



5.5 Air Quality



5.5 AIR QUALITY

5.5.1 PURPOSE

This section identifies existing air quality conditions within the Study Area and provides an analysis of potential impacts associated with implementation of the General Plan Update. Potential impacts are identified and mitigation measures to address potentially significant impacts are recommended, as necessary.

5.5.2 EXISTING REGULATORY SETTING

FEDERAL

U.S. Environmental Protection Agency

The U.S. Environmental Protection Agency (EPA) is responsible for implementing the Federal Clean Air Act (FCAA), which was first enacted in 1955 and amended numerous times after. The FCAA established Federal air quality standards known as the National Ambient Air Quality Standards (NAAQS). These standards identify levels of air quality for "criteria" pollutants that are considered the maximum levels of ambient (background) air pollutants considered safe, with an adequate margin of safety, to protect the public health and welfare. The criteria pollutants addressed under the FCAA are ozone (O₃), carbon monoxide (CO), nitrogen dioxide (NO₂) (which is a form of nitrogen oxides [NO_x]), sulfur dioxide (SO₂) (which is a form of sulfur oxides [SO_x]), particulate matter less than 10 and 2.5 microns in diameter (PM₁₀ and PM_{2.5}, respectively) and lead (Pb); refer to [Table 5.5-1, National and California Ambient Air Quality Standards](#).

STATE

California Air Resources Board

The California Air Resources Board (CARB) administers the air quality policy in California. The California Ambient Air Quality Standards (CAAQS) were established in 1969 pursuant to the Mulford-Carrell Act. These standards, included with the NAAQS in [Table 5.5-1](#), are generally more stringent and apply to more pollutants than the NAAQS. In addition to the criteria pollutants, CAAQS have been established for visibility reducing particulates, hydrogen sulfide, and sulfates. The California Clean Air Act (CCAA), which was approved in 1988, requires that each local air district prepare and maintain an Air Quality Management Plan (AQMP) to achieve compliance with CAAQS.



**Table 5.5-1
National and California Ambient Air Quality Standards**

Pollutant	Averaging Time	California ¹		Federal ²	
		Standard ³	Attainment Status	Standards ^{3,4}	Attainment Status
Ozone (O ₃)	1 Hour	0.09 ppm (180 µg/m ³)	Nonattainment	N/A	N/A ⁵
	8 Hours	0.070 ppm (137 µg/m ³)	Unclassified	0.070 ppm (135 µg/m ³)	Extreme Nonattainment
Particulate Matter (PM ₁₀)	24 Hours	50 µg/m ³	Nonattainment	150 µg/m ³	Attainment
	Annual Arithmetic Mean	20 µg/m ³	Nonattainment	N/A	Attainment
Fine Particulate Matter (PM _{2.5})	24 Hours	No Separate State Standard		35 µg/m ³	Nonattainment
	Annual Arithmetic Mean	12 µg/m ³	Nonattainment	12.0 µg/m ³	Nonattainment
Carbon Monoxide (CO)	8 Hours	9.0 ppm (10 mg/m ³)	Attainment	9 ppm (10 mg/m ³)	Maintenance
	1 Hour	20 ppm (23 mg/m ³)	Attainment	35 ppm (40 mg/m ³)	Maintenance
Nitrogen Dioxide (NO ₂) ⁵	Annual Arithmetic Mean	0.030 ppm (57 µg/m ³)	N/A	53 ppb (100 µg/m ³)	Maintenance
	1 Hour	0.18 ppm (339 µg/m ³)	Attainment	100 ppb (188 µg/m ³)	N/A
Lead (Pb) ^{7,8}	30 days Average	1.5 µg/m ³	Attainment	N/A	N/A
	Calendar Quarter	N/A	N/A	1.5 µg/m ³	Attainment
	Rolling 3-Month Average	N/A	N/A	0.15 µg/m ³	Attainment
Sulfur Dioxide (SO ₂) ⁶	24 Hours	0.04 ppm (105 µg/m ³)	Attainment	0.14 ppm (for certain areas)	Attainment
	3 Hours	N/A	N/A	N/A	Attainment
	1 Hour	0.25 ppm (655 µg/m ³)	Attainment	75 ppb (196 µg/m ³)	N/A
	Annual Arithmetic Mean	N/A	N/A	0.030 ppm (for certain areas)	Attainment
Visibility-Reducing Particles ⁹	8 Hours (10 a.m. to 6 p.m., PST)	Extinction coefficient = 0.23 km @ <70% RH	Unclassified	No Federal Standards	
Sulfates	24 Hour	25 µg/m ³	Attainment		
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m ³)	Unclassified		
Vinyl Chloride ⁷	24 Hour	0.01 ppm (26 µg/m ³)	N/A		

µg/m³ = micrograms per cubic meter; ppm = parts per million; ppb = parts per billion; km = kilometer(s); RH = relative humidity; PST = Pacific Standard Time; N/A = Not Applicable

Notes:

- California standards for ozone, carbon monoxide (except eight-hour Lake Tahoe), sulfur dioxide (one- and 24-hour), nitrogen dioxide, and particulate matter (PM₁₀, PM_{2.5}, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
- National standards (other than ozone, particulate matter, and those based on 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 measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM₁₀, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m³ is equal to or less than one. For 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.
- 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.
- National Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.
- To attain the one-hour national standard, the three-year average of the annual 98th percentile of the one-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national standards are in units of ppb. California standards are in



**Table 5.5-1 [continued]
National and California Ambient Air Quality Standards**

	units of ppm. To directly compare the national standards to the California standards the units can be converted from ppb to ppm. In this case, the national standards of 53 ppb and 100 ppb are identical to 0.053 ppm and 0.100 ppm, respectively.
6.	On June 2, 2010, a new one-hour SO ₂ standard was established and the existing 24-hour and annual primary standards were revoked. To attain the one-hour national standard, the three-year average of the annual 99th percentile of the one-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO ₂ national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved. Note that the one-hour national standard is in units of ppb. California standards are in units of parts per million (ppm). To directly compare the one-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.
7.	CARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.
8.	The national standard for lead was revised on October 15, 2008 to a rolling three-month average. The 1978 lead standard (1.5 µg/m ³ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.
9.	In 1989, CARB converted both the general Statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the Statewide and Lake Tahoe Air Basin standards, respectively.
Source: California Air Resources Board and U.S. Environmental Protection Agency, May 4, 2016.	

Similar to the EPA, CARB also designates areas within California as either attainment or nonattainment for each criteria pollutant based on whether the CAAQS have been achieved. Under the CCAA, areas are designated as nonattainment for a pollutant if air quality data shows that a State standard for the pollutant was violated at least once during the previous three calendar years. Exceedances that are affected by highly irregular or infrequent events are not considered violations of a State standard and are not used as a basis for designating areas as nonattainment. Similar to the FCAA, all areas designated as nonattainment under the CCAA are required to prepare plans showing how the area would meet the CAAQS by its attainment dates. [Table 5.5-1](#) also illustrates the FCAA and CCAA attainment status for the South Coast Air Basin which the City of Rancho Santa Margarita is located.

REGIONAL

South Coast Air Quality Management District

The *2016 Air Quality Management Plan (2016 AQMP)*, which was adopted in March 2017, proposes policies and measures to achieve Federal and State standards for improved air quality in the South Coast Air Basin and those portions of the Salton Sea Air Basin (formerly named the Southeast Desert Air Basin) that are under the South Coast Air Quality Management District's (SCAQMD) jurisdiction. The AQMP relies on a regional and multi-level partnership of governmental agencies at the Federal, State, regional, and local level. These agencies (EPA, CARB, local governments, Southern California Association of Governments [SCAG], and the SCAQMD) are the primary agencies that implement the AQMP programs.

The 2016 AQMP incorporates the latest scientific and technical information and planning assumptions, including the *2016–2040 Regional Transportation Plan/Sustainable*



Communities Strategy (2016–2040 RTP/SCS), updated emission inventory methodologies for various source categories, and SCAG's latest growth forecasts.

The 2016 AQMP addresses several State and Federal planning requirements, incorporating new scientific information, primarily in the form of updated emissions inventories, ambient measurements, and new meteorological air quality models. The 2016 AQMP highlights the reductions and the interagency planning necessary to identify additional strategies, especially in the area of mobile sources, to meet all Federal criteria pollutant standards within the timeframes allowed under Federal Clean Air Act. The primary task of the 2016 AQMP is to bring the Basin into attainment with Federal health-based standards.

SCAQMD RULES AND REGULATIONS

All projects located within the Basin are subject to SCAQMD rules and regulations in effect at the time of construction. Specific rules that may be applicable in the Study Area include the following:

- *Rule 401 Visible Emissions*. A person shall not discharge into the atmosphere from any single source of emission whatsoever any air contaminant for a period or periods aggregating more than three minutes in any one hour which is as dark or darker in shade as that designated No. 1 on the Ringelmann Chart, as published by the U.S. Bureau of Mines, or of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in subparagraph (b)(1)(A) of this rule.
- *Rule 402 Nuisance*. A person 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 do not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals.
- *Rule 403 Fugitive Dust*. This rule is intended to reduce the amount of particulate matter entrained in the ambient air as a result of man-made fugitive dust sources by requiring actions to prevent, reduce or mitigate fugitive dust emissions. Rule 403 applies to any activity or man-made condition capable of generating fugitive dust.
- *Rule 445 Wood-Burning Devices*. This rule prohibits permanently installed wood burning devices in any new development. A wood burning device means any fireplace, wood burning heater, or pellet-fueled wood heater, or any similarly enclosed, permanently installed, indoor or outdoor device burning any solid fuel for aesthetic or space-heating purposes, which has a heat input of less than one million British thermal units (BTU) per hour.



