

4.3 AIR QUALITY

This section analyzes potential local and regional air quality impacts and is based on the *Air Quality Assessment for Rancho Cucamonga General Plan Update* (Air Quality Assessment) prepared by Mestre Greve Associates in January 2010 (amended in February 2010) and included in its entirety in Appendix B. Greenhouse gas (GHG) emissions and climate change are addressed in Section 4.5, Climate Change, of this EIR.

4.3.1 RELEVANT POLICIES AND REGULATIONS

The City of Rancho Cucamonga is located in the South Coast Air Basin (SCAB). The SCAB is comprised of parts of Los Angeles, Riverside and San Bernardino counties and all of Orange County. Air quality in the SCAB is regulated by U.S. Environmental Protection Agency (USEPA), the CARB, and the South Coast Air Quality Management District (SCAQMD). Each of these agencies develops rules, regulations, policies, and/or goals to comply with applicable legislation. Although USEPA regulations may not be superseded, both State and local regulations may be more stringent. The Southern California Association of Governments (SCAG) is an important partner to the SCAQMD and produces estimates of anticipated future growth and vehicular travel in the basin which are used for air quality planning. The Federal, State, regional, and local regulations for criteria air pollutants and toxic air contaminants (TACs) are discussed below.

Federal

The USEPA is the primary Federal agency for regulating air quality, and implements the provisions of the Federal Clean Air Act (FCAA). The FCAA establishes national ambient air quality standards (NAAQS), summarized in Table 4.3-1. The USEPA has established NAAQS for six major pollutants; ozone (O₃), respirable particulate matter (PM₁₀), fine particulate matter (PM_{2.5}), carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), as well as lead. These air pollutants are referred to as criteria air 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).

The USEPA designates areas with pollutant concentrations that do not meet the NAAQS as non-attainment areas for each criteria pollutant. States are required by the FCAA to prepare State Implementation Plans (SIP) for designated non-attainment areas. The SIP is required to demonstrate how the areas will attain the NAAQS by the prescribed deadlines and what measures will be required to attain the standards. The EPA also oversees implementation of the prescribed measures. Areas that achieve the NAAQS after a non-attainment designation are redesignated as maintenance areas and must have approved Maintenance Plans to ensure continued attainment of the NAAQS.

State

The CARB sets and enforces emission standards for motor vehicles, fuels, and consumer products, establishes the health-based California Ambient Air Quality Standards (CAAQS), and monitors air quality levels throughout the State. The CARB also identifies and sets control measures for toxic air contaminants.

The CARB also performs air quality related research, provides compliance assistance for businesses, produces education and outreach programs and materials, and provides assistance for air quality districts, such as the SCAQMD. Under the California Clean Air Act (CCAA), the CARB has established CAAQS to protect the health and welfare of Californians, summarized below in Table 4.3-1. State standards have been established for the six criteria air pollutants as

well as four additional pollutants: visibility reducing particles, sulfates, hydrogen sulfide, and vinyl chloride.

**TABLE 4.3-1
NATIONAL AND CALIFORNIA AMBIENT AIR QUALITY STANDARDS**

Pollutant	Averaging Time	NAAQS ²		CAAQS ^{1,3}
		Primary ^{3,4}	Secondary ^{3,5}	Concentration ^e
O ₃ ⁸	1 Hour	—	Same as Primary Standard	0.09 ppm (180 µg/m ³)
	8 Hour	0.075 ppm (147 µg/m ³)		0.070 ppm (137 µg/m ³) ⁱ
CO	1 Hour	35 ppm (40 mg/m ³)	—	20 ppm (23 mg/m ³)
	8 Hour	9 ppm (10 mg/m ³)		9.0 ppm (10 mg/m ³)
	8 Hour (Lake Tahoe)	—		6.0 ppm (7 mg/m ³)
NO ₂	AAM ⁶	0.053 ppm (100 µg/m ³)	Same as Primary Standard	0.030 ppm (56 µg/m ³) ^j
	1 Hour	0.100ppm ¹⁰	0.053 ppm (100 µg/m ³)	0.18 ppm (338 µg/m ³) ^j
SO ₂	AAM ⁶	0.03 ppm (80 µg/m ³)	—	—
	24 Hour	0.14 ppm (365 µg/m ³)	—	0.04 ppm (105 µg/m ³)
	3 Hour	—	0.5 ppm (1,300µg/m ³)	—
	1 Hour	—	—	0.25 ppm (655 µg/m ³)
PM10 ⁸	24 Hour	150 µg/m ³	Same as Primary Standard	50 µg/m ³
	AAM ⁶	—		20 µg/m ³ ⁹
PM2.5 ⁸	24 Hour	35 µg/m ³	Same as Primary Standard	—
	AAM ⁶	15 µg/m ³		12 µg/m ³
Pb ⁹	Rolling 3-Month Average	—	—	0.15 µg/m ³
	Quarterly Average	1.5 µg/m ³	Same as Primary Standard	—
Hydrogen Sulfide (H ₂ S)	1 Hour	No Federal Standards		0.03 ppm (42 µg/m ³)
Sulfates (SO ₄)	24 Hour			25 µg/m ³
Visibility Reducing Particles	8 Hour			Extinction coefficient of 0.23 per km; visibility ≥10 miles (≥30 miles for Lake Tahoe)
Vinyl Chloride ⁷	24 Hour			0.01 ppm (26 µg/m ³)

Pollutant	Averaging Time	NAAQS ²		CAAQS ^{1,3}
		Primary ^{3,4}	Secondary ^{3,5}	Concentration ⁶
ppm – parts per million; $\mu\text{g}/\text{m}^3$ – micrograms per cubic meter; mg/m^3 – milligrams per cubic meter; km – kilometers; — – not applicable/no standard; PST – Pacific Standard Time.				
¹ California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, PM_{10} , $\text{PM}_{2.5}$, 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, PM_{10} , $\text{PM}_{2.5}$, 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 PM_{10} , the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above $150 \mu\text{g}/\text{m}^3$ is equal to or less than one. For $\text{PM}_{2.5}$, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. 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 vinyl chloride as a 'toxic air contaminant' with no threshold level of exposure for adverse health effects determined. This action allows for the implementation of control measures at levels below the ambient concentrations specified for this pollutants.				
⁸ On September 21, 2006 EPA published a final rule revoking the annual $50 \mu\text{g}/\text{m}^3$ PM_{10} standard and lowering the 24-hour $\text{PM}_{2.5}$ standard from $65 \mu\text{g}/\text{m}^3$. 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 3 year average of 98th percentile of maximum daily 1-hour concentration, January 22, 2010.				
Source: Mestre Greve Associates 2010a				

Regional

The CCAA required all air pollution control districts in the State to prepare a plan prior to December 31, 1994 to reduce pollutant concentrations exceeding the CAAQS and ultimately achieve the CAAQS. The districts are required to review and revise these plans every three years. The SCAQMD satisfies this requirement through the publication of an Air Quality Management Plan (AQMP). The AQMP is developed by SCAQMD and SCAG in coordination with local governments and the private sector. 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 AQMP is incorporated into the SIP by CARB to satisfy the FCAA requirements discussed above.

The 2003 AQMP is the current Federally-approved AQMP for ozone. The 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 SIP on October 23, 2003. The PM_{10} attainment plan from the 2003 AQMP received final approval from the USEPA on November 14, 2005 with an effective date of December 14, 2005. As of February 14, 2007 the USEPA 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. However, on March 10, 2009 the USEPA announced partial approval and partial disapproval of the ozone attainment plan of the 2003 AQMP effective April 9, 2009. The portions disapproved by the USEPA were determined to not be required by the FCAA because they represented revisions to previously approved AQMP elements. Even with the disapproved elements, the 2003 AQMP satisfied the requirements of the USEPA and did not trigger sanction clocks.

The 2007 AQMP was adopted by the SCAQMD on June 1, 2007. CARB adopted the plan as a part of the California SIP on September 27, 2007. The SIP was submitted to the USEPA on November 16, 2007, and the USEPA has not taken action on the 2007 AQMP at this time. The 2007 AQMP was prepared in response to the implementation of the Federal PM_{2.5} 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 PM_{2.5} standard one year later, in April of 2008. The attainment date for the PM_{2.5} NAAQS is earlier (i.e., 2015) than the attainment date for the ozone NAAQS (i.e., 2021) and the SCAQMD felt that delaying a plan for PM_{2.5} by a year could jeopardize the SCAB'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 PM_{2.5} levels. Reductions in NO_x emissions result in reductions in both ozone and PM_{2.5} levels.

The 2007 AQMP demonstrates attainment of the 65 µg/m³ 24-hour average and 15µg/m³ annual average PM_{2.5} standards by the 2015 deadline. However, it should be noted that in September of 2006, the USEPA lowered the 24-hour PM_{2.5} NAAQS to 35 µg/m³. An attainment plan for the revised standard will need to be completed by December 14, 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 USEPA.

The 2007 AQMP determined that the SCAB 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 requested to the USEPA to "bump up" the basin's classification to Extreme with the submittal of the 2007 AQMP. The USEPA proposed approval of this request in August 2009 but as of January 2010, no final action has been taken (Cassmassi 2010). Approval would 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 NO_x and 27 tpd of VOC. These reductions represent a 17 percent reduction in 2002 average daily NO_x emissions and a 3 percent reduction in 2002 average daily VOC emissions.

