and services aimed at enhancing the mobility of senior citizens, disabled persons and the transit dependent population.
Policy M1.3	Mobility enhancements. Developments that increase density or intensity by zone change, variance, conditional use, parcel map, subdivision or other discretionary action should provide adequate mobility enhancements such as traffic mitigation, pedestrian crosswalks, bike lanes and enhanced bus stops to ensure that mobility needs are met.
Policy M1.4	Private investment for off-site facilities/amenities. Encourage new developments to include bicycle and pedestrian amenities and include off-site transit and road improvements creating a circulation system that optimizes travel by all modes.
Policy M1.5	Modified Street Standards. Where there is evidence of physical or other constraints, or uses such as a transit station, the City should consider modified street standards to implement modal priorities for the enhancement of neighborhood character and facilitation of a complete street network.
Policy M2.1	Streetscapes. Encourage and support streetscape improvements in neighborhood areas that foster the appeal of the street as a gathering place including street furniture, well-maintained street trees, publicly accessible courtyards, wide sidewalks, bicycle access and appropriate traffic control measures to reduce travel speeds
Policy M2.2	Special Events. Encourage and support special street closures for community activities such as street fairs, parades, festivals and other civic events.
Policy M3.1	Pedestrian access. Encourage walking by orienting building entrances to face the streets and sidewalks when designing access to new developments and buildings.
Policy M3.2	Priority pedestrian routes. Selected streets within commercial, mixed-use and employment districts should have pedestrian priority establishing pedestrian needs as paramount to vehicular circulation needs and encouraging investment in pedestrian improvements and programs for these segments.
Policy M3.3	Pedestrian amenities. Maintain sidewalks, streets and right-of-way in good condition, free of obstructions, and with adequate lighting, trees and parkways. Streets must accommodate pedestrians comfortably through adequate sidewalks and parkway landscaping that provides a buffer from moving vehicles and shade from the hot sun, and street lighting that provides for safety during the night.
Policy M3.5	Safe school routes. Encourage the development and improvement of safe routes to schools throughout the community via walking, bicycles or transit.
Policy M3.6	Easements and public right-of-way. Encourage the safe utilization of easements and/or right-of-way along flood control channel, public utilities, railroad right-of-way and streets wherever feasible for pedestrians and/or bicyclists.
Policy M4.1	Priority bikeways. Support the Citywide bikeway network to establish bicycle circulation as paramount to vehicular circulation needs on key streets and to encourage investment in bicycle improvements and programs on these identified streets.

Table 4.2-6 Proposed San Pedro Community Plan Policies

Policy No.	*Policy*
Policy M4.2	Bikeway connections. Provide bicycle access for open space areas, commercial corridors, downtown/regional center, neighborhood districts and community centers to allow easy connection between residential neighborhoods and employment centers, as well as other destinations.
Policy M4.3	Bicycle Amenities. Incorporate bicycle amenities, such as parking, lockers, changing rooms and showers, in public facilities, parks, commercial development, employment and transit centers and park and ride facilities.
Policy M4.4	Regional coordination. Coordinate with adjacent jurisdictions and communities to require that local bicycle routes and trails be linked with those of neighboring areas.
Policy M4.5	Reclaimed land for bikeways. Incorporate bicycle facilities into recreational reuse of under-utilized land such as public utility right-of-way and access roads.
Policy M5.1	Transit connections to key areas. Increase public transit access to neighborhood districts, community centers and mixed use districts.
Policy M5.2	Development at transit nodes. Facilitate development and public improvements at multimodal transit nodes, or intersections that Metro identifies as major transfer nodes to promote convenient access between new development and the transit system.
Policy M5.3	Regional transit connections. Support efforts to establish regional transportation, such as high-speed rail, commuter rail, heavy rail, light rail, rapid transit bus ways, or express bus service serving the Plan area and adjacent communities.
Policy M5.4	Private transit. Encourage large major developments to provide on-demand shuttle services to Metro stations and major activity centers or destinations in and around San Pedro.
Policy M6.2	Pedestrian access to transit. Improve pedestrian amenities and urban design on streets served by transit to create welcoming conditions for pedestrians accessing transit.
Policy M6.3	Express bus focus. Connect express bus service, such as Express, Rapid and Bus Rapid Transit, to transit centers and park and ride facilities to key destinations within the Community Plan and region.
Policy M7.1	Priorities for capacity enhancements. Implement a safe and efficient transportation network, and increase its capacity through, in priority order, the provision of alternative transit options (Transit), transportation demand management (TDM), and traffic system management (TSM) before considering street widening and network completion.
Policy M7.2	Priority motorized vehicle routes. Support the identification of motorized vehicle streets for arterials with the highest traffic volumes and demonstrated congestion to establish motorized vehicle circulation as paramount to alternative roadway user needs and to encourage investment in congestion relief programs and/or truck safety improvements for the identified routes.
Policy M7.3	Access management. Minimize driveways and consider the addition of medians on Major and Secondary Highways to ensure the smooth and safe flow of vehicles, buses, pedestrians, and bicycles.
Policy M8.1	Traffic calming. Support traffic calming measures and parking management for local and collector streets where a demonstrated need exists and with active community involvement.
Policy M8.3	Special event coordination. Encourage coordination of park-and-ride shuttle services to activities centers and special events such as street fairs and parades.
Policy M9.1	Regional coordination. Coordinate with Councils of Government and regional transportation planning agencies (such as SCAG and Metro) and adjacent cities to improve shuttle services, encourage ridesharing, bicycle sharing, and other TDM programs within the region.
Policy M9.2	Reduce auto trips. Create incentives for employers, institutions, and residential neighborhoods to reduce their vehicle trips by encouraging mixed-use developments that minimize Vehicle Miles Traveled (VMT).

