12 AIR QUALITY ELEMENT

An Air Quality Element is not required by State law. However, air quality has important impacts on public health and quality of life throughout the Southern California region. Therefore, Chino has elected to include an Air Quality Element.

Air quality conditions in a city or region are shaped by a number of land use and transportation patterns. The Land Use and Transportation Elements include a variety of policies that complement those found in this Element seeking to reduce single-passenger vehicle trips, increase neighborhood services so residents can access services without driving, and increase the safety and convenience of walking, bicycling, and transit use. In turn, these efforts reflect the overall theme of this General Plan, to move Chino toward becoming a Healthy City.

This Element is organized into the following sections:

- **Background.** Describes the air basin and Chino's setting related to air quality.
- **Regulatory Framework.** Describes key federal, State, regional, and local organizations and regulations.
- **Goals, Objectives, Policies, and Actions.** Provides policy guidance to the City related to air quality.
- **Indicators.** Provides methods for evaluating progress on implementing the Air Quality Element.

A. Background

1. Air Basin

The South Coast Air Basin (SCAB) region includes parts of San Bernardino, Los Angeles, Riverside, and Orange Counties. The City of Chino is located approximately 30 miles east of the Pacific Ocean in southwestern San Bernardino County within the SCAB. The mountains to the north and east of Chino tend to restrict airflow and concentrate pollutants in the valleys and low-lying areas below.

2. Environmental Setting

The City of Chino, like the rest of the inland valley areas within the SCAB, is characterized by a Mediterranean climate consisting of warm, dry summers and mild, wet winters. The average annual precipitation is 13 inches, falling primarily from November to April. The average maximum temperature is about 78 degrees Fahrenheit (°F), and the average minimum temperature is about 48 degrees °F.

The prevailing wind in the SCAB is from a westerly direction and allows for the areas within the basin to be influenced by the cool waters of the Pacific Ocean. Occasionally, however, high pressure over the Great Basin will result in hot, dry easterly winds that are regionally called Santa Ana winds. These offshore winds typically bring some of the warmest temperatures of the year to coastal southern California and occur most often during the late summer or early fall months. During these Santa Ana wind events, air pollutants in the basin are pushed westward out to sea, resulting in some of the best air quality days for the residents of the inland valley areas. Generally speaking, the overall air quality within the basin is better during the winter months.

B. Regulatory Framework

The regulatory framework described below details the federal and State agencies that are in charge of monitoring and controlling air pollutants and the policies that impact management of air quality in the SCAB.

State and federal agencies such as the CARB and the US Environmental Protection Agency (EPA) establish emission standards for mobile and stationary sources. Mobile sources of air pollution include on-road vehicles such as cars, trucks, and buses (which comprise more than half of all air pollution in the SCAB) and off-road equipment such as airplanes, trains, agricultural, and construction equipment. Stationary sources of air pollution are non-moving sources and include power plants, manufacturing and industrial facilities, chemical plants, and oil refineries. Stationary sources are generally regulated through the permitting process as implemented by the local air district.

1. Federal Regulations

The Clean Air Act requires the EPA to set primary and secondary Ambient Air Quality Standards (AAQS) for pollutants harmful to public health and the environment. AAQS represent the maximum levels of background pollution considered safe, with an adequate margin of safety, to protect the public health and welfare. Primary AAQS are intended to provide an adequate margin of safety to protect public health, including sensitive groups such as children, senior citizens, and people with breathing difficulties. Secondary standards are designed to protect public welfare, including protection from air pollution impacts such as decreased visibility, and damage to crops and buildings.

EPA has designated six pollutants of primary concern, known as "criteria pollutants:" ozone (O_3), carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), lead (Pb), and particulate matter (PM_{10}). The current federal AAQS for these pollutants, along with those for California, are presented in Table AQ-1.

That portion of SCAB in which Chino is located was designated a "Severe 17" non-attainment area for the eight-hour ozone standard in 2004. The period of attainment for the eight-hour ozone standard is no more than 17 years from the effective date of designation, which means SCAB must demonstrate attainment of the eight-hour ozone standard by June 15, 2021.

That portion of the SCAB containing the project area is designated a non-attainment area for the PM_{10} standard and was reclassified from a moderate to serious non-attainment area on February 8, 1993. The area is also a non-attainment area for the State PM_{10} standard.