It should be noted that on March 12, 2008, the USEPA 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 PM_{2.5} 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 (SO_x), directly emitted PM_{2.5}, and nitrogen oxides (NO_x) to achieve the PM_{2.5} standard. Achieving the 8-hour ozone standard builds upon the PM_{2.5} attainment strategy with additional NO_x 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 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 percent of all home work trips according to the 200 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 SCAQMD'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 VOC's, 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 SCAQMD 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.

4.3.2 EXISTING CONDITIONS

Climate

The climate in and around the City, 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 F. 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. During the transition period from one wind pattern to the other, the dominant wind direction rotates into the south and causes a minor wind direction maximum from the south. The frequency of calm winds (less than 2 miles per hour) is less than 10 percent. Therefore, there is little stagnation in the project vicinity, especially during busy daytime traffic hours.

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 local to 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 (SCAB) and is responsible for the high levels of ozone observed during summer months in the air basin.

Criteria Air Pollutants

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 gasses (ROG) and nitrogen oxides (NO_x), 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 breath, 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.

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 (NO_x). 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 NO_x 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. Because of this and because NO emissions largely convert to NO₂, NO_x emissions are typically examined when assessing potential air quality impacts.

Sulfur Dioxide (SO₂)

Sulfur oxides (SO_x) constitute a class of compounds of which sulfur dioxide (SO₂) and sulfur trioxide (SO₃) are of greatest importance. Ninety-five percent of pollution related SO_x emissions are in the form of SO₂. SO_x 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 SO_x emissions. Industrial processes, such as nonferrous metal smelting, also contribute to SO_x emissions. SO_x is also formed during combustion of motor fuels. However, most of the sulfur has been removed from fuels greatly reducing SO_x 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 PM_{2.5}.

Particulate Matter (PM₁₀ and PM_{2.5})

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 (PM_{2.5}). 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 PM_{2.5} levels are associated with premature mortality and increased hospital admissions and emergency room visits. Long term exposures to high PM_{2.5} 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 USEPA has concluded that available evidence does not suggest an association between long-term exposure to PM₁₀ at current ambient levels and health effects.

PM_{2.5} is directly emitted in combustion exhaust and formed from atmospheric reactions between of various gaseous pollutants including nitrogen oxides (NO_x) sulfur oxides (SO_x) 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. PM_{2.5} 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.

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 hematopoietic, 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.

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, an ARB committee concluded that the ambient standard for H₂S is adequate to protect public health and to significantly reduce odor annoyance.

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.

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 State 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.

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.

South Coast Air Basin Attainment Designations

Based on monitored air pollutant concentrations, the USEPA and CARB designate areas relative to their status in attaining the NAAQS and CAAQS, respectively. Table 4.3-2 summarizes the current attainment designations for the SCAB. For the 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 4.3-2
SCAB ATTAINMENT DESIGNATIONS**

Pollutant	Federal	State
Ozone (O ₃)	Severe-17 Nonattainment (2021) ¹	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
n/a – not applicable		
¹ Redesignation to Extreme Nonattainment with corresponding attainment date of 2024 is anticipated pending final action by the USEPA (Cassmassi 2010).		
Source: Mestre Greve Associates 2010a.		

As shown in Table 4.3-2, SCAB is currently designated at the Federal level as Severe-17 non-attainment for ozone, serious non-attainment for PM₁₀, non-attainment for PM_{2.5}, and attainment/maintenance for CO and NO₂. The SCAB has been designated by the State as non-attainment for ozone, PM₁₀, and PM_{2.5}. For the 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 SCAB 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.

Existing Air Quality in Rancho Cucamonga

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, in this case SCAB. Estimates for the SCAB have been made for existing emissions. 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 SCAB.

Mobile sources account for approximately 64 percent of VOC emissions, 92 percent of NO_x emissions, 39 percent of direct PM_{2.5} emissions, 59 percent of SO_x 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 PM_{2.5} emissions. Point sources (e.g., chemical manufacturing, petroleum production, and electric utilities) account for approximately 38 percent of SO_x emissions. Entrained road dust accounts for approximately 20 percent of direct PM_{2.5} emissions as an area source.

The SCAQMD has divided the SCAB into 38 air-monitoring areas with a designated ambient air monitoring station representative of each area. The City is in the area represented by measurements made at the Upland monitoring station. The Upland station is located approximately 4 miles west of the City. The pollutants measured at the Upland Station include ozone, carbon monoxide, PM_{2.5}, and nitrogen dioxide. PM₁₀ and sulfur dioxide are not monitored at the Upland station. The next nearest monitoring site to the City is the Fontana-Arrow Highway monitoring site located in the approximately 11 miles to the east. The monitored air quality data from 2006 to 2008, and a comparison to the NAAQS and CAAQS, from the Upland and Fontana-Arrow Highway Monitoring Stations is presented in Table 4.3-3.

The monitoring data presented in Table 4.3-3 illustrate that ozone and particulate matter (PM₁₀ and PM_{2.5}) are the air pollutants of primary concern in the project area.

The State 1-hour ozone standard was exceeded 51 days in 2008, 32 days in 2007, and 52 days in 2008 at the Upland Station. The Federal 1-hour ozone standard was exceeded 9 days in 2008, 7 days in 2007, and 14 days in 2008. The State 8-hour ozone standard was exceeded between 55 and 65 days each year over the past three years. The Federal 8-hour ozone standard was exceeded between 35 and 50 days in each of the past three years. There does not appear to be a distinct trend in either maximum ozone concentrations or days of exceedances in the area.

**TABLE 4.3-3
UPLAND AND FONTANA-ARROW HIGHWAY MONITORING STATIONS AIR
QUALITY DATA (2006–2008)**

Pollutant	State Standard	National Standard	Year	% Msrd. ¹	Max. Level	Days State Standard Exceeded ²	Days National Standard Exceeded ²
Ozone (1 Hour Average)	0.09 ppm	0.12 ppm ⁴	2008	94	0.155	51	9
			2007	96	0.145	32	7
			2006	99	0.166	52	14
Ozone (8 Hour Average)	0.070 ppm	0.08 ppm	2008	94	0.122	65	50
			2007	96	0.115	55	35
			2006	99	0.131	64	50
PM ₁₀ (24 Hour Average)	50 µg/m ³	150 µg/m ³	2008	99	75.0	73	0
			2007	98	276	209	13.2
			2006	99	142	176	0
PM ₁₀ ⁵ (AAM ³)	20 µg/m ³	None	2008	99	40.2	Yes	n/a
			2007	98	60.7	Yes	n/a
			2006	99	53.7	Yes	n/a
PM _{2.5} ⁵ (24 Hour Average)	None	65 µg/m ³	2008	66	49.0	n/a	-
			2007	90	77.5	n/a	-
			2006	88	52.6	n/a	27
PM _{2.5} (AAM ³)	12 µg/m ³	15 µg/m ³	2008	66	15.4	Yes	Yes
			2007	90	18.8	Yes	Yes
			2006	88	17.5	Yes	Yes
CO 1 Hour (Average)	20 ppm	35 ppm	2008	97	--	0	0
			2007	97	--	0	0
			2006	98	--	0	0
CO (8 Hour Average)	9.0 ppm	9 ppm	2008	97	1.59	0	0
			2007	97	1.65	0	0
			2006	98	1.90	0	0
NO ₂ (1 Hour Average)	0.18 ppm	0.100 ppm ⁶	2008	95	0.094	0	-
			2007	78	0.095	0	-
			2006	90	0.100	0	-
NO ₂ (AAM ³)	0.030 ppm	0.053 ppm	2008	95	0.023	No	0
			2007	78	0.027	No	0
			2006	90	0.031	Yes	0
SO ₂ (24 Hour Average)	0.04 ppm	0.14 ppm	2008	96	0.003	No	No
			2007	95	0.004	No	No
			2006	98	0.003	No	No
SO ₂ (AAM ³)	None	0.030 ppm	2008	96	0.001	n/a	No
			2007	95	0.001	n/a	No
			2006	98	0.001	n/a	No

-- Data Not Reported; n/a – no applicable standard, ppm – parts per million; µg/m³ – micrograms per cubic meter;

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 number shown in Days State or National Standard Exceeded column is the actual number of days measured that State or National standard was exceeded.

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 PM_{2.5} standard to 35 µg/m³. The previous standards are presented as the new standards are not fully implemented at this time.

⁶3 year average of 98th percentile of maximum daily 1-hour concentration, January 22, 2010.

Source: Mestre Greve Associates 2010a.

The State 24-hour standard for PM₁₀ was exceeded 73 days in 2008, 209 days in 2007, and 176 days in 2006 at the Fontana-Arrow Highway Station. The Federal 24-hour PM₁₀ standard was exceeded 13 days in 2007, but has not been exceeded in 2006 and 2008. The State annual average standard has been exceeded each of the past three years. There does not appear to be a noticeable trend in either maximum particulate concentrations or days of exceedances in the area. Particulate levels in the area are due to natural sources, grading operations, and motor vehicles.

The Federal 24 hour standard for PM_{2.5} was exceeded 27 days in 2007 at the Fontana-Arrow Highway Station. Complete PM_{2.5} data for 2007 and 2008 were not accorded at the Fontana Station. Note that on September 21, 2006, USEPA revised the standard to 35 µg/m³. However, since designations for the revised standards will not be made until April 2010 only the number of days exceeding the original standard of 65 µg/m³ are reported. The annual average PM_{2.5} concentration has exceeded both the State and Federal standards for the past three years at the Fontana-Arrow Highway Station. There does not appear to be a noticeable trend in either maximum particulate concentrations or days of exceedances in the area.