Table 4.2-6 Proposed San Pedro Community Plan Policies

Policy No.	*Policy*
Policy M9.3	Alternatives to the automobile. Reduce automobile dependency by providing a safe, convenient transit system, pedestrian linkages and a network of safe and accessible bikeways and by encouraging alternatives, such as reduced emission vehicles, including electric and neighborhood electric vehicles (NEVs).
Policy M9.4	TDM Plans. Encourage major development to submit a TDM Plan to the City and provide employee incentives for utilizing alternatives to the single-driver automobile (i.e., carpools, vanpools, buses, telecommuting, bicycling, and walking, etc.).
Policy M9.5	Transportation Management Associations. Support the formation of agencies and collaboratives such as Transportation Management Associations (TMAs) that facilitate ridesharing in carpools and vanpools.
Policy M12.1	Reduced parking near transit centers. Consider reductions in parking requirements for projects located within the Downtown Regional Center.
Policy M12.2	Park Once strategy. Collaborate with the business community to improve parking services including shared-parking facilities and public valet services in appropriate locations to more effectively use the overall parking supply and implement a "park once and walk" strategy for commercial districts.
Policy M12.3	Priority parking for alternative fuel vehicles. Encourage new commercial and retail developments to provide prioritized parking for shared vehicles, electric vehicles and vehicles using alternative fuels.
Policy M12.4	Connections for electric vehicles. Encourage new construction to include vehicle access to properly wired outdoor receptacles to accommodate zero emission vehicles (ZEVs) and/or plug-in electric hybrids (PHEV).
Policy M13.1	Industrial center siting. Site regional distribution centers and other industrial districts proximate to the freeway system and regional truck routes and avoid adjacency to residential neighborhoods.
Policy CF5.9	Encourage neighborhood parks and recreational centers near concentrations of residential areas and include pedestrian walkways and bicycle paths that encourage non-motorized use.
Policy CF7.1	Support policies of the Bureau of Street Services to reduce conflicts with existing infrastructure through proper tree selection and through the recognition of street trees as a vital and equal component of the City's infrastructure.
Policy CF7.2	Include on-site trees in new development projects whenever possible.
Policy CF7.3	Encourage community and private partnership involvement in urban forestry issues, minimizing maintenance costs.
Policy CF7.4	Facilitate the planting and maintenance of street trees, which provide shade and give scale to residential and commercial streets in all neighborhoods in the City.
Policy CF7.5	Develop design standards that promote sustainable development in public and private open space and street rights-of-way.

Consistency Analysis

The proposed plan and implementing ordinances contain goals, objectives, policies, and programs that the City would promote during the life span of the San Pedro Community Plan. Goals of the Community Plan are intended to promote and enhance infill, mixed-use, and transit-oriented development within the CPA. The increase in density and transit opportunities will aid in the reduction of air quality emissions through the reduction in vehicle miles traveled (VMT). While the Transportation Improvement and Mitigation Program (TIMP) for the San Pedro Community Plan shows that VMT will increase as a result of area growth, growth projections and shifts in land use within the San Pedro CPA in conjunction with the anticipated increases in vehicle efficiencies in the future result in a reduction in criteria pollutant

emissions from vehicles. The proposed plan and implementing ordinances would be consistent with the policies set forth the City's General Plan document. Therefore, the proposed plan would be consistent with applicable guidelines and regulations.

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 plan. Air pollutant emissions associated with the proposed plan would result from operation of the proposed development and from project-related traffic volumes. Construction activities would also generate emissions in the project area and on roadways resulting from construction-related traffic. 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 established by the SCAQMD.

Construction Emissions

The SCAQMD has established thresholds for the analysis of construction emissions which are published in the SCAQMD CEQA Air Quality Handbook. The construction activities associated with the proposed plan would create diesel emissions and would generate emissions of dust. Construction equipment used for development of the proposed plan would also generate VOC, CO, NO_X, SO_X, PM_{10}, and $PM_{2.5}$ pollutants.

The predominant land use within the San Pedro CPA is residential, with approximately 2,354.7 acres and 29,911 housing units. Commercial and industrial land uses constitute 223.5 acres and 253.9 acres, respectively. Including open space and facility designations, full build-out of the CPA would result in 34,731 housing units and 11,975,036 square feet of building space for nonresidential land uses. While the amount of development is known, the development will be spread out over twenty years and the phasing of the construction will be determined by market need. Therefore, the construction details would be difficult, if not impossible, to quantify due to the variables associated with daily construction activity (e.g., construction schedule, number and types of equipment, etc.). Because the level of detail needed to model construction related impacts using URBEMIS2007 is not available, a qualitative analysis is used to project the potential significance of project implementation with regard to construction emissions.

