Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning

A Reference for Local Governments Within the South Coast Air Quality Management District

This guidance document is prepared by the South Coast Air Quality Management District (AQMD) as a reference for cities and counties within AQMD's jurisdiction. It provides suggested policies that local governments can use to prevent or reduce potential air pollution impacts and protect public health in their General Plans or through local planning. The objective of the guidance document is to facilitate stronger collaboration between local governments and the AQMD to reduce community exposure to source-specific and cumulative air pollution impacts. 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.

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TABLE OF CONTENTS

PREFACE i

CHAPTER 1

INTRODUCTION 1-1
REGULATED AIR POLLUTANTS 1-2
EFFECTS OF AIR POLLUTION ON HEALTH AND WELFARE 1-10
THE ROLE OF FEDERAL, STATE, AND LOCAL AGENCIES TO REDUCE AIR POLLUTION 1-10
THE REGIONAL COMPREHENSIVE PLAN 1-14
THE REGIONAL AIR QUALITY MANAGEMENT PLAN 1-15
ENVIRONMENTAL JUSTICE 1-15
FORMAT OF THE DOCUMENT 1-16

CHAPTER 2

AIR QUALITY ISSUES REGARDING LAND USE 2-1
LOCAL GOVERNMENT SITING CRITERIA FOR SENSITIVE RECEPTORS 2-1
JOB HOUSING BALANCE 2-13
SUGGESTED GOAL, OBJECTIVES AND POLICIES/STRATEGIES RELATED TO LAND USE 2-13

CHAPTER 3

TRANSPORTATION 3-1
CATEGORIES OF MOBILE SOURCE EMISSIONS 3-1
TRANSPORTATION AND INDIRECT SOURCE CONTROL PROGRAMS 3-1
CONGESTION AND TRANSPORTATION SYSTEM MANAGEMENT 3-2
SUGGESTED GOAL, OBJECTIVES AND POLICIES/STRATEGIES 3-5

CHAPTER 4

STATIONARY SOURCES OF AIR POLLUTION 4-1
CATEGORIES OF STATIONARY EMISSION SOURCES 4-1
SUGGESTED GOAL, OBJECTIVES AND POLICIES/STRATEGIES 4-2

CHAPTER 5

REDUCTION OF FUGITIVE DUST 5-1
SUGGESTED GOAL, OBJECTIVES AND POLICIES/STRATEGIES 5-2

CHAPTER 6

ENERGY 6-1
ENERGY CONSERVATION 6-1
GREEN BUILDING OPPORTUNITIES 6-1
PUBLIC FACILITIES AND FLEETS 6-2
SUGGESTED GOAL, OBJECTIVES AND POLICIES/STRATEGIES 6-2

CHAPTER 7

PUBLIC AWARENESS AND EDUCATION 7-1
SUGGESTED GOAL, OBJECTIVES AND POLICIES/STRATEGIES 7-2

REFERENCES R-1

GLOSSARY G-1

APPENDIX A – CITIES AND COUNTIES WITHIN THE SCAQMD THAT HAVE ADOPTED AIR QUALITY ELEMENTS IN GENERAL PLANS & EXAMPLES OF AIR QUALITY ELEMENTS A-1

APPENDIX B - AMBIENT AIR QUALITY STANDARDS B-1

APPENDIX C - HEALTH EFFECTS OF AMBIENT AIR POLLUTANTS C-1

APPENDIX D - COACHELLA VALLEY MODEL DUST CONTROL ORDINANCE D-1

APPENDIX E - FUNDING RESOURCES AVAILABLE TO LOCAL JURISDICTIONS TO SUPPORT THE IMPLEMENTATION OF SUGGESTED POLICIES/STRATEGIES E-1

PREFACE

The South Coast Air Quality Management District (AQMD) environmental justice program is designed to protect the rights of the residents in the South Coast basin to live and work in an environment of clean air, free of airborne health threats. The guiding principle of the program is based on "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." In suggesting enhancements to the AQMD's 2002 environmental justice program, stakeholders proposed the development of a model air quality element for cities and counties within AQMD's jurisdiction that considers the health risks to community residents associated with local government land use planning and decision-making. To that end, the AQMD is making this guidance document available to local governments as a tool to assist them as they develop or update their General Plans and make other planning decisions. The primary users will likely be local government planners within the geographic boundaries of the South Coast air district; however, the ideas, technical issues, and references in the guidance document are also intended for use by private developers, residents, and community organizations. The use of this document by local governments is strictly voluntary. The AQMD recognizes 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.

Neither state or federal law mandates separate air quality elements in General Plans. Similarly, the AQMD does not require that cities or counties include a "stand alone" air quality element in their plans, but we encourage local governments to use the information presented in this guidance document to: (1) help develop a separate air quality element, (2) update their current air quality element or (3) integrate air quality policies in other elements of their General Plans such as Land Use and Circulation. We recognize that each community must address a unique combination of air quality and community development issues in their General Plans; therefore, the suggested goals, objectives and policies/strategies presented in this document will not apply uniformly in every jurisdiction. The format and scope of suggested air pollution policies and strategies for each local jurisdiction should be tailored to be consistent with the structure and content of the existing General Plan. Local jurisdictions have complete discretion to select the appropriate mix of pertinent air quality goals and objectives and determine the level of detail of policies and implementation measures that will effectively reduce air pollution and protect public health in their communities.

The combined implementation of the suggested strategies throughout the region will strengthen the local government partnership with the AQMD to achieve state and federal clean air standards and demonstrate the resolve of cities and counties in the district to provide environmental equity and protect public health. The AQMD will

update this document periodically to make available the most current air quality information, the results of local health effects studies related to air pollution and the state of air pollution control technologies to help local governments update their General Plans and make other planning decisions.

CHAPTER 1
INTRODUCTION

- REGULATED AIR POLLUTANTS
- EFFECTS OF AIR POLLUTION ON HEALTH AND WELFARE
- THE ROLE OF FEDERAL, STATE, AND LOCAL AGENCIES TO REDUCE AIR POLLUTION
- THE REGIONAL COMPREHENSIVE PLAN
- THE REGIONAL AIR QUALITY MANAGEMENT PLAN
- ENVIRONMENTAL JUSTICE
- FORMAT OF THE DOCUMENT

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 (PM_{10} 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 (O_3)
- nitrogen dioxide (NO_2)
- carbon monoxide (CO)
- sulfur dioxide (SO_2)
- lead (Pb)
- particulate matter (PM_{10} 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 (NO_2) 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 NO_2, creating the mixture of NO and NO_2 commonly called NO_x. NO_2 acts as an acute irritant and, in equal concentrations, is more injurious than NO. At atmospheric concentrations, however, NO_2 is only potentially irritating. There is some indication of a relationship between NO_2 and chronic pulmonary fibrosis. Some increase in bronchitis in young children has also been observed at concentrations below 0.3 parts per million (ppm). NO_2 absorbs blue light which results in a brownish red cast to the atmosphere and reduced visibility. Although NO_2 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 O_3 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 (SO_2) 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 SO_2. Though SO_2 concentrations have been reduced to levels well below state and federal standards, further reductions in SO_2 emissions are needed because SO_2 is a precursor to sulfate and PM_{10}. The South Coast basin is considered a SO_2 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 PM_{10} 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 of 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

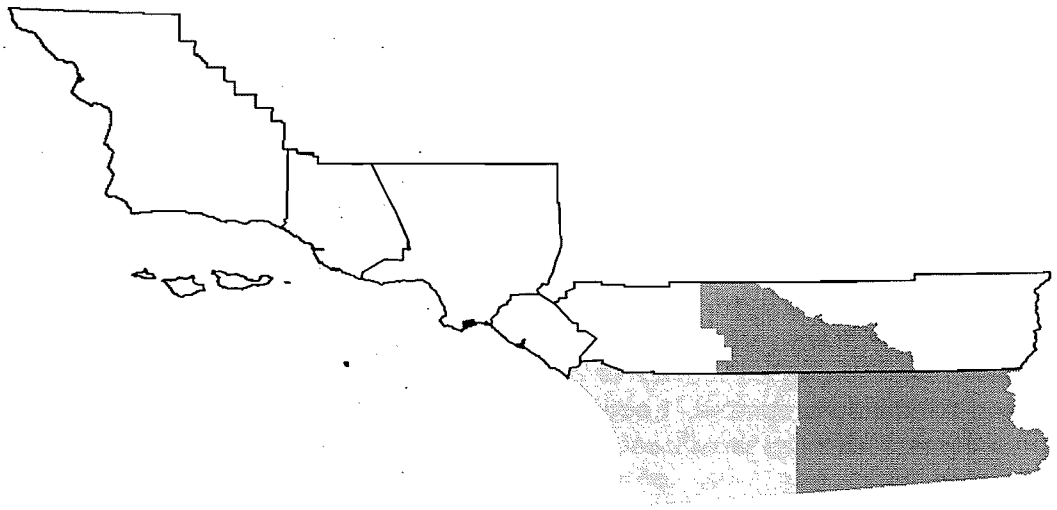
The CARB became part of the California Environmental Protection Agency (CalEPA) in 1991. The agency is responsible for ensuring implementation of the California Clean Air Act, meeting state requirements of the federal Clean Air Act, and establishing state ambient air quality standards. It is also responsible 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.



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 polices 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.

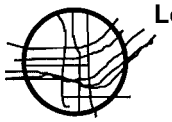
Government	Legislation	Implementing Agencies
Federal	Clean Air Act	U.S. Environmental Protection Agency (USEPA)
State	California Clean Air Act (H&S §§ 39660 et seq.)	California EPA (Cal-EPA) and California Air Resources Board (CARB)
	AB 1807, Air Toxics Contaminants Act	Office of Environmental and Health Hazard Assessments (OEHHA)
Regional	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	
Local 	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".

CHAPTER 2
AIR QUALITY ISSUES REGARDING LAND USE

- LOCAL GOVERNMENT SITING CRITERIA FOR SENSITIVE RECEPTORS
- JOB-HOUSING BALANCE
- SUGGESTED GOAL, OBJECTIVES AND POLICIES/STRATEGIES RELATED TO LAND USE

AIR QUALITY ISSUES REGARDING LAND USE

Local government land use authority in planning, zoning, and permitting can be a very effective tool to minimize air pollutant emissions and associated health risks. However, it is important to recognize that traditional assumptions about planning and zoning compatibility to protect the public may not always eliminate adverse health impacts of air pollution. While 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, some projects being considered by local land use decision-makers may comply with zoning and air pollution control requirements but still result in adverse health impacts on nearby sensitive receptors. These health impacts may result from emissions released at a single site, along a transportation corridor or a combination of co-located air pollution sources in a community. For example, the co-location of residential and commercial zones often minimize transportation-related emissions, but in some situations this mixed land use may also increase health risks if commercial facilities that emit toxic chemicals are over concentrated. While mixed-use zoning offers economic, social, and environmental benefits compared to single-use zoning, this chapter describes certain industrial, commercial and transportation uses that may pose health concerns with residences, schools, and other sensitive sites. This document introduces land use related policies that rely on design and distance parameters to minimize emissions and lower potential health risk.

