5.3 Air Quality

The analysis in this section is based on the air quality assessment completed by Mestre Greve Associates (MGA), specifically, the *Air Quality Assessment For: Historic Town Center City of San Juan Capistrano,* February 3, 2011. The subject study is contained within Appendix B of this EIR.

5.3.1 ENVIRONMENTAL SETTING

Climate and Meteorological Conditions

The climate in and around the Project area, as with all of southern California, is controlled largely by the strength and position of the subtropical high pressure cell over the Pacific Ocean. It maintains moderate temperatures and comfortable humidity, and limits precipitation to a few storms during the winter "wet" season. Temperatures are normally mild, excepting the summer months, which commonly bring substantially higher temperatures. In all portions of the basin, temperatures well above 100 degrees Fahrenheit have been recorded in recent years. The annual average temperature in the basin is approximately 62 degrees Fahrenheit.

Winds in the Project area are usually driven by the dominant land/sea breeze circulation system. Regional wind patterns are dominated by daytime onshore sea breezes. At night the wind generally slows and reverses direction traveling towards the sea. Wind direction will be altered by local canyons, with wind tending to flow parallel to the canyons. The frequency of calm winds (less than two miles per hour) is less than ten percent.

Southern California frequently has temperature inversions which inhibit the dispersion of pollutants. Inversions may be either ground based or elevated. Ground based inversions, sometimes referred to as radiation inversions, are most severe during clear, cold, early winter mornings. Under conditions of a ground-based inversion, very little mixing or turbulence occurs, and high concentrations of primary pollutants may occur near major roadways. Elevated inversions can be generated by a variety of meteorological phenomena. Elevated inversions act as a lid or upper boundary and restrict vertical mixing. Below the elevated inversion, dispersion is not restricted. Mixing heights for elevated inversions are lower in the summer and more persistent. This low summer inversion puts a lid over the South Coast Air Basin (Basin) and is responsible for the high levels of ozone observed during summer months in many areas of the Basin. While summer inversions are a primary influence on ambient air quality throughout the Basin, South Orange County, due to its close proximity to the Pacific Ocean and the geographic barrier imposed by the Santa Ana Mountains, possesses air quality that is consistently “good” to “excellent” with the lowest ozone concentrations recorded within the Basin.

Criteria Pollutants and Standards

Under the Federal Clean Air Act (FCAA), the U.S. EPA has established National Ambient Air Quality Standards (NAAQS) for seven major pollutants; ozone (O3), respirable particulate matter (PM10), fine particulate matter (PM2.5), carbon monoxide (CO), nitrogen dioxide (NO2), sulfur dioxide (SO2), and lead. These seven air pollutants are often referred to as the criteria pollutants.

The NAAQS are two tiered: primary, to protect public health, and secondary, to prevent degradation to the environment (i.e., impairment of visibility, damage to vegetation and property).

Under the California Clean Air Act (CCAA), the California Air Resources Board (CARB) has established California Ambient Air Quality Standards (CAAQS) to protect the health and welfare of Californians. State standards have been established for the seven criteria pollutants as well as for four additional pollutants; visibility reducing particles, sulfates, hydrogen sulfide, and vinyl chloride. Table 5.3-1, *Ambient Air Quality Standards,* presents the state and national ambient air quality standards. As shown, the State standards are generally higher than the Federal requirements. A brief explanation of each pollutant and their health effects is presented below.

Ozone (O3): Ozone is a secondary pollutant; it is not directly emitted. Ozone is the result of chemical reactions between volatile organic compounds (VOC) (also referred to as reactive organic gases (ROG)) and nitrogen oxides (NOx), which occur only in the presence of bright sunlight. Sunlight and hot weather cause ground-level ozone to form in the air. As a result, it is known as a summertime air pollutant. Ground-level ozone is the primary constituent of smog. Because ozone is formed in the atmosphere, high concentrations can occur in areas well away from sources of its constituent pollutants. People with lung disease, children, older adults, and people who are active can be affected when ozone levels are unhealthy. Numerous scientific studies have linked ground-level ozone exposure to a variety of problems, including:

- Lung irritation that can cause inflammation much like a sunburn;
- Wheezing, coughing, pain when taking a deep breathe, and breathing difficulties during exercise or outdoor activities;
- Permanent lung damage to those with repeated exposure to ozone pollution; and
- Aggravated asthma, reduced lung capacity, and increased susceptibility to respiratory illnesses like pneumonia and bronchitis.

Ground-level ozone can have detrimental effects on plants and ecosystems. These effects include:

- Interfering with the ability of sensitive plants to produce and store food, making them more susceptible to certain diseases, insects, other pollutants, competition and harsh weather;
- Damaging the leaves of trees and other plants, negatively impacting the appearance of urban vegetation, national parks, and recreation areas; and
- Reducing crop yields and forest growth, potentially impacting species diversity in ecosystems.

Table 5.3-1 Ambient Air Quality Standards				
Pollutant	**Averaging Time**	**State Standards [1,3]**	**Federal Standards2**	
			Primary[3,5]	**Secondary[3,6]**
Ozone (O_3)	1 Hour	0.09 ppm (180 µg/m^3)	--	--
	8 Hour	0.070 ppm (137 µg/m^3)	0.075 ppm (147 µg/m^3)	Same as Primary
Respirable Particulate Matter (PM_{10})[8]	24 Hour	50 µg/m^3	150 µg/m^3	Same as Primary
	AAM[6]	20 µg/m^3	--	Same as Primary
Fine Particulate Matter ($PM_{2.5}$)[8]	24 Hour	--	35 µg/m^3	Same as Primary
	AAM[6]	12 µg/m^3	15 µg/m^3	Same as Primary
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	None
	8 Hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	None
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)	--	--
Nitrogen Dioxide (NO_2)	AAM[6]	0.030 ppm (56 µg/m^3)	0.053 ppm (100 µg/m^3)	Same as Primary
	1 Hour	0.18 ppm (338 µg/m^3)	100 ppb[10]	--
Sulfur Dioxide (SO_2)	AAM[6]	--	0.030 ppm (80 µg/m3)	--
	24 Hour	0.04 ppm (105 µg/m^3)	0.14 ppm (365 µg/m^3)	--
	3 Hour	--	--	0.5 ppm (1,300 µg/m^3)
	1 Hour	0.25 ppm (655 µg/m^3)	--	--
Lead[9]	Rolling 3-Month Average	1.5 µg/m^3	--	--
	Quarterly Average	--	1.5 µg/m^3	Same as Primary
Visibility Reducing Particles	8 hour	Extinction coefficient of 0.23 per km -- visibility ≥ 10 miles (0.07 per km -- ≥30 miles for Lake Tahoe)	--	--
Sulfates	24 Hour	25 µg/m^3	--	--
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)	--	--
Vinyl Chloride[7]	24 Hour	0.01 ppm (26 µg/m^3)	--	--

1. California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, PM10, PM2.5, and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded.