Operational Emissions

Operational emissions associated with the proposed plan are estimated using the URBEMIS2007 computer model developed for the California ARB and recommended by the SCAQMD, the information provided in Chapter 3, and trip generation rates from the traffic report (Appendix G). The URBEMIS2007 program does not estimate emissions based on square footage of commercial or the majority of industrial land uses, therefore an average floor area ratio (FAR) for each land use type was used to approximate a worst case scenario for maximum project development. Operational emissions would be comprised of mobile source emissions and area source emissions. Mobile source emissions are generated by the increase in motor vehicle trips to and from a project site associated with operation of proposed development. Area source emissions are 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 regional emissions thresholds.

Localized CO Concentrations for Operation

As stated previously, CO concentrations were calculated based on CALINE4 screening. This methodology assumes worst-case conditions and provides a screening of maximum, worst-case CO concentrations. For this analysis, CO concentrations for ten roadway intersections determined to operate at LOS F and have the greatest traffic, at build-out of the San Pedro Community Plan were modeled and analyzed. All other roadway intersections, due to lesser congestion and traffic, are expected to generate lower CO concentrations than the intersections modeled.

Localized Sensitive Receptor Concentrations for Construction

In addition to the mass annual and daily regional thresholds, Project construction has the potential to raise local ambient pollutant concentrations. This could present a significant impact if these concentrations were to exceed the AAQSs included in Table 4.2-1 at receptor locations.

Localized Significance Thresholds (LSTs) were developed and adopted by the SMAQMD in response to the SCAQMD Governing Board's Environmental Justice Enhancement Initiative. LSTs are upper limits on construction-phase pollutant emissions to assure that a project would not cause or contribute to violations of the most stringent applicable federal or state ambient air quality standards; they vary based on location of the project construction site (i.e., the specific SMAQMD-defined source-receptor area in which the site is located), size of the site, and distance of the nearest sensitive receptor to the site.

The potential for this impact is demonstrated through dispersion modeling, however for construction sites 5 acres or less a screening-level analysis based on LST lookup tables developed by SCAQMD can be used. In accordance with the SCAQMD criteria, peak daily emissions for CO, NO_X, PM_{10}, and $PM_{2.5}$ are modeled to determine their concentration and contribution to the ambient concentrations within the project vicinity. The analysis makes use of methodology included in the SCAQMD Final Localized Significance Threshold Methodology (Methodology). In accordance with the Methodology, dispersion modeling is only to include exhaust and dust emissions associated with those pieces of equipment that actually operate on-site and omits vehicle trips that are distributed over a large area. Because the level of detail needed to model construction related impacts is not available, a qualitative analysis is used to project the potential significance of project implementation with regards to localized sensitive receptors.

Toxic Air Contaminants

The California ARB indicates that one of the highest public health priorities is the reduction of diesel particulate matter (DPM) generated by vehicles on California's highways, as it is one of the primary TACs. Other potential TAC generators within South Coast Air Basin are associated with specific types of facilities such as dry cleaners, gas stations, distribution centers, and ports, and are the focus of California ARB's control efforts. California ARB has made specific recommendations with respect to considering existing sensitive uses when siting new TAC-emitting facilities or with respect to TAC-emitting sources

when siting sensitive receptors.[11] California ARB recommends that following buffer distances be observed when locating TAC emitters or sensitive land uses:

- Freeways or major roadways—500 feet
- Dry cleaners—500 feet
- Auto body repair services—500
- Gasoline dispensing stations with an annual throughput of less than 3.6 million gallons—50 feet
- Gasoline dispensing stations with an annual throughput at or above 3.6 million gallons—300 feet
- Other TAC sources including furniture manufacturing and repair services that use Methylene Chloride or other solvents identified as a TAC—300 feet
- Distribution centers with more than 100 trucks per day; more than 40 trucks with operating transport refrigeration units per day; or where transport refrigeration unit operations exceed 300 hours per week—1,000 feet
- Rail yards for major service and maintenance operations—1,000 feet
- Chrome platers—1,000 feet
- Port developments should not site the heavily impacted areas immediately upwind of sensitive land uses
- Petroleum refineries should not site the heavily impacted areas immediately upwind of sensitive land uses

The SCAQMD recommends that site-specific health risk assessments be performed to accurately document potential cancer risk when siting sensitive land uses within the above buffer zones.

Thresholds of Significance

The 2006 LA CEQA Thresholds Guide defers to the SCAQMD thresholds for analysis of air quality impacts. 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 so that projects can be compared using the same standard. The City utilizes the SCAQMD's thresholds that are recommended at the time that development projects are proposed to assess the significance of quantifiable impacts. The following quantifiable thresholds are currently recommended by the SCAQMD and are used to determine the significance of air quality impacts associated with a proposed project.

Implementation of a proposed project may have a significant adverse impact on climate change 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

[11] California ARB, Air Quality and Land Use Handbook—A Community Health Perspective (April 2005).