- Rule 1113 Architectural Coatings. No person shall apply or solicit the application of any architectural coating within SCAQMD, with VOC content in excess of the values specified in a table incorporated in the Rule.

In addition to the rules listed above, SCAQMD has developed an air quality guidance document with suggested measures to reduce the amount of fugitive dust that is re-entrained into the atmosphere from unpaved areas, parking lots, and construction sites.

SCAQMD GENERAL PLAN GUIDANCE

The SCAQMD has prepared the *Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning*, dated May 6, 2005. The SCAQMD has made this document available to local governments as a tool to assist in the development of their General Plans and other planning decisions. Implementation of the suggested strategies throughout the region will strengthen the local government partnership with the SCAQMD to achieve State and Federal clean air standards and demonstrate efforts taken to provide environmental equity and protect public health.

The involvement of local governments to establish public policies that support SCAQMD strategies is essential for this region to meet State and Federal air quality goals. Since the General Plan is the foundation for all local planning and development decisions, it is the most important tool in the implementation of local government policies and programs necessary to achieve clean air standards. Local governments work with their Council of Governments and the SCAQMD to improve air quality through a variety of programs, including regulatory actions, policy making, and education programs. The City can address air quality issues through ordinances, local circulation systems, transportation services, energy, and land use. Design standards such as requirements for bicycle racks and bicycle paths may result in reduced motor vehicle trips and decreased levels of air pollutants. The SCAQMD *Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning* (dated May 6, 2005) suggests policies and strategies which are intended to guide local governments in developing approaches to reduce exposure to source-specific air pollution and lower health risk associated with cumulative air pollution impacts.

Southern California Association of Governments

SCAG is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino and Imperial Counties and serves as a forum for regional issues relating to transportation, the economy, community development and the environment. SCAG serves as the Federally-designated metropolitan planning organization (MPO) for the Southern California region and is the largest MPO in the United States. SCAG's 2016–2040 Regional Transportation Plan/Sustainable Communities Strategies (RTP/SCS) forms the basis for the land use and transportation control portions of the 2016 AQMP. SCAG is responsible under the FCAA for determining conformity of projects, plans, and programs with the SCAQMD.



LOCAL

Rancho Santa Margarita General Plan

Air quality is included in the General Plan Conservation/Open Space Element to address reducing pollutant levels through stationary source, mobile source, transportation and land use control, and energy conservation measures. The Conservation/Open Space Element identifies that cooperation among all agencies in the Basin is necessary to achieve desired improvements to air quality. The City can participate and contribute its share to those efforts by proper planning and participation in regional air quality management programs.

5.5.3 EXISTING ENVIRONMENTAL SETTING

SOUTH COAST AIR BASIN

Geography

The City of Rancho Santa Margarita is located in the South Coast Air Basin (Basin), a 10,743-square mile area bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino and San Jacinto Mountains to the north and east. The Basin includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties, in addition to the San Geronio Pass area of Riverside County. The Basin's terrain and geographical location (i.e., a coastal plain with connecting broad valleys and low hills) determine its distinctive climate.

The general region lies in the semi-permanent high-pressure zone of the eastern Pacific. The climate is mild and tempered by cool sea breezes. The usually mild climatological pattern is interrupted infrequently by periods of extremely hot weather, winter storms, or Santa Ana winds. The extent and severity of the air pollution problem in the Basin is a function of the area's natural physical characteristics (weather and topography), as well as man-made influences (development patterns and lifestyle). Factors such as wind, sunlight, temperature, humidity, rainfall, and topography all affect the accumulation and/or dispersion of pollutants throughout the Basin.

Climate

The climate in the Basin is characterized by moderate temperatures and comfortable humidity, with precipitation limited to a few storms during the winter season (November through April). The average annual temperature varies little throughout the Basin, averaging 75 degrees Fahrenheit (°F). However, with a less pronounced oceanic influence, the eastern inland portions of the Basin show greater variability in annual minimum and maximum temperatures. January is usually the coldest month at all locations, while July and August are usually the hottest months of the year. Although the Basin has a semi-arid climate, the air near the surface is moist due to the presence of a shallow marine layer. Except for infrequent periods when dry, continental air is brought into the Basin by offshore winds, as the ocean effect is dominant. Periods with heavy fog



are frequent, and low stratus clouds, occasionally referred to as “high fog,” are a characteristic climate feature.

Annual average relative humidity is 70 percent at the coast and 57 percent in the eastern part of the Basin. Precipitation in the Basin is typically nine to 14 inches annually and is rarely in the form of snow or hail due to typically warm weather. The frequency and amount of rainfall is greater in the coastal areas of the Basin.

In the City of Rancho Santa Margarita, the climate is typically warm during summer when temperatures tend to be in the 70s and cool during winter when temperatures tend to be in the 50s. The warmest month of the year is August with an average maximum temperature of 80 °F, while the coldest month of the year is December with an average minimum temperature of 43 °F. Temperature variations between night and day tend to be moderate during summer and winter with a difference that can reach 24 °F. The annual average precipitation in Rancho Santa Margarita is 13.93 inches. Rainfall is fairly evenly distributed throughout the year. The wettest month of the year is February with an average rainfall of 3.42 inches.¹

Photochemical Smog

The presence and intensity of sunlight are necessary prerequisites for the formation of photochemical smog. Under the influence of the ultraviolet radiation of sunlight, certain original or “primary” pollutants (mainly reactive hydrocarbons and oxides of nitrogen) react to form “secondary” pollutants (primarily oxidants). Since this process is time dependent, secondary pollutants can be formed many miles downwind from the emission sources. Because of the prevailing daytime winds and time-delayed nature of photochemical smog, oxidant concentrations are highest in the inland areas of southern California.

Temperature Inversions

Under ideal meteorological conditions and irrespective of topography, pollutants emitted into the air would be mixed and dispersed into the upper atmosphere. However, the southern California region frequently experiences temperature inversions in which pollutants are trapped and accumulate close to the ground. The inversion, a layer of warm, dry air overlaying cool, moist marine air, is a normal condition in the southland. The cool, damp, and hazy sea air capped by coastal clouds is heavier than the warm, clear air that acts as a lid through which the marine layer cannot rise. The height of the inversion is important in determining pollutant concentration. When the inversion is approximately 2,500 feet above sea level, the sea breezes carry the pollutants inland to escape over the mountain slopes or through the passes. At a height of 1,200 feet, the terrain prevents the pollutants from entering the upper atmosphere, resulting in a settlement in the foothill communities. Below 1,200 feet, the inversion puts a tight lid on pollutants, concentrating them in a shallow layer over the entire coastal basin. Usually, inversions are lower before sunrise than during the daylight hours. Mixing heights for inversions are lower in the summer and more persistent and are partly responsible for the high levels of ozone (O₃)

¹ The Weather Channel, *Average Weather for Rancho Santa Margarita, CA*, <https://weather.com/weather/monthly/l/USCA0915:1:US>, accessed August 1, 2018.



observed during summer months in the Basin. Smog in southern California is generally the result of these temperature inversions combining with coastal day winds and local mountains to contain the pollutants for long periods of time, allowing them to form secondary pollutants by reacting with sunlight. The Basin has a limited ability to disperse these pollutants due to typically low wind speeds.

AMBIENT AIR QUALITY

The SCAQMD monitors air quality at 37 monitoring stations throughout the Basin. Each monitoring station is located within a Source Receptor Area (SRA). The communities within a SRA are expected to have similar climatology and ambient air pollutant concentrations. The City of Rancho Santa Margarita is located in SRA 19 (Saddleback Valley). The monitoring stations usually measure pollutant concentrations ten feet above ground level; therefore, air quality is often referred to in terms of ground-level concentrations.

Pollutants Measured

The following air quality information briefly describes the various types of pollutants monitored at the Mission Viejo and Costa Mesa Monitoring Stations. The Mission Viejo Monitoring Station is the nearest to the City; however, for pollutants not measured at Mission Viejo, the next closest station was used. Air quality data from 2015 through 2017 is provided in [Table 5.5-2, Local Air Quality Levels](#).