2. National standards (other than ozone, PM10, PM2.5, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m3 is equal to or less than one. For PM2.5, the 24 hour standard is attained when 98 percent of the daily concentrations,

averaged over three years, are equal to or less than the standard. Contact U.S. EPA for further clarification and current federal policies.

3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25˚ C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25˚ C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

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

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

6. Annual Arithmetic Mean

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

8. On September 21, 2006 EPA published a final rule revoking the annual 50 µg/m3 PM10 standard and lowering the 24-hour PM2.5 standard from 65 µg/m3.

On March 12, 2008 EPA lowered the 8-hour Ozone standard to 0.075 ppm from 0.08 ppm. Attainment designations are to be issued in December, 2009 by March 2010 with attainment plans due April, 2010 by March, 2013.

9. Final rule signed October 15, 2008.

10 Parts per billion (3 year average of 98th percentile of maximum daily 1-hour concentration, January 22, 2010.)

-- No Standard

Particulate Matter (PM10 & PM2.5): Particulate matter includes both aerosols and solid particles of a wide range of size and composition. Of particular concern are those particles smaller than 10 microns in size (PM10) and smaller than or equal to 2.5 microns (PM2.5). The size of the particulate matter is referenced to the aerodynamic diameter of the particulate. Smaller particulates are of greater concern because they can penetrate deeper into the lungs than large particles. The principal health effect of airborne particulate matter is on the respiratory system. Short term exposures to high PM2.5 levels are associated with premature mortality and increased hospital admissions and emergency room visits. Long term exposures to high PM2.5 levels are associated with premature mortality and development of chronic respiratory disease. Short-term exposure to high PM10 levels is associated with hospital admissions for cardiopulmonary diseases, increased respiratory symptoms, and possible premature mortality. The EPA has concluded that available evidence does not suggest an association between long-term exposure to PM10 at current ambient levels and health effects.

PM2.5 is directly emitted in combustion exhaust and formed from atmospheric reactions between of various gaseous pollutants including nitrogen oxides (NOx) sulfur oxides (SOx) and volatile organic compounds (VOC). PM10 is generally emitted directly as a result of mechanical processes that crush or grind larger particles or the re-suspension of dusts most typically through construction activities and vehicular travels. PM2.5 can remain suspended in the atmosphere for days and weeks and can be transported long distances. PM10 generally settles out of the atmosphere rapidly and are not readily transported over large distances.

Carbon Monoxide (CO): Carbon monoxide is a colorless and odorless gas, which in the urban environment, is associated primarily with the incomplete combustion of fossil fuels in motor vehicles. Carbon monoxide combines with hemoglobin in the bloodstream and reduces the amount of oxygen that can be circulated through the body. High carbon

monoxide concentrations can lead to headaches, aggravation of cardiovascular disease, and impairment of central nervous system functions. Carbon monoxide concentrations can vary greatly over comparatively short distances. Relatively high concentrations are typically found near crowded intersections, along heavily used roadways carrying slow moving traffic, and at or near ground level. Even under the most severe meteorological and traffic conditions, high concentrations of carbon monoxide are limited to locations within a relatively short distance (i.e., up to 600 feet or 185 meters) of heavily traveled roadways. Overall carbon monoxide emissions are decreasing as a result of the Federal Motor Vehicle Control Program, which has mandated increasingly lower emission levels for vehicles manufactured since 1973.

Nitrogen Dioxide (NO2): Nitrogen gas, normally relatively inert (unreactive), comprises about 80 percent of the air. At high temperatures (i.e., in the combustion process) and under certain other conditions it can combine with oxygen, forming several different gaseous compounds collectively called nitrogen oxides (NOx). Nitric oxide (NO) and nitrogen dioxide (NO2) are the two most important compounds. Nitric oxide is converted to nitrogen dioxide in the atmosphere. Nitrogen dioxide (NO2) is a red-brown pungent gas. Motor vehicle emissions are the main source of NOx in urban areas. Nitrogen dioxide is toxic to various animals as well as to humans. Its toxicity relates to its ability to form nitric acid with water in the eye, lung, mucus membrane and skin. In animals, long-term exposure to nitrogen oxides increases susceptibility to respiratory infections lowering their resistance to such diseases as pneumonia and influenza. Laboratory studies show susceptible humans, such as asthmatics, exposed to high concentrations of NO2 can suffer lung irritation and potentially, lung damage. Epidemiological studies have also shown associations between NO2 concentrations and daily mortality from respiratory and cardiovascular causes and with hospital admissions for respiratory conditions.

NO_X is a combination of primarily NO and NO2. While the NAAQS only addresses NO2, NO and the total group of nitrogen oxides is of concern. NO and NO2 are both precursors in the formation of ozone and secondary particulate matter as discussed above. Because of this and the fact that NO emissions largely convert to NO2, NO_X emissions are typically examined when assessing potential air quality impacts.

Sulfur Dioxide (SO2): Sulfur oxides (SOx) constitute a class of compounds of which sulfur dioxide (SO2) and sulfur trioxide (SO3) are of greatest importance. Ninety-five percent of pollution related SOx emissions are in the form of SO2. SOx emissions are typically examined when assessing potential air quality impacts of SO2. Combustion of fossil fuels for generation of electric power is the primary contributor of SOx emissions. Industrial processes, such as nonferrous metal smelting, also contribute to SOx emissions. SOx is also formed during combustion of motor fuels. However, most of the sulfur has been removed from fuels greatly reducing SOx emissions from vehicles. SO2 combines easily with water vapor, forming aerosols of sulfurous acid (H2SO3), a colorless, mildly corrosive liquid. This liquid may then combine with oxygen in the air, forming the even more irritating and corrosive sulfuric acid (H2SO4). Peak levels of SO2 in the air can cause temporary breathing difficulty for people with asthma who are active outdoors. Longer-term exposures to high levels of SO2 gas and particles cause respiratory illness

and aggravate existing heart disease. SO2 reacts with other chemicals in the air to form tiny sulfate particles which are measured as PM2.5. The heath effects of PM2.5 are discussed above.

Lead (Pb): Lead is a stable compound, which persists and accumulates both in the environment and in animals. In humans, it affects the blood forming or hematopoletic, the nervous, and the renal systems. In addition, lead has been shown to affect the normal functions of the reproductive, endocrine, hepatic, cardiovascular, immunological, and gastrointestinal systems, although there is significant individual variability in response to lead exposure. Since 1975, lead emissions have been in decline due in part to the introduction of catalyst-equipped vehicles, and decline in production of leaded gasoline. In general, an analysis of lead is limited to projects that emit significant quantities of the pollutant (i.e. lead smelters) and are not applied to transportation projects.