TABLE AQ-1 **AMBIENT AIR QUALITY STANDARDS**[a]

		California Standards[b]		Federal Standards[c]		
Pollutant	**Averaging Time**	**Concentration**[d]	**Method**[e]	**Primary**[d,f]	**Secondary**[d,g]	**Method**[h]
Ozone (O_3)	1 Hour	0.09 ppm (180 µg/m³)	Ultraviolet Photometry	–	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.07 ppm (137 µg/m³)		0.0775 ppm (147 µg/m³)		
Respirable Particulate Matter (PM_{10})	24 Hour	50 µg/m³	Gravimetric or Beta Attenuation	150 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetic Analysis
	Annual Arithmetic Mean	20 µg/m³		–		
Fine Particulate Matter ($PM_{2.5}$)	24 Hour	No Separate State Standard		35 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetic Analysis
	Annual Arithmetic Mean	12 µg/m³	Gravimetric or Beta Attenuation	15 µg/m³		
Carbon Monoxide (CO)	8 Hour	9.0 ppm (10 mg/m³)	Non-dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m³)	None	Non-dispersive Infrared Photometry (NDIR)
	1 Hour	20 ppm (23 mg/m³)		35 ppm (40 mg/m³)		
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	0.030 ppm	Gas Phase Chemiluminescence	0.053 ppm (100 µg/m³)	Same as Primary Standard	Gas Phase Chemiluminescence
	1 Hour	0.18 ppm		–		
Lead (Pb)[i]	30 days average	1.5 µg/m³	Atomic Absorption	–	–	–
	Calendar Quarter	–		1.5 µg/m³	Same as Primary Standard	High Volume Sampler and Atomic Absorption
	Rolling 3-Month Average[j]	–		0.15 µg/m³		
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	–	Ultraviolet Fluorescence	0.030 ppm (80 µg/m³)	–	Pararosoaniline
	24 Hour	0.04 ppm (105 µg/m³)		0.14 ppm (365 µg/m³)	–	
	3 Hour	–		–	0.5 ppm (1300 µg/m³)	
	1 Hour	0.25 ppm (665 µg/m³)		–	–	
Visibility Reducing Particles	8 Hour	Extinction coefficient of 0.23 per kilometer – visibility of 10 miles or more (0.07-30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent. Method: Beta Attenuation and Transmittance through Filter Tape.		–	No Federal Standards	–
Sulfates	24 Hour	25 µg/m³	Ion Chromatography	–	No Federal Standards	–

TABLE AQ-1 **AMBIENT AIR QUALITY STANDARDS** (CONTINUED)

		California Standards[b]		Federal Standards[c]		
Pollutant	**Averaging Time**	**Concentration[d]**	**Method[e]**	**Primary[d,f]**	**Secondary[d,g]**	**Method[h]**
Hydrogen Sulfide	1 Hour	0.03 ppm (42 μg/m^3)	Ultraviolet Fluorescence	–	No Federal Standards	–
Vinyl Chloride[h]	24 Hour	0.01 ppm (26 μg/m^3)	Gas Chromatography	–	No Federal Standards	–

Notes: ppm = parts per million; μg/m^3 = micrograms per cubic meter.

[a] State of California, 2008, Ambient Air Quality Standards, California Air Resources Board, November 17, 2008. Accessed from the CARB website at http://www.arb.ca.gov/research/aaqs/aaqs2.pdf on December 6, 2008.

[b] California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, suspended particulate matter—PM_{10}, $PM_{2.5}$, 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.

[c] National standards (other than ozone, particulate matter, 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 μg/m^3 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. Contact U.S. EPA for further clarification and current federal policies.

[d] 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.

[e] Any equivalent procedure which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.

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

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

[h] Reference method as described by the EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the EPA.

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

[j] National lead standard, rolling 3-month average: final rule signed October 15, 2008.

This portion of SCAB has also been designated a non-attainment area for the $PM_{2.5}$ standard, effective April 5, 2005. Attainment of the $PM_{2.5}$ standards must be achieved 10 years after the final designation date; consequently, the SCAB must demonstrate attainment by April 5, 2015.

In 2008, the EPA revised the primary standard for lead from 1.5 micrograms per cubic meter ($\mu g/m^3$) to 0.15 $\mu g/m^3$ over a rolling three-month period. The 1.5 $\mu g/m^3$ standard will be retained until one year after designations are made for the new standard, except in current non-attainment areas. States are required to make recommendations for areas to be designated attainment, non-attainment, or unclassifiable for the new standard by October 2009. The SCAB is in attainment of the 1.5 $\mu g/m^3$ lead NAAQS.

2. State Regulations

a. California Clean Air Act

The EPA permits states to develop stricter standards for criteria pollutants than the national standards. The State of California generally has set more stringent limits on the six criteria pollutants. The State has also designated ambient air quality standards for four additional air pollutants: visibility-reducing particles, sulfates, hydrogen sulfide, and vinyl chloride. The California Clean Air Act (CCAA) requires that districts implement regulations to reduce mobile source emissions of these pollutants through the adoption and enforcement of transportation control measures. The CCAA requires that a district must:

- Demonstrate the overall effectiveness of the air quality program;
- Reduce non-attainment pollutants at a rate of five percent per year or include all feasible measures and an expeditious adoption schedule;
- Reduce population exposure to severe non-attainment pollutants according to a prescribed schedule;
- Include any other feasible controls that can be implemented or for which implementation can begin within ten years of adoption of the most recent air quality plan; and
- Rank control measures by cost-effectiveness.