The annual average NO₂ concentration has exceeded the State standard in 2006, but not in 2007 and 2008.

The monitored data shown in Table 4.3-3 show that other than ozone, NO₂, PM₁₀ and PM_{2.5} exceedances as mentioned above, no State or Federal standards were exceeded for the remaining criteria pollutants.

4.3.3 THRESHOLDS OF SIGNIFICANCE

The following thresholds of significance are derived from the Environmental Checklist Form included as Appendix G of the CEQA Guidelines. The proposed project was determined to have a potentially significant impact for the following thresholds of significance and further analysis in this Draft EIR was determined to be necessary.

Threshold 4.3a: Would the project conflict with or obstruct implementation of the applicable air quality plan?

Threshold 4.3b: Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Threshold 4.3c: Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable NAAQS or CAAQS (including releasing emissions that exceed quantitative thresholds for ozone precursors)?

Threshold 4.3d: Would the project expose sensitive receptors to pollutant concentrations?

Threshold 4.3e: Would the project create objectionable odors affecting a substantial number of people?

SCAQMD Thresholds

The SCAQMD has established significance thresholds to assess the impact of project related air pollutant emissions. Table 4.3-4 presents the most recent SCAQMD significance thresholds, adopted March 2009.

**TABLE 4.3-4
SCAQMD AIR QUALITY SIGNIFICANCE THRESHOLDS**

Mass Daily Thresholds		
Pollutant	Construction	Operation
NOx	100 lbs/day	55 lbs/day
VOC	75 lbs/day	55 lbs/day
PM10	150 lbs/day	150 lbs/day
PM2.5	55 lbs/day	55 lbs/day
SOx	150 lbs/day	150 lbs/day
CO	550 lbs/day	550 lbs/day
Lead	3 lbs/day	3 lbs/day
Toxic Air Contaminants		
TACs ^a	Maximum Incremental Cancer Risk \geq 10 in 1 million Cancer Burden > 0.5 excess cancer cases (in areas \geq 1 in 1 million) Hazard Index \geq 1.0 (project increment)	
Odor	Project creates an odor nuisance pursuant to Rule 402 ^b	
Ambient Air Quality For Criteria Pollutants^c		
NO ₂	1-hour average \geq 0.18 ppm Annual average \geq 0.03 ppm	
PM10	24-hour average \geq 10.4 $\mu\text{g}/\text{m}^3$ (construction) 24-hour average \geq 2.5 $\mu\text{g}/\text{m}^3$ (operation) Annual average \geq 1.0 $\mu\text{g}/\text{m}^3$	
PM2.5	24-hour average \geq 10.4 $\mu\text{g}/\text{m}^3$ (construction) 24-hour average \geq 2.5 $\mu\text{g}/\text{m}^3$ (operation)	
Sulfate	24-hour average \geq 1.0 $\mu\text{g}/\text{m}^3$	
CO	1-hour average \geq 20.0 ppm (State) 8-hour average \geq 9.0 ppm (State/Federal)	
lbs/day: pounds per day; ppm: parts per million; $\mu\text{g}/\text{m}^3$: micrograms per cubic meter; VOC: volatile organic compounds; NOx: nitrogen oxides; CO: carbon monoxide; SOx: sulfur oxides; PM10: particulate matter 10 microns or less in diameter; PM2.5: particulate matter 2.5 microns or less in diameter; TAC: toxic air contaminant ^a Toxic air contaminants (carcinogenic and non-carcinogenic). ^b Rule 402 states that a project shall not "discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property. The provisions of this rule shall not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals". ^c Ambient air quality threshold based on SCAQMD Rule 403. Source: SCAQMD 2009.		

4.3.4 GENERAL PLAN GOALS AND POLICIES

The proposed 2010 General Plan Update contains multiple goals and policies that relate to reduction of greenhouse gases. Implementation of these goals and policies and their corresponding implementation actions would reduce climate change impacts to existing and future developments.

Goal CM-1: Provide an integrated and balanced multi-modal transportation network of complete streets to meet the needs of all users and transportation modes.

Policy CM-1.1: Provide a safe and efficient street system in the City to support mobility goals, all transportation modes, and the goals of the Managing the Land Use, Community Design, and Historic Resources Chapter.

Implementation Action: Add the intersection improvements listed below to the Capital Improvement Program (CIP) or appropriate equivalents identified and approved by the City Engineer in the future that would offset the identified impacts; implement the improvements as funding becomes available. Prepare a report on the need for the improvements and their relationship to the impacts caused by new development in Rancho Cucamonga.

- Work with Caltrans and SANBAG to implement a new freeway interchange at I-15 and Arrow Highway.
- Complete Wilson Avenue between Milliken Avenue and Day Creek Boulevard.
- Complete Rochester Avenue between Banyan Street and Wilson Avenue.
- Pursue Federal funds for a grade separation of the SPRR at Etiwanda Avenue.
- Complete storm drain and widening of Hellman Avenue from Foothill Boulevard to Cucamonga Creek.
- Complete Wilson Avenue from East Avenue to Wardman Bullock
- Improve the Base Line Road at I-15 Freeway Interchange
- Complete Youngs Canyon from Cherry Avenue to Banyan Street

Policy CM-1.2: Provide an integrated network of roadways that provides for convenient automobile, transit, bicycle, and pedestrian circulation movement around the City.

Implementation Action: Implement the Bicycle Master Plan included in the Community Mobility Chapter. Require that pedestrian facilities and connections be provided as part of all development projects, with an emphasis on connections within Mixed Use districts. Implement all bicycling and walking policies and Mobility Chapter components. Preparation and distribute bike route maps and bike facilities information. Publish and make readily available pedestrian route maps and pedestrian facilities information.

Implement the Bicycle Plan pursuant to Figure CM-6. Update the City's Bicycle Circulation Plan in a format suitable for obtaining public funding. Develop the planning, implementation, and design details of the bicycle facility and amenity elements of the Community Mobility Chapter, including the setting of implementation priorities and the identification of both capital and operating funding sources. Implementation should focus on adding a north-south trail along either Deer Creek or Cucamonga Creek as a first priority. Update the City's Trails Implementation Plan to maintain consistency with the General Plan.

Review City ordinances to ensure that an adequate mechanism exists to manage the use of trails only by authorized categories of users. Implementation of the Bicycle Plan may require traffic signalization at the crossing of bike paths with arterial roadways to facilitate the safe crossing of those arterials by bicyclists and pedestrians. Signals should be convenient to bicyclists with accessible push-buttons to activate the signal. Provide traffic control push button devices at convenient locations for bicyclists at signalized intersections on the identified Bicycle Network.

Goal CM-2: *Plan, implement, and operate transportation facilities to support healthy and sustainable community objectives.*

Policy CM-2.1: Facilitate bicycling and walking citywide.

Implementation Action: *Implement the Bicycle Master Plan included in the Community Mobility Chapter. Require that pedestrian facilities and connections be provided as part of all development projects, with an emphasis on connections within Mixed Use districts. Implement all bicycling and walking policies and Mobility Chapter components. Preparation and distribute bike route maps and bike facilities information. Publish and make readily available pedestrian route maps and pedestrian facilities information.*

Policy CM-2.2: Encourage all feasible measures to reduce total vehicle miles traveled by automobiles, including enhanced transit access and land use approaches that provide compact and focused development along major transit corridors.

Implementation Action: *Review and modify the Development Code and Specific Plans to ensure that those areas identified in Table LU-2 of Chapter 2: Managing Land Use, Community Design, and Historic Resources allow for the type and densities/intensities of development as outlined.*

Assess the streetscape and landscape amenities along the Haven Avenue corridor to determine where enhancements can be programmed into new development or redevelopment in the future.

Require new development projects to coordinate with transit authorities as part of a pre-application process to determine how and where transportation facilities can be incorporated into a project.

Implement the Bicycle Master Plan included in the Community Mobility Chapter. Require that pedestrian facilities and connections be provided as part of all development projects, with an emphasis on connections within Mixed Use districts. Implement all bicycling and walking policies and Mobility Chapter components. Preparation and distribute bike route maps and bike facilities information. Publish and make readily available pedestrian route maps and pedestrian facilities information.

Policy CM-2.3: Support the use of hybrid, electric, and low/zero emission vehicles.

Implementation Action: *Continue to maintain the Green Team Sustainability Action Matrix that identifies current and proposed efforts that procure vehicles that includes providing gas-efficient vehicles. Amend the Development Code as appropriate to accommodate alternative fuel service stations and charging facilities.*

Policy CM-2.4: Replace City vehicles with energy-efficient and alternative fuel source models when replacing vehicles or adding to the City's fleet.

Implementation Action: *Continue to maintain the Green Team Sustainability Action Matrix that identifies current and proposed efforts that procure vehicles that includes providing gas-efficient vehicles. Amend the Development Code as appropriate to accommodate alternative fuel service stations and charging facilities.*

Policy CM-2.5: Establish priority parking locations for hybrid, electric, and low/zero emission, and alternative fuel vehicles.