Visibility Reducing Particulates: Visibility-reducing particles consist of suspended particulate matter, which is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size and chemical composition, and can be made up of many different materials such as metals, soot, soil, dust, and salt. The Statewide standard is intended to limit the frequency and severity of visibility impairment due to regional haze. A separate standard for visibility-reducing particles that is applicable only in the Lake Tahoe Air Basin is based on reduction in scenic quality.

Sulfates: Sulfates are the fully oxidized ionic form of sulfur. Sulfates occur in combination with metal and/or hydrogen ions. In California, emissions of sulfur compounds occur primarily from the combustion of petroleum-derived fuels (e.g., gasoline and diesel fuel) that contain sulfur. This sulfur is oxidized to sulfur dioxide (SO2) during the combustion process and subsequently converted to sulfate compounds in the atmosphere. The conversion of SO2 to sulfates takes place comparatively rapidly and completely in urban areas of California due to regional meteorological features. The CARB's sulfates standard is designed to prevent aggravation of respiratory symptoms. Effects of sulfate exposure at levels above the standard include a decrease in ventilatory function, aggravation of asthmatic symptoms, and an increased risk of cardio-pulmonary disease. Sulfates are particularly effective in degrading visibility, and, due to fact that they are usually acidic, can harm ecosystems and damage materials and property.

Hydrogen Sulfide (H2S): Hydrogen sulfide (H2S) is a colorless gas with the odor of rotten eggs. It is formed during bacterial decomposition of sulfur-containing organic substances. It can also be present in sewer gas and some natural gas, and can be emitted as the result of geothermal energy exploitation. Breathing H2S at levels above the standard will result in exposure to a very disagreeable odor. In 1984, a California Air Resources Board (CARB) committee concluded that the ambient standard for H2S is adequate to protect public health and to significantly reduce odor annoyance.

Vinyl Chloride (Chloroethene): Vinyl chloride (chloroethene), a chlorinated hydrocarbon, is a colorless gas with a mild, sweet odor. Most vinyl chloride is used to make polyvinyl

chloride (PVC) plastic and vinyl products. Vinyl chloride has been detected near landfills, sewage plants, and hazardous waste sites, due to microbial breakdown of chlorinated solvents. Short-term exposure to high levels of vinyl chloride in air causes central nervous system effects, such as dizziness, drowsiness, and headaches. Long-term exposure to vinyl chloride through inhalation and oral exposure causes liver damage. Cancer is a major concern from exposure to vinyl chloride via inhalation. Vinyl chloride exposure has been shown to increase the risk of angiosarcoma, a rare form of liver cancer in humans.

Air Quality Management

The proposed Project is located in the South Coast Air Basin. The Basin is comprised of parts of Los Angeles, Riverside and San Bernardino counties and all of Orange County. In the Basin, SCAQMD and SCAG, in coordination with local governments and the private sector, develop the Air Quality Management Plan (AQMP) for the air basin to satisfy these requirements. The AQMP is the most important air management document for the basin because it provides the blueprint for meeting state and federal ambient air quality standards.

The l997 AQMP with the 1999 amendments is the current Federally approved applicable air plan for ozone. The successor 2003 AQMP was adopted locally on August 1, 2003, by the governing board of the SCAQMD. CARB adopted the plan as part of the California State Implementation Plan on October 23, 2003. The PM10 attainment plan from the 2003 AQMP received final approval from the U.S. EPA on November 14, 2005 with an effective date of December 14, 2005. As of February 14, 2007 the U.S. EPA had not acted on the ozone attainment plan of the 2003 AQMP. On this date, CARB announced that it was rescinding the ozone attainment plan from the 2003 AQMP with the intention to expedite approval of the 2007 AQMP. The 2007 AQMP was adopted by the SCAQMD on June 1, 2007. CARB adopted the plan as a part of the California State Implementation Plan on September 27, 2007. The State Implementation Plan was submitted to the U.S. EPA on November 16, 2007. The U.S. EPA has not taken action on the 2007 AQMP at this time.

The 2007 AQMP was prepared in response to the implementation of the federal PM2.5 and 8-hour ozone NAAQS. The implementation of the new standards required completion of plan addressing attainment of the 8-hour ozone standard by June of 2007 and completion of a plan addressing the PM2.5 standard one year later, in April of 2008. SCAQMD determined that it was most prudent to prepare an integrated plan to address both pollutants. The attainment date for the PM2.5 NAAQS is earlier (i.e., 2015) than the attainment date for the ozone NAAQS (i.e., 2021) and the district felt that delaying a plan for PM2.5 by a year could jeopardize the basin's ability to attain the standard. Further, development of a plan for ozone would have likely focused on lowering VOC emissions, which would have no effect on PM2.5 levels. Reductions in NOx emissions result in reductions in both ozone and PM2.5 levels.

The 2007 AQMP demonstrates attainment of the 65 µg/m3 24-hour average and 15µg/m3 annual average PM2.5 standard by the 2015 deadline. However, it should be noted that in September of 2006, the U.S. EPA lowered the 24-hour PM2.5 NAAQS to 35 µg/m3. An attainment plan for the revised standard will need to be completed by 2013. The deadline for meeting the revised

standard will not change (i.e., April 2015) but five year extensions to attain the standard may be granted by the U.S. EPA.

The 2007 AQMP determined that the Basin would not be able to achieve the 0.08-ppm 8-hour ozone standard by the 2021 deadline without the use of "black box" measures. "Black box" measures anticipate the development of new technologies or improving existing control technologies that are not well defined at the time the plan is prepared. However, the use of "black box" measures is not allowed for areas with a Severe-17 non-attainment designation. Because of this the SCAQMD and CARB have submitted a request to the U.S. EPA to "bump up" the Basin's classification to Extreme. This will extend the required attainment date to 2024 and allow the use of "black box" measures. The "black box:" reductions needed for ozone attainment are estimated to be 190 tons per day (tpd) of NOx and 27 tpd. These reductions represent a 17% reduction in 2002 average daily NOx emissions and a 3% reduction in 2002 average daily VOC emissions.

It should be noted that on March 12, 2008, the U.S. EPA lowered the 8-hour ozone standard to 0.075 ppm. This effectively lowers the standard 0.009 ppm as 0.084 ppm is considered meeting the 0.08 ppm standard. A plan to attain the revised standard will need to be completed by 2013. Attainment deadlines for the revised standard have not been established and may vary depending on the severity of the exceedances.

Implementation of the 2007 AQMP is based on a series of control measures and strategies that vary by source type (i.e., stationary or mobile) as well as by the pollutant that is being targeted. Short-term and mid-term control measures are defined to achieve the PM2.5 standard by 2015. These measures are designed to also contribute to reductions in ozone levels. Additional, long-term measures are defined to attain the 8-hour ozone standard by 2024. The measures rely on actions to be taken by several agencies that have statutory authority to implement such measures. Each control measure will be brought for regulatory consideration in a specified time frame. Control measures deemed infeasible will be substituted by other measures to achieve the total emission reduction target for each agency.