LOCAL GOVERNMENT SITING CONSIDERATIONS FOR SENSITIVE RECEPTORS

There is a strong connection between health risk and the proximity of the source of air pollution. Local jurisdictions have the responsibility for determining land use compatibility for sensitive receptors. A sensitive receptor is a person in the population who is particularly susceptible to health effects due to exposure to an air contaminant. The following are land uses (sensitive sites) where sensitive receptors are typically located:

- schools, playgrounds and childcare centers
- long-term health care facilities
- rehabilitation centers
- convalescent centers
- hospitals
- retirement homes
- residences

Facilities and Operations That Emit Odors and Dust

Both the AQMD and local governments receive complaints about dust and offensive odors. Odors and dust are air pollutants that can have negative health impacts. While

almost any source may emit objectionable odors, some land uses will be more likely to produce odors or dust because of their operation. The types of facilities or operations that are prone to generate odors, and dust, and other air pollutants can be identified from complaints received by the AQMD (Table 2-1). While AQMD records indicate these facilities have the potential to emit odor or dust that may impact sensitive receptors, individual equipment and operations within each source category do not necessarily generate dust or odor. Special care needs to be given to the initial siting and design of operations and facilities listed in Table 2-1. Assessing potential impacts depends on a number of variables such as wind speed and direction, design features of the proposed facility such as stack height, and the physical distance from the source and the sensitive receptors. Local governments should identify both new projects that have a probability of pollution-related complaints and new developments that may be affected by existing upwind sources. Ideally, potential odor and dust emissions from new projects should be identified and evaluated while the project is still in its initial design phase. This early effort could provide an opportunity to change the project design to minimize or eliminate emissions before the facility becomes operational. Potential odor and dust sources that can be identified and mitigated before construction of a project begins will minimize health impacts and enforcement problems. Local governments are advised to contact the AQMD's Office of Engineering and Compliance to determine if complaints have been filed by property owners or occupants in the general vicinity of a proposed project site to help evaluate the potential for dust or odor complaints.

Table 2-1

Sources of Odor and Dust Complaints Received by the AQMD

Sources of Odors	Sources of Dust
Agriculture (farming and livestock)	Agricultural (Land Tilling)
Chemical Plants	Asphalt and Cement Plants
Composting Operations	Auto Body Facilities
Dairies	Construction Activities
Fiberglass Molding	Diesel Engines/Vehicles
Landfills	Composting Operations
Refineries	Fertilizer Operations
Rendering Plants	Fiberglass Molding
Rail Yards	Furniture Manufacturing - Sawdust
Wastewater Treatment Plant	Landfills and Transfer Stations
	Refineries
	Roofing Operations
	Rubber Manufacturing
	Sand and Gravel Operations
	Sandblasting
	Silk Screening
	Wood dust

Toxic Air Contaminants

Sensitive receptors (and the facilities that house them) in proximity to sources of air pollutants that emit TACs are of particular concern. Exposure to TACs can increase the risk of contracting cancer or result in adverse non-cancer health effects. Non-cancer health risks associated with TAC exposure include birth defects and other reproductive damage, neurological disorders, and damage to the respiratory system. A comprehensive monitoring study of TACs was initiated as part of AQMD's environmental justice program. The Multiple Air Toxics Exposure Study (MATES-II) included fixed sites characterizing neighborhood-scale conditions and a complementary microscale study to sample potential localized influences of toxic-emitting sources near residential neighborhoods. Inventories of TACs were utilized in computer simulation models to depict toxic risks for the entire South Coast basin. The MATES-II project represents one of the most comprehensive air toxics monitoring programs ever conducted in a major urban area in the country, and it has been recognized as a model program. Findings from the study revealed the following:

- Average cancer risk from ambient measurements in the South Coast basin was found to be 1400 in a million;
- Diesel exhaust is responsible for about 70 percent of the total cancer risk from air pollution;
- Emissions from mobile sources -- including cars and trucks as well as ships, trains and planes -- account for about 90 percent of the cancer risk. Emissions from businesses and industry are responsible for the remaining 10 percent; and
- The highest cancer risk occurs in south Los Angeles county -- including the port area -- and along major freeways.

In 2005, the AQMD plans to release the results of another intensive one-year study that examined current levels of cancer-causing TACs and the risk they pose to district residents. This study will help gauge the effectiveness of current regulations and serve as a vital tool in helping shape future air quality and environmental justice policies. MATES-III will monitor 21 TACs and four other substances at 10 sites across the Los Angeles basin. The AQMD will use mobile monitoring stations to sample at neighborhood sites near toxic emission sources or in areas where community members are concerned about health risks from air pollution. Such neighborhood sites could be near airports, rail yards, warehouses, landfills, high-volume vehicle traffic, or multiple commercial or industrial facilities. Sampling at each neighborhood site lasts for up to two months. The goal of MATES-III is to update TAC levels and toxic emission inventories, determine the cancer and non-cancer health risk from air toxics across the district. Also, the study will investigate potential toxic "hot spots" in local communities.

The potential impacts of new facilities on sensitive sites will depend on a variety of factors including the amount and toxicity of pollutants emitted, the type of air pollution control equipment at the facility, design features of the facility, the distance from the

source of emissions to the sensitive receptor, and local meteorology. All these factors should be carefully evaluated when siting a source of air pollution. Typically, the siting process followed by land use agencies to avoid the location of sensitive sites (e.g., residences, health clinics, etc.) near sources of air pollution does not involve the AQMD. The potential for public health impacts remains unchanged when siting sensitive receptors near a pollution source or a pollution source near a sensitive receptor. Therefore, local policies should allow for a thorough evaluation of the air quality impacts for both scenarios.

Where possible, CARB recommends a minimum separation between new sensitive land uses and the following eight categories of existing sources (Table 1-1 in CARB's Proposed Air Quality and Land Use Handbook: A Community Health Perspective. March 2005, or subsequent versions adopted by CARB):

- high-traffic freeways and roads
- distribution centers
- rail yards
- ports
- refineries
- chrome plating facilities
- perchloroethylene dry cleaners
- large gasoline stations

It is recommended that the AQMD be consulted to obtain facility-specific emissions information and accepted assessment methods for determining relative exposure and health risk for proposed projects.

Recent studies have found an increased incidence of adverse effects among those who live near busy roadways; these include increased respiratory disease and increased mortality (Wilhelm, M., et al 2003; Kim, J. et al 2004). These studies found that residential proximity to traffic was associated with increased risk of low birth weight, increased medical visits for asthma and increased respiratory symptoms in children. Studies conducted near freeways in Southern California show that traffic emissions, such as carbon monoxide, ultra-fine particulates, and black carbon (soot) are several times higher next to freeways than the background concentrations. These concentrations fell to lower levels with increasing distance from the roadway, decreasing about 60-80 percent within 100 meters (Zhu, Yifang, et al, 2002).

Recent results from the Children's Health Study have shown strong evidence of adverse effects in children exposed to ambient levels of traffic-related pollutants. This study followed children in 12 communities in Southern California from 4th grade through 12th grade (McConnell, K., et al, 2002). Children in communities with high levels of NOx, $PM_{2.5}$, acid vapors, and elemental carbon showed reduced lung function growth over the study period. Additionally, a higher level of asthma was found in the children that lived nearest to busy roadways. In a report prepared for CARB, researchers concluded that the current levels of ambient air pollution in Southern California are associated with

clinically important chronic health effects that have substantial health and economic impacts (Peters, 2004).

The primary authority for siting public schools rests with local school districts which are the designated "lead agencies" for the CEQA environmental analyses. The California Education Code requires public school districts to notify the local planning agency when siting new public schools and the planning agency to determine if the proposed site conforms with the General Plan. If the proposed school is within 500 feet of the edge of a freeway or traffic corridor that has specified minimum average daily traffic counts, the school district is required to determine through specified risk assessment and air dispersion modeling that neither short-term nor long-term exposure poses significant heath risks to pupils. Both the California Education Code section 17213 and the California Public Resources Code section 21151.8 require school districts to consult with the AQMD when preparing the environmental assessment. The AQMD verifies all permitted and non-permitted sources of air pollution that might significantly affect health have been identified and evaluated.

Generally, cancer risk will drop off with distance from a ground level pollution source, such as a freeway. Freeways and busy traffic corridors are defined as traffic volume of over 100,000 vehicles per day in urban areas and 50,000 vehicles per day in rural areas (Education Code Section 17312). CARB studies show that air pollution levels can be significantly higher within 500 feet (150 meters) of freeways or busy traffic corridors and then diminish rapidly. Actual concentration of diesel particulate matter will vary at a particular location depending on traffic volume, vehicle mix, prevailing winds and other variables. The decline in the relative concentration of diesel particulate matter as one moves away from the edge of a freeway is illustrated Figure 2-1. These data have been normalized to a receptor located 20 meters from the edge of freeway (i.e., at a distance of 20 m, the receptor is exposed to 100 percent of the diesel particulate matter emissions from the freeway). A downwind distance of 328 feet (100 m) will reduce cancer risk by over 60 percent. If the physical downwind distance is increased to 984 feet (300 m), the relative concentration is reduced over 80 percent.

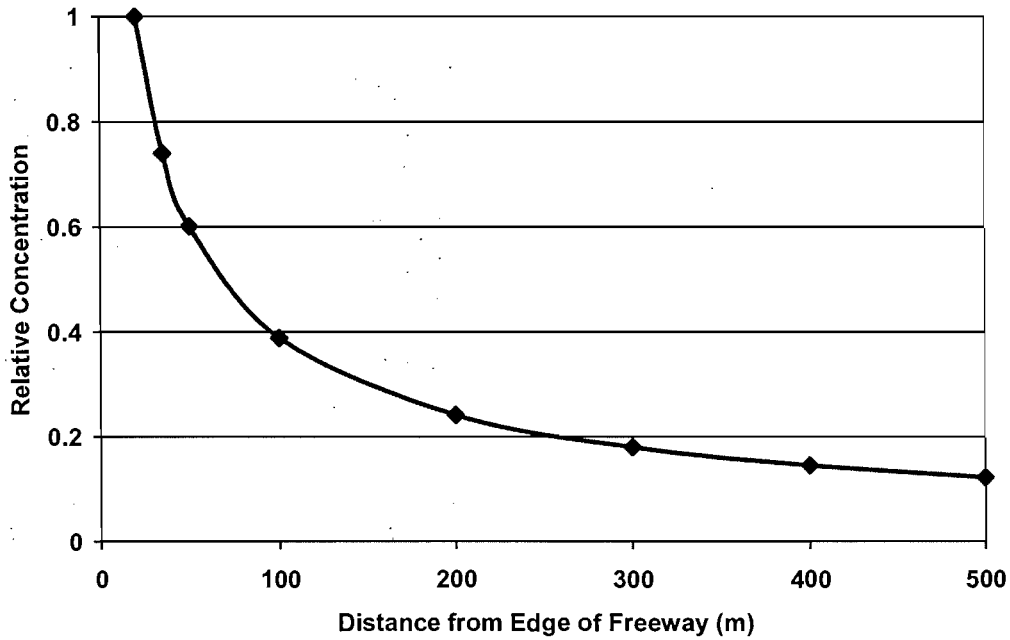


Figure 2-1

Relative Concentration of Diesel Particulate Matter in Relation to the Distance from The Edge of a Freeway

Source: South Coast Air Quality Management District. Adapted from the California Air Resources Board's Diesel Risk Reduction Plan.