- 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

Construction Emissions Thresholds

The SCAQMD recommends that projects with construction-related emissions that exceed any of the following emissions thresholds should be considered significant:

- 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 Thresholds

The SCAQMD recommends that projects with operational emissions that exceed any of the following emissions thresholds should be considered significant; these thresholds apply to individual development projects only; they do not apply to cumulative development:

- 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 pounds per day of $PM_{2.5}$

Cumulative Impacts

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 plan, air pollutant emissions would be considered to be cumulatively considerable if the new sources of emissions exceed SCAQMD project-specific emissions thresholds.

Localized Thresholds of Significance (LST)

Construction emissions LSTs are only analyzed for CO, NO_2, PM_{10}, and $PM_{2.5}$. Thresholds of significance for localized concentrations were developed by comparing the highest ambient air quality measurements between 2007 and 2009 (as shown in Table 4.2-1) to the most stringent air quality standards. The difference is the maximum concentration of criteria air pollutants that the proposed plan

would be able to create without causing an exceedance in the ambient air quality standard. Therefore, the following LSTs apply to construction of development pursuant to the proposed plan:

- 20 ppm (17 ppm maximum allowable project contribution) for 1 hour CO concentrations
- 9 ppm (6.4 ppm maximum allowable project contribution) for 8 hour CO concentrations
- 0.18 ppm (0.05 ppm maximum allowable project contribution) for 1 hour NO_2 concentrations
- 0.03 ppm (0.0092 ppm maximum allowable project contribution) for annual NO_2 concentrations

As the Basin is in nonattainment for PM_{10} and $PM_{2.5}$, the SCAQMD has established the following LST for PM_{10} and $PM_{2.5}$ concentrations during construction:

- 10.4 $\mu g/m^3$ for 24 hour PM_{10} concentrations
- 2.5 $\mu g/m^3$ for 24 hour $PM_{2.5}$ concentrations

CO "Hotspots"

The SCAQMD has established the following threshold criteria to determine if a project has the potential to contribute to an exceedance of the state Ambient Air Quality Standards with respect to CO emissions from operational mobile sources:

- 20 ppm (17 ppm maximum allowable project contribution) for 1 hour CO concentrations
- 9 ppm (6.4 ppm maximum allowable project contribution) for 8 hour CO concentrations

Toxic Air Contaminants

Based on the methodology established by the Office of Environmental Health Hazard Assessment (OEHHA) and the SCAQMD, the following thresholds have been established to determine the MICR, HI, and cancer burden for development under the proposed plan:

- MICR—cancer risk of less than 10 in one million ($< 10 \times 10^{-6}$)
- HI—highest chronic health index of less than 1
- Cancer Burden—excess cancer burden within 1 square mile of less than 0.5

Effects Not Found to Be Significant

There were no effects identified that would not have any impact with respect to air quality.

Less-Than-Significant Impacts

Impact 4.2-1 **Implementation of the proposed plan would not conflict with or obstruct implementation of the applicable air quality plan. This impact is *less than significant*.**

The 2007 AQMP was prepared to accommodate growth, to reduce high levels of pollutants within the areas under the jurisdiction of SCAQMD, to return clean air to the region, and to minimize the impact on the economy. 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 employment and population forecasts identified in the Growth Management chapter of the SCAG's Regional Comprehensive Plan and Guide (RCPG) are considered consistent with the AQMP growth projections. In turn, projects that are consistent with the City's General Plan are considered to be consistent with the Growth Management chapter, as the General Plan forms the basis for population and employment forecasts in the RCPG. This is because the Growth Management chapter forms the basis of the land use and transportation control portions of the AQMP.

The San Pedro CPA is currently planned for residential, commercial, and industrial land uses with an existing population of 82,112 and employment of 13,307. The proposed plan, if completely built out, would result in a growth in population to 83,354 (1.5 percent increase) and employment estimate of 19,075 (43.3 percent increase). Based on SCAG's 2030 projections, the current AQMP projects an estimated increase in population and employment of 26.79 and 28.57 percent, respectively. Growth under the proposed plan is well under the proposed population increase; however, it exceeds the growth increase expected for employment. The proposed plan's capacity for jobs is 19,074, less than the SCAG projected jobs of 19,917; however, the difference of 843 jobs could be distributed in other areas of the City. Overall, employment throughout the City is consistent with SCAG projections. Accordingly, planned build-out in the City, including build-out of the CPA under the proposed plan, would be consistent with SCAG's year 2030 projections, and therefore, consistent with the AQMP.

In order to evaluate the total changes (a smaller residential population combined with an increase in employment over AQMP projections), an evaluation of total vehicle miles traveled (VMT) was conducted. As shown in Table 4.2-7 (Population, Employment, and VMT Estimations), VMT estimations in the CPA under proposed plan build-out would increase by 116,655, an increase of 18.3 percent. Although there is an increase in employment over what was projected in the 2007 AQMP, the limited anticipated growth in population, and, therefore, VMT, ensures that the proposed plan is consistent with the projections as provided to SCAG, and below the AQMP projections. This impact is considered ***less than significant***, and no mitigation is required.