Implementation Action: Consider updating the Development Code (§17.12) to include regulations on establishing priority parking locations for hybrid, electric, and low/zero emission, and alternative fuel vehicles for large office and commercial developments.

Policy CM-2.6: Accommodate charging and fueling station for alternative fuel vehicles, and put forth strong efforts to have charging facilities provided at employment centers.

Implementation Action: Continue to maintain the Green Team Sustainability Action Matrix that identifies current and proposed efforts that procure vehicles that includes providing gas-efficient vehicles. Amend the Development Code as appropriate to accommodate alternative fuel service stations and charging facilities.

Consider updating the Development Code (§17.12) to include regulations on establishing priority parking locations for hybrid, electric, and low/zero emission, and alternative fuel vehicles for large office and commercial developments.

Policy CM-2.7: Require new developments of more than 100 employees (per building or per tenant/company) to develop Transportation Demand Management programs to minimize automobile trips and to encourage use of transit, ridesharing, bicycling, and walking.

Implementation Action: Consider expanding §17.10.070 Trip Reduction of the Development Code to include additional Transportation Demand Management programs.

Policy CM-2.8: Support the installation of high-speed communications infrastructure to facilitate the ability of residents to work at home.

Implementation Action: Continue to implement Title 7 Telecommunications Regulations of the Municipal Code.

Goal CM-3: Provide a transportation system that includes connected transit, bicycle, and pedestrian networks.

Policy CM-3.1: Consult with regional transit operators to maintain and improve the coverage and frequency of transit service in the City.

Implementation Action: Consult and work with regional transit operators to add service coverage and frequency of service in Rancho Cucamonga per Figure CM-4 of the Community Mobility Chapter. Provide input to and monitor results of the Omnitrans Short Range Transit Plan to: (1) ensure that the Plan is responsive to the City's needs, and (2) be in a position to incorporate appropriate conditions of approval on development projects that could benefit from transit access. Coordinate specific location of local bus routes and service loops to provide optimum transit service to the City's residents and businesses. Focus particularly on areas in which the mix and intensities of uses are most in need of a transit option and most likely to support transit operations. Actively promote the use of transit in the City through the publication of transit route maps, schedules and other information, the development and implementation of marketing programs, and the provision of coordinated transit service and bicycle and pedestrian facilities information. Provide locations in the City where residents can purchase transit passes. Provide park-and-ride lots at rail stations and transit centers and near freeway interchanges to encourage ridesharing and transit use. Support the Gold Line Extension

from Montclair to LA/Ontario Airport, with a preferred alignment along the Metrolink right-of-way and the Cucamonga Channel.

Policy CM-3.2: Support Omnitrans' expansion of Bus Rapid Transit (BRT) into Rancho Cucamonga, along Foothill Boulevard, with stops at all major north-south streets and with direct routing via Victoria Gardens.

Implementation Action: Proactively engage with Omnitrans to identify the timing of BRT service, preferred BRT stops within the City, and necessary local infrastructure improvements needed to accommodate BRT service. Develop a time frame and development requirements so that development projects at affected locations can incorporate needed improvements along planned BRT routes. Work with Omnitrans to develop station designs, lighting, and station amenities that are compatible with Rancho Cucamonga's design character.

Policy CM-3.3: Provide local transit circulator service in the City to serve local neighborhoods, Victoria Gardens, the Metrolink Station, Civic Center, Central Park, and key destinations.

Implementation Action: Study the feasibility of establishing a local transit circulator to connect businesses, adjacent development, and activity centers in the City. Explore options for alternative funding from sources other than the General Fund, such as having merchants sponsor the shuttle. These buses should operate on fixed routes (with possibly some minimal real-time deviation) and on regular and convenient schedules. The service could be based on smaller (20-35 seat) buses. This action to include the following:

Conduct a Transit Planning Study

Study to determine the best approach to initiating local transit service, to develop a Short-Range (Five Year) Transit Plan for operating such a service, and to determine funding sources.

Explore the Feasibility of Extending Local Transit Service

Explore the possibility of extending to adjacent jurisdictions in cooperation with such jurisdictions who could also participate in funding, if beneficial to the City.

Work with Regional Transit Operators (Omnitrans)

Develop the optimum coordination and integration of bus transit services between the local City circulator system and the regional service.

Policy CM-3.4: Consult with Omnitrans to establish and maintain transit hubs at Victoria Gardens, Chaffey College, the Metrolink Station, and other locations as appropriate to facilitate use of transit and transfers between transit services.

Implementation Action: Consult and work with regional transit operators to add service coverage and frequency of service in Rancho Cucamonga per Figure CM-4 of the Community Mobility Chapter. Provide input to and monitor results of the Omnitrans Short Range Transit Plan to: (1) ensure that the Plan is responsive to the City's needs, and (2) be in a position to incorporate appropriate conditions of approval on development projects that could benefit from transit access. Coordinate specific location of local bus

routes and service loops to provide optimum transit service to the City's residents and businesses. Focus particularly on areas in which the mix and intensities of uses are most in need of a transit option and most likely to support transit operations. Actively promote the use of transit in the City through the publication of transit route maps, schedules and other information, the development and implementation of marketing programs, and the provision of coordinated transit service and bicycle and pedestrian facilities information. Provide locations in the City where residents can purchase transit passes. Provide park-and-ride lots at rail stations and transit centers and near freeway interchanges to encourage ridesharing and transit use. Support the Gold Line Extension from Montclair to LA/Ontario Airport, with a preferred alignment along the Metrolink right-of-way and the Cucamonga Channel.

Policy CM-3.5: Consider and evaluate the relocation of Metrolink Station to Haven Avenue to provide improved connections to transit and to support planned transit-oriented land uses along Haven Avenue.

Implementation Action: Work with Metrolink and SCRRA to study the feasibility of moving the Metrolink Station from its current location to Haven Avenue. Explore options for alternative funding from sources other than the General Fund, such as grants, and specifically grants that promote transit-oriented development.

Policy CM-3.6: In addition to requiring private development to provide transit amenities, consult with regional transit operators to provide attractive and convenient bus stops, including shade/weather protection, seats, transit information, and bus shelters as appropriate.

Implementation Action: Consult and work with regional transit operators to add service coverage and frequency of service in Rancho Cucamonga per Figure CM-4 of the Community Mobility Chapter. Provide input to and monitor results of the Omnitrans Short Range Transit Plan to: (1) ensure that the Plan is responsive to the City's needs, and (2) be in a position to incorporate appropriate conditions of approval on development projects that could benefit from transit access. Coordinate specific location of local bus routes and service loops to provide optimum transit service to the City's residents and businesses. Focus particularly on areas in which the mix and intensities of uses are most in need of a transit option and most likely to support transit operations. Actively promote the use of transit in the City through the publication of transit route maps, schedules and other information, the development and implementation of marketing programs, and the provision of coordinated transit service and bicycle and pedestrian facilities information. Provide locations in the City where residents can purchase transit passes. Provide park-and-ride lots at rail stations and transit centers and near freeway interchanges to encourage ridesharing and transit use. Support the Gold Line Extension from Montclair to LA/Ontario Airport, with a preferred alignment along the Metrolink right-of-way and the Cucamonga Channel. Also, develop a program, with identified funding sources, for providing amenities at bus stops in the City.

Policy CM-3.7: Continue to develop and maintain a citywide bicycle network of off-street bike paths, on-street bike lanes, and bike streets to provide connections between neighborhoods, schools, parks, civic center/facilities, recreational facilities, and major commercial centers.

Implementation Action: Implement the Bicycle Plan pursuant to Figure CM-6. Update the City's Bicycle Circulation Plan in a format suitable for obtaining public funding. Develop the planning, implementation, and design details of the bicycle facility and

amenity elements of the Community Mobility Chapter, including the setting of implementation priorities and the identification of both capital and operating funding sources. Implementation should focus on adding a north-south trail along either Deer Creek or Cucamonga Creek as a first priority. Update the City's Trails Implementation Plan to maintain consistency with the General Plan. Review City ordinances to ensure that an adequate mechanism exists to manage the use of trails only by authorized categories of users. Implementation of the Bicycle Plan may require traffic signalization at the crossing of bike paths with arterial roadways to facilitate the safe crossing of those arterials by bicyclists and pedestrians. Signals should be convenient to bicyclists with accessible push-buttons to activate the signal. Provide traffic control push button devices at convenient locations for bicyclists at signalized intersections on the identified Bicycle Network.

Policy CM-3.8: Continue to encourage the provision of bicycle facilities, such as bicycle lockers and secure bike parking, throughout the City.

Implementation Action: Identify existing locations where bicycle lockers and secure bicycle parking could be provided at key locations throughout the City, and develop a funding and implementation plan. Encourage/require the provision of bicycle lockers and secure bike parking for major development projects, as defined in the Development Code. Modify the Development Code to require provision of bicycle parking spaces, bicycle lockers, and, as appropriate, showers for bicycle riders at new buildings providing significant employment, at transit stations, in the commercial districts, and at recreational destinations in the City.

Policy CM-3.9: Identify and implement a dedicated funding source for implementation and completion of the bicycle network as identified in the Bicycle Plan.