**Table 5.5-2
Local Air Quality Levels**

Pollutant	Primary Standard		Year	Maximum Concentration ¹	Number of Days State/Federal Std. Exceeded
	California	Federal			
Carbon Monoxide (CO) ²	9.0 ppm for 8 hours	9.0 ppm for 8 hours	2015	1.41 ppm	0/0
			2016	1.34	0/0
			2017	1.60	0/0
Ozone (O ₃) (1-Hour) ²	0.09 ppm for 1 hour	NA ⁴	2015	0.099 ppm	2/0
			2016	0.122	5/0
			2017	0.103	3/0
Ozone (O ₃) (8-Hour) ²	0.07ppm for 8 hours	0.070 ppm for 8 hours	2015	0.088ppm	8/8
			2016	0.093	1313
			2017	0.083	27/25
Nitrogen Dioxide (NO ₂) ³	0.18 ppm for 1 hour	0.100 ppm for 1 hour	2015	0.0524 ppm	0/0
			2016	0.0598	0/0
			2017	0.0453	0/0
Particulate Matter (PM ₁₀) ^{2,3,5}	50 µg/m ³ for 24 hours	150 µg/m ³ for 24 hours	2015	49.0 µg/m ³	NM/0
			2016	59.0	NM/0
			2017	58.2	NM/0
Fine Particulate Matter (PM _{2.5}) ^{2,5}	No Separate State Standard	35 µg/m ³ for 24 hours	2015	31.5 µg/m ³	0/0
			2016	24.7	0/0
			2017	19.5	0/0
ppm = parts per million		PM ₁₀ = particulate matter 10 microns in diameter or less			
µg/m ³ = micrograms per cubic meter		PM _{2.5} = particulate matter 2.5 microns in diameter or less			
NM = Not Measured		NA = Not Applicable			



**Table 5.5-2 [continued]
Local Air Quality Levels**

Notes:
1. Maximum concentration is measured over the same period as the California Standard.
2. Measurements taken at the Mission Viejo monitoring station located at 26081 Via Pera, Mission Viejo, California 92691.
3. Measurements taken at the Costa Mesa monitoring station located at 2850 Mesa Verde Drive East, Costa Mesa, California 92626.
4. The U.S. Environmental Protection Agency revoked the Federal 1-hour Standard in June of 2005.
5. PM ₁₀ exceedances are based on State thresholds established prior to amendments adopted on June 20, 2002.
6. PM ₁₀ and PM _{2.5} exceedances are derived from the number of samples exceeded, not days.
Source: California Air Resources Board, <i>ADAM Air Quality Data Statistics</i> , http://www.arb.ca.gov/adam/welcome.html .

Carbon Monoxide. CO is a colorless and odorless gas. The automobile and other types of motor vehicles are the main source of this pollutant in the Basin. CO concentrations are generally higher along roadways, especially in the early mornings. The State and Federal standard for CO is 9.0 parts per million (ppm), averaged over eight hours. The standards were not exceeded between 2015 and 2017 at the Mission Viejo Monitoring Station. The Basin is designated as an attainment/maintenance area for Federal and State CO standards.

CO replaces oxygen in the body's red blood cells. Individuals with a deficient blood supply to the heart, patients with diseases involving heart and blood vessels, fetuses, and patients with chronic hypoxemia (oxygen deficiency, as seen in high altitudes) are most susceptible to the adverse effects of CO exposure. People with heart disease are also more susceptible to developing chest pains when exposed to low levels of CO. Exposure to high levels of CO can slow reflexes and cause drowsiness, as well as result in death in confined spaces at very high concentrations.

Nitrogen Dioxide. NO₂ (often used interchangeably with NO_x) is a reddish-brown gas with an odor similar to bleach and is the by-product of fuel combustion, which results from mobile and stationary sources. It has complex diurnal concentrations that are typically higher at night. The Basin has relatively low NO₂ concentrations, as very few monitoring stations have exceeded the State standard of 0.18 ppm (one hour) since 1988. NO₂ is itself a regulated pollutant, but it also reacts with hydrocarbons in the presence of sunlight to form O₃ and other compounds that make up photochemical smog. NO₂ levels have not exceeded the State standard at the Costa Mesa Monitoring Station between 2015 and 2017. The Basin is designated as an attainment/maintenance area for NO₂ for State and Federal standards.

NO₂ can irritate and damage the lungs and lower resistance to respiratory infections such as influenza. The health effects of short-term exposure are still unclear. However, continued or frequent exposure to NO₂ concentrations that are typically much higher than those normally found in the ambient air, may increase acute respiratory illnesses in children and increase the incidence of chronic bronchitis and lung irritation. Chronic exposure to NO₂ may aggravate eyes and mucus membranes as well as cause pulmonary dysfunction.

Ozone. O₃, a colorless gas with a sharp odor, is one of a number of substances called photochemical oxidants (highly reactive secondary pollutant). These oxidants are formed when hydrocarbons, nitrogen oxides, and related compounds interact in the presence of ultraviolet sunlight. The State standard for O₃ is 0.09 ppm, averaged over one



hour, and 0.07 ppm, averaged over eight hours. Both Federal and State standards designate the Basin as a nonattainment area. The Federal one-hour standard for O₃ was revoked as of June 5, 2005, and therefore no longer applies.

The 1-hour O₃ levels ranged from 0.099 ppm to 0.115 ppm from 2015 and 2017 at the Mission Viejo Monitoring Station. The 8-hour O₃ levels between 2015 and 2017 ranged from 0.082 ppm to 0.088 ppm. The State 8-hour standard for O₃ is 0.07 and was approved by CARB on April 28, 2005. The State standard has been exceeded 23 times between 2015 and 2017. The Federal standard for O₃ has been revoked as of June 2005.

The “Bad” O₃ is a photochemical pollutant, and is formed by reactive organic compounds (ROGs) and NO_x in the presence of sunlight; therefore, ROGs and NO_x are O₃ precursors. To reduce O₃ concentrations, it is necessary to control the emissions of these O₃ precursors. Significant O₃ formation generally requires an adequate amount of precursors in the atmosphere and a period of several hours in a stable atmosphere with strong sunlight. High O₃ concentrations can form over large regions when emissions from motor vehicles and stationary sources are carried hundreds of miles from their origins.

While O₃ in the upper atmosphere (stratosphere) protects the earth from harmful ultraviolet radiation, high concentrations of ground-level O₃ (in the troposphere) can adversely affect the human respiratory system and other tissues. O₃ is a strong irritant that can constrict the airways, forcing the respiratory system to work hard to deliver oxygen. Individuals exercising outdoors, children, and people with pre-existing lung disease such as asthma and chronic pulmonary lung disease are considered to be the most susceptible to the health effects of O₃. Short-term exposure (lasting for a few hours) to O₃ at levels typically observed in southern California can result in aggravated respiratory diseases such as emphysema, bronchitis, asthma, shortness of breath, increased susceptibility to infections, inflammation of the lung tissue, increased fatigue, as well as chest pain, dry throat, headache, and nausea.

Coarse Particulate Matter (PM₁₀). PM₁₀ refers to suspended particulate matter which is smaller than 10 microns (or ten one-millionths) of a meter. PM₁₀ arises from sources such as road dust, diesel soot, combustion products, construction operations, and dust storms. PM₁₀ scatters light and significantly reduces visibility. In addition, these particulates penetrate in the lungs and can potentially damage the respiratory tract. On June 19, 2003, CARB adopted amendments to the Statewide 24-hour particulate matter standards based upon requirements set forth in the Children’s Environmental Health Protection Act (Senate Bill 25). The Federal 24-hour standard of 150 µg/m³ was retained. The State standard for PM₁₀ is 50 micrograms per cubic meter (µg/m³) averaged over 24 hours; this standard was not exceeded at the Mission Viejo Monitoring Station between 2015 and 2017. The Federal standard for PM₁₀ is 150 µg/m³ averaged over 24 hours; this standard was not exceeded between 2015 and 2017.

Fine Particulate Matter (PM_{2.5}). In 1997, the EPA announced new PM_{2.5} standards. Industry groups challenged the new standard in court and implementation of the standard was blocked. However, upon appeal by the EPA, the U.S. Supreme Court reversed this decision and upheld the EPA’s new standards. On January 5, 2005, the EPA published a Final Rule in the Federal Register that designates the Orange County portion of the Basin



as a nonattainment area for Federal PM_{2.5} standards.² On June 20, 2002, CARB adopted amendments for Statewide annual ambient particulate matter air quality standards. These standards were revised/established due to increasing concerns by CARB that previous standards were inadequate, as almost everyone in California is exposed to levels at or above the current State standards during some parts of the year, and the Statewide potential for significant health impacts associated with particulate matter exposure was determined to be large and wide-ranging.³ For PM_{2.5}, the Federal standard is 35 µg/m³ over 24 hours. There is no separate State standard for PM_{2.5}. At the Mission Viejo Monitoring Station, there were no exceedances between 2015 and 2017 for PM_{2.5}.

Sulfur Dioxide. SO₂ is a colorless, irritating gas with a rotten egg smell that is formed primarily by the combustion of sulfur-containing fossil fuels. SO₂ is often used interchangeably with sulfur oxides (SO_x) and lead (Pb). SO₂ levels in all areas of the Basin do not exceed Federal or State standards, and the Basin is designated as in attainment for both State and Federal SO₂ standards. SO₂ was not monitored at the Mission Viejo monitoring locations.

Reactive Organic Gases and Volatile Organic Compounds. Hydrocarbon compounds are any compounds containing various combinations of hydrogen and carbon atoms that exist in the ambient air. VOCs contribute to the formation of smog and/or may themselves be toxic. VOCs often have an odor; some examples include gasoline, alcohol, and the solvents used in paints. There are no specific State or Federal VOC thresholds as they are regulated by individual air districts as O₃ precursors.

Lead (Pb). In the Basin, atmospheric lead is generated almost entirely by the combustion of leaded gasoline and contributes less than one percent of the material collected as total suspended particulate. Atmospheric lead concentrations have been reduced substantially in recent years due to the lowering of average lead content in gasoline. Exceedances of the State air quality standard for lead (monthly average concentration of 1.50 g/m³) now are confined to densely populated areas, where vehicle traffic is greatest. The Basin has achieved attainment for lead under both State and Federal standards. Lead was not monitored at the Mission Viejo monitoring locations.

PRIMARY SOURCES OF EMISSIONS

Air pollutants typically occur from stationary sources, point sources, and mobile sources. As the City of Rancho Santa Margarita primarily consists of residential and commercial uses, stationary and point sources are limited. Mobile sources are responsible for the majority of emissions in the City. These emission sources are described below.