Table 4.2-7 Population, Employment, and VMT Estimations

Evaluation Criteria	*AQMP Projections*	*2005 (Existing)*	*2030 Capacity*
Population	104,106	82,112	83,354
Employment	17,109	13,307	19,075
Residential VMT	695,220	548,342	613,472
Nonresidential VMT	112,667	88,864	140,389
Total VMT	*807,886*	*637,206*	*753,861*

SOURCE: Atkins (2011) (calculation sheets are provided in Appendix B).

Impact 4.2-2 **Implementation of the proposed plan would not result in objectionable odors affecting a substantial number of people. This impact is *less than significant*.**

Odors emanate from trace substances within the air that can be perceived by the sense of smell. This analysis focuses on objectionable odors. Although almost any land use has the potential to emit odors, some land uses are more likely to produce odors because of their operations. Land uses that are known to have the potential to emit odors include: agriculture, chemical plants, composting operations, dairies, fiberglass molding, landfills, refineries, rendering plants, rail yards, and wastewater treatment plants.

Because of the specific uses that could occur under the proposed plan, there is the potential that new development operations could emit odors. Each individual development project under the proposed plan would be required to evaluate the project with respect to odor impacts. By evaluating for potential odor impacts early in the development process, odor sources can be sited away from sensitive receptors or mitigated to a level where odors are not objectionable. Potential measures that could be implemented on a project level include locating potential odor sources downwind from existing sensitive receptors and potential sensitive receptors upwind from existing odor sources, maintaining an adequate buffer between potential odor sources and receptors such that emitted odors are dissipated before reaching the receptors (minimum of 500 feet depending on odor source), and designing odor-emitting source facilities such that odor emitters are located as far from potential receptors as possible and stack heights are balanced to provide the maximum dispersion of odor between the stack and the nearest sensitive receptors. Appropriate measures would be considered by the City as development projects are proposed, and appropriate mitigation will be implemented on the project level. Therefore, this impact would be considered *less than significant*, and no mitigation is required on a program level.

Significant and Unavoidable Impacts

Impact 4.2-3 **Implementation of the proposed plan could violate air quality standards or contribute substantially to an existing or projected air quality violation. Implementation of mitigation measures MM4.2-1 through MM4.2-4 would reduce this impact, but not to less than significant during construction. Therefore, this impact is *significant and unavoidable*.**

Construction Emissions

Construction of new development under the proposed plan would occur as market demands between 2012 and 2030. Because market demand will fluctuate with the economy, there is no construction schedule in place for the development anticipated under the proposed plan. Construction emissions are dependent on the number of construction and delivery vehicles operating, the length of time in operation, and the amount of soil that is disturbed on a daily basis. Without a known schedule or an anticipated annual or daily level of construction, emissions cannot be accurately estimated.

Individual development projects under the proposed plan will be required to analyze the impacts from construction activities and to implement all feasible and appropriate mitigation to reduce project-specific impacts to below regulatory thresholds. Due to the unknown level of construction activity that would occur on any given day during the proposed plan build-out, this is considered a potentially significant

impact. Implementation of standard City mitigation measures and code compliance would reduce this impact, but not necessarily to a less-than-significant level. Individual development projects could, even with implementation of mitigation, result in an air quality violation or a substantial contribution to an existing air quality violation. Emissions would be anticipated to be lower during years where economically the area is experiencing a slow down and higher during years where the economic situation is at peak. It is anticipated that the daily average emissions (between existing and 2030) would exceed the SCAQMD's recommended thresholds for construction emissions, although individual years (and months and days) would vary substantially over the planning horizon. Therefore, this would be a ***significant and unavoidable*** impact for construction activities on a program level.

Operational Emissions

Operational emissions generated by both stationary and mobile sources would result from normal day-to-day activities within the proposed plan area. Stationary area source emissions would be generated by the consumption of natural gas for space and water heating devices, and the operation of landscape maintenance equipment. Mobile emissions would be generated by the motor vehicles traveling to, within, and from the CPA.

Operational emissions are identified in Table 4.2-8 (Proposed Plan Daily Operational Emissions). As shown, operational emissions, without any mitigation incorporated, would result in significant impacts for ROG, PM_{10} and $PM_{2.5}$. Growth projections and shifts in land use within the San Pedro CPA, in conjunction with the anticipated increases in vehicle efficiencies, would result in a reduction in criteria pollutant emissions from vehicles even though there is an increase in vehicle use and VMT.

Table 4.2-8 Proposed Plan Daily Operational Emissions

	ROG	*NO_X*	*CO*	*PM_{10}*	*$PM_{2.5}$*
Existing					
Area	4,730	621	10,112	1,544	1,486
Mobile	1,133	1,371	10,306	1,105	218
Total	*5,864*	*1,992*	*20,418*	*2,649*	*1,704*
Total 2030 Unmitigated					
Area	7,049	885	15,289	2,339	2,252
Mobile	382	282	2,659	1,301	252
Total	*7,430*	*1,167*	*17,948*	*3,640*	*2,504*
2030 CPA Buildout					
Area	2,318	264	5,177	795	765
Mobile	(752)	(1,090)	(7,647)	197	35
Total	*1,566*	*(826)*	*(2,470)*	*992*	*800*
SCAQMD Thresholds	55	55	550	150	55
Significant?	Yes	No	No	Yes	Yes

SOURCE: Atkins (2011) (calculation sheets are provided in Appendix B).

