

CHAPTER 1

INTRODUCTION

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INTRODUCTION

California state law requires each city and county to adopt a General Plan “for the physical development of the county or city, and any land outside its boundaries which bears relation to its planning”. The General Plan must contain seven “elements:” land use, circulation, housing, open-space, conservation, noise and safety. The policies in the required General Plan elements are the basis for most land use decisions. General Plan policies and practices have the potential to exacerbate localized air pollution impacts and adversely affect public health. State law offers the flexibility to go beyond the mandatory elements, to adopt “any other elements or address any other subjects, which in the judgment of the legislative body, relate to the physical development of the county or city.” Many cities and counties in the district have addressed air quality in other sections of their General Plan, such as land use, circulation, and conservation. While an air quality element is not mandatory, two counties (San Bernardino and Riverside) and 44 cities within AQMD’s jurisdiction have adopted separate air quality elements in their General Plans (see Appendix A). The fact that Southern California continues to be faced with some of the most serious air pollution problems in the United States is a strong case for the topic of air quality to be included as a stand alone element in General Plans. It is recognized that local governments, to make the best decisions for the benefit of their residents, must weigh and balance multiple issues, demands and concerns, including, but not limited to, the need for housing, existing development and development patterns, environmental responsibilities and more when making land use decisions.

The South Coast basin exceeds federal standards for ozone and particulate matter (PM₁₀ and PM_{2.5}). Although the AQMD is moving forward in implementing both near and long term control measures that aggressively seek to reduce air quality emissions, the basin is currently one of only two areas in the nation classified as “extreme” non-attainment for ozone. Clean air for all the residents in the basin cannot be accomplished by air quality agencies alone. Achieving the mutual goals of protecting public health and providing environmental equity to residents throughout the basin can only be accomplished through a strong partnership with local jurisdictions. The involvement of local governments to establish public policies that support AQMD strategies is essential for this region to meet state and federal air quality goals. The General Plan, as the foundation for all local planning and development, is an important tool to implement local government policies and programs that are vital to achieving clean air standards. Cities and counties have the flexibility and authority to address air quality issues through General Plans that guide the development of local circulation systems, transportation services, and land use. The AQMD and CARB have strong, comprehensive regulatory programs in place for new and existing sources of air pollution. However, local policies in conjunction with air agency efforts can greatly enhance the effectiveness of these programs by addressing cumulative impacts in local areas. Many land use decisions that involve siting, zoning and permitting actions provide opportunities to complement local and state air regulations and prevent or

minimize adverse health impacts. The development of land use policy and the authority to site sensitive land uses are local government functions. In local planning and policy development, sensitive land uses should be given special consideration to best protect those individuals that are especially vulnerable to the effects of air pollution. The intent of this document is to provide information that will lead to general plan policies and local decision making that considers potential air quality impacts on public health. The suggested policies and strategies are intended to guide land use planners in developing approaches tailored to their community that reduce exposure to source-specific air pollution and lower the health risk associated with cumulative air pollution impacts.

Chapter 1 presents an overview of regulated air pollutants in the South Coast air district and summarizes the effects of air pollution on public health and welfare.

REGULATED AIR POLLUTANTS

Air pollutants regulated by the federal and California Clean Air Acts or other laws fall under three categories:

- criteria air pollutants,
- toxic air contaminants (TAC),
- global warming and ozone-depleting gases.

Pollutants in each of these categories are monitored and regulated differently. Criteria air pollutants are measured by sampling concentrations in the ambient air; toxic air contaminants are measured at the source and in the general atmosphere; and, global warming and ozone-depleting gases are not monitored but are subject to federal and regional policies that call for their reduction and eventual phase out. The U.S. Environmental Protection Agency (USEPA) has established ambient air quality standards for the following air pollutants:

- ozone (O₃)
- nitrogen dioxide (NO₂)
- carbon monoxide (CO)
- sulfur dioxide (SO₂)
- lead (Pb)
- particulate matter (PM₁₀ and PM_{2.5})

The California Air Resources Board (CARB) has also established ambient air quality standards for the six pollutants regulated by the USEPA. Some of the California ambient air quality standards are more stringent than the national ambient air quality standards (NAAQS). In addition, California has established ambient air quality standards for the following pollutants or air quality conditions:

- hydrogen sulfide
- sulfates

- vinyl chloride
- visibility

NAAQS and California ambient air quality standards for the criteria pollutants are listed in Appendix B.

Criteria Air Pollutants

Criteria air pollutants are defined as those pollutants for which the federal and state governments have established air quality standards for outdoor or ambient concentrations to protect public health. The national and state ambient air quality standards have been set at levels to protect human health with a determined margin of safety. For some pollutants, there are also secondary standards to protect the environment. The following is a description of the ambient air pollutants and the attainment status of each pollutant in the South Coast basin. A discussion of the health effects of the ambient air pollutants is found in Appendix C.