A comparison of total cancer risk and cancer risk from diesel particulate matter emissions in rural and urban areas shows that cancer risk associated with elevated levels of diesel particulate both decrease rapidly within the first 100 – 150 meters from the edge of a roadway (Table 2-2). Estimated cancer risk from diesel particulate matter along rural and urban roadways is decreased approximately 68 percent at a distance 150 m (492 ft) from the edge of the roadway. Clearly, these data demonstrate that a minimum distance that separates sources of diesel emissions from nearby receptors is effective in reducing potential cancer risk. The AQMD recognizes that physical separation of the receptors from the pollution sources is not always reasonable or feasible particularly in mature communities. For example, in southern Los Angeles county a sequence of land use decisions in urban areas allowed freeway construction through existing neighborhoods.

Table 2-2

Cancer Risks from Diesel Particulate Matter at the Edge of Roadways in Rural and Urban Areas

Distance from Edge of Roadway (meters)	Diesel Particulate Matter Cancer Risk (in one million)		Total Cancer Risk (in one million)*	
	Rural	Urban	Rural*	Urban*
20 m	475	890	589	1104
150 m	151	277	187	343
500 m	86	159	107	197

Source: South Coast Air Quality Management District. Adapted from the California Air Resources Board's Diesel Risk Reduction Plan.

*To account for gasoline vehicle emissions, the diesel PM risk was multiplied by 1.24. This represents the relative risk contribution from benzene, 1, 3 butadiene, formaldehyde, and acetaldehyde on a basin-wide basis. It is assumed that the vast majority of benzene, 1, 3 butadiene, formaldehyde, and acetaldehyde emissions come from on-road gasoline vehicles.

The AQMD provides guidance for analyzing cancer risks from diesel particulate matter from mobile sources at facilities such as truck stops and warehouse distribution centers in the document titled Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis. This document may be downloaded at http://www.aqmd.gov/ceqa/hdbk.html. This guidance describes analysis of potential cancer risks associated with diesel particulates from truck idling and movement (such as truck stops, warehouse and distribution centers, or transit centers), ship hotelling at ports, and train idling. It is suggested that projects with diesel-powered mobile sources use this health risk guidance document to quantify potential cancer risks from the diesel particulate emissions.

Projects that incorporate transit nodes may include a range of multiple services ranging from a bus or light rail stop to a combination of services that may include bus, shuttles, light and heavy rail systems. The concept of a "clean" transit node refers to transit services that predominately operate with zero emission vehicles (e.g., electric light rail), clean fuel vehicles (e.g., compressed natural gas or hydrogen), or vehicles powered with low-emission engines (e.g., California certified Super Ultra Low Emissions Vehicles). Projects that emphasize "clean" transit nodes not only minimize VMT, but also reduce the potential health impacts associated with transit-related emissions on individuals living near transit services.

Current USEPA regulations establish fuel registration and formulation requirements. All diesel fuels and all additives for on-road motor vehicles are required to be registered with the USEPA, and all new diesel-fueled on-road and off-road engines and vehicles sold in California are required to meet both federal and state emission certification requirements. In addition, the Carl Moyer Program, administered by CARB and local air

districts, is a clean engine incentive program that incentivizes projects that substantially reduce emissions of oxides of nitrogen (NOx) and fine particulate matter (PM) from heavy-duty diesel engines. Funds are distributed to project proponents through the AQMD to incentivize cost-effective projects. Funds, in the form of grants for private companies, public agencies, or individuals operating heavy-duty diesel engines, cover an incremental portion of the cost of cleaner on-road, off-road, marine, locomotive, and agricultural irrigation pump engines. This framework is also used to award grants for other equipment and for retrofitting or repowering existing engines.

The CARB Diesel Risk Reduction Plan proposes a three-pronged approach that would require use of low-sulfur diesel fuel; retrofitting existing engines with PM filters; and nearly a 90 percent reduction of PM emissions from all new diesel engines and vehicles. A number of adopted and proposed state regulations that will reduce diesel emissions target the following source categories: Heavy-Duty Public Fleets and Private Utilities; Cargo Handling Equipment; Non-Urban Transit Buses; Harbor Craft; Truck Idling from Sleeper Cabs; Off Road and Private On-Road Fleets; Agriculture Equipment; and Ships.

Further, the AQMD has adopted fleet rules that will gradually shift public agencies to lower emissions and alternative fuel vehicles whenever a fleet operator with 15 or more vehicles replaces or purchases new vehicles.

Rule 1186.1 Less – polluting sweepers
Rule 1191 Clean On-Road Light and Medium-Duty Public Fleet Vehicle
Rule 1192 Clean On-Road Transit Buses
Rule 1193 Clean On-Road Residential and Commercial Refuse Collection Vehicles
Rule 1194 Commercial Airport Ground Access Vehicles
Rule 1195 Clean On-Road School Buses
Rule 1196 Clean On-Road Heavy-duty Public Fleet Vehicles

Air regulatory agencies have collaborated closely with regulated industries, refineries and diesel vehicle manufacturers to establish cleaner fuel specifications and engine technologies. Although AQMD's fleet rules have been challenged, CARB is moving forward with its rulemaking to facilitate the implementation of fleet rules in the South Coast Air Basin that will result in significant emission reductions. In addition, state and federal requirements are the cornerstone of the clean air strategy to clean up diesel pollution in the South Coast district. Combined, the current and planned regulatory efforts by USEPA, CARB and AQMD are expected to substantially lower the average level of diesel emissions per vehicle. CARB or AQMD staff can be contacted to obtain additional information on the current status of rule development.

The goals established by the CARB plan call for a statewide reduction in diesel particulate emissions of 75 percent by 2010 and 85 percent by 2020. AQMD' s 2004 addendum to the 2000 Air Toxics Control Plan indicates that full implementation of the 2003 AQMP, including CARB's measures to reduce diesel particulate matter, would reduce basin-wide toxic-weighted emissions by 50 percent. While there continues to be

an overall reduction in air pollution for the region, the emission reductions expected from cleaner engine standards that employ new control technologies often require a lengthy "fleet turnover" time to be effective. Given projections for future growth and additional vehicles that will utilize the regions transportation corridors, there are no guarantees that localized cancer risk and non-cancer impacts will diminish rapidly in the short term or adequately in the long run. Cities are encouraged to join the AQMD in a proactive approach to address existing health concerns in their communities identified in the AQMD's Multiple Air Toxics Emissions Study (MATES II). Policies and strategies suggested in this guidance document can offer a near-term remedy to lower cancer risk from exposure to air pollution, and at the same time, provide preventive measures that protect health over the long-term planning horizon of the general plan.

TACs from stationary sources are of particular concern with regard to sensitive receptors. For example, state law requires school districts to consider the impact of siting a new school close to existing facilities that emit TACs. This same principle should be applied in siting other sensitive sites such as retirement homes and hospitals. AQMD serves as a clearinghouse for publicly available information on stationary sources that emit TACs and associated public health risks. This information is compiled from documentation required of facilities that emit TACs by AQMD Rules 1401 & 1402, and Assembly Bill (AB) 2588 Air Toxics Hot Spots Program (H&SC §§ 39660 et seq.). Toxic risk assessments are routinely included in CEQA evaluations performed by the local governments in its land use decisions

Jurisdictions may conduct a current inventory of all major sources of air pollution within a specified radius of the proposed sensitive site. Examples of facilities with the potential to emit TACs that could pose a health risk are shown in Table 2-3. Also, AQMD staff are available to assist local governments in identifying sources of TACs within their jurisdictions and evaluating potential health risk from TAC exposure. Local governments may contact the AQMD to obtain recommended analytical methods.

Existing land use conflicts are best addressed on an individual basis. AQMD is available to assist cities and counties in evaluating local government options and strategies for minimizing existing pollution exposure problems. Options may include relocation, recycling, redevelopment, rezoning, process changes, incentive programs, and other types of measures.

Table 2-3

Examples of Facilities That Emit Toxic Air Contaminants

Categories	Facility Type	Air Pollutants of Concern
Commercial		
	Perchloroethylene Dry Cleaners[1]	Perchloroethylene
	Chrome Platers/Chrome Spraying Operations	Hexavalent Chromium
	Gas Stations	Benzene
	Auto Body Shops	Metals, Solvents
	Furniture Repair	Solvents[2], Methylene Chloride
	Film Processing Services	Solvents, Perchloroethylene
	Cold Storage Distribution Centers, Warehouses	Diesel Particulate Matter
	Printing Shops	Solvents
	Diesel Engines	Diesel Particulate Matter
Industrial		
	Manufacturers	Solvents, Metals
	Metal Platers, Welders, Metal Spray (flame spray) Operations	Hexavalent Chromium, Nickel, Metals
	Chemical Producers	Solvents, Metals
	Gasoline Refineries	Benzene, Solvents, Metals, PAHs
	Furniture Manufacturers	Solvents
	Shipbuilding and Repair	Hexavalent Chromium and other metals, Solvents
	Hazardous Waste Incinerators	Dioxin, Solvents, Metals
	Power Plants	Benzene, Formaldehyde, Particulate Matter
	Research and Development Facilities	Solvents, Metals, etc.
	Freight Distribution Centers	Diesel Particulate Matter
Public		
	Landfills	Benzene, Vinyl Chloride, Diesel Particulate Matter
	Waste Water Treatment Plants	Hydrogen Sulfide
	Medical Waste Incinerators	Dioxin, Benzene, PAH, PCBs, 1,3-Butadiene
	Recycling, Garbage Transfer Stations	Diesel Particulate Matter
	Municipal Incinerators	Dioxin, Benzene, PAH, PCBs, 1,3-Butadiene
Transportation		
	Port Facilities	Diesel Particulate Matter, Methyl Bromide
	Airports	Benzene, Formaldehyde
	Rail Yards (diesel locomotives)	Diesel Particulate Matter
	Rail Corridors	Diesel Particulate Matter
	Intermodal Facilities	Diesel Particulate Matter
	Truck Stops	Diesel Particulate Matter
	Freeways and Roadways	Diesel Particulate Matter, Benzene, 1,3-Butadiene, Formaldehyde
Agricultural Operations		
	Farming Operations	Diesel Particulate Matter, VOCs, NOx, PM_{10}, CO, SOx, Pesticides
	Livestock and Dairy Operations	Ammonia, VOCs, PM_{10}

Source: Adapted from the Proposed Air Quality and Land Use Handbook: A Community Health Perspective. CARB, March 2005.

[1]Non-perc alternatives (e.g. wet cleaning and CO_2 cleaning) may eliminate TAC emissions.

[2]Many, but not all solvents contain TACs.