Stationary and Point Sources

Stationary source emissions refer to those that originate from a single place or object that does not move around. Typical stationary sources include power plants, mines,

2 U.S. Environmental Protection Agency, *Air Quality Designations and Classifications for the Fine Particles (PM_{2.5}) National Ambient Air Quality Standards*, January 5, 2005.

3 California Environmental Protection Agency, Air Resources Board, *Staff Report: Public Hearing to Consider Amendments to the Ambient Air Quality Standards for Particulate Matter and Sulfates*, May 3, 2002.



smokestacks, vents, incinerators, buildings, and other facilities using industrial combustion processes. Stationary point sources have one or more emission sources at a facility with an identified location and are usually associated with manufacturing and industrial projects.

The City does not have any power plants or other facilities that represent a major stationary emissions source within its limits. However, the City of Rancho Santa Margarita contains several minor point sources of air pollutants. A variety of pollutants, including reactive hydrocarbons from activities such as spray painting, are typically generated by smaller commercial and industrial uses. The City allows light industrial uses within the areas zoned as Business Park and Auto Center overlay. While each use might not represent a significant source of air pollution, the cumulative effects of development of the entire Study Area could be significant. Although the number and nature of future additional air pollutant point sources is presently unknown, each individual source would be required to comply with rules and regulations as they are established by the SCAQMD. These regulations require that sources of hazardous materials or criteria pollutants above threshold levels obtain permits prior to operation of the facility.

Mobile Sources

Mobile sources of emissions refer to those moving objects that release pollution and include cars, trucks, busses, planes, trains, motorcycles, and gasoline-powered lawn mowers. Mobile source emissions may be classified as on- or off-road sources. Increased traffic volumes within the City of Rancho Santa Margarita could contribute to regional incremental emissions of nitrogen dioxide (NO_x), volatile organic compound (VOC), carbon monoxide (CO), sulfur dioxide (SO_x), and coarse particulate matter (PM₁₀). The following is a listing of emissions that typically emanate from vehicular sources:

- Vehicle running exhaust (VOC, CO, NO_x, SO_x, and PM₁₀);
- Vehicle tire wear particulates (PM₁₀);
- Vehicle brake wear particulates (PM₁₀);
- Vehicle variable starts (VOC, CO, NO_x);
- Vehicle hot soaks (VOC);
- Vehicle diurnal (VOC);
- Vehicle resting losses (VOC); and
- Vehicle evaporative running losses (VOC).

ON-ROAD SOURCES

These sources are considered to be a combination of emissions from automobiles, trucks, and indirect sources. Major sources of mobile emissions in the City include the local and regional roadway network. Foothill Transportation Corridor State Route 241 (SR-241) is the freeway that passes through the City and is heavily traveled. Other busy roadways within



the City that contribute to localized air quality emissions are Santa Margarita Parkway, Antonio Parkway, Alicia Parkway, and Avenida Empresa.

Indirect on-road sources of emissions are those that by themselves may not emit air contaminants; however, they indirectly cause the generation of air pollutants by attracting vehicle trips or by consuming energy. Examples of these indirect sources include an office complex or commercial center that generates trips and consumes energy resources.

OFF-ROAD SOURCES

Off-road sources typically include aircraft, trains, construction equipment, and landscape equipment. The primary source of off-road emissions within the City would be generated by construction equipment and landscape equipment. Construction activities are typically temporary and intermittent and can be located at various locations within the City. Landscape equipment emissions would occur more regularly and would occur throughout the City, especially within residential areas. There is no aircraft traffic within the City, as the closest airport, John Wayne Airport is located over 12 miles west of the City. Additionally, there are no railroad tracks located within the City.

Emissions from off-road sources include NO_x and diesel particulate matter, which contribute to serious public health problems. The EPA has set emission standards for the engines used in most construction, agricultural, and industrial equipment. The EPA has adopted off-road diesel fuel requirements to decrease the allowable levels of sulfur, which can damage advanced emission control technologies.

EMISSIONS INVENTORY

Orange County Emissions Inventory

Table 5.5-3, 2015 Estimated Emissions Inventory for Orange County, summarizes the emissions of criteria air pollutants within Orange County for various source categories in 2015 (the latest data available). According to Orange County's emissions inventory, vehicular sources are the largest contributor to the estimated annual average air pollutant levels for reactive organic gases (ROG), CO, NO_x, SO_x, PM₁₀, and fine particulate matter (PM_{2.5}).



**Table 5.5-3
2015 Estimated Emissions Inventory for Orange County**

Source Type/Category	Estimated Annual Average Emissions (Tons/Day)					
	ROG	CO	NO _x	SO _x	PM ₁₀	PM _{2.5}
Stationary Sources						
Fuel Combustion	1.2	6.6	5.4	0.3	0.4	0.4
Waste Disposal	2.7	0.2	0.4	0.1	0.1	0.1
Cleaning and Surface Coating	8.9	0.0	0.1	0.0	0.4	0.4
Petroleum Production Marketing	6.3	0.0	0.0	-	0.0	0.0
Industrial Processes	2.1	0.0	0.0	-	1.9	0.9
Subtotal (Stationary Sources)¹	21.2	6.8	5.9	0.4	2.9	1.9
Areawide Sources						
Solvent Evaporation	19.9	-	-	-	0	0
Miscellaneous Processes	2.1	14.9	3.8	0.2	15.1	5.3
Subtotal (Areawide Sources)¹	21.9	14.9	3.8	0.2	15.1	5.3
Mobile Sources						
On-Road Mobile Sources	18.9	186	38.3	0.4	4.6	2.1
Other Mobile Sources	24.2	185.4	25.9	0.6	1.9	1.7
Subtotal (Mobile Sources)¹	43.1	371.5	64.2	1	6.5	3.8
Grand Total for Orange County²	86.2	393.2	73.8	1.5	24.5	11
Notes:						
1. Totals may be slightly off due to rounding. Totals are derived from the inventory model and are not specifically added by category.						
2. This total excludes emissions from natural sources (i.e., biogenic, geogenic, and wildfire sources).						
Source: California Air Resources Board, <i>2015 Estimated Annual Average Emissions Orange County</i> , https://www.arb.ca.gov/app/emsinv/2017/emssumcat.php , accessed August 20, 2018.						

City of Rancho Santa Margarita Emissions Inventory

Table 5.5-4, *Summary of 2016 Estimated Emissions Inventory for the City of Rancho Santa Margarita*, summarizes the emissions of criteria air pollutants within the City of Rancho Santa Margarita for area, mobile, and indirect source categories. The emissions inventory is based on existing land use information, vehicle miles traveled, City water consumption data, and energy consumption data. The data used to calculate the emissions inventory for criteria pollutants is based on the City's GIS data. According to the emissions inventory, area and mobile sources are the largest contributor to the estimated annual average air pollutant levels.



**Table 5.5-4
Summary of 2016 Estimated Existing Emissions Inventory
for the City of Rancho Santa Margarita**

Source Type/Category ²	Estimated Annual Average Emissions (Tons/Year) ¹					
	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Area	178.73	6.75	297.59	0.30	17.97	17.97
Energy	1.96	16.92	8.17	0.11	1.36	1.36
Mobile	64.38	285.57	891.73	2.85	239.71	66.46
Waste	--	--	--	--	0.00	0.00
Water	--	--	--	--	0.00	0.00
Total for the City³	245.07	309.24	1,197.48	3.26	259.03	85.79

Notes:
 1. Emissions estimates calculated using CalEEMod version 2016.3.2.
 2. Emissions estimates calculated using the land use categories/intensities depicted in Section 5.1, Land Use and Planning.
 3. The numbers may be slightly off due to rounding.

Source: Appendix D, *Air Quality and Greenhouse Gas Emissions Data*, for assumptions used in this analysis.

SENSITIVE RECEPTORS

Sensitive populations are more susceptible to the effects of air pollution than are the general population. Sensitive populations (sensitive receptors) that are in proximity to localized sources of toxics and CO are of particular concern. Land uses considered sensitive receptors include residences, schools, playgrounds, childcare centers, athletic facilities, churches, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes. The City of Rancho Santa Margarita currently has numerous sensitive land uses, in particular low, medium, and high density residential communities. These sensitive land uses will continue to exist and new sensitive land uses may occur with implementation of the General Plan Update.

5.5.4 SIGNIFICANCE THRESHOLDS AND CRITERIA

The SCAQMD's *CEQA Air Quality Handbook* provides significance thresholds for both construction and operation of projects within the SCAQMD jurisdictional boundaries; refer to Table 5.5-5, South Coast Air Quality Management District Emission Thresholds. If the SCAQMD thresholds are exceeded, a potentially significant impact could result. However, ultimately the lead agency determines the thresholds of significance for impacts.

**Table 5.5-5
South Coast Air Quality Management District Emission Thresholds**

Phase	Pollutant (lbs/day)					
	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Construction	75	100	550	150	150	55
Operational	55	55	550	150	150	55

Source: South Coast Air Quality Management District, *CEQA Air Quality Handbook*, November 1993.