Carbon Monoxide. Carbon monoxide (CO) is a colorless, odorless gas formed by the incomplete combustion of fuels. Motor vehicles are the main source of this gas. CO competes with oxygen, often replacing it in the blood, thus reducing the blood's ability to transport oxygen to vital organs in the body. The ambient air quality standard for carbon monoxide is intended to protect persons whose medical condition already compromises their circulatory system's ability to deliver oxygen. These medical conditions include certain heart ailments, chronic lung diseases, and anemia. Persons with these conditions have reduced exercise capacity even when exposed to relatively low levels of CO. Fetuses are at risk because their blood has an even greater affinity to bind with CO. Smokers are also at risk from ambient CO levels because smoking increases the background level of CO in their blood. The South Coast basin is designated as a serious non-attainment area for carbon monoxide by both USEPA and CARB. However, there have been no violations of the CO standard in the past three years, and AQMD has submitted to EPA a request for redesignation to attainment status.

Nitrogen Dioxide. Nitrogen dioxide (NO₂) is a byproduct of fuel combustion. The principal form of nitrogen oxide produced by combustion is nitric oxide (NO), but NO reacts quickly to form NO₂, creating the mixture of NO and NO₂ commonly called NO_x. NO₂ acts as an acute irritant and, in equal concentrations, is more injurious than NO. At atmospheric concentrations, however, NO₂ is only potentially irritating. There is some indication of a relationship between NO₂ and chronic pulmonary fibrosis. Some increase in bronchitis in young children has also been observed at concentrations below 0.3 parts per million (ppm). NO₂ absorbs blue light which results in a brownish red cast to the atmosphere and reduced visibility. Although NO₂ concentrations have not exceeded national standards since 1991 and the state hourly standard since 1993, NO_x emissions remain of concern because of their contribution to the formation of O₃ and particulate matter.

Ozone. Ozone (O_3) is one of a number of substances called photochemical oxidants that are formed when volatile organic compounds (VOC) and NO_x react in the presence of ultraviolet sunlight. O_3 concentrations in the South Coast basin are typically among the highest in the nation, and the damaging effects of photochemical smog, which is a popular name for a number of oxidants in combination, are generally related to the concentrations of O_3 . Individuals exercising outdoors, children, and people with pre-existing lung disease, such as asthma and chronic pulmonary lung disease, are considered to be the subgroups most susceptible to O_3 effects. Short-term exposures (lasting for a few hours) to O_3 at levels typically observed in southern California can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes. In recent years, a correlation between elevated ambient O_3 levels and increases in daily hospital admission rates, as well as mortality, has also been reported. The South Coast basin is designated by both the USEPA and the CARB as an extreme non-attainment area for ozone. Although O_3 concentrations declined between 1991 and 2004 to the lowest levels since monitoring began, the South Coast basin continues to have peak O_3 levels that exceed both state and federal standards. In 2004, the peak concentration (1-hr standard) exceeded the federal standard 131 percent and the state standard 163 percent.

In 1997, the USEPA issued a new ozone air quality standard based on an 8-hour average exposure (the current federal ozone air quality standard is based on a 1-hour average period). The new 8-hour average ozone air quality standard provides for greater health protection. Current regulatory controls which are directed toward attaining the 1-hour ozone standard will also have benefits toward attaining the 8-hour ozone standard.

Particulate Matter. Inhalable fine particulate matter (PM_{10}) consists of extremely small suspended particles or droplets 10 microns or smaller in diameter that can lodge in the lungs, contributing to respiratory problems. PM_{10} arises from such sources as re-entrained road dust, diesel soot, combustion products, tire and brake abrasion, construction operations, and fires. It is also formed in the atmosphere from NO_x and SO_2 reactions with ammonia. PM_{10} scatters light and significantly reduces visibility.

Inhalable particulates pose a serious health hazard, alone or in combination with other pollutants. More than half of the smallest particles inhaled will be deposited in the lungs and can cause permanent lung damage. Inhalable particulates can also have a damaging effect on health by interfering with the body's mechanism for clearing the respiratory tract or by acting as a carrier of an absorbed toxic substance. USEPA designates the South Coast basin as serious non-attainment for PM_{10} , while CARB designates the South Coast basin simply as non-attainment.

In 1997, the USEPA established a new particulate matter $PM_{2.5}$ standard, in addition to the PM_{10} standard. $PM_{2.5}$ is defined as particulate matter with a diameter less than 2.5 microns and is a subset of PM_{10} . $PM_{2.5}$ consists mostly of products from the reaction of NO_x and SO_2 with ammonia, secondary organics, finer dust particles, and the

combustion of fuels including diesel soot. Deadlines for meeting this standard will be ten years after the region is designated as non-attainment by the USEPA.