Mapping Sources of Toxic Air Contaminants. Land use/zoning maps should be utilized to identify the location of facilities and transit corridors that are potential sources of TACs and the locations of sensitive receptors. An internet-based mapping tool is available from CARB that allows local planners to view maps showing the locations of air pollution sources. The Community Health Air Pollution Information System (CHAPIS) was developed by ARB and the State's 35 local air districts. The AQMD provides the data for facilities in its jurisdiction. Facilities that emit 10 or more tons per year of nitrogen oxides, sulfur oxides, carbon monoxide, PM_{10}, or reactive organic gases are included in the database. AQMD facilities that emit TACs are being phased in by categories. The CHAPIS database includes chemical manufacturing, metal fabrication, and aerospace/electronics manufacturing facilities if they have conducted health risk assessments under California's Air Toxics "Hot Spots" program. The remaining "Hot Spot" facilities and other industries and smaller businesses, such as gas stations and dry cleaners will eventually be added. An example of a CHAPIS map for the Central Los Angeles - Port region is shown in Figure 2-2.

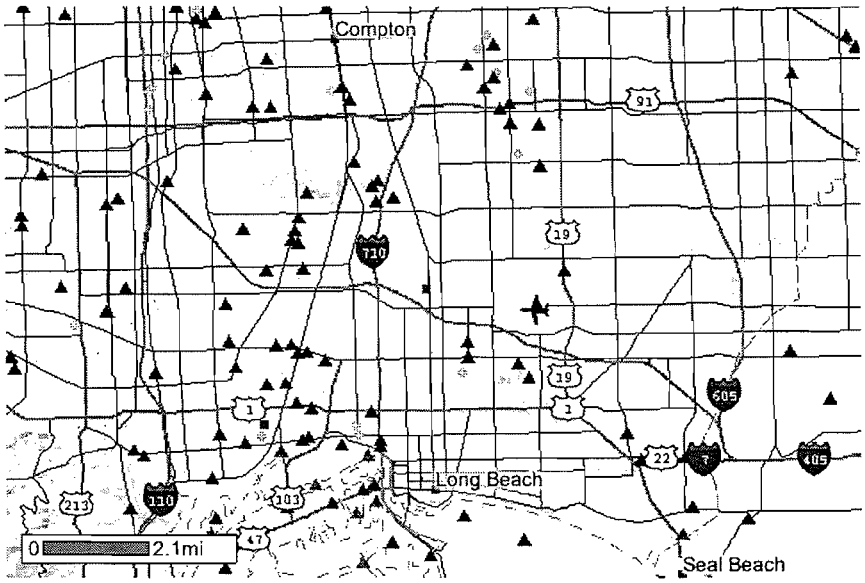


Figure 2-2
Example of a CHAPIS Map of Central Los Angeles Port Regions

CHAPIS maps may answer questions such as:

- What are the major sources of air pollution within several miles from a residence?
- What are the relative contributions of mobile and stationary source emissions?
- What are major sources of air pollution near schools?
- What air pollutants are emitted by a particular facility or from mobile sources?

While the CHAPIS information can serve as an indicator of local levels of air pollution, it is the exposure to emissions that influences health effects. Exposure is the amount of pollution that someone actually breathes or otherwise ingests. The degree of exposure varies with the distance from the source and the activities of the individual. Exposure is also dependent on how the emissions are released and dispersed into the atmosphere. Exposure to air pollutants can also occur from indoor sources such as cooking, cleaning, and smoking. Health risk, as it is related to exposure to air contaminants is influenced by the number of air pollutants an individual is exposed to and the relative toxicity of those pollutants. The air pollutant emission information contained in CHAPIS is provided for general informational purposes. This mapping tool does not address the contribution of indoor sources of air pollution, and it does not show exposure levels or the health risks associated with the pollutants and sources it tracks. Not all stationary source facilities that are required to be permitted by the AQMD can be identified by CHAPIS at this time. Also, there can be a lag time between when the emissions occurred and the reporting of the information to the AQMD or CARB emission inventory databases. The AQMD should be consulted for the most recent emissions data and for information on facilities that may not appear on CHAPIS maps.

Siting issues, with respect to sensitive receptors need to be identified early in the review process, preferably before projects are formally submitted to the public agencies' planning boards. The following three air quality questions related to land use compatibility should be considered for each project in close proximity to sensitive receptors:

- Will a sensitive receptor be located downwind from an existing source of dust or odors (Table 2-1)?
- Will a sensitive receptor be located in close proximity to a congested roadway or an existing facility that emits TACs (Table 2-3)?
- Is adequate separation provided, or are there established siting criteria to minimize exposure and health risk between sensitive receptors and sources of air pollution (see Table 1-1 in CARB's Draft Air Quality and Land Use Handbook: A Community Health Perspective. February 2005)?

Cities and counties could establish policies that provide for the location of sensitive sites and sources of air pollution in a manner that seeks to avoid the over-concentration of these facilities near sensitive sites. A number of strategies that may be employed to address over-concentration of emission sources and the cumulative impacts of the combined emissions include:

- physical separation between the source and the sensitive site
- design features at the source to minimize air pollution emissions
- siting, permitting and zoning policies
- capping cumulative impacts of various pollution sources

- changing the land use designations in areas where there are significant cumulative impacts

"Cumulative" air quality analyses describe health and nuisance impacts related to cumulative emissions from sources that individually comply with AQMD, state, and federal rules. For example, in local jurisdictions where there are neighborhoods near a relatively large number of industrial facilities or near heavy cross-town traffic, there is concern that there may be accumulated effects of numerous emission sources operating near residences, schools, or other sensitive sites. Cumulative impacts may be mitigated through siting and zoning policies that consider, where feasible, appropriate setbacks and buffer zones to disperse the air pollutants before they reach sensitive receptors. When physical separation of sensitive receptors from sources of air pollution is not a feasible option, particularly in older well-developed communities, the design features of a specific facility or project (e.g., barriers and walls, landscaping, stack height, and ventilation systems) should be evaluated as an alternative to physical land separation.

JOB-HOUSING BALANCE

Residents in urban areas in the South Coast basin have become increasingly concerned with increased traffic congestion and the failure of the region to achieve state and federal clean air standards. The concept of a "jobs/housing balance" is based on the premise that the number of vehicle trips and vehicle miles traveled (VMT) can be reduced when sufficient jobs are available locally to balance the employment demands of the community, and when commercial services are convenient to residential areas. Achieving a good balance requires planning the location and nature of jobs and housing in order to encourage a reduction in vehicle trips and VMT while increasing mass transit ridership and alternative modes of transportation, such as bicycles and walking. The AQMD and the SCAG both embrace jobs/housing balance as a viable tool available to local governments to reduce air pollution.

SUGGESTED GOAL, OBJECTIVES AND POLICIES/STRATEGIES RELATED TO LAND USE

Goal 1 **Land use policies that address the relationship between land use and air quality to protect public health and minimize impacts on existing land use patterns and future land use development**

Objective 1.1 **Through land use plans provide heightened consideration of policies and strategies to minimize exposure of sensitive receptors and sites (e.g., schools, hospitals, and residences) to health risks related to air pollution.**

Suggested Policies/Strategies to Protect Sensitive Receptors from Health Risks Related to Air Pollution:

AQ 1.1.1 Develop mapping and inventory resources to identify sensitive receptors and sources of air pollution.

AQ 1.1.2 Consider environmental justice issues as they are related to potential health impacts associated with air pollution and ensure that all land use decisions, including enforcement actions, are made in an equitable fashion to protect residents, regardless of age, culture, ethnicity, gender, race, socioeconomic status, or geographic location from the health effects of air pollution.

AQ 1.1.3 Encourage site plan designs to provide the appropriate set-backs and/or design features that reduce TAC at the source.

AQ 1.1.4 Encourage the applicants for sensitive land uses (e.g., residences, schools, daycare centers, playgrounds and medical facilities) to incorporate design features (e.g., pollution prevention, pollution reduction, barriers, landscaping, ventilation systems, or other measures) in the planning process to minimize the potential impacts of air pollution on sensitive receptors.

AQ 1.1.5 Promote and support mixed-use land patterns that allow the integration of retail, office, institutional and residential uses. Consult with the AQMD when siting new facilities with dust, odors or TAC emissions to avoid siting those facilities near sensitive receptors and avoid siting sensitive receptors near sources of air pollution.

AQ 1.1.6 Consider cumulative air quality impacts from both existing and new projects when making siting decisions.

AQ 1.1.7 Facilitate communication among residents, businesses and the AQMD to quickly resolve air pollution nuisance complaints. Distribute information to advise residents on how to register a complaint with AQMD (AQMD's "Cut Smog" program).

AQ 1.1.8 The owners of new developments that have the potential to emit air pollutants that would impact sensitive receptors are required, during the early stages of the business license, development or conditional use permit processes, to notify residents and businesses adjacent to the proposed site prior to starting construction. However, potential business and resident occupants newly locating near sites that may impact sensitive receptors should be encouraged to inquire through their local government or the AQMD about the air quality emissions from such sites.

AQ 1.1.9 Consider all feasible alternatives to minimize emissions from diesel equipment (e.g., trucks, construction equipment, and generators).*

AQ 1.1.10 Actively participate in decisions on the siting or expansion of facilities or land uses (e.g. freeway expansions), to ensure the inclusion of air quality

mitigation measures.

AQ 1.1.11 Where decisions on land use may result in emissions of air contaminants that pose significant health risks, consider options, including possible relocation, recycling, redevelopment, rezoning, process changes, incentive programs, and other types of measures.

Objective 1.2 Reduce mobile source emissions by reducing vehicle trips and vehicle miles traveled associated with land use patterns.

Suggested Policies/Strategies to reduce vehicle miles traveled:

AQ 1.2.1 For planned high density and mixed use developments, project proponents should consult with the local transit agency and incorporate all appropriate and feasible transit amenities into the plans.

AQ 1.2.2 Establish a Mixed-Use Zoning District that offers incentives to mixed use developments.

AQ 1.2.3 Encourage through the land use entitlement process or business regulation, design of commercial and residential areas to foster pedestrian circulation.

AQ 1.2.4 Adopt and implement zoning codes that encourage community centers, telecommuting programs, and home-based businesses.*

AQ 1.2.5 Create opportunities to receive State transportation funds by adopting incentives (e.g., an expedited review process) for planning and implementing infill development projects within urbanized areas that include job centers and clean transportation nodes (e.g., preparation of "transit village" plans).

AQ 1.2.6 Collaborate with local, regional, state and federal agencies to create incentives for "job/housing opportunity zones," to promote housing in job-rich areas and jobs in housing-rich areas.

AQ 1.2.7 Design safe and efficient vehicle access to commercial land uses from arterial streets to ensure efficient vehicular ingress and egress.

AQ 1.2.8 Locate public facilities and services so that they further enhance job creation opportunities.

AQ 1.2.9 Ensure that development projects and zoning codes create the maximum opportunity for the use of bicycles as an alternative work transportation mode.*

AQ 1.2.10 Encourage "walkable neighborhoods" by siting parks and community centers near residential areas.*

Objective 1.3 Reduce mobile source emissions by increasing population densities within one-half mile of clean transit nodes.

Suggested Policies/Strategies to Increase Densities:

AQ 1.3.1 Increase residential and commercial densities around clean rail and bus transit stations and corridors. Clean rail and bus transit nodes and corridors are those that are served by rail and buses that are powered by electricity, alternative fuels (i.e., CNG and LNG), or that meet or exceed SULEV emission standards.

AQ 1.3.2 Sponsor paratransit transportation systems, such as neighborhood electric vehicle "station cars" or jitneys for short trips to and from transit nodes.*

*Potential funding for these policies has been identified in Appendix E.