The California standards for ambient air quality are presented with the federal standards above in Table AQ-1.

b. The California Environmental Quality Act

The California Environmental Quality Act (CEQA) was adopted in 1970 to inform governmental decision makers about potential environmental impacts of a project, discuss ways to reduce adverse impacts and evaluate alternatives to a project.

c. State Implementation Plan

A State Implementation Plan (SIP) is a collection of documents that set forth the State's strategies for achieving the air quality standards. The Air Quality Management District (AQMD) is responsible for preparing and implementing the portion of the SIP applicable to SCAB. The AQMD adopts rules, regulations, and programs to attain State and federal air quality standards and appropriates money (including permit fees) to achieve these objectives.

d. Toxic Air Contaminants

The public's exposure to toxic air contaminants (TACs) is a significant public health issue in California. The California Legislature in 1983 enacted a program to identify the health effects of TACs, to reduce exposure to these contaminants, and to protect the public health (AB 1807: Health and Safety Code Sections 39650–39674). The Legislature established a two-step process to address the potential health effects from TACs: the risk assessment (or identification) phase and risk management (or control) phase.

Diesel-exhaust particulate matter (DPM) emissions were established as a TAC in 1998. Since the designation of DPM as a TAC, the CARB has worked on developing strategies and regulations aimed at reducing the risk from DPM. The CARB has set a target goal of reducing the cancer risk statewide arising from exposure to DPM 75 percent below 2000 levels by 2010 and 85 percent by 2020. The CARB administers several State programs and strategies to reduce DPM.

e. Children's Environmental Health Protection Act

The Children's Environmental Health Protection Act established specific requirements to determine if children are adequately protected from the harmful effects of air pollution. The Act requires the CARB and the Office of Environmental Health Hazard Assessment to review all health-based California AAQS to determine if public health, particularly the health of infants and children, is adequately protected. It also requires a review of the air monitoring network to determine if it accurately measures the amount of pollutants in the air. Furthermore, the State's list of TACs must be reviewed, and Air Toxic Control Measures must be implemented, in order to reduce exposure to TACs that cause children to be especially susceptible to illness.

3. South Coast Air Quality Management Plan

California is divided into 15 regional air basins and 35 air pollution districts for the purpose of managing air resources at the regional level. The South Coast AQMD is the agency that regulates air quality in the SCAB, in which Chino is located. AQMD prepares an air quality management plan (AQMP) every three years; each iteration of the plan is an update of the previous plan and has a 20-year horizon. The Final 2007 Air Quality Management Plan was prepared by AQMD, the California Air Resources Board (CARB), and the Southern California Association of Governments (SCAG) and was adopted in June 2007. The AQMP meets federal and State Clean Air Act planning requirements for all areas under the jurisdiction of the AQMD, including San Bernardino County.

The AQMP is intended to provide for continued progress toward cleaner air and to comply with federal and State requirements. The plan includes a comprehensive strategy aimed at controlling pollution from all sources, including stationary sources, on-road and off-road mobile sources, and area sources.

4. City of Chino

a. Healthy Chino Coalition

The California Healthy Cities and Communities (CHCC) network began in 1988 to promote clean, safe, and healthy places to live. The Chino City Council in 2004 passed a resolution endorsing the Healthy Cities concept and formal participation in CHCC. Focus areas include:

- Creating safe, walkable neighborhoods.
- Encouraging fitness by developing a Youth Fun Club.
- Providing health and human services by reducing barriers to the City's mental health services.
- Supporting a healthcare center for low-income families.
- Promoting nutrition with healthier alternatives in the school lunch program.
- Developing public education programs and organizations.

C. Existing Air Quality Conditions

Air quality in a particular location is a function of the kinds and amounts of pollutants being emitted into the air locally and throughout the basin, and the dispersal rates of pollutants within the region. The major factors affecting pollutant dispersion are wind speed and direction, the vertical dispersion of pollutants (which is affected by inversions), and the local topography.

1. Criteria Pollutants

As of 2008, AQMD operates 32 air-quality monitoring stations throughout the SCAB, which record criteria pollutant concentrations and meteorological information continuously. An additional monitoring station within the SCAB is operated by the CARB. The Ontario–Francis Street monitoring station, located in the northern portion of Chino; the Pomona monitoring station, located approximately 4.5 miles northwest of the northern Chino City boundary; the Upland monitoring station, located approximately 5 miles northeast of the City's northern boundary; and the Norco-Norconian monitoring station, located approximately 2.5 miles east of the City's eastern boundary are the nearest stations to the project area, as shown in Figure AQ-1. The Upland station monitors ozone, carbon monoxide, and nitrogen dioxide; the Pomona station monitors ozone, carbon monoxide, and nitrogen dioxide; the Ontario-Francis Street station monitors PM_{10} and $PM_{2.5}$; and the Norco-Norconian monitors PM_{10}.

Table AQ-2 summarizes the number of days per year during which State and federal standards for criteria pollutants were exceeded in the SCAB overall during the years 2003 to 2007.