Sulfur Dioxide. Sulfur dioxide (SO₂) is a colorless, pungent gas formed primarily by the combustion of sulfur-containing fossil fuels. Health effects include acute respiratory symptoms and difficulty in breathing for children. Individuals with asthma may experience constriction of airways with exposure to SO₂. Though SO₂ concentrations have been reduced to levels well below state and federal standards, further reductions in SO₂ emissions are needed because SO₂ is a precursor to sulfate and PM₁₀. The South Coast basin is considered a SO₂ attainment area by USEPA and CARB.

Lead. Lead (Pb) concentrations once exceeded the state and federal air quality standards by a wide margin, but have not exceeded state or federal air quality standards at any regular monitoring station since 1982. Though special monitoring sites immediately downwind of lead sources recorded very localized violations of the state standard in 1994, no violations were recorded at these stations in 1996. Consequently, the South Coast basin is designated as an attainment area for lead by both the USEPA and CARB.

Volatile Organic Compounds. It should be noted that there are no state or federal ambient air quality standards for VOCs because they are not classified as criteria pollutants. VOCs are regulated, however, because a reduction in VOC emissions reduces certain chemical reactions which contribute to the formation of ozone. VOCs are also transformed into organic aerosols in the atmosphere, contributing to higher PM₁₀ and lower visibility levels.

Although health-based standards have not been established for VOCs, health effects can occur from exposures to high concentrations of VOC. Some hydrocarbon components classified as VOC emissions are hazardous air pollutants. Benzene, for example, is a hydrocarbon component of VOC emissions that is known to be a human carcinogen.

Criteria air pollutant concentrations are typically higher in the South Coast basin than in any other area of the country because of the region's climate, geographical setting, and high concentrations of industry and motor vehicles. Although still high, pollutant concentrations have declined sharply throughout the 1990s. Air quality in 2004, aided by favorable weather conditions, was the best recorded since air pollution agencies began monitoring air pollution in this region in the 1940s prior to the creation of the AQMD. Table 1-1 lists the primary emission sources of the criteria pollutants and some of the harmful effects of the pollutants.

Table 1-1

Primary Sources and Effects of Criteria Pollutants

Pollutants	Source	Primary Health and Welfare Effects
Lead (Pb)	Contaminated soil	Behavioral and hearing disabilities in children; Nervous system impairment
Sulfur Dioxide (SO ₂)	Combustion of sulfur-containing fossil fuels; Smelting of sulfur-bearing metal ores; Industrial processes	Aggravation of respiratory diseases (asthma, emphysema); Reduced lung function
Carbon Monoxide (CO)	Incomplete combustion of fuels and other carbon-containing substances, such as motor vehicle exhaust; Natural events, such as decomposition of organic matter	Aggravation of some heart diseases (angina); Reduced tolerance for exercise; Impairment of mental function; Impairment of fetal development; Death at high levels of exposure
Nitrogen Dioxide (NO ₂)	Motor vehicle exhaust; High-temperature stationary combustion; Atmospheric reactions	Aggravation of respiratory illness
Ozone (O ₃)	Atmospheric reaction of organic gases with nitrogen oxides in sunlight	Aggravation of respiratory and cardiovascular diseases; Reduced lung function, Increased cough and chest discomfort
Fine Particulate Matter (PM ₁₀ and PM _{2.5})	Stationary combustion of solid fuels; Construction activities; Industrial processes; Atmospheric chemical reactions	Reduced lung function; Aggravation of respiratory & cardio-respiratory diseases; Increases in mortality rate; Reduced lung function growth in children

The AQMD measures current air quality and provides forecasts on the AQMD website in several formats. Current information on air pollution levels may be viewed in text form on the "Current Air Quality Readings" page, or retrieved from a clickable map on the "Animated Air Quality Map" page. Air quality data, trends, and studies are available via the "Air Quality Data" page, and a forecast of pollution levels for the following day is available on the "Daily Air Quality Forecast" page. Also, meteorological data needed for the air dispersion model applications may be downloaded from this website at no charge.

Toxic Air Contaminants

Toxic Air Contaminants (TACs) are often referred to as "non-criteria" air contaminants because ambient air quality standards have not been established for them. There are hundreds of TACs, and exposure to these pollutants is associated with elevated risk of cancer and non-cancer health effects such as birth defects, genetic damage, and other

adverse health effects. Effects may be chronic (i.e., of long duration) or acute (i.e., of short duration) on human health. Acute health effects are attributable to short term exposure to air toxics. These effects include nausea, skin irritation, respiratory illness, and, in extreme cases, death. Chronic health effects result from long-term exposure. The effect of major concern for this type of exposure is cancer, which may develop up to 30 years after exposure. The USEPA regulates TACs through technology-based requirements which are implemented by state & local agencies. California regulates TACs through the air toxics program (H&SC §§ 39660 et seq.) and the Air Toxics “Hot Spots” Information and Assessment Act (H&SC §§ 44300 et seq.).