Implementation Action: Implement the Bicycle Plan pursuant to Figure CM-6. Update the City's Bicycle Circulation Plan in a format suitable for obtaining public funding. Develop the planning, implementation, and design details of the bicycle facility and amenity elements of the Community Mobility Chapter, including the setting of implementation priorities and the identification of both capital and operating funding sources. Implementation should focus on adding a north-south trail along either Deer Creek or Cucamonga Creek as a first priority. Update the City's Trails Implementation Plan to maintain consistency with the General Plan. Review City ordinances to ensure that an adequate mechanism exists to manage the use of trails only by authorized categories of users. Implementation of the Bicycle Plan may require traffic signalization at the crossing of bike paths with arterial roadways to facilitate the safe crossing of those arterials by bicyclists and pedestrians. Signals should be convenient to bicyclists with accessible push-buttons to activate the signal. Provide traffic control push button devices at convenient locations for bicyclists at signalized intersections on the identified Bicycle Network.

Policy CM-3.10: Continue to complete the installation of sidewalks and require new development to provide sidewalks.

Implementation Action: Use the CIP to identify a schedule for installing new and replacement sidewalks throughout the City, placing priority on installing missing sidewalks near schools and activity centers, and replacing sidewalks that have been identified as hazardous to public safety.

Policy CM-3.11: Continue to require pedestrian amenities on sidewalks on major streets that are key pedestrian routes, including the provision of benches, shade trees, and trash cans.

Implementation Action: *Identify key pedestrian travel corridors citywide, and prepare a Citywide Pedestrian Circulation Study to determine pedestrian amenity needs, capital and operating funding sources, and a phased implementation program. Develop a program for gradually installing public amenities such as streetlights, benches, trash containers, art, drinking fountains, landscaping, etc. that will enhance the pedestrian environment and encourage increased use of transit. Use both the CIP process and other funding sources, including a program whereby businesses or residents may sponsor street furniture and/or landscaped areas.*

Policy CM-3.12: Require that the siting and architectural design of new development promote safety, pedestrian-friendly design, and access to transit facilities.

Implementation Action: *Develop standards to be applied to development projects along transit corridors that require transit and pedestrian accessibility.*

Policy CM-3.13: Establish a number of bike hubs in the City (centralized locations with convenient bike parking for trip destinations or transfer to other transportation modes), at key transit nodes and at commercial nodes.

Implementation Action: *Conduct a study to determine the best locations for bike hubs in the City, and develop a plan, wayfinding program, and implementation process for providing bike hubs that provide secure bicycle lockers, bike racks, and connections to transit at key locations in the City.*

Policy CM-3.14: Enhance pedestrian and bicycle access to local and regional transit, including facilitating connections to transit.

Implementation Action: *Implement the Bicycle Plan pursuant to Figure CM-6. Update the City's Bicycle Circulation Plan in a format suitable for obtaining public funding. Develop the planning, implementation, and design details of the bicycle facility and amenity elements of the Community Mobility Chapter, including the setting of implementation priorities and the identification of both capital and operating funding sources. Implementation should focus on adding a north-south trail along either Deer Creek or Cucamonga Creek as a first priority. Update the City's Trails Implementation Plan to maintain consistency with the General Plan. Review City ordinances to ensure that an adequate mechanism exists to manage the use of trails only by authorized categories of users. Implementation of the Bicycle Plan may require traffic signalization at the crossing of bike paths with arterial roadways to facilitate the safe crossing of those arterials by bicyclists and pedestrians. Signals should be convenient to bicyclists with accessible push-buttons to activate the signal. Provide traffic control push button devices at convenient locations for bicyclists at signalized intersections on the identified Bicycle Network.*

Policy CM-3.15: Coordinate the provision of the non-motorized networks (bicycle and pedestrian) with adjacent jurisdictions to maximize sub-regional connectivity.

Implementation Action: *Implement the Bicycle Plan pursuant to Figure CM-6. Update the City's Bicycle Circulation Plan in a format suitable for obtaining public funding. Develop the planning, implementation, and design details of the bicycle facility and*

amenity elements of the Community Mobility Chapter, including the setting of implementation priorities and the identification of both capital and operating funding sources. Implementation should focus on adding a north-south trail along either Deer Creek or Cucamonga Creek as a first priority. Update the City's Trails Implementation Plan to maintain consistency with the General Plan. Review City ordinances to ensure that an adequate mechanism exists to manage the use of trails only by authorized categories of users. Implementation of the Bicycle Plan may require traffic signalization at the crossing of bike paths with arterial roadways to facilitate the safe crossing of those arterials by bicyclists and pedestrians. Signals should be convenient to bicyclists with accessible push-buttons to activate the signal. Provide traffic control push button devices at convenient locations for bicyclists at signalized intersections on the identified Bicycle Network.

Goal CM-4: Maximize the operational efficiency of the street system.

Policy CM-4.1: Continue to implement traffic management and traffic signal operations measure along the arterial roadway to minimize delay and congestion for all modes, without adversely impacting transit, bicycles, and pedestrians.

Implementation Action: Complete intersection capacity improvements, coordinate traffic signals utilizing Intelligent Transportation Systems (ITS), and improve striping and signage. Striping shall maximize room for bike lanes where feasible and consistent with the Bicycle Plan. Modernize traffic signal equipment as necessary, and continue to update traffic signal timing and synchronization plans to optimize traffic flow along the key arterial corridors, taking into account the needs of transit, bicyclists, and pedestrians as well. Invest in the communications infrastructure necessary to operate a Citywide traffic signal control system.

Policy CM-4.2: Continue to design and operate arterials and intersections for the safe operation of all modes of transportation, including transit, bicyclists, and pedestrians.

Implementation Action: Complete intersection capacity improvements, coordinate traffic signals utilizing Intelligent Transportation Systems (ITS), and improve striping and signage. Striping shall maximize room for bike lanes where feasible and consistent with the Bicycle Plan. Modernize traffic signal equipment as necessary, and continue to update traffic signal timing and synchronization plans to optimize traffic flow along the key arterial corridors, taking into account the needs of transit, bicyclists, and pedestrians as well. Invest in the communications infrastructure necessary to operate a Citywide traffic signal control system.

Policy CM-4.3: Continue to implement Intelligent Transportation System (ITS) measures and advanced traffic management technologies where appropriate.

Implementation Action: Complete intersection capacity improvements, coordinate traffic signals utilizing Intelligent Transportation Systems (ITS), and improve striping and signage. Striping shall maximize room for bike lanes where feasible and consistent with the Bicycle Plan. Modernize traffic signal equipment as necessary, and continue to update traffic signal timing and synchronization plans to optimize traffic flow along the key arterial corridors, taking into account the needs of transit, bicyclists, and pedestrians as well. Invest in the communications infrastructure necessary to operate a Citywide traffic signal control system.

Goal CM-5: *Require that new development mitigate transportation impacts and contribute to the improvement of the City's transportation system.*

Policy CM-5.1: Continue to require that new development participates in the cost of transportation mitigation and improvements necessitated by new development, including non-automobile solutions.

Implementation Action: *Require payment of Traffic Impact Fees as approved by the City Council, used to finance specific improvements made necessary by new development. The relationship between the fees, the cost of the improvements, and new development has been established in fee analyses approved by the City Council. These fees shall be reviewed from time to time and adjusted as needed.*

Policy CM-5.2: Require evaluation of potential traffic and transportation impacts associated with new development prior to project approval, and require adequate mitigation measures, including non-automobile solutions prior to, or concurrent with, project development.

Implementation Action: *Require applicants to prepare traffic and transportation impact assessments consistent with adopted City guidelines and standards. Continue to require sidewalks, pedestrian paths, and connections to be provided as part of new development projects to improve and enhance access between neighborhoods, and from neighborhoods to schools, parks, trails, commercial centers, and other activity centers.*

Goal CM-6: *Coordinate with other jurisdictions on regional transportation issues.*

Policy CM-6.2: Support appropriate regional plans for high-occupancy vehicle lanes, Bus Rapid Transit and express bus, rail transit, and high-speed rail, provided it does not negatively impact the City.

Implementation Action: *Consult with Omnitrans and/or Caltrans when coordinating with regional transportation plans that directly impact the City.*

Goal LU-2: *Facilitate sustainable and attractive infill development that complements surrounding neighborhoods and is accessible to pedestrians, bicycles, transit, and automobiles.*

Policy LU-2.1: Plan for vibrant, pedestrian-friendly mixed use and high-density residential areas at strategic infill locations along transit routes.

Implementation Action: *Review and modify the Development Code and Specific Plans to ensure that those areas identified in Table LU-2 of Chapter 2: Managing Land Use, Community Design, and Historic Resources allow for the type and densities/intensities of development as outlined.*

Policy LU-2.2: Require new infill development to be designed for pedestrians and automobiles equally, and to provide connections to transit and bicycle facilities.

Implementation Action: *Continue development review of applications for infill development between the various City departments and regional-serving agencies to coordinate and maximize non-vehicular connections within the proposed developments and connecting to other areas of the City.*

Policy LU-2.3: Provide direct pedestrian connections between development projects where possible.

Implementation Action: *Establish procedures that allow City staff, during their review of infill development applications, to require pedestrian access studies to ensure that each development has maximized convenient and safe pedestrian connections to existing surrounding developments and public rights-of-way.*

Goal LU-3: Encourage sustainable development patterns that link transportation improvements and planned growth, create a healthy balance of jobs and housing, and protect the natural environment.

Policy LU-3.6: Create focused, pedestrian-friendly neighborhoods that are reminiscent of the qualities found in earlier days, particularly within the original communities of Cucamonga, Alta Loma, and Etiwanda, and along Historic Route 66 (Foothill Boulevard).