CHAPTER 3
TRANSPORTATION

- CATEGORIES OF MOBILE SOURCE EMISSIONS
- TRANSPORTATION AND INDIRECT SOURCE CONTROL PROGRAMS
- CONGESTION AND TRANSPORTATION SYSTEM MANAGEMENT
- SUGGESTED GOAL, OBJECTIVES AND POLICIES/STRATEGIES

TRANSPORTATION

CATEGORIES OF MOBILE SOURCE EMISSIONS

Mobile sources are motorized vehicles, which are classified as either on-road or off-road. On-road mobile sources typically include automobiles and trucks that operate on public roadways. Off-road mobile sources include aircraft, ships, trains, and self-propelled construction equipment that operate off public roadways. Mobile source emissions are accounted for as both direct source emissions (those directly emitted by the individual source) and indirect source emissions that by themselves do not emit air contaminants but indirectly cause the generation of air pollutants by attracting vehicles. Examples of indirect sources include office complexes, commercial and government centers, warehouses/distribution centers, sports and recreational complexes, rail yards, port terminals, and residential developments that attract mobile source emissions.

TRANSPORTATION AND INDIRECT SOURCE CONTROL PROGRAMS

Indirect sources are generally considered to be sources which generate or attract motor vehicle activity. State law is clear that the creation of the AQMD does not constitute an infringement on the existing authority of cities and counties to plan or control land use, and does not provide or transfer new land use authority to the AQMD, SCAG or CARB (H&SC § 40414). Historically, cities and counties in the South Coast basin have determined appropriate land uses through the planning process, while the AQMD imposes air quality requirements on sources of air pollution operating within the local jurisdictions. The relationship between the AQMD and the cities and counties is one of concurrent jurisdictional authority over sources of air pollution. Therefore, the regulation of indirect sources by the AQMD falls within the existing shared authority with the local jurisdictions and would not infringe on city and county land use decisions. This is supported by state law which specifies the authority of the AQMD to reduce or mitigate emissions from indirect and area wide sources of air pollution but does not constitute an infringement on the existing authority of counties and cities to plan or control land use (H&SC § 40716(a)).

The California Clean Air Act (CCAA) authorizes the AQMD to consider Indirect Source Control (ISC) programs in the development of the AQMP, and CARB has provided guidance for air districts and local governments that advocates the development of ISC programs as an effective tool to attain and maintain state ambient air quality standards. Generally the AQMD relies on the CEQA process to mitigate indirect source emissions. SCAG has the responsibility to coordinate the efforts of the counties and cities in the process of developing and reviewing plan elements which meet the requirements of state and federal law, and local needs relating to transportation, land use, demographic projections, employment, housing, and other matters of local concern (H&SC § 40464).

The CCAA defines the term "transportation control measure" (TCM) as "any strategy to reduce vehicle trips, vehicle use, vehicle miles traveled, vehicle idling, or traffic congestion for the purpose of reducing motor vehicle emissions" (H&SC § 40717(g)). The TCMs must be at a stringency level commensurate with the air quality designation (H&SC § 40918-40920). Indirect source control measures in the 2003 AQMP are broadly described in the TCMs developed by SCAG. There is inherent overlap between ISC strategies and TCMs, and the distinction between the two is subtle. Generally, TCMs are designed to implement a local or regional strategy to change travel behavior. In contrast, an indirect source control measure may rely on TCMs or stand alone to affect a change in travel behavior that occurs to and from a specific indirect source.

According to the CARB document, *Guidance for the Development of Indirect Source Control Programs*, land use design strategies that are sensitive to air quality issues, such as incorporating mixed uses into a land use project, can reduce vehicle trips by as much as 50 percent. Design strategies for site plans that are sensitive to air quality are also effective in reducing mobile source emissions. For example, a site plan design that incorporates amenities such as bicycle racks and pedestrian paths may reduce vehicle trips up to 10 percent.

CONGESTION AND TRANSPORTATION SYSTEM MANAGEMENT

Land use development may affect local transportation/circulation systems by increasing traffic to congested roadways and reducing vehicle speeds. The resulting increase in mobile source emissions adversely affects regional air quality, especially ozone levels and localized carbon monoxide concentrations. Under the regional Congestion Management Plan (CMP), local governments are required to adopt and implement a program to analyze the impacts of land use decisions on their portion of the CMP transportation system. If the project would cause traffic service at an intersection to deteriorate below level of service E (considerable congestion) or the level established in the CMP, the resulting congestion should be addressed by improvements, programs, or actions that either mitigate the deficiency or measurably improve the level of service of the system. In fact, the CMP requires that the impact be mitigated through the development of a deficiency plan. AQMD staff are available to assist local agencies identify areas where a project or series of projects may bring increased congestion to a segment of roadway.

The following questions should be asked regarding the potential of a development project to adversely affect air quality:

- Does the site design for public right-of-way and pedestrian walkways encourage pedestrian traffic? If not, can the site be modified to encourage pedestrian traffic?
- Is onsite traffic circulation designed to reduce vehicle queuing? If not, can the project layout be modified to minimize vehicle idling emissions?

- Are links between the project and bike/pedestrian pathways adequate to facilitate walking and bicycling rather than driving? If not, can the site be modified to accommodate bike/pedestrian pathways?
- Do residential-specific plans incorporate mixed uses such as banks, post offices, etc., to minimize vehicle miles traveled (VMT) but avoid incompatible land use between sensitive receptors and air pollution sources? If not, can mixed uses be incorporated?
- Is the project accessible to transit facilities? If not, can the project design be modified to access public transit facilities?
- Do developments in transit corridors provide sustainable densities to support transit ridership? If not, how could those developments be modified to achieve minimum densities?
- Could the project affect the levels of service on the Congestion Management Plan (CMP) transportation system? If so, what would be the impact on the transportation system?

Transportation System Management

Transportation System Management (TSM) is a means of improving the efficiency of the existing transportation system through more effective utilization of facilities. TSM programs that discourage single-occupant vehicle trips and promote flexible work hours may improve levels of service on city streets. Overall, effective TSM programs that reduce the existing traffic congestion and VMT while increasing the carrying capacity of the transportation system will reduce air pollution. The California Department of Transportation (CALTRANS) lists the following TSM measures that could be appropriately included in the air quality element:

- programs to improve traffic flow
- preferential treatments for transit and other HOV strategies
- provisions for pedestrians and bicyclists
- management/control of parking
- changes in work schedules, fares and tolls
- actions to reduce motor vehicle use in congested areas
- improved public transit

CALTRANS and local transit agencies recommend uniform design features that should be considered in the planning stages of some TSM measures. For example, the Riverside Transit Agency provides guidelines for local planners, developers and decision makers that outline uniform standards for the design and placement of bus-related facilities. The document, titled *Design Guidelines for Bus Transit*, defines criteria, dimensions, and space requirements for the following transit facilities and amenities:

- pedestrian and bicycle access-ways connecting with transit

- bus stops, signs, and hardware (e.g., benches, shelters, lighting)
- park and ride facilities
- transit centers

Cities are encouraged to consider all CALTRANS TSM measures in their air quality elements and to collaborate with CALTRANS and local transit agencies to reduce air pollution through efficient design and management of transportation facilities and fleets.

Cities may utilize a portion of the state motor vehicle registration fees to fund TSM measures. Assembly Bill 2766 authorizes a $4 motor vehicle fee surcharge at the time motor vehicles are registered to be used solely to fund projects and programs that reduce air pollution from motor vehicles, as well as to fund mobile-source related planning, monitoring, enforcement, and technical studies necessary to implement the California Clean Air Act. The AQMD subvenes 40 percent of the total AB 2766 revenue Subvention Funds to cities and counties within the air district based on the prorated share of the jurisdiction's population. For many cities, the AB 2766 revenue provides a vital funding source to implement TSM measures and AQMP mobile source control measures. The AQMD provides an AB 2766 Resource Guide as a framework for use of the funds to help local governments evaluate and select cost-effective projects that are eligible for funding. The Resource Guide describes typical projects that reduce vehicle emissions from the following categories:

- purchase of alternative-fueled vehicles
- abatement of vehicle emissions
- implement land use strategies to reduce vehicle emissions
- public transportation programs
- traffic management projects
- transportation demand programs
- market-based strategies
- promote bicycle use
- PM_{10} reduction strategies
- public education

A California statewide regulation now limits diesel-fueled commercial motor vehicle idling. Effective February 1, 2005, operators of diesel-fueled commercial motor vehicles over 10,000 pounds are prohibited from idling more then five minutes when not engaged in work activity. California state law prohibits the idling of a vehicle's primary diesel engine for greater than five minutes at any location with some exceptions. The use of diesel auxiliary power systems and main engines are limited to five minutes when within 100 feet of homes or schools while a driver is resting. The idling rules are among a series of rules adopted by the CARB as part of its Diesel Risk Reduction Plan. Efforts by local jurisdictions to encourage residents to turn their engines off when they park, saves fuel and emissions. Cities may adopt ordinances to impose more stringent engine idling requirements than those imposed by the state or the local air district.

Cities are encouraged to work collaboratively with non-government organizations and consult with the broader community about the mix of anti-idling initiatives (e.g., workplace-based, school-based, municipal by-law, and/or community outreach) that will work best in their area. Further, cities could determine if vehicle idling is a concern at municipally-owned or controlled facilities (e.g., city hall, community centers) and implement measures to discourage idling. Local jurisdiction environmental advisory or air quality committees are good forums to start to discuss the health effects of emissions from idling vehicles and the options available to reduce or eliminate those emissions. Local jurisdictions may consider partnering with other community organizations (e.g., environmental groups, school boards) to implement a community anti-idling campaign or project and consider participating in a "fleet challenge" with other municipalities or fleet owners in the community.

SUGGESTED GOAL, OBJECTIVES AND POLICIES/STATEGIES

Goal 2 **A reduction in air pollution from mobile sources**

Objective 2.1 **Reduce motor vehicle trips and vehicle miles traveled.**

Suggested Policies/Strategies to Reduce Motor Vehicle Trips and VMT:

AQ 2.1.1 Seek new cooperative relationships between employers and employees to reduce vehicle miles traveled (VMT).*

AQ 2.1.2 Work with large employers and commercial/industrial complexes to create Transportation Management Associations and to implement trip/VMT reduction strategies. (For additional information please refer to AQMD's Rule 2202 Employee Commute Reduction Program Guidelines.)*

AQ 2.1.3 Cooperate with surrounding jurisdictions to provide incentives, adopt regulations and develop transportation demand management programs that reduce and eliminate vehicle trips and VMT.*

AQ 2.1.4 Collaborate with local transit agencies to:*

- develop programs and educate employers about employee rideshare and transit
- establish mass transit mechanisms for the reduction of work-related and non-work related vehicle trips
- promote mass transit ridership through careful planning of routes, headways, origins and destinations, and types of vehicles

AQ 2.1.5 Identify and develop non-motorized transportation corridors (e.g., bicycling & walking trails).*

AQ 2.1.6 Provide merchants with fliers/posters that publicize public mass transit schedules to encourage their customers to use mass transit.*

AQ 2.1.7 Outline a plan of mobile source enforcement methods such as periodic mobile source (e.g., trucks and buses) checkpoints throughout the City to enforce opacity regulations. Technical assistance can be sought from ~~by~~ CARB and the California Highway Patrol (CHP) on enforcement issues.