The CARB, working in conjunction with the Office of Environmental Health Hazard Assessment (OEHHA), identifies TACs. Air Toxic Control Measures (ATCMs) must then be adopted by CARB to reduce the identified TACs. Where there are federal standards, CARB must, at minimum, adopt the standards established by the USEPA. If there is a threshold below which there would be no significant adverse health impacts, CARB must create an ATCM to reduce emissions so there are no adverse health effects. If there is not a threshold below which there would be no significant adverse health impacts CARB must create an ATCM that reduces TAC emissions using the best available control technologies. Local air quality control agencies must implement ATCMs, or adopt equal or more stringent control measures as rules, within six months of adoption by CARB.

The Air Toxics “Hot Spots” Information and Assessment Act, codified in the Health and Safety Code, requires operators of specified facilities in the South Coast air district to submit to the AQMD comprehensive emissions inventories and reports by specified dates. The AQMD reviews the reports and then places the facilities into high-, intermediate-, and low-priority categories, based on the potency, toxicity, quantity, and volume of emissions and on the proximity of receptors, including sensitive receptors, to the facility. Facilities designated as high priority must prepare a health risk assessment. If the risk is above specified levels, facilities are required to notify the surrounding population and may be required to develop and implement a risk reduction plan.

The AQMD has also developed “industry-wide” inventories and assessed risks of small business facilities with emissions that are easily characterized. Some of the facilities in the industry-wide program are gas stations, small auto body shops, small dry cleaners, plating shops, and fiberglass product manufacturers. This information can then be used as an initial screening tool to determine whether a particular site is advisable for siting a sensitive receptor, or vice versa. Additional information is available on control strategies to minimize cumulative impacts of toxic emissions at http://www.aqmd.gov/rules/CIWG/final_white_paper.pdf and the AQMD Air Toxics “Hot Spots” Program (AB2588) at <http://www.aqmd.gov/prdas/AB2588/AB2588.html>. Information is also available from the AQMD Office of Engineering and Compliance to determine if a facility is operating under AQMD permits and what types of pollutants are emitted.

AQMD also adopts other rules that are not part of the federal or state programs and works with other agencies to encourage TAC reductions in their purview. The emissions inventory data are to be updated every four years. In addition to implementing federal and state toxic requirements, AQMD has an Air Toxics Control Plan and a Cumulative Impacts Reduction Strategy to further reduce TACs and their impacts on the communities in the South Coast basin.

Global Warming and Ozone-Depleting Gases

“Stratospheric ozone depletion” refers to the slow destruction of naturally occurring ozone, which lies in the upper atmosphere (called the stratosphere) and which protects Earth from the damaging effects of solar ultraviolet radiation. Certain compounds, including chlorofluorocarbons (CFCs,) halons, carbon tetrachloride, methyl chloroform, and other halogenated compounds, accumulate in the lower atmosphere and then gradually migrate into the stratosphere. In the stratosphere, these compounds participate in complex chemical reactions to destroy the upper ozone layer. Destruction of the ozone layer increases the penetration of ultraviolet radiation to the Earth’s surface, a known risk factor that can increase the incidence of skin cancers and cataracts, contribute to crop and fish damage, and further degrade air quality.

Some gases in the atmosphere affect the Earth’s heat balance by absorbing infrared radiation. This layer of gases in the atmosphere functions much the same as glass in a greenhouse (i.e., both prevent the escape of heat). This is why global warming is also known as the “greenhouse effect.” Gases responsible for global warming and their relative contribution to the overall warming effect are carbon dioxide (55 percent), CFCs (24 percent), methane (15 percent), and nitrous oxide (6 percent). It is widely accepted that continued increases in greenhouse gases will contribute to global warming although there is uncertainty concerning the magnitude and timing of the warming trend.

Global warming gases and ozone-depleting gases include, but are not limited to, the following:

- **Carbon dioxide.** Carbon dioxide results from fossil fuel combustion in stationary and mobile sources. It contributes to the greenhouse effect, but not to stratospheric ozone depletion. In the South Coast basin, approximately 48 percent of carbon dioxide emissions come from transportation, residential and utility sources contribute approximately 13 percent each, 20 percent come from industry, and the remainder come from a variety of other sources.
- **Chlorofluorocarbons.** Chlorofluorocarbons (CFCs) are emitted from blowing agents used in producing foam insulation. They are also used in air conditioners and refrigerators and as solvents to clean electronic microcircuits. CFCs are primary contributors to stratospheric ozone depletion and to global warming. Sixty-three percent of CFC emissions in the South Coast basin come from the industrial sector. Federal regulations require service practices that maximize recycling of ozone-depleting compounds (both CFCs, hydro-chlorofluorocarbons and their blends) during the servicing and disposal of air-conditioning and

refrigeration equipment. AQMD Rule 1415 – Reduction of Refrigerant Emissions from Stationary Refrigeration and Air Conditioning Systems requires CFC refrigerants to be reclaimed or recycled from stationary refrigeration and air conditioning systems. AQMD Rule 1405 – Control of Ethylene Oxide and Chlorofluorocarbon Emissions From Sterilization or Fumigant Processes requires recovery or reclamation of CFCs at certain commercial facilities and eliminates the use of some CFCs in the sterilization processes. Some CFCs are classified as TACs and regulated by AQMD Rule 1401 – New Source Review of Toxic Air Contaminants and AQMD Rule 1402 Control of Toxic Air Contaminants from Existing Sources.