The proposed plan would provide for infill development in an already established urban area, which would result in the reduction of trips from the existing transit and pedestrian amenities. Reductions from these features were included in the traffic data provided by Iteris and has been incorporated into the emissions in Table 4.2-8. Implementation of the proposed plan policies would reduce ROG, PM_{10}, and $PM_{2.5}$ emissions by implementing green building policies and reducing VMT generated by projected growth. For example, Policy LU1.7 (also Policy LU5.10, Policy LU14.6, and Policy LU16.5) provides that developments should be sustainable, attractive, and incorporate green building design, systems, and materials to the greatest extent feasible. Policy LU11.7 provides for the development of a multi-modal center that considers various modes, such as walking, cycling, automobile, public transit, etc., in or near Downtown. Policies LU5.18 and LU5.19 promote sustainable practices by reducing long-distance shipping and co-locating neighborhood services in schools, community centers, and other public facilities and around transit centers. These policies would reduce impacts from implementation of the proposed plan.

All individual projects developed under the proposed plan would require the incorporation of mitigation measures to reduce air quality impacts. While the implementation of these measures will reduce air quality impacts, buildout of the proposed plan would result in vehicle and area emissions that would exceed the SCAQMD's daily thresholds for ROG, PM_{10} and $PM_{2.5}$. Therefore, this would remain a ***significant and unavoidable*** impact with respect to ROG, PM_{10} and $PM_{2.5}$.

Impact 4.2-4 **Implementation of the proposed plan could 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). Implementation of mitigation measures MM4.2-1 through MM4.2-3 would reduce this impact, but not to a less-than-significant level. Therefore, this cumulative impact is *significant and unavoidable*.**

The South Coast Air Basin (SCAB) is designated as a federal-level severe nonattainment area for ozone, meaning that federal ambient air quality standards are not expected to be met for more than 18 years, and as nonattainment areas for PM_{10} and $PM_{2.5}$. The Basin is a state-level extreme nonattainment area for ozone, and is a state-level nonattainment area for $PM_{2.5}$ and PM_{10}.[12] As indicated under Impact 4.2-3, emissions from operational activities are anticipated to exceed the operational threshold for ROG, PM_{10}, and $PM_{2.5}$ emissions before mitigation. Because emissions from the proposed plan area would be significant on a project level, and the SCAB is in nonattainment for PM_{10} and $PM_{2.5}$, this is considered to be a potentially significant cumulative impact. Implementation of measures MM4.2-1 through MM4.2-3 would reduce these impacts. The impacts from ROG and $PM_{2.5}$ emissions would be reduced to below regulatory thresholds however PM_{10} emissions would still exceed the 150 lbs/day regulatory threshold. Because the project exceeds a threshold for a standard that the SCAB is in nonattainment, the project would make a cumulatively considerable contribution to the cumulative impact. Because all exceedances of project level thresholds inhibit the SCAB's ability to reach attainment, any exceedance is considered a ***significant and unavoidable*** cumulative impact.

[12] California ARB, Area Designations Map/State and National (last reviewed September 2010), http://www.arb.ca.gov/desig/adm/adm.htm (accessed January 13, 2011).

Impact 4.2-5 **Implementation of the proposed plan could expose sensitive receptors to substantial pollutant concentrations. Implementation of project-level mitigation measures MM4.2-1 through MM4.2-3 would reduce this impact, but not to a less-than-significant level for exceedance of LST thresholds during construction. Therefore, this impact is *significant and unavoidable*.**

CO Hotspot Analysis

Maximum existing CO concentrations were calculated for ten of the intersections within the CPA that would be affected by project-related traffic at build-out. These intersections represent the lowest level of service (F) and the most daily traffic as determined from the traffic report prepared by Iteris (Appendix G). As all other intersections are expected to operate at a better LOS, those intersections would produce lower CO concentrations. The results of these calculations are presented in Table 4.2-9 (Build-Out Localized Carbon Monoxide Concentrations). As shown, no intersection currently exceeds national or state standards for 1-hour or 8-hour CO concentrations. Therefore, CO hotspots do not currently exist in the CPA. This impact is considered *less than significant*, and no mitigation is required.

Table 4.2-9 Build-Out Localized Carbon Monoxide Concentrations

Intersection	*Level of Service*	*Peak Hour Volume*	*1-Hr Conc. (ppm)*	*8-Hr Conc. (ppm)*	*Exceeds Standard*
State Standards	—	—	20	9	—
Western Avenue and 1st Street	F	9,511	4.1	3.4	No
Gaffey Street and Channel Street	F	8,774	4.1	3.4	No
1st Street and Gaffey Street	F	8,677	4.0	3.3	No
John S. Gibson Blvd and Channel Street	F	7,564	4.2	3.4	No
Western Avenue and Park Western Drive	F	7,537	4.0	3.3	No
Western Avenue and 9th Street	F	7,462	3.9	3.2	No
Western Avenue and Dodson Avenue	F	6,945	3.9	3.2	No
Gaffey Street and Elberon Avenue	F	6,853	3.9	3.2	No
Western Avenue and 19th Street	F	6,728	3.9	3.2	No
Pacific Avenue and Front Street	F	6,580	3.9	3.2	No

SOURCE: Atkins (2011) (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.