Appendix G of the California Environmental Quality Act (CEQA) Guidelines contains the Initial Study Environmental Checklist, which includes questions relating to air quality. The issues presented in the Initial Study Environmental Checklist have been utilized as thresholds of significance in this section. Accordingly, a project may create a significant environmental impact if it would:

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

Based on these standards and significance thresholds and criteria, The General Plan Update effects have been categorized as either “no impact,” a “less than significant impact,” or a “potentially significant impact.” Mitigation measures are recommended for potentially significant impacts. If a potentially significant impact cannot be reduced to a less than significant level through the application of mitigation, it is categorized as a significant unavoidable impact.

5.5.5 PROJECT IMPACTS AND MITIGATION MEASURES

SHORT-TERM CONSTRUCTION EMISSIONS

- **CITYWIDE CONSTRUCTION ACTIVITIES UNDER THE GENERAL PLAN UPDATE COULD RESULT IN A CONSIDERABLE INCREASE OF CRITERIA POLLUTANTS, AND THUS, COULD VIOLATE ANY AIR QUALITY STANDARD OR CONTRIBUTE SUBSTANTIALLY TO AN EXISTING OR PROJECTED AIR QUALITY VIOLATION, OR RESULT IN A CUMULATIVELY CONSIDERABLE NET INCREASE OF ANY CRITERIA POLLUTANT FOR WHICH THE PROJECT REGION IS NON-ATTAINMENT UNDER AN APPLICABLE FEDERAL OR STATE AMBIENT AIR QUALITY STANDARD.**

Impact Analysis: Implementation of the General Plan Update would not directly result in new development within the City; however, it projects additional development, which could result in new construction-related emissions associated with future development. The thresholds of significance recommended by the SCAQMD for construction emissions were developed for individual development projects. Construction-related emissions are described as short-term or temporary in duration and have the potential to represent a significant impact with respect to air quality. Implementation of the General Plan Update is dependent on individual housing decisions, employment opportunities, provision of services for housing and supporting commercial uses, land use decisions by the City and



other public agencies, regional transportation planning decisions, the decisions of financial institutions related to development projects, and other similar factors. Future development projects and plans would continue to define specific phasing at a detailed level and be reviewed by the City to ensure that development occurs in a logical manner consistent with policies in the General Plan Update, and that additional environmental review is conducted under CEQA, as needed.

Construction-related activities associated with implementation of the General Plan Update would result in emissions of criteria air pollutants and precursors from site preparation (e.g., demolition, excavation, grading, and clearing); exhaust from off-road equipment, material delivery trucks, and worker commute vehicles; vehicle travel on roads; and other miscellaneous activities (e.g., building construction, asphalt paving, application of architectural coatings, and trenching for utility installation). Construction activities occurring under the General Plan Update could also generate airborne odors associated with the operation of construction vehicles (i.e., diesel exhaust) and the application of architectural coatings. Construction related odors would be short-term in nature and cease upon completion of construction. Emissions would typically be isolated to the immediate vicinity of the construction site and activity. As such, these odors would not affect a substantial number of people and impacts would be limited to people living and working near the source. Due to the types of odors that would occur in the City and limited exposure, implementation of the General Plan Update would not create construction-related objectionable odors affecting a substantial number of people; thus, impacts would be less than significant in this regard.

Because the General Plan Update projects future development but does not contain specific development proposals, construction-related emissions that may occur at any one time are speculative and cannot be accurately determined at this stage of the planning process. Assuming relatively robust economic conditions over the next 20 years, construction activities would occur throughout the City, but the rate of development cannot be predicted. Future construction-related emissions could lead to the violation of an applicable air quality standard or contribute substantially to an existing or projected air quality violation.

Goal 4 of the General Plan Update Conservation/Open Space Element addresses potential air quality impacts by supporting projects, programs, policies, and regulations that reduce impacts to air quality caused by private and public construction projects. Rancho Santa Margarita Zoning Code (RSMZC) Section 9.08.220 requires all land use and development review applications referenced in Chapter 9.08 (such as zone changes, conditional use permits, subdivisions, etc.) and all public works and other public projects to undergo environmental review as an integral part of the process for such applications prior to consideration by the decision-making authority. Additionally, future development projects that include employers with 250 employees or more shall comply with SCAQMD Rule 2202, which requires the implementation of employee commute reduction programs. Environmental review shall be carried out in accordance with the California Environmental Quality Act, State Environmental Impact Report Guidelines, City's Environmental Guidelines, and other applicable regulations. Future development projects would be required to comply with RSMZC Section 9.08.220 and all applicable SCAQMD rules and regulations as well as other control measures to reduce construction emissions; refer to Mitigation Measure AQ-1 through AQ-3. However, because the



General Plan Update would facilitate future development and generate construction emissions that could potentially exceed SCAQMD thresholds, impacts would be considered significant and unavoidable.

Proposed General Plan Update Goals and Policies:

CONSERVATION/OPEN SPACE ELEMENT

Goal 4: Cooperate with local and regional agencies to improve air quality.

- Policy 4.1:** Cooperate with the South Coast Air Quality Management District and Southern California Association of Governments in their efforts to implement the regional Air Quality Management Plan.
- Policy 4.2:** Promote land use patterns that reduce the number and length of motor vehicle trips.
- Policy 4.3:** Encourage the expansion and retention of local serving retail businesses (e.g., restaurants, drug stores) to reduce the number and length of automobile trips to comparable services located in other jurisdictions.
- Policy 4.4:** Encourage complete streets improvements and alternative modes of transportation, such as walking, biking, and public transportation to reduce emissions associated with automobile use.
- Policy 4.5:** Consider vehicle miles traveled when creating and implementing planning documents and reviewing development proposals.
- Policy 4.6:** Require new development and reuse/revitalization projects with sensitive uses in areas within 500 feet of a freeway or urban road with 100,000 vehicles/day to be designed to lessen any potential health risks through site design, landscaping, ventilation systems, or other measures.

Mitigation Measures:

- AQ-1 Prior to issuance of any grading permit for a project subject to California Environmental Quality Act (CEQA) review (meaning, non-exempt projects), the City Planning Division shall confirm that the Grading Plan, Building Plans, and specifications require that ozone precursor emissions from construction equipment vehicles shall be controlled by maintaining equipment engines in good condition and in proper tune per manufacturer's specifications. The equipment maintenance records and equipment design specifications data sheets shall be submitted to the City and verified by the City Planning Division, and shall be kept on site by the project contractor during construction activities.
- AQ-2 Each development project subject to California Environmental Quality Act (CEQA) review (meaning, non-exempt projects) shall submit a traffic control plan to the City Engineer prior to the issuance of a grading permit. To reduce traffic congestion during temporary construction activities, the plan shall



include, as deemed necessary by the City Engineer, the following: temporary traffic controls such as a flag person during all phases of construction to maintain smooth traffic flow, dedicated turn lanes for movement of construction trucks and equipment on- and off-site, scheduling of construction activities that affect traffic flow on the arterial system to off-peak hour, consolidating truck deliveries, rerouting of construction trucks away from congested streets or sensitive receptors, and/or signal synchronization to improve traffic flow. Traffic control devices included in the traffic control plan shall be developed in compliance with the requirements of the *California Manual on Uniform Control Devices*.

- AQ-3 To identify potential long-term operational-related air quality impacts from projects subject to California Environmental Quality Act (CEQA) review (meaning, non-exempt projects), project-specific air emissions impacts shall be determined in compliance with the latest version of the SCAQMD CEQA Guidelines. To address potential localized impacts, the air quality analysis shall be completed pursuant to the latest version of SCAQMD's *Final Localized Significance Threshold Methodology* document or other appropriate methodology as determined in conjunction with SCAQMD. The results of the operational-related and localized air quality impacts analyses shall be included in the development project's CEQA documentation. If such analyses identify potentially significant regional or local air quality impacts, the City shall require the incorporation of appropriate mitigation to reduce such impacts as required by CEQA.

Level of Significance After Mitigation: Significant and Unavoidable Impact.

LONG-TERM MOBILE AND STATIONARY SOURCE EMISSIONS

- **IMPLEMENTATION OF THE GENERAL PLAN UPDATE COULD RESULT IN AN OVERALL INCREASE IN MOBILE AND STATIONARY SOURCE EMISSIONS WITHIN THE CITY, WHICH COULD VIOLATE ANY AIR QUALITY STANDARD OR CONTRIBUTE SUBSTANTIALLY TO AN EXISTING OR PROJECTED AIR QUALITY VIOLATION, OR RESULT IN A CUMULATIVELY CONSIDERABLE NET INCREASE OF ANY CRITERIA POLLUTANT FOR WHICH THE PROJECT REGION IS NON-ATTAINMENT UNDER AN APPLICABLE FEDERAL OR STATE AMBIENT AIR QUALITY STANDARD.**

Impact Analysis: Regional area- and mobile-source emissions of criteria air pollutants and ozone precursors were modeled using the California Emissions Estimator Model (CalEEMod), which is designed to estimate emissions for land use development projects. CalEEMod allows land use data entries that include project location specifics and trip generation rates, and accounts for emissions from the use of electricity, natural gas, and water, as well as mobile-source emissions associated with vehicle trip generation and emissions from waste generation. Regional emissions were modeled based on proposed land use types, the increase in trip generation, and default settings and parameters attributable to the analysis period and project location. Table 5.5-6, Summary of 2040 Estimated Emissions Inventory, presents the criteria air pollutant emissions within the City for area, energy, mobile, waste, and water source categories based on the General Plan



growth assumptions. According to the emissions inventory, area sources are the largest contributor to the estimated annual average air pollutant levels.