- **Halons.** These compounds are used in fire extinguishers and behave as both ozone-depleting and greenhouse gases. Halon production ended in the United States in 1993. AQMD Rule 1418 – Halon Emissions From Fire Extinguishing Equipment requires the recovery and recycling of halons used in fire extinguishing systems and prohibits the sale of halon in small fire extinguishers.
- **Hydro-chlorofluorocarbons.** HCFCs are solvents, similar in use and chemical composition to CFCs. The hydrogen component makes HCFCs more chemically reactive than CFCs, allowing them to break down more quickly in the atmosphere. These compounds deplete the stratospheric ozone layer, but to a much lesser extent than CFCs. HCFCs are regulated under the same AQMD rules as CFCs.
- **Methane.** Methane is emitted from biogenic sources, incomplete combustion in forest fires, landfills, and leaks in natural gas pipelines. It is a greenhouse gas and traps heat 40-70 times more effectively than carbon dioxide. In the South Coast basin, more than 50 percent of human-induced methane emissions come from natural gas pipelines, while landfills contribute 24 percent. Methane emissions from landfills are reduced by AQMD Rule 1150.1 - Control of Gaseous Emissions from Active Landfills. Methane emissions from petroleum sources are reduced by a number of rules in AQMD Regulation XI that control fugitive emissions from petroleum production, refining and distribution.
- **1,1,1-trichloroethane (TCA).** TCA (methyl chloroform) is a solvent and cleaning agent commonly used by manufacturers. It is less destructive on the environment than CFCs or HCFCs, but its continued use will contribute to global warming and ozone depletion. 1,1,1-trichloroethane (TCA) is a synthetic chemical that does not occur naturally in the environment. No TCA is supposed to be manufactured for domestic use in the United States after January 1, 2002 because it affects the ozone layer. TCA had many industrial and household uses, including use as a solvent to dissolve other substances, such as glues and paints; to remove oil or grease from manufactured metal parts; and as an ingredient of household products such as spot cleaners, glues, and aerosol sprays. AQMD regulates this compound as a toxic air contaminant under Rules 1401 and 1402.

The Montreal Protocol on Substances That Deplete the Ozone Layer controls the phase-out of ozone depleting compounds (ODCs). Under this international agreement, several organizations report on the science of ozone depletion, implement projects to help move away from ODCs, and provide a forum for policy discussions. The AQMD supports state, federal and international policies to reduce levels of ozone depleting gases through its Global Warming Policy and rules. Further, AQMD has developed ODC Replacement Guidelines to facilitate transition from ODCs to substances that are the most environmentally benign.

EFFECTS OF AIR POLLUTION ON HEALTH AND WELFARE

The residents of Southern California bear the cost of air pollution by:

- reduced visibility
- increased episodes of respiratory infections and other illnesses
- increased number of days of discomfort
- absent days from work and school
- increased symptoms related to respiratory disease, including asthma
- slowed lung function growth and increased asthma risk in children
- heart disease
- shortened life spans

Polluted air also damages agriculture, the natural environment, and human-made materials. Improving air quality enhances public health and produces economic benefits that more than offset the costs of attaining clean air. The overall strategy for reducing air pollution for criteria pollutants in the South Coast air district is contained in the Air Quality Management Plan (AQMP). The AQMP provides control measures that reduce emissions to attain federal ambient air quality standards by their applicable deadlines. The cost benefit analysis for the plan is conducted as part of the AQMP development. However, not all the health benefits associated with implementing the AQMP can be quantified. Further, the Air Toxic Control Plan amended in 2003 outlines the strategies pursued by the AQMD, CARB, and USEPA to reduce air toxic emissions.

THE ROLE OF FEDERAL, STATE, AND LOCAL AGENCIES TO REDUCE AIR POLLUTION

U.S. Environmental Protection Agency

The U.S. Environmental Protection Agency (USEPA) is responsible for establishing the national ambient air quality standards and enforcing the federal Clean Air Act. This agency also regulates emission sources under the exclusive authority of the federal government, such as aircraft, certain types of ships and locomotives. The USEPA has jurisdiction over emission sources outside state waters (e.g., beyond the outer continental shelf) and establishes various emission standards, including those for

vehicles sold in states other than California. Automobiles sold in California must also meet the often stricter emission standards established by the California Air Resources Board (CARB). For additional information about the USEPA, contact the USEPA's general internet address at www.epa.gov. Information on the programs and activities in USEPA Region IX, which includes California, can be found at www.epa.gov/region9, and additional information on mobile source emissions is available from the Office of Mobile Sources at www.epa.gov/otaq/index.htm.