Below is a summary by criteria pollutant of the current air quality conditions in the SCAB and City of Chino.

a. Ozone

Ozone is the primary air pollution problem in the SCAB. Because sunlight plays such an important role in its formation, ozone pollution or smog is mainly a concern during the daytime in summer months. Nitrogen oxides and hydrocarbons (reactive organic gases) are known as the chief "precursors" of ozone. These compounds react in the presence of sunlight to produce ozone.

The SCAB is currently designated a federal and State non-attainment area for ozone. As shown in Table AQ-2, the basin is an extreme federal and State non-attainment area for the 1-hour average and a severe federal non-attainment area for

the 8-hour average. Ozone concentration measurements recorded in the SCAB dating back to the late 1970s show a distinctive downward trend.

The SCAB has been classified as a transport contributor to downwind air basins. The Mojave Desert Air Basin, the Salton Sea Air Basin, the San Diego Air Basin and the South Central Coast Air Basin are all affected by ozone concentrations from the SCAB.

FIGURE AQ-1

AIR MONITORING SITES IN THE PROJECT VICINITY

TABLE AQ-2 **AMBIENT AIR QUALITY SUMMARY – SOUTH COAST AIR BASIN[a]**

Pollutant	Average Time	California Ambient Air Quality Standards	Attainment Status	National Ambient Air Quality Standards	Attainment Status[b]	Maximum Concentration					Number of Days Exceeding State Standard					Number of Days Exceeding National Standard				
						2003	2004	2005	2006	2007	2003	2004	2005	2006	2007	2003	2004	2005	2006	2007
O_3	1 hour	0.09 ppm	N (extreme)	N/A	N/A (extreme)*	0.19	0.16	0.18	0.18	0.17	125	105	99	102	96	64	28	31	35	18
O_3	8 hours	0.07 ppm	N	0.075‡ ppm	N (severe)	0.15	0.15	0.15	0.14	0.14	153	152	138	130	127	133‡	115‡	116‡	114‡	108‡
CO	1 hour	20 ppm	A	35 ppm	A	12.3	10.4	Na	Na	Na	0	0	Na	Na	Na	0	0	Na	Na	Na
CO	8 hours	9 ppm	A	9 ppm	A	7.3	6.5	5.9	6.2	5.3	0	0	0	0	0	0	0	0	0	0
NO_2	1 hour	0.18† ppm	A	N/A	N/A	0.16	0.16	0.14	0.14	0.11	0	0	0	0	0	N/A	N/A	N/A	N/A	N/A
NO_2	Annual	0.030 ppm	A	0.053 ppm	A	0.03	0.03	0.02	0.02	0.02	N/A	N/A	N/A	N/A	N/A	0	Na	Na	Na	Na
SO_2	1 hour	0.25 ppm	A	N/A	N/A	0.03	0.04	Na	Na	Na	0	0	Na	Na	Na	N/A	N/A	N/A	N/A	N/A
SO_2	24 hours	0.04 ppm	A	0.14 ppm	A	0.01	0.02	Na	Na	Na	0	0	Na	Na	Na	0	0	Na	Na	Na
SO_2	Annual	N/A	N/A	0.03 ppm	A	0.0	Na	Na	Na	Na	N/A	N/A	N/A	N/A	N/A	Na	Na	Na	Na	Na
PM_{10}	24 hours	50 $\mu g/m^3$	N	150 $\mu g/m^3$	N (serious)	164	137	131	142	1212	201[cd]	210[cd]	198[cd]	241[cd]	273[cd]	2	0	0	0	2
PM_{10}	Annual	20 $\mu g/m^3$	N	N/A	N/A	55.1	53.5	50.4	62.3	72.2	Na	Na	Na	Na	Na	N/A	N/A	N/A	N/A	N/A
$PM_{2.5}$	24 hours	N/A	N/A	35 $\mu g/m^{3**}$	N	121	Na	Na	Na	Na	N/A	N/A	N/A	N/A	N/A	8	Na	Na	Na	Na
$PM_{2.5}$	Annual	12 $\mu g/m^3$	N	15 $\mu g/m^3$	N	24.8	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na

Notes: ppm = parts per million

$\mu g/m^3$ = micrograms per cubic meter

[cd]Calculated days = Calculated days are the estimated number of days that a measurement would have been greater than the level of the standard had measurements been collected every day. The number of days above the standard is not necessarily the number of violations of the standard for the year.

[a] California, State of, 2008. *California Air Quality Data Statistics*. California Air Resources Board Internet Site. URL http://www.arb.ca.gov/adam/welcome.html accessed on December 6.

[b] A = attainment; N = non-attainment; N/A = not applicable; Na = data not available

* The federal 1-hour standard for ozone (0.12 ppm) has been revoked.