**Table 5.5-6
Summary of 2040 Estimated Emissions Inventory**

Source Type/Category ²	Estimated Annual Average Emissions (Tons/Year) ¹					
	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Area	192.19	6.91	304.30	0.31	18.51	18.51
Energy	2.13	18.38	9.20	0.12	1.47	1.47
Mobile	25.47	131.78	357.57	1.98	249.94	67.49
Waste	--	--	--	--	0.00	0.00
Water	--	--	--	--	0.00	0.00
Total for the City³	219.79	157.07	671.07	2.41	269.93	87.48

Notes:

1. Emissions estimates calculated using CalEEMod version 2016.3.2.
2. Emissions estimates calculated using the land use categories/intensities depicted in [Section 5.1, Land Use and Planning](#).
3. The numbers may be slightly off due to rounding.

Source: Appendix D, *Air Quality and Greenhouse Gas Emissions Data*, for assumptions used in this analysis.

The City's stationary source emissions primarily consist of light industrial, residential, and commercial uses. Indirect sources consist of electricity usage including the energy usage associated with water consumption. Mobile source emissions are produced by each trip generating land use within the City (e.g., residential, schools, retail, office, light industrial, etc.). The General Plan Update would allow for additional residential and non-residential development over existing conditions. Although the City anticipates future growth, overall emissions are anticipated to be lower than existing conditions for ROG, NO_x, and CO (refer to [Table 5.5-4](#) and [Table 5.5-6](#)). Area and energy source emissions are expected to increase from existing conditions. However, mobile source ROG, NO_x, and CO emissions would decrease despite a projected increase in vehicle trips. This can be attributed to improved vehicle emissions standards, improved fuel efficiency, and a newer model year vehicle fleet during the planning period.

Criteria pollutant emissions health effects are highly dependent on a multitude of interconnected variables (e.g., cumulative concentrations, local meteorology and atmospheric conditions, and the number and character of exposed individual [e.g., age, gender]). In particular, ozone precursors VOCs and NO_x affect air quality on a regional scale. Health effects related to ozone are therefore the product of emissions generated by numerous sources throughout a region. Existing models have limited sensitivity to small changes in criteria pollutant concentrations, and, as such, translating project-generated criteria pollutants to specific health effects or additional days of nonattainment would produce meaningless results.⁴ For example, based on SCAQMD's modeling in the *2012 Air Quality Management Plan (2012 AQMP)*, a reduction of 432 tons per day of NO_x and a reduction of 187 tons per day of VOCs would reduce ozone levels at the highest monitored site by only nine parts per billion.⁵ As shown in [Table 5.5-6](#), NO_x and ROG (i.e., VOC) estimated annual average emissions, modeled in tons per year, would be negligible compared to SCAQMD's modeling in the 2012 AQMP. As such, the General

⁴ April 2015 Amicus Curiae Brief of San Joaquin Valley Unified Air Pollution Control District in *Sierra Club v. County of Fresno* (CA Supreme Court, S219783).

⁵ Ibid.



Plan Update's increases in regional air pollution from criteria air pollutants would have nominal or negligible impacts on human health.

Conservation/Open Space Element Policies 4.1 through 4.6 would improve air quality within the City through participation in regional and subregional efforts to improve housing and employment options to reduce commuting, promote a transportation system coordinated with air quality improvements, and implement programs that regulate pollution across jurisdictions. Land Use Element Policies 4.1 through 4.6 would encourage emissions reductions with the development of car-free and pedestrian only zones, alternative transportation options, and support transit, bicycle, and pedestrian improvements. These policies would also support balanced land uses which would provide options to reduce vehicle trips and vehicle miles traveled (VMT), which would reduce mobile source emissions.

IMPACT CONCLUSION

The thresholds of significance that have been recommended by the SCAQMD were established for individual development projects and are based on the SCAQMD's General Plan guidance and New Source Review emissions standards for individual sources of new emissions, such as boilers and generators. They do not apply to cumulative development or multiple projects. Air quality impacts would be regional and not confined to the limits of the Study Area. The destinations of motor vehicles, which are the primary contributors to air pollution, vary widely and cross many jurisdictional boundaries. As stated above, the General Plan Update establishes the City's mobility goals by providing improved local and regional transit services as well as a connected, balanced, and integrated transportation system of bicycle and pedestrian networks. Such alternatives to automotive transportation can be greatly utilized to reduce mobile source emissions. Future site-specific development proposals would be evaluated for potential air emissions once development details have been determined and are available. Individual projects may not result in significant air quality emissions. Although individual development projects have the potential to exceed SCAQMD thresholds, the General Plan Update goals and policies themselves would not result in potentially significant impacts.

Development projects allowed under the General Plan Update would increase regional pollutants over current conditions, specifically PM₁₀ and PM_{2.5}. However, ozone precursor pollutants, ROGs and NO_x would decrease, due to improvements in vehicular technology for mobile source emissions. CEQA review of individual development projects would include an evaluation to determine whether potential air pollutant emissions generated from growth could result in a significant impact to air quality. The significance level of these impacts would be determined during review and appropriate mitigation measures would be developed. However, due to the magnitude of development and associated mobile and stationary source air quality impacts, impacts would be significant and unavoidable in this regard.



Proposed General Plan Update Goals and Policies:

LAND USE ELEMENT

Goal 4: Integrate transportation and land use planning to provide mobility options and comfort for pedestrians, bicyclists, transit users, and personal vehicles.

- Policy 4.1:** Establish appropriately scaled car-free and pedestrian-only zones in high pedestrian demand locations.
- Policy 4.2:** Ensure that City rights-of-way provide adequate infrastructure for the movement of vehicles, bicycles, and pedestrians with facilities that provide safety and comfort for all transportation modes.
- Policy 4.3:** Balance street space allocated for alternative transportation options with parking when determining the appropriate future use of street space.
- Policy 4.4:** Support the creation of multiuse trails within the City and their connection to regional trails in order to provide enhanced access to open space, promote alternative transportation options, and increase recreational opportunities.
- Policy 4.5:** Support transit, bicycle, and pedestrian improvements that connect within the City and to neighboring jurisdictions.
- Policy 4.6:** Encourage nodes of interest and activity, public open spaces, well-planned development, mixed-use projects, and signature commercial uses that are highly accessible by pedestrians, bicyclists, and transit users.

Mitigation Measures: Refer to Mitigation Measure AQ-3.

Level of Significance After Mitigation: Significant and Unavoidable Impact.

ODOR IMPACTS

- **IMPLEMENTATION OF THE GENERAL PLAN UPDATE WOULD NOT CREATE OBJECTIONABLE ODORS AFFECTING A SUBSTANTIAL NUMBER OF PEOPLE.**

Impact Analysis: Potential operational airborne odors could be created by cooking activities associated with the residential and commercial (i.e., food service) uses within the City. These odors would be similar to existing residential and food service uses throughout the City and would be confined to the immediate vicinity of the new buildings. Restaurants are also typically required to provide ventilation systems that avoid substantial adverse odor impacts. The other potential source of odors would be new waste receptacles within the community. The receptacles would be stored in areas and in containers, as required by City (*Rancho Santa Margarita Municipal Code* [Municipal Code] Section 5.06.470, *Containerization of solid waste*) and Orange County Health



Department regulations, and be emptied on a regular basis, before potentially substantial odors have developed.

Development in accordance with the General Plan Update would not emit objectionable odors that would affect a substantial number of people. The threshold is if a project creates an odor nuisance pursuant to SCAQMD Rule 402, *Nuisance*, which include facilities such as wastewater treatments plants, compost facilities, landfills, solid waste transfer stations, fiberglass manufacturing facilities, paint/coating operations (e.g., auto body shops), dairy farms, petroleum refineries, asphalt batch plants, chemical manufacturing, and food manufacturing facilities. The General Plan Update does not anticipate development of such uses, and thus, would not result in significant or highly objectionable odor.

Additionally, the policies included as part of the General Plan Update (described above) would reduce mobile and stationary source emissions and odors associated with diesel fuel by focusing on land use patterns that improve air quality, reduce air pollution from stationary sources, and encourage/enable increased transit behavior. Consequently, implementation of the General Plan Update would not create operational-related objectionable odors affecting a substantial number of people within the City. Impacts would be less than significant in this regard.

Proposed General Plan Update Goals and Policies: The General Plan Update does not include goals or policies regarding odors.

Mitigation Measures: No mitigation is required.

Level of Significance: Less Than Significant Impact.

CARBON MONOXIDE HOTSPOTS

- **IMPLEMENTATION OF THE GENERAL PLAN UPDATE WOULD NOT RESULT IN AN OVERALL INCREASE IN CARBON MONOXIDE HOTSPOT EMISSIONS WITHIN THE CITY, WHICH COULD EXPOSE SENSITIVE RECEPTORS TO SUBSTANTIAL POLLUTANT CONCENTRATIONS.**

Impact Analysis: Carbon monoxide (CO) emissions are a function of vehicle idling time, meteorological conditions and traffic flow. Under certain extreme meteorological conditions, CO concentrations near a congested roadway or intersection may reach unhealthy levels (i.e., adversely affect residents, school children, hospital patients, the elderly, etc.). To identify CO hotspots, the SCAQMD requires a CO microscale hotspot analysis when a project increases the volume-to-capacity ratio (also called the intersection capacity utilization) by 0.02 (two percent) for any intersection with an existing level of service (LOS) D or worse. Because traffic congestion is highest at intersections where vehicles queue and are subject to reduced speeds, these hot spots are typically produced at intersection locations. However, projected intersection capacity/queuing analyses are unknown, as no specific development proposals have been identified.