California Air Resources Board

The CARB became part of the California Environmental Protection Agency (CalEPA) in 1991. The agency is responsible for ensuring implementation of the California Clean Air Act, meeting state requirements of the federal Clean Air Act, and establishing state ambient air quality standards. It is also responsible for setting vehicle emission standards and fuel specifications, and regulating emissions from other sources such as consumer products and certain types of mobile equipment (e.g., lawn & garden equipment, industrial forklifts). The internet address for CalEPA is www.calepa.ca.gov; the internet address for CARB is www.arb.ca.gov.

South Coast Air Quality Management District

Because Southern California has one of the worst air quality problems in the nation, the AQMD was created by the 1977 Lewis Air Quality Management Act. Four county air pollution control agencies were merged into one regional district to better address the issue of improving air quality in Southern California. Under the act, revised and renamed the Lewis-Presley Air Quality Management Act in 1988, the AQMD is the agency principally responsible for comprehensive air pollution control in the South Coast basin. Specifically, the AQMD is responsible for monitoring air quality and planning, implementing, and enforcing programs designed to attain and maintain state and federal ambient air quality standards in the district. Programs developed include air quality rules and regulations that regulate stationary source emissions, including area and point sources and certain mobile source emissions. The AQMD is also responsible for establishing permitting requirements and issuing permits for stationary sources and ensuring that new, modified, or relocated stationary sources do not create net emissions increases. The AQMD enforces air quality rules and regulations through a variety of means, including inspections, educational and training programs, and fines.

The AQMD has jurisdiction over an area of 10,743 square miles, referred to in this document as the South Coast air district. This area includes all of Orange county, all of Los Angeles county except for the Antelope Valley, the non-desert portion of western San Bernardino county, and the western and Coachella Valley portions of Riverside county. The South Coast basin is a sub-region of the district and covers an area of 6,745 square miles. The South Coast basin includes all of Orange county and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties. Figure 1-1 shows the jurisdictional boundaries of the South Coast air district and the South Coast basin.

Both the district and the South Coast basin are surrounded by mountains, which tend to restrict air flow and concentrate pollutants in the valleys or “basins” below. The South Coast basin is almost entirely urban, and its pollution is typically related to dense population and associated area sources, heavy vehicular traffic, and industrial sources. In the Coachella Valley, pollution problems are associated primarily with ozone transport from the South Coast basin and with particulate emissions from heavy construction, travel on paved and unpaved roads, and agriculture.