** The federal 24-hour standard for $PM_{2.5}$ was changed from 65 to 35 $\mu g/m^3$ in 2006.

‡ The federal 8-hour standard for ozone was changed from 0.08 ppm to 0.075 ppm in 2008; number of days exceeding the 2008 standard.

† The State 1-hour standard for nitrogen dioxide was changed from 0.25 ppm to 0.18 ppm in 2007.

Figures AQ-2 and AQ-3 show plots of the measured ozone exceedances for the year 2005 in the SCAB relative to the revoked federal one-hour standard and the 2005 federal eight-hour standard, respectively. In 2008 the federal eight-hour standard was strengthened to 0.075 ppm. As seen from these plots, the number of days for which the ozone standards were exceeded generally increases with distance from the coast. In the Chino area, the one-hour standard was generally exceeded on ten or fewer days, and the eight-hour standard was exceeded on 20 or fewer days.

Although State and federal standards are being exceeded, ozone in the SCAB has improved substantially over the past three decades. In 1984, the State one-hour ozone standard was exceeded 209 days, and the national one-hour ozone standard was exceeded 175 days in the SCAB. In 2007, the State 1-hour ozone standard was exceeded on 96 days, and the revoked national one-hour ozone standard would have been exceeded on 18 days in the SCAB, as shown in Table AQ-2. As ozone levels in the SCAB decline, the transport impact to downwind air basins will also decline.

b. Carbon Monoxide

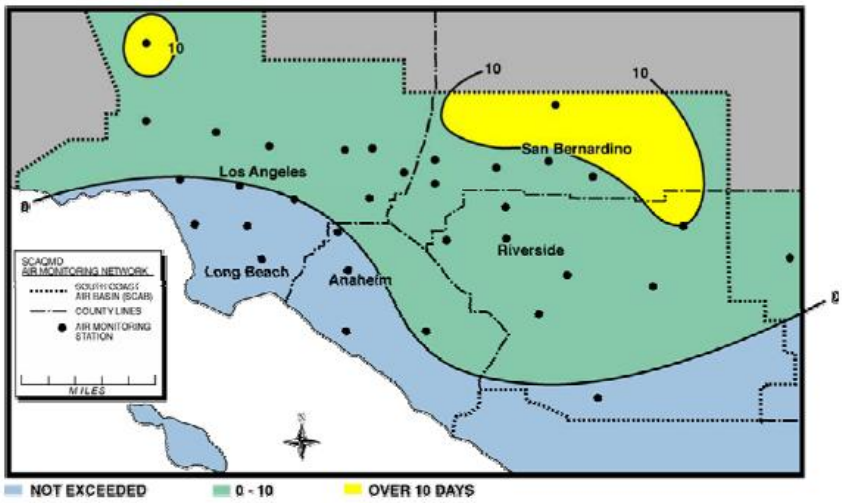
The SCAB is classified as a State and federal attainment area for carbon monoxide, as shown in Table AQ-2. From 2003 to 2007, SCAB had zero days exceeding the 8-hour federal and State CO standards.

Small-scale, localized concentrations of carbon monoxide above the State and national standards have the potential to occur at intersections with stagnation points such as those that occur on major highways, and heavily traveled and congested roadways. Localized high concentrations of CO are referred to as "CO hot spots," and are a concern at congested intersections when automobile engines burn fuel less efficiently and their exhaust contains more CO.

c. PM_{10}

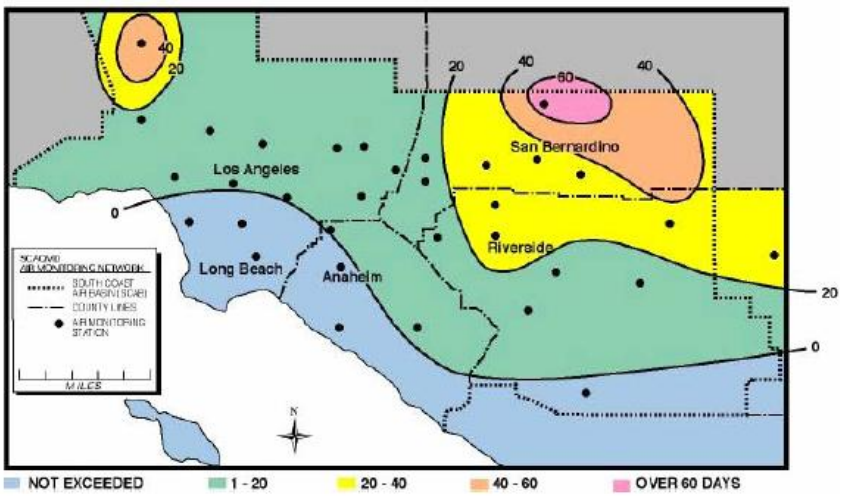
Particulate matter is a complex mixture of very tiny solid or liquid particles composed of chemicals, soot, and dust. Ten microns is about one-seventh the diameter of a human hair. Sources of PM_{10} emissions in the SCAB consist

FIGURE AQ-2 **OZONE – 2005: NUMBER OF DAYS EXCEEDING 1-HOUR FEDERAL STANDARD**



Note: (1-hour average ozone > 0.12ppm [revoked in 2005]).
Source: 2007 SCAQMP.