AQ 2.1.8 Provide incentives such as preferential parking for alternative-fuel vehicles (e.g., CNG or hydrogen).

Objective 2.2 **Establish necessary policies and requirements to reduce indirect source emissions.**

Suggested Policies/Strategies Related to the Reduction of Mobile Source Emissions at Special Event Centers:

AQ 2.2.1 Establish requirements for special event centers to provide off-site parking and park-n-ride facilities at remote locations. Remote parking should be as close as practicable to the event site and the operator should operate or provide alternative-fuel vehicles for shuttles.*

AQ 2.2.2 Promote peripheral parking by increasing on-site parking rates and reduced peripheral parking rates.*

AQ 2.2.3 Encourage special event center operators to provide discounted transit passes with event tickets or offer discounted on-site parking for carpooling patrons (four or more persons per vehicle).*

Objective 2.3 **Reduce mobile source emissions through efficient management of transportation facilities and system infrastructure using cost-effective management and innovative demand-management techniques.**

Suggested Policies/Strategies Related to TSM efficiency:

AQ 2.3.1 Synchronize traffic signals throughout the City and with adjoining cities and counties while allowing free flow of mass transit systems.*

AQ 2.3.2 Construct and improve traffic signals with Automated Traffic Surveillance and Control systems at appropriate intersections.*

AQ 2.3.3 Reduce traffic delays through highway maintenance, rapid emergency

response, debris removal, and elimination of at-grade railroad crossings.*

AQ 2.3.4 Encourage businesses to schedule deliveries at off-peak traffic periods through the land use entitlement or business regulation process.

AQ 2.3.5 Encourage the construction of HOV lanes whenever necessary to relieve congestion and reduce air pollution. Emphasize the use of HOV lanes, as well as light rail and bus routes, and pedestrian and bicycle facilities to improve mobility and air quality.

AQ 2.3.6 Monitor traffic and congestion to determine when and where the City needs new transportation facilities to achieve increased mobility efficiency.*

AQ 2.3.7 Work with local transit providers to incorporate best design practices for transit into new development projects.*

AQ 2.3.8 Adopt a Trip Reduction Ordinance that is equivalent to or more stringent than the requirements of AQMD Rule 2202 (refer to Rule 2202 (I)).*

AQ 2.3.9 Implement the required components of the Congestion Management Plan (CMP), and continue to work with *(applicable body/organization)* on annual updates to the CMP.

AQ 2.3.10 Support SCAG's Regional Growth Management Plan by developing intergovernmental agreements with appropriate governmental entities such as the *(Council of Government)*, sanitation districts, water districts, and those sub-regional entities identified in the Regional Growth Management Plan.

AQ 2.3.11 Replace existing vehicles in the city fleet with the cleanest vehicles commercially available.*

Objective 2.4 Secure all available funding from local, state and federal sources to improve TSM cost effectiveness

Suggested Policies/Strategies Related to Funding Resources:

AQ 2.4.1 Develop and coordinate a plan with local agencies for cost-effective use of AB 2766 funds so that revenue is used for projects and programs identified in the AQMP.

AQ 2.4.2 Develop and adopt a policy to utilize federal Congestion Mitigation and Air Quality Improvement (CMAQ) funds in coordination with regional agencies in a manner consistent with projects approved in the AQMP.

AQ 2.4.3 Apply annually to the AQMD Mobile Source Reduction Committee (MSRC) for AB 2766 "Local Government Match Program" grants for projects that reduce mobile source emissions (e.g., purchases of alternative-fueled vehicles).

AQ 2.4.4 Seek opportunities to pool AB 2766 revenue with neighboring cities to fund programs that will reduce mobile source emissions (e.g., traffic synchronization, fueling station infrastructure, teleconferencing facilities).

Objective 2.5 Advocate for stricter regulations on mobile source emissions.

Suggested Policies/Strategies Related to Advocacy:

AQ 2.5.1 Cooperate with federal and state agencies and the AQMD in their efforts to reduce exposure from railroad, truck, and ship emissions.

AQ 2.5.2 Collaborate with the USEPA, CARB, AQMD, and warehouse owners to create programs and ordinances to minimize the amount of diesel emissions related to warehousing operations.

Objective 2.6 Purchase and operate alternative fuel vehicles and encourage the greater use of alternative fuel vehicles

Suggested Policies/Strategies Related to the Increased Use of Alternative Fuels:*

AQ 2.6.1 Support full compliance with the AQMD's and CARB's Fleet Rules.

AQ 2.6.2 Manage the City's transportation fleet fueling standards to achieve the greatest number of alternative fuel vehicles in the City fleet.

AQ 2.6.3 Encourage City contractors who operate vehicles within the City boundaries to operate alternative fuel vehicles.

AQ 2.6.4 Support the development of alternative fuel infrastructure that is publicly accessible.

AQ 2.6.5 Establish programs for priority or free parking on City streets or in City parking lots for alternative fuel vehicles.

AQ 2.6.6 Join or continue current membership with a Clean Cities Coalition.

Objective 2.7 Reduce emissions from idling vehicles.

Suggested Policies/Strategies to Reduce Emissions From Idling Vehicles:*

AQ 2.7.1 Enforce a statewide regulation that requires school buses and other heavy-duty vehicle operators to turn off their engines if they are idling within 100 feet of a school.

AQ 2.7.2 Adopt an ordinance that restricts vehicle engine idling for the purpose of controlling or mitigating vehicle emissions or abating a nuisance.

AQ 2.7.3 Design traffic plans, including the development of suggested routes, to minimize diesel truck idling.

*Potential funding for these policies has been identified in Appendix E.

CHAPTER 4
STATIONARY SOURCES OF AIR POLLUTION

- CATEGORIES OF STATIONARY EMISSION SOURCES
- SUGGESTED GOAL, OBJECTIVES AND POLICIES/STRATEGIES

STATIONARY SOURCES OF AIR POLLUTION

CATEGORIES OF STATIONARY EMISSION SOURCES

Air pollutant emissions sources are typically grouped into two categories: stationary and mobile sources. Stationary sources are further divided into two major subcategories: point and area sources. Point sources consist of a single emission source with an identified location point at a facility. Facilities could have multiple point sources located onsite. Point sources are usually associated with manufacturing and industrial processes, such as boilers, spray booths or degreasers. Area sources are small emission sources that are widely distributed, but may have substantial cumulative emissions; examples include residential water heaters, small engines, and consumer products, such as barbecue lighter fluid and hair spray.

Stationary source facilities that propose new or modified equipment, or want to relocate operations need to obtain or modify permits issued by the AQMD. For modifications at an existing facility, such as expansion of existing operations, it may be helpful for local governments to coordinate with the AQMD and the facility to obtain information about the facility's current operations. Further, AQMD will provide information on the type and quantity of pollutants that are currently emitted from the facility and the pollutants that are proposed after the modification. Information on permitted facilities can be obtained from the AQMD's Office of Engineering and Compliance.

The AQMP is a blueprint for achieving clean air that contains regulations and commitments to adopt regulations and programs to reduce pollution from stationary, mobile and area sources. Cities and counties are encouraged to act prospectively to support these strategies to improve air quality by including in their decision-making full consideration of the air quality impacts that will result in new receptors near existing sources of air pollution. For example, cities could consider incentives for existing businesses and new developments which complement AQMD strategies to reduce emissions. The air quality element could include a clear policy statement(s) that commits local agencies to work with the AQMD and other stakeholders to find cost-effective emission reductions and pollution prevention strategies that could be implemented at sources within their jurisdictions. SCAG and the AQMD provide forums for local jurisdictions to participate in control measure development when the AQMD is updated every three years. Control measures in the 2003 AQMP are classified in nine categories:

- coatings and solvents
- petroleum operations and fugitive VOC emissions
- combustion sources
- fugitive dust sources
- miscellaneous sources
- compliance flexibility programs

- mobile sources
- long term measures
- transportation conformity budget backstop

SUGGESTED GOAL, OBJECTIVES AND POLICIES/STRATEGIES

Goal 3 **A reduction of air pollution emissions from stationary sources**

Objective 3.1 **Coordinate with the AQMD and operators of stationary source equipment or processes to minimize air pollution emissions**

Suggested Policies/Strategies Related to Reduction of Emissions from Stationary Sources:

AQ 3.1.1 Assist small businesses by developing training programs related to clean, innovative technologies to reduce air pollution (e.g., wet cleaning or CO_2 cleaning in lieu of perchloroethylene), and provide incentives to those businesses that use clean air technologies.*

AQ 3.1.2 Encourage the use of building materials and methods that minimize air pollution.

AQ 3.1.3 Support, through the use of development standards, the use of fuel-efficient heating equipment, and other appliances, such as water heaters, swimming pool heaters, cooking equipment, refrigerators, furnaces, boiler units, and low or zero-emitting architectural coatings. Provide incentives to encourage the use of clean air technology beyond what is required by AQMD. For example, encourage the use of fuel and material substitution, cleaner fuel alternatives, product reformulation, change in work practices, and air pollution control measures identified in the latest AQMP.*

AQ 3.1.4 Encourage pollution prevention and source emission reduction strategies through:

- process change
- best management practices
- preventative inspection and maintenance programs
- emergency response planning

AQ 3.1.5 Provide incentives to promote siting or use of clean air technologies (e.g., fuel cell technologies, renewable energy sources, UV coatings, hydrogen fuel).

AQ 3.1.6 Consider support of legislation which promotes clean industrial technologies, and more efficient stationary source combustion equipment and energy generation.*

*Potential funding for these policies has been identified in Appendix E.

CHAPTER 5

REDUCTION OF FUGITIVE DUST

- **SUGGESTED GOAL, OBJECTIVES AND POLICIES/STRATEGIES**

REDUCTION OF FUGITIVE DUST

Fugitive dust is a generic term used to describe any solid particulate matter that becomes airborne, other than that emitted from an exhaust stack, directly or indirectly as a result of the activities of any person. Fugitive dust can vary in size and composition, depending on the location, wind direction, time of the day, and the time of season for its source. The AQMD includes two air basins that exceed State and federal ambient air quality standards for PM_{10} (fine particulate matter less than 10 microns in diameter). Studies indicate that approximately one-third of the South Coast basin's ambient PM_{10} concentrations and over ninety percent of Coachella Valley's ambient PM_{10} levels are a result of fugitive dust.

AQMD regulates fugitive dust via several district rules. For example, Rule 403 (Fugitive Dust) requirements are applicable to the South Coast Air District and to the Coachella Valley portion of the Salton Sea Air Basin. The purpose of Rule 403 is to reduce the amount of particulate matter entrained in the ambient air as a result of anthropogenic (man-made) fugitive dust sources. Rule 403 requires implementation of control measures to prevent, reduce, or mitigate fugitive dust emissions and includes a performance standard that prohibits visible emissions from crossing any property line. Under Rule 403, large operations (projects greater than 50 acres and/or more than 5,000 cubic yards of daily earth-movement) are required to notify the AQMD of the project location and implement Table 2, and, if necessary Table 3, control measures and maintain recordkeeping. Rule 403 can be viewed or downloaded at: http://www.aqmd.gov/rules/reg/reg04/r403.pdf Forms for large operation submittals can be viewed or downloaded at: http://www.aqmd.gov/comply/Forms/403N_8_2004.doc.