The plan focuses on control of sulfur oxides (SOx), directly emitted PM2.5, and nitrogen oxides (NOx) to achieve the PM2.5 standard. Achieving the 8-hour ozone standard builds upon the PM2.5 attainment strategy with additional NOx and VOC reductions. The control measures in the 2007 AQMP are based on facility modernization, energy efficiency and conservation, good management practices, market incentives/compliance flexibility, area source programs, emission growth management and mobile source programs. In addition, CARB has developed a plan of control strategies for sources controlled by CARB (i.e. on-road and off-road motor vehicles and consumer products). Further, Transportation Control Measures (TCM) defined in SCAG's Regional Transportation Plan (RTP) and Regional Transportation Improvement Program (RTIP) are needed to attain the standards.

The 2007 AQMP includes 30 short-term and mid-term stationary and 7 mobile source control measures proposed for implementation by the district that are applicable to sources under their jurisdiction. Nine of these measures were included in the 2003 AQMP and have been updated or revised. Twenty-eight new measures are proposed based on replacement of the District's long-term reduction measures from the 2003 AQMP with more defined control measures or

development of new control measures. Measures include regulations to reduce VOC emissions from coatings, solvents, petroleum operations, and cutback asphalt; measures to reduce emissions from industrial combustion sources as well as residential and commercial space heaters; a measure to offset potential emission increases due to changes in natural gas specifications; localized control of PM emission hot spots; regulation of wood burning fireplaces and wood stoves; reductions from under-fired char broilers; reducing urban heat island through lighter colored roofing, and paving materials and tree planting programs; energy efficiency and conservation programs; and emission reduction from new or redevelopment projects through regulations that will establish mitigation options to be implemented in such project. The specific measures are discussed in Chapter 4 and presented in detail in Appendix IV-A of the 2007 AQMP.

The TCMs defined in the RTP and RTIP fall into three categories, High Occupancy Vehicle measures, Transit and System Management Measures and Information-based Transportation Strategies. The High Occupancy Vehicle (HOV) Strategy attempts to reduce the proportion of commute trips made by single occupancy vehicles which constitute 72% of all home work trips according to the 2010 U.S. Census. Specific measures include new HOV lanes on existing and new facilities, HOV to HOV bypasses and High Occupancy Toll (HOT) lanes. The Transit and Systems Management Strategy incentivize the use of transit, alternative transportation modes (e.g., pedestrian and bicycles), and increases in average vehicle occupancy by facilitating vanpools, smart shuttles and similar strategies. Systems management measures include grade separation and traffic signal synchronization projects. The information-based Transportation Strategy relies primarily on the innovative provision of information in a manner that successfully influences the ways in which individuals use the regional transportation system. Providing ride matching to increase ride-sharing and carpool trips and providing near real-time estimates of congestion in an effort to influence persons to defer traveling to a less congested period are examples of the strategy.

In addition to District's measures and SCAG's TCMs, the Final 2007 AQMP includes additional short- and mid-term control measures aimed at reducing emissions from sources that are primarily under state and federal jurisdiction including on-road and off-road mobile sources, and consumer products. Measures committed to be enacted by CARB include (1) improvements to the smog check program, (2) cleaner in-use heavy duty truck emission regulations, (3) increased regulations on goods movement sources including ships, harbor craft, and port trucks, (4) regulations for cleaner in-use off-road equipment including agricultural equipment, (5) various measures to reduce evaporative VOC emissions from fuel storage and dispensing, (6) tightened emission standards and product reformulation for consumer products that emit VOCs, and (7) reductions in emissions from pesticide applications.

Four long-term "black box" control approaches are presented in the 2007 AQMP. These measures include (1) further reductions from on-road sources by retiring or retrofitting older high-emitting vehicles and accelerated penetration of very low and zero emission vehicles, (2) increased inspection and maintenance (I/M) programs for heavy-duty diesel trucks, (3) further reductions from off-road mobile sources through accelerated turn-over of existing equipment, retrofitting existing equipment and new engine emission standards, and (4) further reductions from consumer product VOC emissions.

The 2007 AQMP identifies four contingency measures that would need to be implemented if milestone emission targets are not met or if the standards are not attained by the required date. While implementation of these measures is expected to reduce emissions, there are issues that limit the viability of these measures as AQMP control measures. These issues include the availability of District resources to implement and enforce the measure, cost-effectiveness of the measure, potential adverse environmental impacts, effectiveness of emission reductions, and availability of methods to quantify emission reductions.

South Coast Air Basin Air Quality Attainment Designations

Based on monitored air pollutant concentrations, the U.S. EPA and CARB designate areas relative to their status in attaining the NAAQS and CAAQS respectively. Table 5.3-2 lists the current attainment designations for the Basin. For Federal standards, the required attainment date is also shown. The Unclassified designation indicates that the air quality data for the area does not support a designation of attainment or nonattainment.

Table 5.3-2
Designations of Criteria Pollutants for the SCAB

Pollutant	Federal	State
Ozone (O_3) 8-Hour Ozone	Severe-17 Nonattainment Extreme Nonattainment	Nonattainment
Respirable Particulate Matter (PM_{10})	Serious Nonattainment (2006)	Nonattainment
Fine Particulate Matter ($PM_{2.5}$)	Nonattainment (2015)	Nonattainment
Carbon Monoxide (CO)	Attainment/Maintenance (2000)	Attainment
Nitrogen Dioxide (NO_2)	Attainment/Maintenance (1995)	Attainment
Sulfur Dioxide (SO_2)	Attainment	Attainment
Lead	Attainment	Attainment
Visibility Reducing Particles	n/a	Unclassified
Sulfates	n/a	Unclassified
Hydrogen Sulfide	n/a	Attainment
Vinyl Chloride	n/a	Attainment

Source: Mestre Greve Associates, Air Quality Assessment For: Historic Town Center City of San Juan Capistrano, February 3, 2011

Table 5.3-2 shows that the U.S. EPA has designated the Basin as Severe-17 non-attainment for ozone, serious non-attainment for PM10, non-attainment for PM2.5, and attainment/maintenance for CO and NO2. The Basin has been designated by the state as non-attainment for ozone, PM10, and PM2.5. For federal designations, the qualifiers, Severe-17 and Serious, affect the required attainment dates as the federal regulations have different requirements for areas that exceed the standards by greater amounts at the time of attainment/non-attainment designation. The Basin is

designated as in attainment of the Federal SO2 and lead NAAQS as well as the state CO, NO2, SO2, lead, hydrogen sulfide, and vinyl chloride CAAQS.