FIGURE AQ-3 **OZONE–2005: NUMBER OF DAYS EXCEEDING 8-HOUR FEDERAL STANDARD**



Note: (8-hour average ozone > 0.08 ppm [standard as of 2005])
Source: 2007 SCAQMP.

mainly of urban activities, dust suspended by vehicle traffic, and secondary aerosols formed by reactions in the atmosphere. In general, particulate concentrations near residential sources are typically greater during the coldest months of the year, when more fireplaces are in use and when meteorological conditions such as inversions prevent the dispersion of directly emitted contaminants.

Particles classified under the PM_{10} category are mainly emitted directly from activities that disturb the soil including travel on roads and construction, mining, or agricultural operations. Other sources include windblown dust and the burning of fuels such as gasoline, oil, diesel, or wood. For several reasons related to the area's dry climate and coastal location, the SCAB has special difficulty in developing adequate tactics to meet present State particulate standards. While emission controls for ozone also reduce levels of PM_{10}, additional controls aimed specifically at PM_{10} will be required to reduce the high levels.

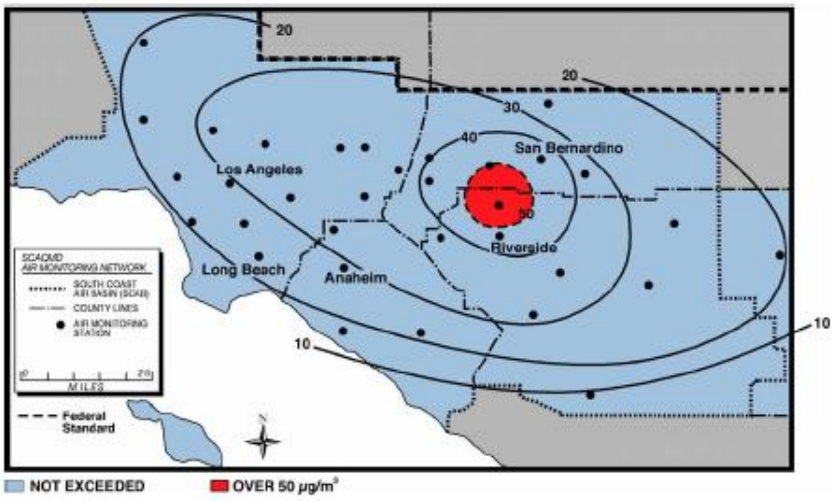
Currently, the SCAB is a State and federal non-attainment area for PM_{10}. Table AQ-2 shows that the 24-hour State PM_{10} standard was exceeded in the SCAB in 2003 through 2007. The less stringent 24-hour federal PM_{10} standard was exceeded in the SCAB in 2003 and 2007.

Figure AQ-4 shows a plot of the measured annual average concentration of PM_{10} for the year 2005 in the SCAB. The federal annual PM_{10} standard was revoked in 2006. As seen from this plot, maximum average annual PM_{10} concentrations tend to occur east of the City of Chino. In and around Chino, the average annual PM_{10} concentrations exceeded State standards and ranged from approximately 30 $\mu g/m^3$ to 50 $\mu g/m^3$.

d. $PM_{2.5}$

Airborne, inhalable particles with aerodynamic diameters of 2.5 microns or less ($PM_{2.5}$) have been recognized as an air quality concern requiring regular monitoring. As noted previously, the Ontario–Francis Street monitoring station is the only station in the project vicinity that monitors $PM_{2.5}$. As

FIGURE AQ-4 **PM_{10}–2005: ANNUAL AVERAGE (ARITHMETIC MEAN) CONCENTRATION, µG/M3**



Source: 2007 SCAQMP.

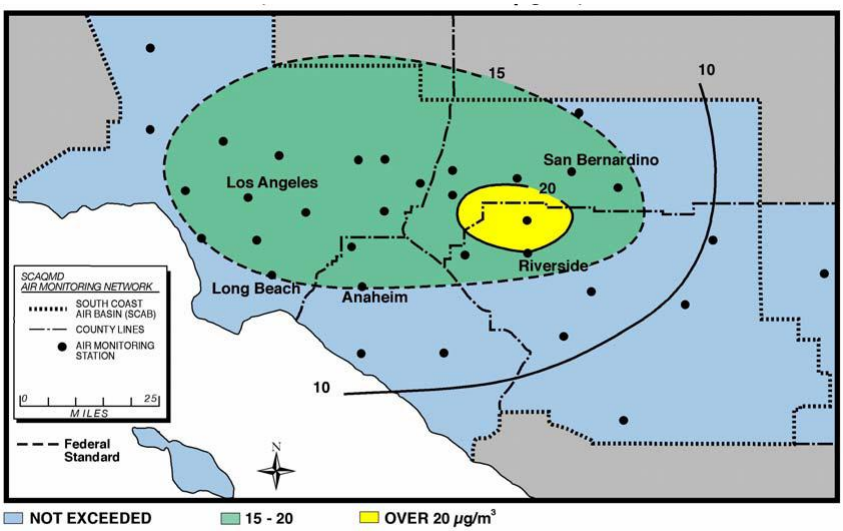
shown in Table AQ-2, SCAB is a federal and State non-attainment area for $PM_{2.5}$.