TAC Analysis

Diesel particulate matter, a carcinogen, is also a component of exhaust. However, construction of individual development projects pursuant to the proposed plan would be short-term in nature. Estimation of the cancer risk from diesel particulate matter assumes long-term exposure of the pollutant.

Therefore, the health risk from air pollutants generated during construction is anticipated to be less than significant.

Toxic air contaminants of potential concern within the San Pedro CPA include diesel particulate matter, a form of PM_{10} and $PM_{2.5}$ emitted mostly from diesel-powered equipment during construction activities, and chemicals emitted from the industrial uses within the City. Individual projects that could result from the implementation of the proposed plan are unknown; therefore, pollutant sources cannot be identified, nor emissions quantified.

While the future industrial development within the proposed plan area is unknown, proposed plan policy LU15.5 promotes phasing-out or relocating facilities used for the storage, processing, or distribution of potentially hazardous petroleum or chemical compounds to Terminal Island or the more heavily industrialized areas of Wilmington and discourage any further expansion of existing facilities.

Operational activities under the proposed plan may include the implementation of industrial processes that would emit TACs or the siting of sensitive receptors in the vicinity of existing TAC emitters. This is considered a potentially significant impact. However, implementation of mitigation measures MM4.2-1 through MM4.2-3 would reduce this impact to a ***less-than-significant*** level.

LST Analysis

LSTs have been developed by the SCAQMD to determine maximum allowable concentrations of criteria air pollutants for projects. Construction emissions are dependent on the number of construction and delivery vehicles operating, the length of time in operation, and the amount of soil that is disturbed on a daily basis. Without a known schedule or an anticipated annual or daily level of construction, emissions cannot be accurately estimated.

Construction activities for each development project under the proposed plan will be required to conduct an LST analysis with respect to CO, NO_2, PM_{10}, and $PM_{2.5}$, emissions. Due to the unknown level of construction activity that would occur on any given day during proposed plan build-out, and the location of construction with respect to sensitive receptors, this is considered a potentially significant impact. Implementation of the standard code requirements, SCAQMD's BACMs (included in Appendix B), and project-level mitigation measures would reduce this impact. Development under the proposed plan would require an LST analysis to determine the localized impacts to sensitive receptors. However, individual projects, even with implementation of the identified mitigation, could exceed LST thresholds. Therefore, this would be a ***significant and unavoidable*** impact for construction activities.

Mitigation Measures

As discussed previously, the proposed San Pedro Community Plan incorporates sustainable policies and programs that would help mitigate significant impacts on regional and local air quality. In addition, the following mitigation measures shall be implemented for all discretionary projects in the San Pedro CPA:

MM4.2-1 *The City, as a condition of approval of all applicable discretionary projects, shall require contractors building projects within the San Pedro CPA to:*

- *Use properly tuned and maintained equipment. Contractors shall enforce the idling limit of five minutes as set forth in the California Code of Regulations*
- *Use diesel-fueled construction equipment to be retrofitted with after treatment products (e.g. engine catalysts) to the extent they are readily available and feasible*
- *Use heavy duty diesel-fueled equipment that uses low NO_X diesel fuel to the extent it is readily available and feasible*
- *Use construction equipment that uses low polluting fuels (i.e., compressed natural gas, liquid petroleum gas, and unleaded gasoline) to the extent available and feasible*
- *Maintain construction equipment in good operating condition to minimize air pollutants*
- *Use building materials, paints, sealants, mechanical equipment, and other materials that yield low air pollutants and are nontoxic*

MM4.2-2 *In the event that future projects under the Community Plan cover areas greater than 5 acres, appropriate analysis and modeling would be required for CO, NO_X, PM_{10} and $PM_{2.5}$.*

MM4.2-3 *In order to comply with the California Air Resources Board Air Quality and Land Use Handbook (June 2005) and achieve an acceptable interior air quality level for sensitive receptors, appropriate measures shall be incorporated into discretionary project building design.*

MM4.2-4 *The City, as a condition of approval for all discretionary projects, shall require developers to implement applicable Greenhouse Gas reduction measures in project design and comply with regulatory targets.*

Level of Significance after Mitigation

Mitigation measures identified above and standard conditions of approval would reduce impacts to air quality during construction, but ***significant and unavoidable*** impacts would remain during construction if significance thresholds are exceeded.

4.2.4 Cumulative Impacts

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 plan, air pollutant emissions would be considered to be cumulatively considerable if the new sources of emissions exceed SCAQMD project-specific emissions thresholds. The cumulative context for consideration of most air quality impacts is the South Coast Air Basin; the context for localized significance thresholds and CO hotspot analysis would be the CPA.