Rule 403 requires all projects and activities in the South Coast Air Basin to control dust generation, with specified control measures for large operations of 50 acres or more. In spite of these basin-wide requirements, ground disturbances, geological conditions, or meteorological conditions may result in dust generation that constitutes a chronic public nuisance, or would prevent attainment of federal PM_{10} standards. These limited areas may warrant additional dust control efforts on the part of local governments. A local dust control policy that requires preparation and approval of a dust control plan for all projects seeking a grading permit in such limited areas may be needed to supplement current Rule 403 requirements. Local governments may also choose to apply specific control measures crafted to address their chronic public nuisance dust problems or PM_{10} exceedances.

Coachella Valley (Palm Springs area) local governments have adopted dust control ordinances that require approval of a dust control plan prior to local government issuance of grading permits. The Coachella Valley's response to its elevated levels of PM_{10} illustrates how local dust control plans can work to address areas with elevated

particulate levels. AQMD and Coachella Valley local government staff have developed a guidance handbook to assist persons preparing and reviewing dust control plans. A copy of the model dust control ordinance for Coachella Valley is provided in Appendix D. AQMD Rule 403.1 (Supplemental Fugitive Dust Control Requirements for Coachella Valley Sources) is a companion regulation to Rule 403 that is only applicable to fugitive dust sources in the Coachella Valley. Rule 403.1 establishes special requirements for Coachella Valley fugitive dust sources under high-wind conditions and requires AQMD approval of dust control plans for sources not subject to local government ordinances (e.g., school districts). AQMD compliance staff ensures compliance with Rules 403 and 403.1 to complement the fugitive dust control programs developed by local Coachella Valley governments. Rule 403.1 can be viewed or downloaded at: http://www.aqmd.gov/rules/reg/reg04/r403-1.pdf.

SUGGESTED GOAL, OBJECTIVES AND POLICIES/STRATEGIES

Goal 4 **Achieve ambient levels of particulate matter that meet state and federal clean air standards**

Objective 4.1 **Reduce the amount of fugitive dust that is re-entrained into the atmosphere from unpaved areas, parking lots and construction sites**

Suggested Policies/Strategies Related to Controlling Fugitive Dust Emissions:*

AQ 4.1.1 Where fugitive dust is causing a chronic public nuisance or the air quality is in exceedance of the PM_{10} standards consider adopting a dust control policy that requires preparation and approval of a dust control plan. Please contact AQMD for the most recent local PM_{10} air quality information.

AQ 4.1.2 Adopt by ordinance, a regulation, after considering small business impacts that controls the use of leaf blowers in areas with sensitive receptors.

AQ 4.1.3 Encourage vegetative thinning or mowing for weed abatement activities to minimize wind-blown dust.

AQ 4.1.4 Identify and create a control plan for areas within the jurisdiction that are prone to wind erosion of soil and take measures to prevent illegal off-highway vehicle (OHV) use.

AQ 4.1.5 Require conditions in a zoning or conditional use permit to require fugitive dust controls and compliance mechanisms for stationary sources (landfills, composting facilities, aggregate facilities, etc.).

AQ 4.1.6 Ensure compliance with California Vehicle Code section 23113 provisions intended to prevent deposition and rapid removal of material from any highway or street.

AQ 4.1.7 Adopt incentives, regulations, and/or procedures to reduce paved road dust emissions through targeted street sweeping of roads subject to high traffic levels and silt loadings.

AQ 4.1.8 Pave currently unpaved roads and parking lots or establish and enforce 15 mile per hour speed limits on low-use unpaved roads as permitted under California Vehicle Code section 22365.

AQ 4.1.9 Adopt incentives or procedures to limit dust from agricultural lands and operations.

AQ 4.1.10 Consider the suspension of all grading operations, not including dust control actions, at construction projects when the source represents a public nuisance or potential safety hazard due to reduced visibility on streets surrounding the project.

AQ 4.1.11 Cooperate with local, regional, state and federal jurisdictions to better control fugitive dust from stationary, mobile and area sources.

AQ 4.1.12 Collaborate with the transportation agencies, utilities, railroads, etc., to minimize fugitive dust during construction and maintenance activities.

AQ 4.1.13 Encourage, and support stricter state and federal legislation for vehicles that spill debris on roadways.

AQ 4.1.14 Ensure that vehicles do not transport aggregate or similar material upon a highway unless the material is stabilized or covered, in accordance with state law and AQMD regulations.

AQ 4.1.15 Encourage vegetation or chemical stabilization for disturbed land for phased construction projects.

*Potential funding for these policies has been identified in Appendix E.

CHAPTER 6
ENERGY

- ENERGY CONSERVATION
- GREEN BUILDING OPPORTUNITIES
- PUBLIC FACILITIES AND FLEETS
- SUGGESTED GOAL, OBJECTIVES AND POLICIES/STRATEGIES

ENERGY

ENERGY CONSERVATION

All new residential and non-residential buildings within California must meet minimum energy efficiency standards contained in Title 24, Part 6 of the California Code of Regulations. New 2005 standards were recently adopted by the California Energy Commission and the Building Standards Commission. These new standards become effective October 1, 2005, and will reduce energy demand from all new development, translating into emission reduction benefits. The Energy Commission estimates the standards will save $57 billion by 2011. The previous 2001 standards have already saved more than $20 billion in electricity and natural gas costs.

New development consumes energy in several ways. Gas-fired combustion equipment such as water heaters, pool heaters, space heaters, furnaces, boilers, steam generators, internal combustion engines, etc. are used throughout the South Coast basin in the residential, commercial, and industrial sectors. Residential uses of natural gas include space heating, water heating, laundry, cooking, dishwashers, and pool/hot tub heaters. The largest demand for natural gas from this sector is from space and water heating. Natural gas in the commercial sector is used for space heating, water heating, process heating, cooling, and food preparation. The industrial sector includes a wide range of manufacturing and industrial processes that use natural gas in a variety of processes such as steam generation, curing and drying processes, metal melting, and heat treatment.

Implementation policies in this chapter promote full implementation of Title 24 and, where possible, voluntary energy conservation beyond Title 24 to reduce emissions. Local governments may provide incentives to developers and proponents of facilities to incorporate energy efficiency measures to improve air quality.

GREEN BUILDING OPPORTUNITIES

Projects may be voluntarily designed to exceed energy efficiency standards established by Title 24 of the California Code of Regulations. Local governments have the voluntary option to provide incentives to implement energy-saving measures for projects, and energy performance targets beyond those required by Title 24 as appropriate. A comprehensive approach to energy conservation in building construction is known as "green building". Green building techniques integrate energy efficiency and sustainable building practices into the design and construction phases. Municipal buildings that follow green building design principles not only help create healthy workplaces, but also reduce the city's energy demand. This results in cost savings and a reduction in air pollution associated with energy production. There are several private and government rating systems for green buildings. One system for example, is the voluntary LEED

(Leadership in Energy and Environmental Design) standard developed by the U.S. Green Building Council, which has been extensively used to date for commercial projects. LEED standards have been adopted nationwide by federal agencies, state and local governments, and interested private companies as the guideline for sustainable building. Another example of a "green building" program is a voluntary program developed by the Building Industry Institute for residential development called the California Green Builder Program. Developers of Green Builder projects select measures that reduce energy consumption to levels that are 15 percent below Title 24 requirements.

Where opportunities exist to go beyond Title 24 energy efficiency requirements, those techniques and features that best fit the nature and economics of the development may be selected. Examples of energy conservation features incorporated into LEEDS and California Green Builder projects include the following:

- more energy efficient lighting, heating and cooling systems and appliances
- landscape treatments that reduce energy consumption use (e.g., planting of deciduous trees)
- use of passive daylight and heating (i.e., sun light)
- use of photovoltaic systems (solar energy)
- use of lighter colored building and roofing materials and coatings
- installation of recharging outlets for electric and hybrid vehicles
- remote sensors that adjust heating, cooling and lighting when rooms are occupied
- bicycle lockers and paths, preferred parking spaces and bus turnouts to encourage alternative modes of transportation

AQMD staff plan to establish a website that will provide examples of green building practices and policies.

PUBLIC FACILITIES AND FLEETS

Energy conservation efficiency and generation operations should be considered when building, acquiring, or retrofitting public facilities. Also, alternative-fuel vehicles are in operation in many local jurisdictions in the air district which help reduce mobile source emissions (see Chapter 3 -Transportation).

SUGGESTED GOAL, OBJECTIVES AND POLICIES/STRATEGIES

Goal 5 **Reduction in air pollution resulting from greater energy efficiency and conservation, and the use of renewable resources**

Objective 5.1 Increase energy efficiency of city facilities and private developments

Suggested Policies/Strategies Related to Energy Conservation:

AQ 5.1.1 Utilize source reduction, recycling and other appropriate measures, to reduce the amount of solid waste disposed in landfills.

AQ 5.1.2 Develop incentives that encourage the use of energy conservation strategies by private and public developments.

AQ 5.1.3 Promote energy-efficient design features, including appropriate site orientation, use of lighter color roofing and building materials, and use of deciduous shade trees and windbreak trees to reduce fuel consumption for heating and cooling.

AQ 5.1.4 Promote or provide incentives for "Green Building" programs that go beyond the requirements of Title 24 of the California Administrative Code and encourage energy efficient design elements as appropriate to achieve "green building" status.

AQ 5.1.5 Promote the use of automated time clocks or occupant sensors to control central heating and air conditioning.

AQ 5.1.6 Utilize all available renewable energy sources to reduce fuel consumption and demand on the power grid.

AQ 5.1.7 Replace vehicles in the local government fleet with the most fuel-efficient vehicles that are commercially available.*

*Potential funding for these policies has been identified in Appendix E.

CHAPTER 7
PUBLIC AWARENESS AND EDUCATION

- SUGGESTED GOAL, OBJECTIVES AND POLICIES/STRATEGIES

PUBLIC AWARENESS AND EDUCATION

In Town Hall meetings held by the AQMD, residents throughout the South Coast basin have asked how the public can become more involved in reducing local air pollution impacts in their communities. Local governments are encouraged to invest in public outreach activities and programs to build strong public awareness of regional and local air quality issues and health studies. To foster greater community involvement and support in developing public policy, local jurisdictions should consider the following activities to improve awareness of air quality and environmental justice issues.

- identify an individual as a contact person for environmental justice issues.

- participate with the AQMD in Town Hall meetings to hear citizen concerns regarding air quality and environmental justice.

- schedule community meetings to update residents of proposed large development projects, the results of AQMD air monitoring programs (e.g., MATES-II), cumulative air quality impacts and evaluate various options to reduce health impacts from exposure to air pollution. To encourage greater participation, hold public meetings in centrally-located community meeting rooms, libraries, and schools. Schedule meetings at times that encourage public participation (e.g., evenings and weekends) and provide translation services, and childcare services, if needed.

- collaborate with local school districts and private schools to increase student awareness of air pollution and health effects issues.