Figure AQ-5 shows a plot of the measured annual average concentration of $PM_{2.5}$ in the SCAB in 2005. As shown in this plot, maximum average annual $PM_{2.5}$ concentrations tend to occur east of the City of Chino. However, average annual concentrations of $PM_{2.5}$ throughout the City were well in excess of the federal standard of 15 µg/m³. At the Ontario–Francis Street monitoring station, the average annual $PM_{2.5}$ concentration ranged between 18 and 24 µg/m³ over the period from 2003 to 2007.

e. Other Criteria Pollutants

The national and State standards for NO_2 and SO_2 are being met in the SCAB, and the latest pollutant trends suggest that these standards will not be exceeded in the foreseeable future. The standards for lead were revised in

FIGURE AQ-5 **$PM_{2.5}$–2005: ANNUAL AVERAGE (ARITHMETIC MEAN) CONCENTRATION, µG/M3**



Source: 2007 SCAQMP.

2008, but the Chino area has been designated as unclassifiable because there are insufficient monitoring data.

2. Sources

Emissions come from either stationary or mobile sources. Stationary sources are generally categorized as either point sources or area sources. Point sources are large emitters at an identified location such as power plants and manufacturing facilities. Area sources consist of small emissions in a general area such as water heaters and architectural coatings. Mobile sources are categorized as either on-road or off-road. On-road mobile sources are vehicles on freeways and roadways. Off-road sources include trains, ships, construction equipment, and other emitters that operate off freeways and roadways. Table AQ-3 summarizes emissions to the SCAB in 2002, the most recent year for which a complete inventory is available.

TABLE AQ-3 **2002 EMISSIONS TO THE SCAB – AVERAGE ANNUAL DAY (TONS/DAY)**[a]

Source Category	VOC	NO_x	CO	SO_x	$PM_{2.5}$	PM_{10}
Stationary Sources						
Fuel Combustion	7	35	53	2	6	6
Waste Disposal	7	2	1	<1	<1	<1
Cleaning and Surface Coatings	54	<1	<1	<1	1	<1
Petroleum Production and Marketing	35	<1	9	7	1	1
Industrial Processes	21	<1	2	<1	5	13
Solvent Evaporation	162	0	0	0	0	0
Misc. Processes[b]	16	55	62	12	47	206
Total Stationary Sources	**302**	**93**	**126**	**22**	**60**	**227**
Mobile Sources						
On-Road Vehicles	362	628	3,677	4	18	25
Off-Road Vehicles	180	372	1,016	27	21	23
Total Mobile Sources	**542**	**1,000**	**4,693**	**31**	**39**	**48**
Total	**844**	**1,093**	**4,819**	**53**	**99**	**275**

[a] Values are rounded to the nearest integer.
[b] Travel related road dust included.
Source: 2007 South Coast Air Quality Management Plan, Appendix III, SCAQMD.

AQMD is the primary agency responsible for regulating stationary sources and developing plans to achieve and maintain air quality standards in the SCAB. The CARB and EPA have jurisdiction over controlling emissions from mobile sources.

D. Goals, Objectives, Policies, and Actions

See the Open Space and Conservation Element for goals, objectives, policies, and actions related to greenhouse gas emissions and climate change. Also see the Transportation Element for additional goals, objectives, policies, and actions related to reducing emissions associated with vehicle travel.

Goal AQ-1 Preserve and improve air quality in Chino and the region.

Objective AQ-1.1 Improve air quality through land use and transportation planning decisions.

Policies

P1. The City shall promote land use patterns that reduce the number and length of motor vehicle trips.

P2. Where development opportunities near shopping areas and transit corridors exist, the City shall prioritize higher-density residential development.

P3. The City shall encourage employment areas to include a mix of retail support services.

P4. Design new intersections to function in a manner that reduces air pollutant emissions from stop and start and idling traffic conditions.

P5. The City shall, to the extent practicable, separate sensitive land uses (schools, senior centers, medical facilities, and residences) from significant sources of air pollutants, toxic air contaminants, or odor emissions.

P6. The City shall require developers of projects that include sensitive land uses (schools, senior centers, medical facilities, and residences) in proximity to State Route 71 and State Route 60 to prepare a health impact assessment (HIA) to determine the significance of

the impact, and to incorporate project-specific mitigation measures to avoid this risk.

P7. The City shall promote expansion of employment opportunities within Chino to reduce commuting to areas outside of the City.