The Basin is designated as an attainment area for State and Federal CO standards. There has been a decline in CO emissions even though VMT on U.S. urban and rural roads have increased. On-road mobile source CO emissions have declined 24 percent between



1989 and 1998, despite a 23 percent rise in motor vehicle miles traveled over the same 10 years. California trends have been consistent with national trends; CO emissions declined 20 percent in California from 1985 through 1997, while VMT increased 18 percent in the 1990s. Three major control programs have contributed to the reduced per-vehicle CO emissions: exhaust standards, cleaner burning fuels, and motor vehicle inspection/maintenance programs.

A detailed CO analysis was conducted in the Federal Attainment Plan for Carbon Monoxide (CO Plan) for the SCAQMD's 2003 Air Quality Management Plan. The locations selected for microscale modeling in the CO Plan are worst-case intersections in the Basin, and would likely experience the highest CO concentrations. Of these locations, the Wilshire Boulevard/Veteran Avenue intersection experienced the highest CO concentration (4.6 ppm), which is well below the 35-ppm 1-hr CO Federal standard. The Wilshire Boulevard/Veteran Avenue intersection is one of the most congested intersections in southern California with an average daily traffic (ADT) volume of approximately 100,000 vehicles per day. As the CO hotspots were not experienced at the Wilshire Boulevard/Veteran Avenue intersection (100,000 ADT), it can be reasonably inferred that CO hotspots would not be experienced at any locations within the City as the highest anticipated volume of traffic in the City during the planning period would be 64,600 ADT On Santa Margarita Parkway between Alicia Parkway to Avenida Empresa; refer to Section 5.4, *Traffic and Circulation*. Additionally, the General Plan Circulation Element identifies implementation of signal coordination and intersection capacity improvements through the City. Therefore, impacts would be less than significant in this regard.

Proposed General Plan Update Policies and Actions: Refer to the General Plan Update goals and policies cited above.

Mitigation Measures: No mitigation is required.

Level of Significance: Less Than Significant Impact.

CONSISTENCY WITH APPLICABLE AIR QUALITY PLAN

- **THE GENERAL PLAN UPDATE WOULD NOT CONFLICT WITH OR OBSTRUCT IMPLEMENTATION OF THE APPLICABLE AIR QUALITY PLAN.**

Impact Analysis: On March 3, 2017, the SCAQMD Governing Board approved the 2016 *Air Quality Management Plan* (2016 AQMP), which is a regional blueprint for achieving air quality standards and healthful air. The 2016 AQMP represents a new approach, focusing on available, proven, and cost-effective alternatives to traditional strategies, while seeking to achieve multiple goals in partnership with other entities promoting reductions in greenhouse gases and toxic risk, as well as efficiencies in energy use, transportation, and goods movement. The 2016 AQMP incorporates the latest scientific and technical information and planning assumptions, including the latest applicable growth assumptions, 2016–2040 RTP/SCS, and updated emission inventory methodologies for various source categories, and SCAG's latest growth forecasts. The 2016 AQMP relies on a multi-level partnership of governmental agencies at the Federal, State, regional,



and local level. These agencies (EPA, CARB, local governments, SCAG, and the SCAQMD) are the primary agencies that implement the AQMP programs.

The 2016 AQMP includes integrated strategies and measures to meet the NAAQS. To ensure air quality goals would be met while maximizing benefits and minimizing adverse impacts to the regional economy, the following policy objectives have guided the development of the 2016 AQMP:

- Eliminate reliance on future technologies (FCAA Section 182(e)(5)) measures to the maximum extent feasible;
- Calculate and take credit for co-benefits from other planning efforts;
- Develop a strategy with fair-share emission reductions at the Federal, State, and local levels;
- Invest in strategies and technologies meeting multiple objectives regarding air quality, climate change, air toxics exposure, energy, and transportation;
- Identify and secure significant funding for incentives to implement early deployment and commercialization of zero and near-zero technologies;
- Enhance the socioeconomic analysis and pursue the most efficient and cost-effective path to achieve multi-pollutant and multi-deadline targets; and
- Prioritize enforceable regulatory measures as well as non-regulatory, innovative and “win-win” approaches for emission reductions.

In addition to the 2016 AQMP and its rules and regulations, the SCAQMD has published the *CEQA Air Quality Handbook*. The *SCAQMD CEQA Air Quality Handbook* provides guidance to assist local government agencies and consultants in developing the environmental documents required by CEQA. With the help of the *CEQA Air Quality Handbook*, local land use planners and consultants are able to analyze and document how proposed and existing projects affect air quality and should be able to fulfill the requirements of the CEQA review process. The SCAQMD is in the process of developing an *Air Quality Analysis Guidance Handbook* to replace the current *CEQA Air Quality Handbook* approved by the SCAQMD Governing Board in 1993. According to the SCAQMD's *CEQA Air Quality Handbook*, two main criteria must be addressed.

CRITERION 1

With respect to the first criterion, SCAQMD methodologies require that an air quality analysis for a project include forecasts of project emissions in relation to contributing to air quality violations and delay of attainment.

- a) *Would the project result in an increase in the frequency or severity of existing air quality violations?*

The General Plan Update includes provisions for improved local and regional transit services as well as a connected, balanced, and integrated transportation



system of bicycle and pedestrian networks. However, the program-level emissions associated with the future development in the City with implementation of the General Plan Update would exceed SCAQMD thresholds, as detailed above under the impact analyses for 'Short-term Construction Emissions' and 'Long-term Mobile and Stationary Source Emissions.' It is noted that the SCAQMD thresholds are intended to evaluate the air quality impacts from individual development projects, and do not apply to plan-level projects such as the General Plan Update. Future development projects in the City would be required to comply with SCAQMD regulations, and would incorporate mitigation measures, as feasible, to reduce air quality impacts.

As previously discussed, concentrations of CO, NO_x, PM₁₀, and PM_{2.5} under the General Plan Update would be lower than existing settings. Therefore, the project would not result in an increase in the frequency or severity of existing air quality violations. Because ROG is not a criteria pollutant, there is no ambient standard or localized threshold for ROG. Due to the role ROG plays in O₃ formation, it is classified as a precursor pollutant and only a regional emissions threshold has been established.

b) *Would the project cause or contribute to new air quality violations?*

As previously discussed under the impact analyses for 'Short-term Construction Emissions' and 'Long-term Mobile and Stationary Source Emissions,' future development anticipated by the General Plan Update would have the potential to exceed SCAQMD thresholds. Therefore, the General Plan Update would have the potential to cause or affect a violation of the ambient air quality standards.

c) *Would the project delay timely attainment of air quality standards or the interim emissions reductions specified in the AQMP?*

The 2016 AQMP utilizes growth projections from the existing 2002 General Plan. Compared to the 2002 General Plan, the General Plan Update anticipates 686 additional dwelling units but 4.5 million fewer square feet of nonresidential development. Overall, the General Plan Update anticipates substantially less development than the 2002 General Plan, and thus, would be consistent with the 2016 AQMP and its specified interim emission reductions. Additionally, the General Plan Update would be included in the future iteration of the AQMP. Further, anticipated development identified in the General Plan Update would result in lower ROG, NO_x, and CO emissions compared to existing conditions (refer to [Table 5.5-4](#) and [Table 5.5-6](#)). Therefore, the General Plan update would not delay timely attainment of the air quality standards or the interim emissions reductions specified in the AQMP.

CRITERION 2

With respect to the second criterion for determining consistency with SCAQMD and SCAG air quality policies, it is important to recognize that air quality planning within the Basin focuses on attainment of ambient air quality standards at the earliest feasible date. Projections for achieving air quality goals are based on assumptions regarding



population, housing, and growth trends. Thus, the SCAQMD's second criterion for determining project consistency focuses on whether or not the project exceeds the assumptions utilized in preparing the forecasts presented in the 2016 AQMP. Determining whether or not a project exceeds the assumptions reflected in the 2016 AQMP involves the evaluation of the three criteria outlined below. The following discussion provides an analysis of each of these criteria.

- a) *Would the project be consistent with the population, housing, and employment growth projections utilized in the preparation of the AQMP?*

The existing 2002 General Plan was taken into account in the 2016 AQMP's population, housing, and employment growth projections. The General Plan Update anticipates 686 additional dwelling units but 4.5 million fewer square feet of nonresidential development than the existing 2002 General Plan. Therefore, while the General Plan Update would introduce more residential units, it projects substantially less nonresidential development. Overall, less development is projected under the General Plan Update compared to the 2002 General Plan. Therefore, the General Plan Update would be consistent and within the growth projections utilized in the 2016 AQMP. In addition, the General Plan Update would be included in the next iteration of the AQMP. Overall, the General Plan Update would be consistent with the population, housing, and employment growth projections of the applicable AQMP.

- b) *Would the project implement all feasible air quality mitigation measures?*

The General Plan Update would be required to comply with applicable emission reduction measures identified by the SCAQMD as listed in Conservation/Open Space Element Policy 4.1 in the General Plan Update. Thus, the Project meets this 2016 AQMP consistency criterion.

- c) *Would the project be consistent with the land use planning strategies set forth in the AQMP?*

The General Plan Update anticipates less growth when compared to the 2002 General Plan. The 2002 General Plan is consistent with the 2016 AQMP and the 2016–2040 RTP/SCS; as discussed in Section 5.1, Land Use and Planning, Table 5.1-3, SCAG 2016 RTP/SCS Goals Project Consistency Analysis. In addition, this General Plan Update will be included in the next iteration of AQMP.