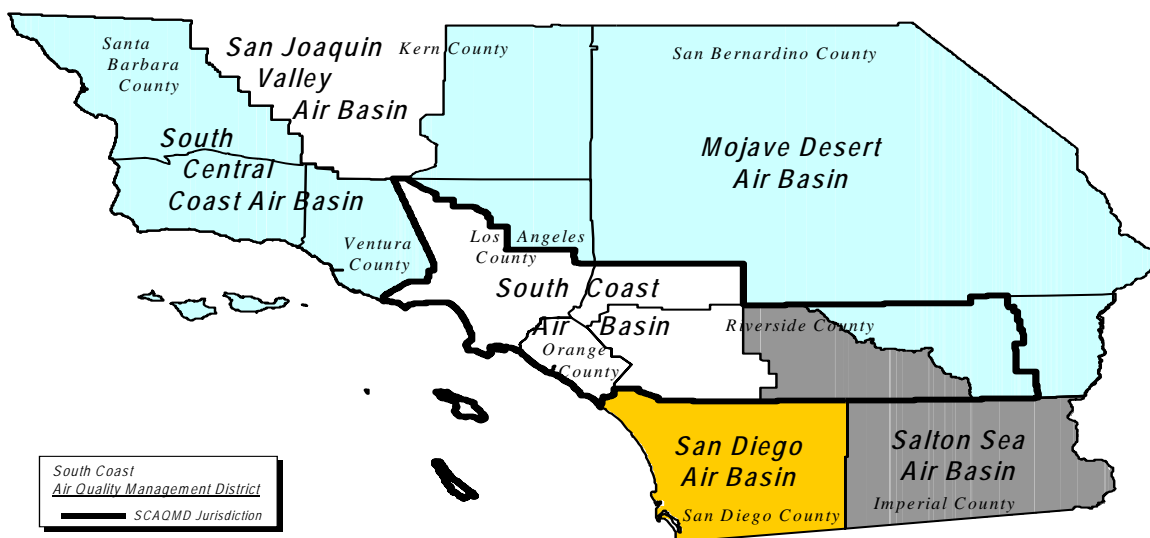


Figure 1-1
South Coast Air Quality Management District

The AQMD is organized according to procedures established by the California Legislature and specified in the Lewis-Presley Air Quality Management Act. The AQMD is organized into three branches. The first branch is the 12-member Governing Board, which is the decision-making body of the AQMD that adopts rules, regulations, and plans, such as the Air Quality Management Plan (AQMP). The Governing Board is comprised of nine elected officials, one county supervisor from each of the four counties in the district and five members representing the cities of each county. Because of its size, Los Angeles county has both an eastern and western cities representative. The three remaining board members are appointed to the board by state elected officials: one is appointed by the governor, another is appointed by the Speaker of the Assembly, and the third is appointed by the state Senate Rules Committee. Several advisory committees review and recommend actions to the Governing Board. For example, the Local Government and Small Business Assistance Advisory Group is made up of local government officials, small business representatives, and members of the general





public. This committee, therefore, offers local governmental agencies the opportunity to comment on the AQMD's rule-making and planning processes.

The second branch of the AQMD is the Hearing Board, which is a quasi-judicial panel authorized to provide relief to regulated facilities from AQMD regulations. Relief from regulations can only occur under specific circumstances, such as emergencies, etc. State law requires that the Hearing Board be appointed by the Governing Board, but the Hearing Board acts independently of the Governing Board. The third branch is management/staff, which is the bulk of the agency and reports to the AQMD Governing Board. This branch includes the divisions responsible for: developing rules and rule amendments; permitting of air pollution sources and rule compliance; planning programs such as the AQMP; air quality monitoring; public outreach and small business assistance; and prosecuting cases of rule violations. Additional information on the AQMD is available at AQMD's internet address - www.aqmd.gov.

Local Governments

Air quality issues in the South Coast air district are addressed through the efforts of federal, state, regional, and local government agencies. These agencies and the legislation that authorizes them to regulate air quality are shown in Figure 1-2. Local governments work in concert with their Councils of Governments and the AQMD to improve air quality through a variety of programs, including regulatory actions, policy making, and education programs. **Local governments have the flexibility to address air quality issues through ordinances, local circulation systems, transportation services, and land use. No other level of government has that authority, including the AQMD.** This document recognizes the vital role of local government policies and programs that are designed to complement and support both local and state air regulations. These policies, particularly in land use, transportation and energy, are essential to achieve state and federal air pollution standards and reduce localized air pollution impacts. For many local governments in the district, the General Plans consolidate air quality related goals, objectives and policies into an optional air quality element. A stand alone air quality element gives direction for sound decision making on air quality-related issues and provides a solid basis to inform the public, as well as developers, about air quality policies to protect public health.

Local governments, which include both city and county agencies, have the ability to control or mitigate air pollution through their police powers and land use decision-making authority. Local ordinances can also provide mechanisms for reducing air pollution. Many cities in the South Coast air district have adopted air quality elements into their General Plans, coordinating these elements with the Air Quality Management Plan (AQMP) and the congestion management program requirements required by state law. Local design standards such as requirements for bicycle racks and bicycle paths may result in reducing motor vehicle trips, and administrative actions can be taken that reduce air pollution, such as creating a telecommunication program that enables employees to work at home. Also, capital improvement programs can fund transportation infrastructure projects such as bus turnouts, energy-efficient street lights, and synchronized traffic signals that contribute to improved air quality.

Government	Legislation	Implementing Agencies
 <p>Federal</p>	Clean Air Act	U.S. Environmental Protection Agency (USEPA)
 <p>State</p>	California Clean Air Act (H&S §§ 39660 et seq.)	California EPA (Cal-EPA) and California Air Resources Board (CARB)
	AB 1807, Air Toxics Contaminants Act	Office of Environmental and Health Hazard Assessments (OEHHA)
 <p>Regional</p>	Assembly Bill 2588, Air Toxics "Hot Spots" Information and Assessment Act of 1987	South Coast Air Quality Management District (AQMD)
	Lewis-Presley Air Quality Management Act	
 <p>Local</p>	Local Ordinances and Air Quality Elements in General Plans (Gov't. 65303) CEQA mitigation measures (PRC §21000, et seq.)	Public Agencies Including Local Governments and County Transportation Commissions

**Figure 1-2
Authorizing Legislation with Air Quality Components**

THE REGIONAL COMPREHENSIVE PLAN

The Regional Comprehensive Plan (RCP) is being developed by SCAG as a useful resource for local governments within the SCAG region to implement regional plans and policy objectives. The goals, policies and strategies of four regional plans are described in the RCP:

- 2004 Regional Transportation Plan
- 2004 Regional Transportation Plan Environmental Impact Report
- 2004 Transportation Improvement Plan
- Regional Growth Strategy ("Compass Growth Vision")

Similar to this Guidance Document for Addressing Air Quality in General Plans and Local Planning, the RCP is an advisory document that lays out steps that local governments and other stakeholders may take to support regional objectives.