P8. The City shall continue to enforce the vehicle idling restrictions established by the State.

P9. The City shall prohibit each and every new land use that has the potential to be a source of air pollution from being located closer than the specified minimum distance from any sensitive land use (when measured as a straight line between the points of the new land use and the sensitive land use that are closest to each other):

- Freeways, urban roads with over 100,000 daily vehicle trips, or rural roads with over 50,000 daily vehicle trips – 500 feet.
- Distribution centers, warehouses, and other facilities serving as a distribution point for the transfer of goods with over 100 trucks per day, over 40 trucks with transport refrigeration units per day, or with all such units operating more than 300 hours per week – 1,000 feet.
- Rail yards or railroads – 1,000 feet.
- Facilities where crude oil is converted into any petroleum product – 1,000 feet.
- Chrome platers and other operations using hexavalent chromium – 1,000 feet.
- Dry cleaners and other operations using perchloroethylene – 500 feet.
- Gasoline-dispensing facilities with the potential for total throughput equal to 3,600,000 gallons or more per year – 300 feet.

- Gasoline-dispensing facilities with no potential for total throughput in excess of 3,600,000 gallons per year – 50 feet.

"Sensitive land use" refers to any and all land uses where sensitive receptors are likely to spend time, including, but not limited to schools, schoolyards, parks, playgrounds, daycare facilities, nursing homes, hospitals, religious facilities, and residential communities; "sensitive receptors" refers to children, the elderly, and members of the public with serious health problems affected by air quality; and "new land use" includes the development of undeveloped land, the redevelopment of an existing developed site, or any use that requires a new permit from the City (whether ministerial or discretionary) even if no construction is involved.

P10. The City shall require each and every new land use where any sensitive receptor may be present for any period of time to employ all commercially reasonable design techniques and equipment sufficient to minimize to the maximum extent feasible all potential exposures to air pollution on the site of the use.

Objective AQ-1.2

Actions

A1. Implement traffic features such as roundabouts or the use of integrated signalization to improve traffic flow and reduce emissions from vehicle idling and stop and start.

A2. Install LED traffic signals throughout Chino to reduce the City's electricity consumption.

A3. Utilize the latest energy-efficient technologies for street and parking lot lights that meet City and state standards.

A4. Establish a local ordinance that exceeds the State vehicle idling restrictions where appropriate, including restrictions for bus layovers, delivery vehicles, trucks at warehouses and distribution facilities, and taxis, particularly when these activities take place close to sen-

sitive land uses (schools, senior centers, medical facilities, and residences).

Objective AQ-1.3 Support local and regional air quality improvement efforts.

Policies

P1. The City shall coordinate its air quality planning efforts with other local, regional and State agencies, and encourage community participation in air quality planning.

P2. The City shall work with the South Coast Air Quality Management District (SCAQMD) to ensure the earliest practicable attainment of federal and State ambient air quality standards.

P3. The City shall utilize the CEQA process to identify and avoid or mitigate potentially significant air quality impacts associated with new development.

Actions

A1. Establish a local ordinance to prohibit solid fuel wood-burning devices in mixed-use high-density development and restrict the installation of wood-burning appliances in new or redeveloped single-family residential properties to those that burn pellets, natural gas, or propane, or at a minimum, EPA-certified wood burning units.

Objective AQ-1.4 Reduce air pollution during construction and operations of a project.

Policies

P1. The City shall assess the air quality impacts of project construction and operations using the latest version of the CEQA Guidelines and the guidelines prepared by the South Coast AQMD.

P2. The City shall require best management practices to reduce air pollution associated with construction of development projects.

P3. The City shall review construction plans associated with development projects to determine if all feasible mitigation measures are included.

Objective AQ-1.5 Promote healthy indoor air quality.

Policies

P1. The City shall disseminate information about methods for reducing mold growth.

P2. The City shall promote green building practices that support "healthy homes."

P3. The City shall continue to support lead-abatement programs.

Actions

A1. Explore the feasibility of new ordinances designed to reduce exposure to secondhand smoke through means such as smoke-free workplaces and smoke-free areas in multi-unit housing.

E. Indicators

The following trends are indicative of progress made in regards to the above policies. Each indicator is followed by the ideal direction of the trend.

- Number of days of non-attainment for criteria pollutants for which the SCAB is a non-attainment area (ozone, carbon monoxide, PM_{10} and $PM_{2.5}$):
  - Direction: *Decrease*
- Number of criteria pollutants categorized as in non-attainment:
  - Direction: *Decrease*
- Incidence of asthma among residents:
  - Direction: *Decrease*
- Number of bad air days:
  - Direction: *Decrease*

- Percentage of residents commuting by public transportation, walking, or bicycling:
  - Direction: *Increase*
- Percentage of the City's energy that is produced from clean, renewable sources:
  - Direction: *Increase*
- Percentage of residents who live within ½ mile radius of a significant emissions source:
  - Direction: *Decrease*