As discussed above, the General Plan Update would be consistent with the SCAQMD and SCAG's goals and policies, and therefore is consistent with the 2016 AQMP. In addition, the General Plan Update would be included in the future iteration of the AQMP. Thus, Impacts associated with compliance with the 2016 AQMP would be less than significant.

Proposed General Plan Update Policies and Actions: Refer to the General Plan Update goals and policies cited above.

Mitigation Measures: No mitigation is required.



Level of Significance: Less Than Significant Impact.

5.5.6 CUMULATIVE IMPACTS

CUMULATIVE SHORT-TERM CONSTRUCTION EMISSIONS

- **SHORT-TERM CONSTRUCTION EMISSIONS ASSOCIATED WITH THE GENERAL PLAN UPDATE COULD IMPACT REGIONAL AIR QUALITY LEVELS ON A CUMULATIVELY CONSIDERABLE BASIS.**

Impact Analysis: The geographic context for air quality impacts for the City of Rancho Santa Margarita is SRA 19 (Saddleback Valley) of the Basin. The analysis accounts for all anticipated cumulative growth within this geographic area. However, the significance of cumulative air quality impacts is typically determined according to the project methodology employed by the SCAQMD, as the regional body with authority in this area, which has taken regional growth projections into consideration.

SCAQMD thresholds for criteria pollutants are established for individual development projects, and it is assumed that some of the projects that would be implemented under the General Plan Update could individually exceed the SCAQMD thresholds. Based on the programmatic-level construction analysis above, construction-related emissions associated with future development projects in the City and surrounding cities may be “cumulatively considerable.” Construction of future development projects under the General Plan Update would be required to comply with the applicable SCAQMD rules and regulations. However, due to the unknown nature of project-specific development under the General Plan Update at this time, future construction emissions could potentially exceed SCAQMD thresholds. Therefore, this cumulative impact is considered to be significant and unavoidable.

Proposed General Plan Update Goals and Policies: Refer to the General Plan Update goals and policies cited above.

Mitigation Measures: Refer to Mitigation Measures AQ-1 through AQ-3.

Level of Significance After Mitigation: Significant and Unavoidable Impact.

CUMULATIVE LONG-TERM MOBILE AND STATIONARY SOURCE EMISSIONS

- **LONG- TERM OPERATIONAL EMISSIONS ASSOCIATED WITH THE GENERAL PLAN UPDATE COULD IMPACT REGIONAL AIR QUALITY LEVELS ON A CUMULATIVELY CONSIDERABLE BASIS.**

Impact Analysis: With regard to daily operational emissions and the cumulative net increase of any criteria pollutant for which the region is nonattainment, this is considered to be a potentially significant cumulative impact, due to nonattainment of O₃ and PM₁₀, and PM_{2.5} standards in the Basin. An emissions inventory for the City in year 2040 is presented in [Table 5.5-6](#). This inventory includes the existing emissions within the City as



well as emissions associated with the anticipated future development. As a result, [Table 5.5-6](#) represents the cumulative condition within the City for 2040. Regarding the contribution of the General Plan Update, the SCAQMD has recommended methods to determine the cumulative significance of new land use projects. The SCAQMD's methods are based on performance standards and emission reduction targets necessary to attain Federal and State air quality standards as predicted in the 2016 AQMP. As previously discussed, the contribution of daily operational emissions from the growth associated with implementation of the General Plan Update could be cumulatively considerable, and thus are considered to be significant and unavoidable.

Proposed General Plan Update Policies and Actions: Refer to the General Plan Update goals and policies cited above.

Mitigation Measures: Refer to Mitigation Measure AQ-3.

Level of Significance After Mitigation: Significant and Unavoidable Impact.

CUMULATIVE ODOR IMPACTS

- **DEVELOPMENT OF THE GENERAL PLAN UPDATE AND RELATED PROJECTS WOULD NOT RESULT IN CUMULATIVELY CONSIDERABLE ODOR IMPACTS.**

Impact Analysis: Cumulative development would not have a potentially significant impact in terms of the creation of objectionable odors affecting a substantial number of people. Thus, this is considered to be a less than significant cumulative impact. Development anticipated within the City would include residential and commercial uses and could include restaurants. Odors resulting from the construction of projects that would occur with implementation of the General Plan Update are not likely to affect a substantial number of people, since construction activities occur in a limited area and do not usually emit odors that are considered offensive. Other odor impacts resulting from these projects are also not expected to affect a substantial amount of people, as solid waste from these projects would be stored in areas and in containers as required by City regulations (Municipal Code Section 5.06.470, *Containerization of solid waste*), and restaurants are typically required to have ventilation systems that avoid substantial adverse odor impacts.

Further, the threshold is if a project creates an odor nuisance pursuant to SCAQMD Rule 402, *Nuisance*, which include facilities such as wastewater treatments plants, compost facilities, landfills, solid waste transfer stations, fiberglass manufacturing facilities, paint/coating operations (e.g., auto body shops), dairy farms, petroleum refineries, asphalt batch plants, chemical manufacturing, and food manufacturing facilities. The General Plan Update does not anticipate development of such uses, and thus, would not result in significant or highly objectionable odor. Cumulative odor impacts would thus be less than significant.

Proposed General Plan Update Goals and Policies: The General Plan Update does not include goals or policies regarding odors.

Mitigation Measures: No mitigation is required.



Level of Significance: Less Than Significant Impact.

CUMULATIVE CARBON MONOXIDE HOTSPOTS

- **DEVELOPMENT OF THE GENERAL PLAN UPDATE AND RELATED PROJECTS WOULD NOT RESULT IN CUMULATIVELY CONSIDERABLE CARBON MONOXIDE HOTSPOT IMPACTS.**

Impact Analysis: Cumulative development is not expected to expose sensitive receptors to substantial pollutant concentrations such as CO hotspots. Thus, this is considered to be a less than significant cumulative impact. Future ambient CO concentrations resulting from the General Plan Update would be substantially below National and State standards. These future concentrations consider cumulative development that would occur in SRA 19 (Saddleback Valley). Therefore, the project's contribution would not be cumulatively considerable, and the cumulative impact would be less than significant.

Proposed General Plan Update Goals and Policies: Refer to the General Plan Update goals and policies cited above.

Mitigation Measures: No mitigation is required.

Level of Significance: Less Than Significant Impact.

CUMULATIVE CONSISTENCY WITH APPLICABLE AIR QUALITY PLAN

- **DEVELOPMENT OF THE GENERAL PLAN UPDATE AND RELATED PROJECTS WOULD NOT RESULT IN CUMULATIVELY CONSIDERABLE INCONSISTENCIES WITH THE APPLICABLE AIR QUALITY PLAN.**

Impact Analysis: As analyzed above, concentrations of criteria air pollutants, including CO, NO_x, PM₁₀, and PM_{2.5}, under the General Plan Update would be lower than existing conditions. Therefore, the project would not result in an increase in the frequency or severity of existing air quality violations. Further, the General Plan Update would be consistent with the SCAQMD and SCAG's goals and policies (refer to [Table 5.1-3](#)). In addition, the growth anticipated by the General Plan Update is less than the existing 2002 General Plan, and therefore is consistent with the 2016 AQMP. As such, impacts associated with the General Plan Update in this regard would not be cumulatively considerable. Cumulative impacts would be less than significant.

Proposed General Plan Update Policies and Actions: Refer to the General Plan Update goals and policies cited above.

Mitigation Measures: No mitigation is required.

Level of Significance: Less Than Significant Impact.



5.5.7 SIGNIFICANT UNAVOIDABLE IMPACTS

The General Plan Update would result in a significant unavoidable impact for the following areas:

- Short-Term Construction Emissions. As project-related emissions (associated with future development and infrastructure projects facilitated by the project) are anticipated to exceed SCAQMD thresholds, construction-related emissions are considered significant unavoidable.
- Long-Term Mobile and Stationary Source Emissions. During the operational phase, potential development within the project area would result in a net increase in regional criteria pollutants from the operation of both stationary and mobile sources. CEQA review of individual development projects would include an evaluation to determine whether potential air pollutant emissions generated from growth could result in a significant impact to air quality. The significance level of these impacts would be determined during review and appropriate mitigation measures would be developed. However, due to the magnitude of development and associated mobile and stationary source air quality impacts, impacts in this regard would be significant unavoidable.
- Cumulative Short-Term Construction and Long-Term Mobile and Stationary Source Emissions Impacts. Construction of future potential development projects in the City and surrounding cities may be cumulatively considerable. Emissions from operations of future development associated with implementation of the General Plan Update would potentially exceed the SCAQMD thresholds for criteria pollutants, resulting in a significant impact. In accordance with SCAQMD methodology, any project that cannot be mitigated to a level of less than significant is also significant on a cumulative basis.

All other air quality impacts associated with implementation of the General Plan Update would be less than significant.

If the City of Rancho Santa Margarita approves the General Plan Update, the City will be required to make findings in accordance with CEQA Guidelines Section 15091 and prepare a Statement of Overriding Considerations for consideration by the City's decisionmakers in accordance with CEQA Guidelines Section 15093.

5.5.8 SOURCES CITED

California Air Resources Board, *2015 Estimated Annual Average Emissions Orange County*, <https://www.arb.ca.gov/app/emsinv/2017/emssumcat.php>, accessed August 20, 2018.

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