Implementation Action: *Continue to identify, prioritize, and install streetscape and landscape amenities that provide pleasant and comfortable streets, enhance City identity, and promote walking.*

Policy LU-3.8: Implement land use patterns and policies that incorporate smart growth practices, including placement of higher densities near transit centers and along transit corridors, allowing mixed-use development, and encouraging and accommodating pedestrian movement.

Implementation Action: *Review and modify the Development Code and Specific Plans to ensure that those areas identified in Table LU-2 of Chapter 2: Managing Land Use, Community Design, and Historic Resources allow for the type and densities/intensities of development as outlined.*

Goal LU-4: Establish a pedestrian-friendly Foothill Boulevard corridor that facilitates transit use and provides a range of commercial destinations to serve both local and regional needs.

Policy LU-4.1: Provide new mixed-used development opportunities along the Foothill Boulevard Corridor to allow residential, commercial, and civic uses, and to accommodate both transit and automobiles.

Implementation Action: *Review and modify the Foothill Boulevard Specific Plan to ensure that allowable land uses not only provide for, but encourage, a mix of residential, commercial, and civic uses that target all modes of transportation.*

Goal LU-5: Support a regionally serving office district that provides professional and technical employment opportunities for the Inland Empire.

Policy LU-5.4: Promote a pedestrian-friendly corridor where employees can walk to restaurants, commercial services, and other amenities in the area.

Implementation Action: *Assess the streetscape and landscape amenities along the Haven Avenue corridor to determine where enhancements can be programmed into new development or redevelopment in the future.*

Policy LU-5.5: Require development to provide courtyards and plazas, public art, and landscaped open spaces that promote safe and convenient pedestrian movement with continuous landscaped pathways between buildings and along Haven Avenue.

Implementation Action: *Assess the streetscape and landscape amenities along the Haven Avenue corridor to determine where enhancements can be programmed into new development or redevelopment in the future.*

Policy LU-5.6: Support the integration of transportation facilities, including transit, to support the office environment.

Implementation Action: *Require new development projects to coordinate with transit authorities as part of a pre-application process to determine how and where transportation facilities can be incorporated into a project.*

Goal LU-12: *Foster a variety of travel routes that are enjoyable ways to experience Rancho Cucamonga.*

Policy LU-12.2: Require the design of transit stops to be compatible with adjacent development and provide for adequate seating, signage, shade, and refuse receptacles.

Implementation Action: *Not identified*

Policy LU-12.3: Support development projects that are designed to facilitate convenient access for pedestrians, bicycles, transit, and automobiles.

Implementation Action: *Adopt a sustainable development program that incorporates green building standards.*

Policy LU-12.4: Retrofit, where feasible, existing neighborhoods to allow for convenient, multi-modal access to schools, parks, and shopping centers.

Implementation Action: *Inventory and establish priorities for retrofitting developments, neighborhoods, and districts lacking multi-modal access.*

GOAL CS-6: *Provide a safe, comprehensive network of interconnecting off-road trails with amenities that connect neighborhoods, parks, schools, open space, employment areas, retail services, other activity areas, and areas outside the City.*

Policy CS-6.1: Provide a comprehensive, interconnected off-road trail system that provides alternative mobility choices throughout the entire City and increases connectivity.

Implementation Action: *Continue to implement the principles of the Trails Implementation Plan.*

Energy Efficiency and Conservation

Goal RC-4: *Encourage the use of energy resources that are efficiently expended and obtained from diverse and sustainable sources, in an effort to minimize greenhouse gas and other air emissions.*

Policy RC-4.1: Pursue efforts to reduce energy consumption through appropriate energy conservation and efficiency measures throughout all segments of the community.

Implementation Action: As it becomes economically practical, identify sources and replace imported, non-renewable energy resources with domestic renewable energy sources such as solar and wind energy, recycled municipal solid waste, and green waste.

Policy RC-4.2: Promote the use of renewable energy and alternative energy technology, and support efforts to develop small-scale, distributed energy generation (e.g. solar, wind, cogeneration, and biomass) to reduce the amount of electricity drawn from the regional power grid and reduce the use of natural gas, while providing Rancho Cucamonga with a greater degree of energy and economic self-sufficiency.

Implementation Action: Provided that there would not be a decline in services to City residents or undue tax burden, use of energy efficiency and renewable energy resources will be employed for approving capital and operational expenditures.

Policy RC-4.3: Encourage the use of solar energy systems in homes and commercial businesses.

Implementation Action: Establish design criteria for active and passive solar applications within development proposals.

Policy RC-4.4: Reduce operational energy requirements through sustainable and complementary land use and circulation planning. Support implementation of State mandates regarding energy consumption and greenhouse gas reduction, including AB32 and SB375.

Implementation Action: Promote land use and circulation patterns that result in multi-purpose automobile trips and that facilitate the use of local and regional transit; continue to advance land use patterns that provide employment and housing opportunities for City residents in a manner that allows for practical options for mobility other than by automobile.

Policy RC-4.5: Support the development of private sources of sustainable and environmentally-friendly energy supplies, provided these are consistent with City aesthetic and public safety goals.

Implementation Action: Continue to make the recruitment and retention of “green” industries a priority in conjunction with economic development strategies.

Goal RC-5: Encourage the use of energy conservation strategies in City projects and operations to maximize energy efficiency and serve as a role model to the community and the region.

Policy RC-5.1: Serve as a role model by adopting recognizable standards and incorporating the use of sustainable strategies for new and existing public buildings that maximize occupant health and productivity, minimize operating costs, and provide good environmental stewardship.

Implementation Action: Collaborate and educate City departments on sustainable strategies that can be employed in new and existing public buildings.

Policy RC-5.2: Investigate the feasibility of using solar (photovoltaic) lights for City operated parking lots instead of conventional street and pedestrian lights that are powered by electricity in an effort to conserve energy.

Implementation Action: Establish a retrofit program as photovoltaic street lighting becomes more cost-effective than other technologies.

Policy RC-5.3: Explore and consider the costs and benefits of alternative fuel vehicles including hybrid, electric, natural gas, and hydrogen powered vehicles when purchasing new City vehicles.

Implementation Action: Continue to meet the objective of reducing fuel consumption when negotiating for new or replacements to the City's fleet vehicles.

Goal RC-6: Encourage and support green buildings in Rancho Cucamonga.

Policy RC-6.1: Add energy efficiency standards in the Rancho Cucamonga Municipal Code based on green building principles, to reduce energy requirements (particularly for heating, cooling, and lighting) in new construction.

Implementation Action: Adopt a formal green building program or create one based on a national model, such as LEED, GreenPoint Rated, and/or other programs into the City's codes.

Policy RC-6.2: Encourage green practices for new and existing buildings throughout the community.

Implementation Action: Provide developer incentives for constructing green buildings.

Policy RC-6.3: Promote energy-efficient design features, including but not limited to, appropriate site orientation, use of light-colored roofing and building materials, and use of evergreen trees and wind-break trees to reduce fuel consumption for heating and cooling beyond the minimum requirements of Title 24 State Energy Codes.

Implementation Action: Review and update the City's design guidelines to address energy-efficient design features.

Policy RC-6.4: Promote green practices and the use of energy saving designs and devices for new and existing buildings throughout the community. Consult with energy providers such as Southern California Edison, Southern California Gas, the Rancho Cucamonga Municipal Utility, and others to establish and coordinate energy efficiency programs that promote energy efficient design in all projects and assist residential, commercial, and industrial users.

Implementation Action: During the development review process for larger development projects (greater than 10 units/or 10,000 square feet), coordinate with energy providers to determine if additional energy efficiency measures can be incorporated into a project design.

4.3.5 STANDARD CONDITIONS OF APPROVAL

Standard Conditions

- SC 4.3-1** All new development in the City of Rancho Cucamonga would be required to comply with South Coast Air Quality Management District's Rule 445, Wood Burning Devices. Rule 445 was adopted in March 2008 to reduce emissions of PM2.5 and precludes the installation of indoor or outdoor wood burning devices (i.e. fireplaces/hearths) in new development on or after March 9, 2009.

4.3.6 ENVIRONMENTAL IMPACTS

Air Quality Management Plan Consistency

Threshold 4.3a: Would the project conflict with or obstruct implementation of the applicable air quality plan?

The purpose of the AQMP consistency discussion is to set forth the issues regarding consistency with the assumptions and objectives of the AQMP and discuss whether the proposed project would interfere with the region's ability to comply with Federal and State air quality standards. The SCAQMD's CEQA Handbook states that "New or amended General Plan Chapters (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 below.

Criterion 1 - Increase in the Frequency or Severity of Violations

The proposed project would result in a net increase in regional emissions of PM10 and PM2.5 when comparing the 2009 Existing Conditions to the proposed 2010 General Plan Update (2030) that exceed SCAQMD thresholds, as discussed further below. However, this consistency criterion pertains 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 local air quality violations would occur, as CO hot-spot is most directly related to increase in traffic. The SCAB is now in attainment for the CO standards and exceedances of the CO standards would not be expected. Local air pollutant concentrations would not be expected to exceed the ambient air quality concentration standards due to local traffic, with or without the proposed project. Because the proposed project is not projected to impact the local air quality, the proposed project is found to be consistent with the AQMP for the first criterion.