In July 1997, U.S. EPA issued a new ozone NAAQS of 0.08 ppm using an 8-hour averaging time. Implementation of this standard was delayed by several lawsuits. Attainment/non-attainment designations for the new 8-hour ozone standard were issued on April 15, 2004 and became effective on June 15, 2005. The Basin was designated severe-17 non-attainment, which requires attainment of the Federal Standard by June 15, 2021. As a part of the designation, the EPA announced that the 1-hour ozone standard would be revoked in June of 2005. Thus, the 8-hour ozone standard attainment deadline of 2021 supersedes and replaces the previous 1-hour ozone standard attainment deadline of 2010.

The SCAQMD and CARB are requesting that U.S. EPA change the nonattainment status of the 8-hour ozone standard to extreme, which would extend the attainment date by three years to 2024.

On March 12, 2008, U.S. EPA announced that it was lowering the 8-hour average NAAQS for ozone to 0.075 ppm. Attainment/non-attainment designations for the revised standard are to be issued by March 2009 with attainment plans due by March 2013. Non-attainment areas will be required to meet the standards by deadlines that may vary based on the severity of the problem in the area that will be determined at time of attainment/non-attainment designation.

On April 28, 2005, CARB adopted an 8-hour ozone standard of 0.070 ppm. The California Office of Administrative Law approved the rulemaking and filed it with the Secretary of State on April 17, 2006. The standard became effective on May 17, 2006. California has retained the 1-hour concentration standard of 0.09 ppm. To be re-designated as attainment by the state the Basin will need to achieve both the 1-hour and 8-hour ozone standards.

The Basin was designated as moderate non-attainment of the PM10 standards when the designations were initially made in 1990 with a required attainment date of 1994. In 1993, the basin was re-designated as serious non-attainment with a required attainment date of 2006 because it was apparent that the basin could not meet the PM10 standard by the 1994 deadline. As of 2006, the Basin had met the federal PM10 standards at all monitoring stations except the western Riverside where the annual PM10 standard had not been met. However, on September 21, 2006, the U.S. EPA announced that it was revoking the annual PM10 standard as research had indicated that there were no considerable health effects associated with long-term exposure to PM10. With this change, the basin is technically in attainment of the federal PM10 standards although the re-designation process has not yet begun.

In July 1997, U.S. EPA issued NAAQS for fine particulate matter (PM2.5). The PM2.5 standards include an annual standard set at 15 micrograms per cubic meter (µg/m3), based on the three-year average of annual mean PM2.5 concentrations and a 24-hour standard of 65 µg/m3, based on the three-year average of the 98th percentile of 24-hour concentrations. Implementation of these standards was delayed by several lawsuits. On January 5, 2005, EPA took final action to designate attainment and nonattainment areas under the NAAQS for PM2.5 effective April 5, 2005. The Basin was designated as non-attainment with an attainment required as soon as possible but no later than 2010. EPA may grant attainment date extensions of up to five years in

areas with more severe PM2.5 problems and where emissions control measures are not available or feasible. It is likely that the SCAB will need this additional time to attain the standard.

On September 21, 2006, the U.S. EPA announced that the 24-hour PM2.5 standard was lowered to 35 µg/m3. Attainment/non-attainment designations for the revised PM2.5 standard will be made by December of 2009 with an attainment date of April 2015 although an extension of up to five years could be granted by the U.S. EPA.

The Federal attainment deadline for CO was to be December 31, 2000 but at that time the Basin still had measured exceedances of the CO NAAQS. The basin was granted an extension to attain the standard and has not had any violations of the federal CO standards since 2002. In March 2005, the South Coast AQMD adopted a CO Redesignation Request and Maintenance Plan. On May 11, 2007, the U.S. EPA announced approval of the Redesignation Request and Maintenance Plan and that, effective June 11, 2007, the Basin would be re-designated as attainment/maintenance for the federal CO NAAQS. The plan provides for maintenance of the federal CO air quality standard until at least 2015 and commits to revising the Plan in 2013 to ensure maintenance through 2025.

The federal annual NO2 standard was met for the first time in 1992 and has not been exceeded since. The Basin was re-designated as attainment for NO2 in 1998. The basin will remain a maintenance/attainment area until 2018, assuming the NO2 standard is not exceeded.

Table 5.3-2 shows that the Basin is designated as in attainment of the SO2 and lead NAAQS as well as the state CO, NO2, SO2, lead, hydrogen sulfide, and vinyl chloride CAAQS. Generally, these pollutants are not considered a concern in the Basin.

Monitored Air Quality

Air quality at any site is dependent on the regional air quality and local pollutant sources. Regional air quality is determined by the release of pollutants throughout the air basin. Estimates for the Basin have been made for existing emissions ("2007 Air Quality Management Plan"). The data indicate that on-road (e.g., automobiles, busses and trucks) and off-road (e.g., trains, ships, and construction equipment) mobile sources are the major source of current emissions in the Basin. Mobile sources account for approximately 64 percent of VOC emissions, 92 percent of NOx emissions, 39 percent of direct PM2.5 emissions, 59 percent of SOx emissions and 98 percent of CO emissions. Area sources (e.g., architectural coatings, residential water heaters, and consumer products) account for approximately 30 percent of VOC emissions and 32 percent of direct PM2.5 emissions. Point sources (e.g., chemical manufacturing, petroleum production, and electric utilities) account for approximately 38 percent of SOx emissions. Entrained road dust account for approximately 20 percent of direct PM2.5 emissions.

The SCAQMD has divided the Basin into 38 air-monitoring areas with a designated ambient air monitoring station representative of each area. The project is in the South Orange County area. The Mission Viejo monitoring station is the nearest station, located on Via Pera approximately 11 miles north of the project site. The data collected at the Mission Viejo station is considered representative of the air quality experienced in the vicinity of the project. The air pollutants

measured at the Mission Viejo station include ozone, carbon monoxide (CO), PM10 and PM2.5. The air quality data monitored from 2007 to 2009 are presented in Table 5.3-3 below.

Table 5.3-3
Air Quality Levels Measured at Mission Viejo Monitoring Station

Pollutant	California Standard	National Standard	Year	% Meas.[1]	Max. Level	Days State Standard Exceeded[2]	Days National Standard Exceeded[2]
Ozone	0.09 ppm for 1 hr. average	None	2009	97	0.121	7	n./a
			2008	96	0.118	9	n/a
			2007	99	0.108	5	n/a
Ozone	0.070 ppm for 8 hr. average	0.08 ppm for 8 hr.	2009	97	0.095	14	10
			2008	96	0.104	25	15
			2007	99	0.090	10	5
CO	20 ppm for 1 hour	35 ppm for 1 hour	2009	--	--	0	0
			2008	96	1.5	0	0
			2007	97	2.9	0	0
CO	9.0 ppm for 8 hour	9 ppm for 8 hour	2009	97	1.0	0	0
			2008	96	1.1	0	0
			2007	97	2.2	0	0
Particulates PM_{10}[5] (24 Hour)	50 µg/m^3 for 24 hr.	150 µg/m^3 for 24 hr.	2009	96	41	1/6	0
			2008	95	42	0/--	0
			2007	93	74	3/--	0
Particulates PM_{10}[5] (Annual)	20 µg/m^3 AAM[3]	50 µg/m^3 AAM[4]	2009	96	23.2	--	--
			2008	95	22.6	--	--
			2007	93	23.0	--	--
Particulates $PM_{2.5}$ (24 Hour)	None	65 µg/m^3 for 24 hr.	2009	95	39.2	n/a	1
			2008	99	32.6	n/a	0
			2007	79	46.8	n/a	2
Particulates $PM_{2.5}$ (Annual)	12 µg/m^3 AAM[3]	15 µg/m^3 AAM[4]	2009	95	9.5	No	No
			2008	99	10.4	No	No
			2007	79	--	--	--