THE REGIONAL AIR QUALITY MANAGEMENT PLAN

The AQMD has authority to reduce emissions from stationary sources, some area sources, and certain indirect sources. The AQMD is the lead agency in charge of, with input from the Southern California Association of Governments (SCAG) and CARB, developing the AQMP. The AQMP is a comprehensive plan that includes control strategies for stationary and area sources, as well as for on-road and off-road mobile sources. SCAG has the primary responsibility for providing future growth projections and the development and implementation of transportation control measures. CARB in coordination with federal agencies provides the control element for mobile sources.

ENVIRONMENTAL JUSTICE

California state law defines environmental justice as the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies (California Government Code sec.65040.12). In 1997, AQMD implemented 10 environmental justice initiatives designed to protect district residents' right to live and work in an environment of clean air, free of airborne health threats. The AQMD defines environmental justice as "equitable environmental policymaking and enforcement to protect the health of all residents, regardless of age, culture, ethnicity, gender, race, socioeconomic status, or geographic location, from the health effects of air pollution."

AQMD's environmental justice program was expanded in 2002 to include 23 enhancements that serve as the basis for further outreach and problem-solving activities regarding environmental justice issues. The goal of developing a model air quality element for local government General Plans is one of the program enhancements established to reduce health risks associated with exposure to air pollution. The progress of AQMD's environmental justice program is reviewed each year and a new workplan is established for the coming year. Public input on the workplan is solicited through a series of public consultation meetings. Prior to being adopted by the AQMD Governing Board, environmental justice work plans are reviewed by the Ethnic Community Advisory Group, an ethnically-diverse committee of residents and businesspeople. For an update on AQMD's environmental justice initiatives, visit <http://www.aqmd.gov/ej/index.htm>.

Often, local governments broadly define "environmental justice" in general plans to balance air quality with other environmental, economic, and social objectives. Broad definitions supported by specific goals, objectives and polices prevent possible procedural inequities (e.g., public meeting times that limit attendance by certain groups)

and geographical inequities (e.g., heavy industrial land uses adjacent to certain neighborhoods). California General Plan Guidelines recommend incorporating policies that support environmental justice in all mandatory and optional elements. Local jurisdictions may choose to define “environmental justice” and consolidate all environmental justice policies in an optional environmental justice element. As stated in the California General Plan Guidelines, the definition of environmental justice clearly leads to policies and planning principles that prevent incompatible land uses that pose threats to the health, safety, and welfare of the community. Furthermore, the definition of “environmental justice” and the policies to achieve environmental equity in an air quality element must not conflict with policies in other elements.

FORMAT OF THE DOCUMENT

This guidance document is formatted with six topics that are typically addressed in an air quality element of a general plan. Air quality issues are described as they are related to each topic, and a menu of strategies and suggested policies are listed that will integrate air quality issues into the general plan. Not all suggested policies are pertinent or applicable for all jurisdictions. The severity of local air pollution problems in various regions of the district (e.g., windblown dust or localized TAC concentrations) will influence the number and scope of air pollution-related strategies that jurisdictions consider for adoption in their General Plans.

The six topics discussed in this document are:

- Chapter 2 - Land Use
- Chapter 3 - Transportation
- Chapter 4 - Stationary Sources of Pollution
- Chapter 5 - Reduction of Fugitive Dust Emissions
- Chapter 6 - Energy Conservation
- Chapter 7 - Public Awareness and Education

The State Guidelines closely adhere to statute and case law and rely upon commonly accepted principles of contemporary planning practice. A four-tier format for general plan elements is suggested, using the terms “goal,” “objective,” “policy,” and “implementation measure” as follows:

1. **Goal** - A goal statement expresses an end, not an action.
2. **Objective** - An objective describes a specified end, condition, or state that is an intermediate step toward attaining a goal. It should be achievable and, when possible, measurable and time-specific.
3. **Policy** - A policy statement guides decision-making and indicates a commitment of the local legislative body to a particular course of action. A policy is based on and

helps implement a general plan's objectives. A policy is carried out by implementation measures.

- 4. Implementation Measure** - An implementation measure is an action, procedure, program, or technique that carries out general plan policy. Each policy has at least one corresponding implementation measure.

This guidance document includes a three-tier format (goals, objectives, and policies/strategies) which closely parallels the four-tier format outlined in state guidelines. A number of stakeholders suggested that the "policies/strategies" category is more helpful and less prescriptive, and allows more flexibility to interpret and craft policy statements that are specific to the needs of the local jurisdiction. During the implementation phase, staff will continue to solicit feedback from stakeholders. If necessary, AQMD staff will move toward a four-tier format in the future and consider an additional subcategory of "implementation measures".