Criterion 2 - Exceed Assumptions in the AQMP

Consistency with AQMP assumptions is determined by comparing a proposed project with the assumptions in the 2003 AQMP, which, in turn, is based on projections from local General Plans. Projects that are consistent with the local General Plan are consistent with the 2003 AQMP assumptions. Therefore, the analysis of this criterion for the proposed project involves comparing the existing and proposed General Plans. It should be noted that impacts under CEQA are generally based on comparison to the existing condition, rather than an existing plan, such as the City's existing General Plan. This analysis is an exception to this standard because the 2003 AQMP is based on the City's existing General Plan, and as such the determination of consistency must compare the existing and proposed General Plans.

Although the proposed 2010 General Plan Update land use designations have not changed significantly from the existing General Plan, the proposed land uses are more intensive. Utilizing URBEMIS default assumptions and the proposed 2010 General Plan Update land use data, the average daily trips are projected to be as follows:

- 2,091,263 for the existing 2001 General Plan, and
- 1,978,384 for the proposed 2010 General Plan Update.

As a result, the proposed 2010 General Plan Update would generate a net decrease of 112,879 daily trips from the existing General Plan. As such, the anticipated decrease in the proposed project traffic, does not conflict with projections for the existing 2001 General Plan, and thus the 2003 AQMP. Therefore, the proposed project is considered consistent with the 2003 AQMP and no impact would occur.

Impact 4.3a: The SCAQMD's CEQA Handbook identifies two key indicators of consistency, Criterion 1 and Criterion 2. The proposed 2010 General Plan Update would be consistent with Criteria 1 and 2. Therefore, the 2010 General Plan Update would be consistent with the 2003 AQMP.

Air Quality Standards Violation and Exposure of Sensitive Receptors

Threshold 4.3b: Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Threshold 4.3d: Would the project expose sensitive receptors to pollutant concentrations?

Short-Term (Construction) Emissions

The proposed 2010 General Plan Update would not involve specific construction activity. However, construction activities that implement land use policies over the long term would produce air pollutant emissions. Air pollutants would primarily be emitted by construction equipment and fugitive dust would be generated during demolition of the existing improvements as well as during grading and excavation of the individual project sites. MM 4.3-3 describes a range of construction-period measures that the City would require of each future project developed under the proposed 2010 General Plan Update. However, as no specific projects are proposed as part of the proposed 2010 General Plan Update and specific details regarding the scheduling of grading activities are unknown, construction emissions cannot be quantified and the requirements of MM 4.3-3 do not directly apply to the proposed 2010 General Plan Update. Construction emissions would be evaluated on a project-by-project basis.

Long-Term (Operational) Emissions

Project Emissions Calculation Methodology

The proposed 2010 General Plan Update air quality emissions were calculated using the URBEMIS2007 program (version 9.2.4). Default URBEMIS2007 variables were used for the calculations including the trip generation rates. URBEMIS default assumptions for hearth emissions were adjusted to reflect the use of natural gas fireplaces instead of wood-burning fireplaces, in accordance with SCAQMD Rule 445 (SC 4.3-1), for the anticipated 7,797 additional residential units with buildout of the proposed 2010 General Plan Update. URBEMIS2007 calculates summer and winter average emissions in pounds per day. The land uses in terms of dwelling units and square footages as well as default emission factors utilized in calculating the emissions are provided in the appendix to the Air Quality Assessment (Appendix B).

The URBEMIS program was set to calculate emissions for the proposed 2010 General Plan Update Target Density scenario, as it represents the most probable level of development. The Target Density scenario comprises a total of 63,253 residential dwelling units (including mixed-use residential), a total of 2,430,000 square feet of school uses, 445 acres of parks, a total of 25,367,700 square feet of mixed commercial land uses, and a total of 72,000,000 square feet of mixed industrial land uses.

Regional Emissions

The proposed project emissions were analyzed for the Target Density scenario for buildout year 2030. For purposes of comparison, the 2009 Existing Conditions and 2030 Existing General Plan were both calculated, although the basis of the significance determination under CEQA is based on the existing condition. Regarding residential land uses, the number of dwelling units with buildout of the proposed 2010 General Plan Update would exceed the 2009 Existing Conditions by 7,584 units and the existing 2001 General Plan forecast for 2030 by 7,797 units. The estimated maximum daily regional air pollutant emissions from the proposed project as calculated in URBEMIS2007 are presented in 4.3-5. The data utilized in calculating the emissions are provided in the appendix to the Air Quality Assessment (Appendix B).

As shown in Table 4.3-5, the primary source of criteria pollutant emissions with implementation of the proposed 2010 General Plan Update would be generated by motor vehicles. However, the future emissions due to vehicular emissions are projected to be less in 2030 when compared to 2009. This is primarily due to the anticipated decrease in the future emission rates for vehicular sources as projected by the EMFAC2007 program. The number of vehicles actually would increase in the future but is more than offset by the decrease in the emission factors. Hearth emissions from wood burning stoves and fireplaces would also be a substantive portion of total emissions. Other criteria air pollutant emissions would be generated by the combustion of natural gas for space and water heating, the use of landscaping equipment, and architectural coatings during maintenance, as well as off-site emissions from the generation of electricity consumed by the proposed project over the long term.

Table 4.3-5 indicates that the net change in emissions with implementation of the proposed 2010 General Plan Update when compared to the Existing Conditions (2009) would decrease significantly for CO, VOC and NO_x, and increase for PM_{2.5}, PM₁₀ and SO_x. The net increase in SO_x emissions would not exceed the SCAQMD threshold; however, estimated net emissions of PM_{2.5} and PM₁₀ would exceed SCAQMD thresholds.

**TABLE 4.3-5
ESTIMATED MAXIMUM DAILY EMISSIONS (POUNDS PER DAY)**

Source	CO	VOC	NOx	PM ₁₀	PM _{2.5}	SOx
Existing Conditions (2009)						
Vehicular Emissions	174,696	16,741	29,123	1,646	1,137	130
Natural Gas Combustion	458	71	930	2	2	0
Hearth	24,192	8,724	747	3,752	3,612	68
Landscaping	0	0	0	0	0	0
Consumer Products	0	2,856	0	0	0	0
Architectural Coatings	0	632	0	0	0	0
Total Emissions	199,345	29,024	30,799	5,400	4,750	198
Existing General Plan (2030)						
Vehicular Emissions	57,118	6,610	7,435	1,507	965	148
Natural Gas Combustion	516	75	990	2	2	0
Hearth	24,097	8,691	739	3,737	3,597	68
Landscaping	0	0	0	0	0	0
Consumer Products	0	2,845	0	0	0	0
Architectural Coatings	0	762	0	0	0	0
Total Emissions	81,731	18,984	9,164	5,245	4,564	215
Proposed 2010 General Plan Update (2030)						
Vehicular Emissions	58,725	6,795	7,640	1,548	991	152
Natural Gas Combustion	562	84	1,103	2	2	0
Hearth	26,451	8,973	838	4,121	3,967	76
Landscaping	0	0	0	0	0	0
Consumer Products	0	3,245	0	0	0	0
Architectural Coatings	0	768	0	0	0	0
Total Emissions	85,739	19,865	9,581	5,671	4,960	227
SCAQMD Significance Thresholds	550	55	55	150	55	150
Net Change in Emissions over Existing General Plan (2030)¹	4,008	881	416	426	396	12
Net Change in Emissions over Existing Conditions (2009)	-113,607	-9,159	-21,218	271	210	30
Net Change over Existing Conditions Significant?	NO	NO	NO	YES	YES	NO
¹ Net change in emissions over the Existing General Plan provided for reference only. The CEQA analysis of long-term regional emissions is based on comparison to existing conditions (2009). Source: Mestre Greve Associates 2010a.						

The proposed 2010 General Plan Update includes many goals and policies, described above, that would reduce long-term criteria air pollutant emissions. Also, MM 4.3-1 and MM 4.3-2 describe a range of measures to be applied to future projects, as feasible, to reduce emissions. However, the anticipated reduction in emissions with implementation of such measures is not quantifiable at this time. Therefore, the proposed project would be considered to have a significant and unavoidable direct impact related to emissions of PM10 and PM2.5, and a less than significant direct impact related to emissions of CO, VOC, NOx and SOx.

Diesel Particulate Matter Emissions

In 1998, the CARB identified particulate matter from diesel-fueled engines (Diesel Particulate Matter or DPM) as a Toxic Air Contaminant (TAC). The CARB Air Quality and Land Use Handbook describes that diesel fueled vehicles that emit DPM from nearby freeways or rail yards could be a problem for any residential areas within 500 feet of freeways and 1,000 feet of rail yards or related distribution centers. TAC impacts from toxic substances are related to cumulative exposure and are assessed over a 70-year period. Cancer risk is expressed as the maximum number of new cases of cancer projected to occur in a population of one million people due to exposure to the cancer-causing substance over a 70-year lifetime. There are no rail yards in the City of Rancho Cucamonga. Additionally, there are no new residential land uses proposed next to freeways. As a result, there would be less than significant impacts related to TAC emissions from the proposed 2010 General Plan Update.