1 Percent of year where high pollutant levels were expected that measurements were made

2. For annual averaging times a yes or no response is given if the annual average concentration exceeded the applicable standard. For the PM1024 hour standard, daily monitoring is not performed. The first number shown in Days State Standard Exceeded column is the actual number of days measured that State standard was exceeded. The second number shows the number of days the standard would be expected to be exceeded if measurements were taken every day.

3. Annual Arithmetic Mean

4. With the implementation of the federal 8-hour ozone standard, the 1-hour standard was revoked as of June 15, 2005. The previous standard is provided for informational purposes.

5. On September 21, 2006 U.S. EPA announced that it was revoking the annual average PM10 standard and lowering the 24-hour PM2.5 standard to 35 µg/m3. The previous standards are presented as the new standards are not fully implemented at this time.

-- Data Not Reported

n/a No applicable standard

Source: CARB Air Quality Data Statistics web site www.arb.ca.gov/adam/ accessed 11/10/10.

The monitoring data presented in Table 5.3-3 show that ozone and particular matter (PM10 and PM2.5) are the air pollutants of primary concern in the project area.

The state 1-hour ozone standard was exceeded seven days in 2009, seven days in 2008, and five days in 2007 at the Mission Viejo Station. The state 8-hour ozone standard was exceeded 14 days in 2009, 25 days in 2008, and 10 days in 2007. The federal 8-hour standard has been exceeded between five and fifteen days in each of the past three years. There does not appear to be a distinct trend in the ozone concentrations.

The state 24-hour concentration standard for PM10 was exceeded 6 days in 2009; PM10 data was not reported for 2007 and 2008. The federal 24-hour standard has not been exceeded in the past three years. The State annual average PM10 standard has been exceeded in the past three years; however, the number of days exceeded for PM10 was not reported. There does not appear to be a distinct trend in maximum 24-hour PM10 concentrations.

The federal 24-hour PM2.5 standard was exceeded one day in 2009, two days in 2007, but none in 2008. The state and federal PM2.5 annual standards were not exceeded.

Carbon monoxide (CO) is another important pollutant that is due mainly to motor vehicles. Currently, CO levels in the project region are in compliance with the state and federal 1-hour and 8-hour standards. CO levels are anticipated to remain in compliance with the ambient air quality standards.

The monitored data show that other than ozone, PM10 and PM2.5 exceedances, no State or Federal standards were exceeded for the remaining criteria pollutants.

5.3.2 THRESHOLDS OF SIGNIFICANCE

According to Appendix G of the California Environmental Quality Act (CEQA) Guidelines, a project will normally have a significant adverse impact on air quality if it would:

Threshold AQ-1 Violate any air quality standard or contribute substantially to an existing or projected air quality violation.

Threshold AQ-2 Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).

Threshold AQ-3 Expose sensitive receptors to substantial pollutant concentrations.

Threshold AQ-4 Conflict with or obstruct implementation of the applicable air quality plan.

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

Regional Air Quality

Project-related air emissions would have a significant effect if they resulted in concentrations that create either a violation of an ambient air quality standard, or contribute to an existing air quality violation. Because ambient air quality already exceeds existing standards in the South Coast Air

Basin (SCAB) for the primary pollutants that would be emitted by construction and operation of the proposed project, SCAQMD has established specific significance thresholds to assess the impact on regional air quality, as set forth in Table 5.3-4, SCAQMD Regional Pollutant Emission Thresholds of Significance.

CEQA Guidelines Appendix G.III directs that where available, the significance criteria established by the applicable air quality management district may be relied upon to determine whether the project violates any air quality standards, or contributes substantially to an existing or projected air quality violation. The project falls within the jurisdiction of the South Coast Air Quality Management District (SCAQMD).

In order to assist with the preparation of CEQA documents, SCAQMD has prepared a CEQA Air Quality Handbook (CEQA Handbook), hereby incorporated by reference, which provides guidance on how to prepare an air quality analysis. As of this writing, SCAQMD is revising the CEQA Handbook, but the updated version has not been publicly released.[1] While the CEQA Handbook is under revision, SCAQMD recommends that lead agencies follow the calculation methodologies set forth in Chapter 9 and the Appendix to Chapter 9 in the CEQA Handbook.[2]

Chapter 9 of the CEQA Handbook directs that project-related construction and operational air emissions should be compared separately to the SCAQMD significance thresholds set for each type of emissions. Table 5.3-4 presents SCAQMD's emissions thresholds at which construction and operational emissions are considered to have a significant effect on air quality throughout the Basin.

Table 5.3-4
SCAQMD Regional Pollutant Emission Thresholds of Significance

	Pollutant Emissions (lbs/day)					
	CO	**VOC**	**NOX**	**PM10**	**PM2.5**	**SOX**
Construction	550	75	100	150	55	150
Operation	550	55	55	150	55	150

Localized Significance Thresholds

SCAQMD has developed a methodology to assess the localized impacts of emissions from within a project site (SCAQMD, Final Localized Significance Threshold Methodology, updated July 2008). While SCAQMD recommends comparing projects to localized significance thresholds (LSTs), the analyses is not required and is purely voluntary. The LSTs were developed to analyze the significance of potential local air quality impacts of projects up to 5-acres in size and provides screening tables for such projects, in which emissions may be less than the mass daily emission thresholds analyzed above. The SCAQMD also recommends project-specific air quality modeling (which is presented in the following sections) for larger projects. The Project is a Master Plan, and therefore, no specific development projects are being evaluated. The potential for exceedance

[1] See http://www.aqmd.gov/ceqa/hdbk.html (last accessed July 25, 2011).
[2] See http://www.aqmd.gov/ceqa/oldhdbk.html (last accessed July 25, 2011).

of the LST thresholds will be discussed in general terms in this assessment, and site specific analysis may be considered by the City at a later time on a project by project basis.