The 2007 AQMP anticipates and accounts for growth within the South Coast Air Basin through 2030, and anticipates a 26.8 percent increase in vehicle trips. Future growth that does not exceed this percentage would not conflict with the AQMP. As discussed under Impact 4.2-1, in order to evaluate the total changes (a smaller residential population combined with an increase in employment over AQMP projections), an evaluation of total vehicle miles traveled (VMT) was conducted. The increase in population, combined with an increase in employment under the proposed plan, results in an 18.3 percent increase in VMT, which is substantially less than the 26.8 percent established in the AQMP. Although there is an increase in area employment over what was projected in the 2007 AQMP, the

limited anticipated growth in population and VMT ensures that the project is consistent with the projections as provided to SCAG. Because VMT is anticipated to be reduced as a whole over the next several years due to an increased emphasis on transportation-oriented development, and the limited increase in anticipated VMT from build-out of the proposed plan, the project would not make a cumulatively considerable contribution, and the cumulative impact is ***less than significant***.

The South Coast Air Basin (SCAB) is designated as a federal-level severe nonattainment area for ozone, meaning that federal ambient air quality standards are not expected to be met for more than 18 years, and as nonattainment areas for PM_{10} and $PM_{2.5}$. The Basin is a state-level extreme nonattainment area for ozone, and is a state-level nonattainment area for $PM_{2.5}$ and PM_{10}.[13] As indicated under Impact 4.2-3, emissions from operational activities are anticipated to exceed the operational threshold for ROG, PM_{10}, and $PM_{2.5}$ emissions before mitigation. Because emissions from the proposed plan area would be significant on a project level, and the SCAB is in nonattainment for PM_{10} and $PM_{2.5}$, this is considered to be a potentially significant cumulative impact. Implementation of measures MM4.2-1 through MM4.2-4 would reduce these impacts. The impacts from ROG and $PM_{2.5}$ emissions would be reduced to below regulatory thresholds however PM_{10} emissions would still exceed the 150 lbs/day regulatory threshold. Because the proposed plan exceeds a threshold for a standard that the SCAB is in nonattainment, the project would make a cumulatively considerable contribution to the cumulative impact. Because all exceedances of project-level thresholds inhibit the SCAB's ability to reach attainment, any exceedance is considered a ***significant*** cumulative impact.

As discussed in the Local Air Quality portion of Section 4.2.1, no intersection within the proposed plan area currently exceeds national or state standards for 1-hour or 8-hour CO concentrations. Therefore an impact with respect to localized CO concentrations does not currently exist within the proposed plan area. As discussed in Impact 4.2-5, as the proposed plan area is built out, the level of service on roadways has the potential to deteriorate; however, no intersection would exceed national or state standards for 1-hour or 8-hour CO concentrations. Therefore, the project would not make a cumulatively considerable contribution to CO hotspots.

The SCAQMD provides a detailed analysis of existing TAC health risks within the District that indicates existing cancer risk within the CPA is between 603 and 2117 cases in a million. Operational activities under the proposed plan may include the implementation of industrial processes that will emit TACs or the siting of sensitive receptors in the vicinity of existing TAC emitters. The potential increase in TAC emissions would result in a cumulatively considerable contribution to TAC impacts. However, implementation of mitigation measures MM4.2-1 through MM4.2-4, the project in combination with future development would result in a ***less-than-significant*** cumulative impact.

Construction activities have the potential to impact nearby sensitive receptors. Because construction activities are of limited duration and in a limited area it is unlikely that construction being undertaken now would overlap with construction under the proposed plan. However, without a known schedule or an anticipated annual or daily level of construction for the proposed plan build-out, timing and emission levels cannot be accurately estimated. Therefore, construction for the proposed plan is considered a

[13] California ARB, Area Designations Map/State and National (last reviewed September 2010), http://www.arb.ca.gov/desig/adm/adm.htm (accessed January 13, 2011).

potentially significant impact on the project level. SCAQMD's BACM's (included in Appendix B) and mitigation measures MM4.2-1 through MM4.2-4 would reduce this impact, but not necessarily to a less-than-significant level. Because the timing and extent of current construction's overlap with nearby construction under the proposed plan area is unknown, construction activities would make a cumulatively considerable contribution to the plan's cumulative impact. Because the SCAQMD indicates that projects that are significant at a project level must also be determined to be significant at a cumulative level, this would result in a ***significant and unavoidable*** cumulative impact.

There are existing land uses within the proposed plan area that have the potential to emit odors. As indicated under Impact 4.2-2, because of the unknown disposition of the developable land under the proposed plan, there is the potential that new development operations will emit odors that could be objectionable and could be in close proximity to existing odor sources. Therefore, the proposed plan has the potential to result in a cumulative impact, and because the exact disposition of land uses is unknown, would result in a cumulatively considerable contribution to the plan's cumulative impact. Each individual development project under the proposed plan will be required to evaluate the project with respect to odor impacts. By evaluating for potential odor impacts early in the development process, odor sources can be sited away from sensitive receptors or mitigated to a level where odors are not objectionable. Because odors are localized impacts and the siting of new odor sources as well as sensitive receptors will be evaluated and mitigated such that no localized odor impacts occur, this project would result in a ***less-than-significant*** cumulative impact.

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