Impacts 4.3b and 4.3 d: The net change in emissions with implementation of the proposed 2010 General Plan Update when compared to the Existing Conditions (2009) would decrease significantly for CO, VOC and NOx, and increase for PM_{2.5}, PM₁₀ and SOx. The net increase in SOx emissions would not exceed the SCAQMD threshold and would be considered a less than significant impact. Estimated net emissions of PM_{2.5} and PM₁₀ would exceed SCAQMD thresholds and would be a significant impact. Regarding TACs, there are no rail yards in the City, and there are no new residential land uses proposed next to freeways. Therefore, there would be a less than significant TAC impact from emissions of Diesel Particulate Matter. Implementation of identified 2010 General Plan Update goals and policies and SC 4.3-1 as well as MMs 4.3-1 through 4.3-3, as feasible, would reduce long-term criteria air pollutant emissions; however, these reductions are not quantifiable at the time. Therefore, the anticipated net increase in PM10 and PM2.5 emissions would be considered a significant and unavoidable direct impact.

Cumulative Impacts

Threshold 4.3c: Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable NAAQS or CAAQS (including releasing emissions that exceed quantitative thresholds for ozone precursors)?

The geographic context for analysis of cumulative air quality impacts related to the proposed 2010 General Plan Update is the South Coast Air Basin (SCAB). As discussed above, the SCAB is designated non-attainment at the Federal and State level for ozone (VOC and NOx are ozone precursors), PM10 and PM2.5.

Implementation of the proposed 2010 General Plan Update would result in a substantial reduction in net emissions of VOC and NOx compared to the Existing Condition (2009). This would be a beneficial impact, and as such would be a less than significant direct and cumulative impact related to emissions of ozone precursors. As discussed above, the proposed 2010 General Plan Update would result in a significant and unavoidable direct impact related to emissions of PM10 and PM 2.5 with implementation of identified 2010 General Plan Update goals and policies, MM 4.3-1 and MM 4.3-2, as feasible. Therefore, because SCAB is designated non-attainment for particulates, this significant and unavoidable direct impact would also be a significant and unavoidable cumulative impact for PM10 and PM2.5.

Impact 4.3c: The SCAB is designated non-attainment for ozone (VOC and NO_x are ozone precursors), PM₁₀ and PM_{2.5}. The net change in emissions with implementation of the proposed 2010 General Plan Update when compared to the Existing Conditions (2009) would decrease significantly for VOC and NO_x, resulting in a less than significant direct and cumulative impact related to emissions of ozone precursors. Estimated net emissions of PM_{2.5} and PM₁₀ would result in a significant and unavoidable direct impact. Therefore, because SCAB is designated non-attainment for particulates, this significant and unavoidable direct impact would also be a significant and unavoidable cumulative impact for PM₁₀ and PM_{2.5} after implementation of proposed 2010 General Plan Update goals and policies, MM 4.3-1 and MM 4.3-2, as feasible.

Odors

Threshold 4.3e: Would the project create objectionable odors affecting a substantial number of people?

Construction (Short-term)

Construction activities associated with implementation of individual projects during buildout of the proposed 2010 General Plan Update would have the potential to use equipment and perform activities that would generate odors. Potential construction odors include diesel equipment exhaust, roofing, painting, and paving. These odors would be temporary and would dissipate rapidly from the source with an increase in distance. Therefore, the impacts would be short-term, would not affect a substantial number of people, and would be less than significant.

Operation (Long-term)

During long-term implementation of the proposed 2010 General Plan Update, some odors associated with residential uses would be expected to occur, such as from cooking and gardening. Similarly, common odors associated with mixed-use and commercial land uses would be expected to occur, such as from restaurants. However, these types of odors are not generally considered objectionable. Local odors from the majority of land uses in the City would be no different than in any other urban area and would not be considered significant. The most likely potential nuisance odors would be from future industrial or utility sources, such as wastewater treatment plants, landfills, transfer facilities, materials recycling facilities (MRFs), refineries, and asphalt plants. These are the potential industrial land uses found within or near urban areas that can create what are generally considered to be objectionable odors.

The distribution of land uses with implementation of the proposed 2010 General Plan Update would be essentially the same as the existing condition, with intensification of land uses in selected areas. Therefore, the location of industrial land use designations in relation to residential land use areas and other sensitive receptors for odors would be similar to the existing condition, wherein there are no sources of objectionable odors. As discussed in Section 4.17, Utilities and Service Systems, neither wastewater treatment infrastructure nor solid waste facilities are expected to require expansion associated with buildout of proposed 2010 General Plan Update. Also, individual projects proposed in the City would be required to comply with the California Environmental Quality Act (CEQA), including this threshold as provided in Appendix G of the State CEQA Guidelines. Therefore, implementation of the proposed 2010 General Plan Update is not anticipated to result in the generation of objectionable odors affecting a substantial number of people and there would be a less than significant impact.

Impact 4.3e: Construction activity odors related to buildout of the proposed 2010 General Plan Update would be temporary and would not be experienced by a substantial number of people. Buildout of the proposed 2010 General Plan Update is anticipated to result in common local odors in an urban setting, such as from cooking/restaurants, gardening, and industrial land uses. The overall distribution of land uses would remain similar to the existing condition, wherein there are no sources of objectionable odors affecting sensitive receptors (such as residential land uses). Also, all future projects would be required to comply with CEQA, including the assessment of odor. Therefore, implementation of the proposed 2010 General Plan Update is not anticipated to result in the generation of objectionable odors affecting a substantial number of people and there would be a less than significant impact.

4.3.7 CUMULATIVE IMPACTS

Refer to Threshold 4.3c impact analysis, above, for a discussion of cumulative impacts.

4.3.8 MITIGATION MEASURES

MM 4.3-1 The City of Rancho Cucamonga shall work with the applicants of future projects to be developed under the proposed 2010 General Plan Update to implement the following measures, derived from the SCAQMD's AQMP, where feasible, in order to reduce criteria air pollutant emissions, primarily related to vehicular travel and energy. Potential measures for consideration in future projects include:

- Provide adequate ingress and egress at all entrances to public facilities to minimize vehicle idling at curbsides.
- Provide preferential parking to high occupancy vehicles and shuttle services.
- Schedule truck deliveries and pickups during off-peak hour.
- Improve thermal integrity of the buildings and reduce thermal load with automated time clocks or occupant sensors.
- Landscape with native and/or drought-resistant species to reduce water consumption and to provide passive solar benefits.
- Provide lighter color roofing and road materials and tree planning programs to comply with the AQMP Miscellaneous Sources MSC-01 measure.
- Comply with the AQMP Miscellaneous Sources PRC-03, and Stationary Sources Operations Enhanced Inspection and Maintenance and ADV-MISC to reduce emissions of restaurant operations.

MM 4.3-2 The City of Rancho Cucamonga has developed the following requirements for specified land uses to reduce criteria pollutant emissions. These measures shall be verified either during review of project plans and specifications. Measures to be enforced include:

- All industrial and commercial facilities shall post signs requiring that trucks shall not be left idling for prolonged periods (i.e., in excess of 10 minutes).
- All industrial and commercial facilities shall designate preferential parking for vanpools.
- All industrial and commercial site tenants with 50 or more employees shall be required to post both bus and Metrolink schedules in conspicuous areas.
- All industrial and commercial site tenants with 50 or more employees shall be required to configure their operating schedules around the Metrolink schedule to the extent reasonably feasible.
- All residential and commercial structures shall be required to incorporate high efficiency/low polluting heating, air conditioning, appliances, and water heaters.
- All residential and commercial structures shall be required to incorporate thermal pane windows and weather-stripping.

MM 4.3-3

The City of Rancho Cucamonga shall ensure that future projects to be developed under the proposed 2010 General Plan Update implement the following construction-period measures to reduce criteria pollutant emissions, including, but not limited to, compliance with SCAQMD Rules as described below. These measures shall be verified either during review of project plans and specifications and/or during construction. Construction-period measures to be enforced include:

- All construction equipment shall be maintained in good operating condition so as to reduce operational emissions. Contractor shall ensure that all construction equipment is being properly serviced and maintained as per manufacturers' specifications. Maintenance records shall be available at the construction site for City verification.
- Prior to the issuance of any grading permits, the developer shall submit Construction Plans to the City denoting the proposed schedule and projected equipment use. Construction contractors shall provide evidence that low-emission mobile construction equipment will be utilized, or that their use was investigated and found to be infeasible for the project. Contractors shall also conform to any construction measures imposed by the South Coast Air Quality Management District (SCAQMD) as well as City Planning staff.
- The construction contractor shall utilize electric or clean alternative fuel-powered equipment where feasible.
- The construction contractor shall ensure that construction-grading plans include a statement that work crews will shut off equipment when not in use.
- All construction equipment shall comply with SCAQMD Rules 402 (Nuisance) and Rule 403 (Fugitive Dust Control).
- All asphalt shall meet or exceed performance standards noted in SCAQMD Rule 1108 (Cutback Asphalt).

- All paints and coatings shall meet or exceed performance standards noted in SCAQMD Rule 1113 (Architectural Coatings). Paints and coatings shall be applied either by hand or high-volume, low-pressure spray.

4.3.9 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Air Quality Management Plan Consistency

No Impact.

Air Quality Standards Violation and Exposure of Sensitive Receptors

Significant and Unavoidable for Long-term Regional Emissions.

Less Than Significant for PM10 and PM2.5.

Less than Significant for VOC, NOx, CO, SOx and TACs.

Cumulative

Significant and Unavoidable for PM10 and PM2.5.

Less than Significant for VOC and NOx.

Odors

Less Than Significant.