5.3.3 ENVIRONMENTAL IMPACTS

Existing Plans, Programs and Policies

The following measures are rules/regulatory provisions established by existing plans, programs, or policies that apply to the Proposed Project and will help to address potential impacts related to air quality:

PPP-AQ-1 Compliance with SCAQMD Rules 402 and 403: During construction of site specific development, the property owner/developer and its contractors shall be required to comply with regional rules, which will assist in reducing short-term air pollutant emissions. SCAQMD Rule 402 requires that air pollutant emissions not be a nuisance off-site. SCAQMD Rule 403 requires that fugitive dust be controlled with the best available control measures so that the presence of such dust does not remain visible in the atmosphere beyond the property line of the emission source. Two options are presented in Rule 403; monitoring of particulate concentrations or active control. Monitoring involves a sampling network around the project with no additional control measures unless specified concentrations are exceeded. The active control option does not require any monitoring, but requires that a list of measures be implemented starting with the first day of construction.

PPP-AQ-2 The project shall comply with SCAQMD Rules 431.1 and 431.2, which require the use of low sulfur fuel for stationary construction equipment.

PPP-AQ-3 The project shall comply with SCAQMD Rule 1108, which sets limitations on ROG content in asphalt.

PPP-AQ-4 The project shall comply with City of San Juan Capistrano Municipal Code Section 9-3.513, which requires implementation of dust control/suppression measures (similar to SCAQMD Rule 403).

PPP-AQ-5 ROG Control Measures: Prior to issuance of the first building permit for site specific development, the applicant shall provide evidence to the Director of Community Development that the following measures shall be incorporated into project construction to the greatest extent feasible:

- Use Water-Based and low-VOC coatings with VOC contents set forth in SCAQMD Rule 1113 (http://www.aqmd/gov/prdas/brochures/Super-Compliant_AIM.pdf)[3]; and
- Use high transfer efficiency painting methods such as HVLP (High Volume Low Pressure) sprayers and brushes/rollers were possible.

PPP-AQ-6 Compliance with Title 24, Part 6, California's Energy Efficiency Standards for Residential and Nonresidential Buildings: All buildings must comply with Title 24, Part 6. Reducing the need to heat or cool structures by improving thermal integrity will result in a reduced expenditure of energy and a reduction in pollutant emissions.

Impact Analysis

The following impacts analysis addresses the following three related thresholds.

Threshold AQ-1 Would the project violate any air quality standards or contribute substantially to an existing or projected air quality violation?

Threshold AQ-2 Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

Threshold AQ-3 Would the project expose sensitive receptors to substantial pollutant concentrations?

Short-Term Impacts

Construction activities that implement the land use plans over the long term will produce air quality emissions. Air pollutants will primarily be emitted by construction equipment and fugitive dust will be generated during demolition of the existing improvements as well as during grading and excavation of the site.

Construction activities that implement land use policies associated with the proposed project over the long term will produce air quality emissions. No specific project developments are proposed at this time. However, estimates of demolition (CY) and construction (GSF) during the three phases of the project were calculated and these estimates are included in the Appendix of the air quality study (estimates provided by Templeton Planning Group, May 5, 2011).

Emissions during three phases of demolition/construction were calculated using the California Emissions Estimator Model (CalEEMod). CalEEMod is a computer program created by ENVIRON International Corp. under contract to the SCAQMD that calculates estimated emissions including those associated with construction. The quantities for demolition and construction were entered into the model for each phase. The model defaults were used since specific development projects are not available at this time. Usually the use of the defaults would result in emission estimates that would reflect a worst case scenario assumption.

Table 5.5-5 presents the results of the total emissions calculations for the construction and demolition activities for each phase. These emissions represent the highest level of emissions during construction. The projected emissions are compared to the Significance Thresholds described above.

Table 5.3-5 Peak Construction Emissions							
		Daily Emissions (lbs/day)					
Phase		**CO**	**NO_x**	**VOC**	**PM_{10}**	**$PM_{2.5}$**	**SO_x**
	Phase 1	52.04	89.89	11.13	22.96	14.55	0.08
	Phase 2	48.61	76.41	10.06	25.01	12.94	0.10
	Phase 3	70.67	87.71	12.49	40.15	13.58	0.17
Significance Threshold		*550*	*100*	*75*	*150*	*55*	*150*
Exceed Threshold?		No	No	No	No	No	No

The projected construction emissions are all less than the significance thresholds established by SCAQMD (Note: Because no mitigation was assumed in this analysis, no mitigation is necessary for construction/demolition activities.)

Long-Term Impacts

Local Air Quality

To assess local air quality impacts, significance thresholds are evaluated with respect to the State Ambient Air Quality Standards. Because the area is in attainment of the CO state standards, exceedances of these standards (i.e. 20 ppm for 1-hour carbon monoxide (CO) concentration levels, and 9 ppm for 8-hour CO concentration levels), would result in a significant local air quality impact. However, since the air basin has reached attainment of the CO air quality standards, a separate 1-hour and 8-hour CO concentration analysis is no longer required by the SCAQMD.

In the past, local pollutant emissions around intersections were considered a potential issue at intersections with a Level of Service (LOS) of D or worse. However, since the air basin is in attainment for the CO standards, exceedances of the CO standards are not expected, even from local intersections with LOS worse than D. Local air pollutant concentrations would not be expected to approach the ambient air quality concentration standards due to local traffic, and therefore, the project site is not anticipated to create a significant impact.

Regional Air Quality

The URBEMIS2007 model divides emissions into two general categories; area source emissions and operational emissions. Area source emissions include natural gas combustion for water and space heating, fireplace emissions, and emissions from landscaping, consumer products, and architectural coatings. Area source emissions are estimated primarily on the land uses being proposed. Operational emissions are due to the motor vehicle travel associated with the project.

Since the Project would increase the development in the HTC these emissions are expected to increase. However, the traffic report shows that the Master Plan will generate significantly fewer

trips than under existing conditions. The "overall decrease results from the proposed replacement of existing land uses with high trip generation rates such as drive-through restaurants with proposed uses that generate less trips and by encouraging a mix of land uses that reduce vehicle miles travelled (VMT). Table 5.3-6 presents the results of the URBEMIS2007 model showing the maximum daily air pollutant emissions for the project at buildout (2035).

Table 5.3-6
Project Emissions (Pound Per Day)

Activity	ROG	NOx[1]	CO	SO2	PM_{10}	$PM_{2.5}$
Natural Gas Combustion	0.36	4.85	3.1	0	0.01	0.01
Fireplace[2]	0	0.2	0	0	0	0
Landscaping	0.49	0	6.18	0	0.02	0.02
Consumer Products	12.26	0	0	0	0	0
Architectural Coatings	1.77	0	0	0	0	0
Subtotal for Area Sources	*14.88*	*5.05*	*9.28*	*0*	*0.03*	*0.03*
Motor Vehicles (Operational)	-5.67	-3.85	-36.84	-0.13	-20.67	-4.00
Total Emissions	**9.21**	**1.2**	**-27.56**	**-0.13**	**-20.64**	**-3.97**
Significance Threshold	**55**	**55**	**550**	**150**	**150**	**55**
Exceed Threshold?	No	No	No	No	No	No

Notes:
1. Winter emissions are highest for NOx during the winter, the other pollutants are highest during summer.
2. Assumes 15% of dwelling units have fireplaces and all are natural gas.

Table 5.3-6 shows that the project emissions are below the SCAQMD Thresholds of Significance. The emissions for CO, SO2, PM10 and PM2.5 are all projected to decrease by small amounts. As a result, the Project will not result in significant regional air quality impacts and long-term mitigation measures are not required.

Table 5.3-7 compares the project emissions to the projected basin wide emissions from the 2007 AQMP. This comparison shows that the Project represents a very small fraction of the total regional emissions. The project emissions represent a little more than five thousandths of a percent of the total regional emissions.

Table 5.3-7
Comparison of Project Emissions with SCAB Emissions

	ROG	NOx	CO	SO2	PM_{10}	$PM_{2.5}$
Project Emissions	0.0046	0.0006	-0.0138	-0.0001	-0.0103	-0.0020
2023 South Coast Air Basin*	95	539	2147	102	508	318
Project as Percentage of Basin	0.0048%	0.0001%	-0.0006%	-0.0001%	-0.0020%	-0.0006%

Source: 2007 AQMP Table 3-5A except PM10 from 2003 AQMP Tables 3-5A and 3-5B

Potential Health Issues Associated With Project Criteria Air Emissions

As shown in previous Table 5.3-6, the Project would add to long-term emission levels but are below thresholds set by the SCAQMD. As a result, the project's added long-term emissions would not contribute to the adverse health impacts.

The project represents a very small percentage of the total criteria pollutant emissions in the South Coast Air Basin. Therefore, the increased risk of adverse health effects from project construction and operations air emissions would be relatively small.

Threshold AQ-4 Would the project conflict with or obstruct implementation of any applicable air quality plan?

The SCAQMD's CEQA Handbook states that "New or amended GP Elements (including land use zoning and density amendments), Specific Plans, and significant projects must be analyzed for consistency with the AQMP." Strict consistency with all aspects of the plan is usually not required. A proposed project should be considered to be consistent with the plan if it furthers one or more policies and does not obstruct other policies. The Handbook identifies two key indicators of consistency:

(1) Whether the project will result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the AQMP (except as provided for CO in Section 9.4 for relocating CO hot spots).

(2) Whether the project will exceed the assumptions in the AQMP in 2010 or increments based on the year of project buildout and phase.

Both of these criteria are evaluated in the following sections.

Criterion 1 - Increase in the Frequency or Severity of Violations?

The proposed Project will increase regional emissions of ROG and NOx, but will decrease emissions of CO, PM10 and PM2.5. All increases in regional emissions will be less than the SCAQMD thresholds. However, the consistency criteria pertain to local air quality impacts, rather than regional emissions, as defined by the SCAQMD. The SCAQMD has identified CO as the best indicator pollutant for determining whether air quality violations would occur, because CO hot-spot is most directly related to increase in traffic. Nevertheless, the air basin is now in attainment for the CO standards. Exceedances of the CO standards are not expected, and local air quality impact modeling is no longer necessary. Local air pollutant concentrations would not be expected to exceed the ambient air quality concentration standards due to local traffic, with or without the project. Additionally, the project is anticipated to decrease CO emissions slightly. Because the Project is not projected to impact the local air quality, the Project is found to be consistent with the AQMP for the first criterion.

Criterion 2 - Exceed Assumptions in the AQMP?

Consistency with the AQMP assumptions is determined by performing an analysis of the Project with the assumptions in the AQMP. Thus, the emphasis of this criterion is to ensure that the analyses conducted for the Project are based on the same forecasts as the AQMP. The Regional Comprehensive Plan and Guide (RCPG) consists of three sections: Core Chapters, Ancillary Chapters, and Bridge Chapters. The Growth Management, Regional Mobility, Air Quality, Water Quality, and Hazardous Waste Management chapters constitute the Core Chapters of the document. These chapters currently respond directly to federal and state requirements placed on SCAG. Local governments are required to use these as the basis of their plans for purposes of consistency with applicable regional plans under CEQA. Consistency with RCPG policies related to Grown Management is discussed further in Section 5.10, Land Use.

Since the SCAG forecasts are not detailed, the test for consistency of this project is not specific. The traffic modeling methodologies upon which much of the air quality assessment are based on the ITE Trip Generation, 8th Edition. The AQMP assumptions are based upon projections from local general plans. Projects that are consistent with the local general plan are consistent with the AQMP assumptions. Although a General Plan Amendment is being processed to expand the boundaries of the HTC Master Plan area, the Project will result in a decrease in traffic and a reduction in traffic-related emissions for all pollutants. Therefore, the growth forecasts for the proposed Project are consistent with the SCAG growth forecasts. Therefore, the second criterion is met for consistency with the AQMP.

Threshold AQ-5 Would the project create objectionable odors affecting a substantial number of people?

No land uses that handle large amounts of solid waste, chemicals associated with heavy industry, or other uses that may generate objectionable odors are proposed or anticipated to occur under the proposed Project. Thus, no significant adverse impacts associated with odors are expected.

5.3.4 CUMULATIVE IMPACTS

Development of the HTC Project would contribute criteria pollutants to the area during temporary project construction. A number of individual projects in the area may be under construction simultaneously with the proposed Project. Depending on construction schedules and the actual implementation of projects in the area, generation of fugitive dust and pollutant emissions during construction could result in substantial short-term increases in air pollutants. This would be a contribution to short-term cumulative air quality impacts; however, the Project's contribution would be less than significant because construction equipment/vehicle emissions and fugitive dust emissions associated with the proposed project would be below SCAQMD thresholds.

The traffic study under the cumulative conditions included vehicular trips from the proposed Project and all present and future projects in the project vicinity. Therefore, the long-term

emissions calculated include the cumulative traffic effect. Based on Tables 5.3-6 and 5.3-7, no significant cumulative air quality impacts would occur. Buildout of the proposed Project is not expected to contribute significantly to cumulative air quality impacts.

5.3.5 MITIGATION MEASURES

With the incorporation of the PPPs identified in Section 5.3.3 above, no additional mitigation measures are required.

5.3.6 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Short-term construction impacts associated with the Project are less than significant. Long term emissions associated with the operation of the Project are less than significant.

5.3.7 REFERENCES

All notes and references listed below are available for public review at the City of San Juan Capistrano, Community Development Department, 32400 Paseo Adelanto, San Juan Capistrano, California.

1. City of San Juan Capistrano. *General Plan*. December 1999.

2. Mestre Greve Associates. *Air Quality Assessment For: Historic Town Center City of San Juan Capistrano,* February 3, 2011.

3. South Coast Air Quality Management District, *CEQA Air Quality Handbook.* April 1993, updated November 1993.