- distribute air quality information, AQMD brochures and fact sheets on the health effects of air pollution, public service announcements, and web page links. Provide this information in languages of the major ethnic groups in the community.

- collaborate with AQMD and other public entities as appropriate on distribution of public notices for air emission related actions and events involving environmental justice, including, but not limited to, mailing lists, noticing venues, and content of notices to improve the effectiveness and efficiency of this outreach effort.

- dedicate a page of the local government website to address local land use policies as they relate to environmental justice programs and cumulative air quality impacts.

- allow, encourage, and promote community access to activities related to land use activities such as General Plan or Community Plan updates, zoning changes, special studies, CEQA reviews, variances, etc.

- create and distribute simple, easy-to-read, understandable material on public participation that describes how to contact the local jurisdiction or AQMD to obtain information and assistance regarding air quality, health effects and environmental justice programs. A model handbook is available from CARB titled "Public Participation Guidebook."

USEPA's Environmental Education Center provides curricula and creative activities on a variety of air quality topics. Kids' sites from the USEPA include educational material on air pollution and its effects on global warming. USEPA's Office of Air Quality Planning and Standards' Environmental Education Web site describes air quality training opportunities for teachers K-12, resource materials and available grants.

The AQMD provides a number of air quality curricula and materials to assist teachers at no charge. For example, a project titled: "Air Pollution - What's the Solution" has been developed for students, grades 6 – 12. This curriculum utilizes online, real-time data to guide student discovery of the science behind the causes and effects of ground level ozone in the context of an authentic real-world problem. The AQMD Student's Health Web Site is a resource for high school students and adults to learn about the health effects of air pollution in Southern California. Also, the website includes a "Kids' Page" that shows three colorful chameleons to teach children how to moderate their activity to safely play outside when air pollution levels are elevated.

SUGGESTED GOAL, OBJECTIVES AND POLICIES/STRATEGIES

Goal 6 **Greater public awareness of the changes in personal behavior that can be chosen to minimize air pollution**

Objective 6.1 **Make air quality education a priority for the City's effort to protect public health and achieve state and federal clean air standards.**

Suggested Policies/Strategies Related to Public Awareness:*

AQ 6.1.1 Provide regional and local air quality information on City's website, including links to the AQMD, CARB, USEPA and other environmental-based internet sites.

AQ 6.1.2 Organize city-sponsored events on topics that educate businesses and the public about compliance with air quality regulations (e.g., alternative fuels and low polluting clean household products).

AQ 6.1.3 Work with school districts to develop air quality curricula for students.

AQ 6.1.4 Encourage, publicly recognize, and reward innovative approaches that improve air quality.

AQ 6.1.5 Encourage the participation of environmental groups, the business community, civic groups, special interest groups, and the general public in the formulation and implementation of programs that effectively reduce air pollution.

AQ 6.1.6 Encourage the purchase and use of low- or zero-emission vehicles, coordinate with AQMD and with local car dealerships and their associations to encourage and support the dealerships' participation in AQMD's "Clean Air Choice" vehicle information program.

AQ 6.1.7 Provide public education to encourage local consumers to choose the cleanest paints, consumer products, etc.

AQ 6.1.8 Publicize the AQMD's 1-800-CUT-SMOG number for the public to report air pollution complaints to the AQMD.

*Potential funding for these policies has been identified in Appendix E.

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GLOSSARY

AB 2766 Funds (AB 2766 (Sher) Motor Vehicle Fee Program): A program that permits air districts and local governments to allocate vehicle registration surcharge fees to projects that reduce motor vehicle emissions such as zero emission vehicles, alternative-fueled street sweepers and trip reduction programs.

Air Pollutants: Amounts of foreign and/or natural substances occurring in the atmosphere that may result in adverse effects on humans, animals, vegetation, and/or materials.

Area Sources: Stationary sources of pollution (e.g., water heaters, gas furnaces, fireplaces, and wood stoves) that are typically associated with homes and non-industrial sources. The CCAA requires districts to include area sources in the development and implementation of AQMPs.

Air Toxics: A generic term referring to a harmful chemical or group of chemicals in the air that has the potential to produce adverse health effects. Typically, substances that are especially harmful to health, such as those considered under USEPA's hazardous air pollutant program or California's AB 1807 toxic air contaminant program, are considered to be air toxics.

Alternative Fuels: Fuels such as methanol, ethanol, natural gas, and liquid propane gases that are cleaner burning and help to meet CARB's mobile and stationary emission standards.

Ambient Air: The air found at a particular time and place outside of structures. Often used interchangeably with "outdoor air."

Air Quality Management Plan (AQMP): A plan prepared by an air pollution control district or air quality management district, for a county or region designated as a non-attainment area, for the purpose of bringing the area into compliance with the requirements of the national and/or California Ambient Air Quality Standards. AQMPs are incorporated into the State Implementation Plan (SIP).

Best Available Control Technology (BACT): The most up-to-date methods, systems, techniques, and production processes available to achieve the greatest feasible emission reductions for given regulated air pollutants and processes. BACT is a requirement of NSR (New Source Review) and PSD (Prevention of Significant Deterioration) under the federal Clean Air Act. BACT, as used in federal law under PSD, is defined as an emission limitation based on the maximum degree of emission reductions allowable taking into account energy, environmental and economic impacts and other costs [CAA Section 169(3)]. The term BACT as used in state law means an emission limitation that will achieve the lowest achievable emission rates, which means

the most stringent of either the most stringent emission limits contained in the SIP for the class or category of source, (unless it is demonstrated that the limitation is not achievable) or the most stringent emission limit achieved in practice by that class in category of source. "BACT" under state law is more stringent than federal BACT and is equivalent to federal LAER (lowest achievable emission rate) which applies to NSR permit actions.

Best Available Retrofit Control Technology (BARCT): An air emission limitation that applies to existing sources and is based on the maximum degree of reduction achievable, taking into account environmental, energy, and economic impacts by each class or category of source.

Best Available Control Technology for Toxics (T-BACT): The most stringent emissions limitation or control technique which:

- has been achieved in practice for such permit unit category or class of source; or
- is any other emissions limitation or control technique, including process and equipment changes of basic and control equipment, found by the Executive Officer to be technologically feasible for such class or category of sources, or for a specific source.

Best Design Practice for Transit: An approach to transit planning that requires adherence to nationally recognized industry standards for physical facilities and services.

Buffer Zone: An area of land separating two distinct land uses that acts to soften or mitigate the effects of one land use on the other.

California Air Resources Board (CARB): The State's lead air quality agency, led by an eleven-member Governor-appointed board. It is responsible for attainment and maintenance of the State and federal air quality standards, and is chiefly responsible for motor vehicle pollution control. It oversees county and regional air pollution management programs.

California Ambient Air Quality Standards (CAAQS): Standards set by the State of California for the maximum levels of air pollutants which can exist in the outdoor air without unacceptable effects on human health or the public welfare. These are more stringent than NAAQS.

California Clean Air Act (CCAA): A California law passed in 1988 which provides the basis for air quality planning and regulation independent of federal regulations. A major element of the Act is the requirement that local air pollution control districts and air quality management districts in violation of state ambient air quality standards must prepare attainment plans which identify air quality problems, causes, trends, and actions to be taken to attain and maintain California's air quality standards by the

earliest practicable date utilizing all feasible measures and an expeditious adoption schedule.

Carbon Monoxide (CO): A colorless, odorless gas resulting from the incomplete combustion of hydrocarbon fuels. CO interferes with the blood's ability to carry oxygen to the body's tissues and results in numerous adverse health effects. Over 80% of the CO emitted in urban areas is contributed by motor vehicles. CO is a criteria air pollutant.

Congestion Management Plan (CMP): A state mandated program (Government Code Section 65089a), that requires each county to prepare a plan to relieve congestion and reduce air pollution.

Criteria Pollutant: An air pollutant for which acceptable levels of exposure can be determined and for which an ambient air quality standard has been set. Examples include: ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, and PM_{10} and $PM_{2.5}$. The term "criteria air pollutants" derives from the requirement that the U.S. EPA must describe the characteristics and potential health and welfare effects of these pollutants. The U.S. EPA and CARB periodically review new scientific data and may propose revisions to the standards as a result.

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 section 65040.12). 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.

Environmental Protection Agency (USEPA): The United States agency charged with setting policy and guidelines, and carrying out legal mandates for the protection of national interests in environmental resources.

Federal Clean Air Act (CAA): A federal law passed in 1970 and amended in 1977 and 1990 which forms the basis for the national air pollution control effort. Basic elements of the act include national ambient air quality standards for major air pollutants, air toxics standards, acid rain control measures, and enforcement provisions.

Fugitive Dust: Dust particles which are introduced into the air through certain activities such as soil cultivation, off-road vehicles, or any vehicles operating on open fields or dirt roadways.

Fugitive Dust Control Plan: A document that describes fugitive dust sources at a site and the corresponding control measures.

Growth Management Plan: A plan for a given geographical region containing demographic projections (i.e., housing units, employment, and population) through some specified point in time, and which provides recommendations for local governments to better manage growth and reduce projected environmental impacts.

Hybrid Vehicles: Hybrid electric motor vehicles may operate using both electric and gasoline-powered motors. Emissions from hybrid electric motor vehicles can be substantially lower than conventionally powered motor vehicles.

Indirect Source: Any facility, building, structure, or installation, or combination thereof, which generates or attracts mobile source activity that results in emissions of any pollutant (or precursor) for which there is a state ambient air quality standard. Examples include employment sites, shopping centers, sports facilities, housing developments, airports, commercial and industrial development, and parking lots and garages.

Jobs/Housing Balance (Jobs/Housing Ratio): The availability of housing for employees. The jobs/housing ratio divides the number of jobs in an area by the total number of dwelling units. Jobs/housing balance is an indicator of the number of residents in an area that must travel outside their commute-shed for work. No jobs/housing ratio is recognized in state, regional or local plans and policies. However, SCAG considers South Coast Air Basin communities to be jobs –rich if they have more than 1.29 jobs per dwelling unit, and housing-rich if they have less than 1.0 jobs per household.

Land Use Recycling: Changing historic land uses to meet the changing needs and priorities of a community. For example, commercial or industrial land areas that are "recycled" to housing, mixed use or institutional use in order to facilitate and be consistent with the current and future needs of a community.

Lead: A gray-white metal that is soft, malleable, ductile, and resistant to corrosion. Sources of lead resulting in concentrations in the air include industrial sources and crystal weathering of soils followed by fugitive dust emissions. Health effects from exposure to lead include brain and kidney damage and learning disabilities. Lead is the only substance which is currently listed as both a criteria air pollutant and a toxic air contaminant.

Maximum Achievable Control Technology (MACT): Federal emissions limitations based on the best demonstrated control technology or practices in similar sources to be applied to major sources emitting one or more federal hazardous air pollutants.

Mixed Use: Properties on which various uses such as office, commercial, institutional, and residential are combined in a single building or on a single site in an integrated development project with significant functional interrelationships and a coherent physical design. A "single site" may include contiguous properties.

Mobile Sources: Sources of air pollution such as automobiles, motorcycles, trucks, off-road vehicles, boats and airplanes (contrast with stationary sources).

National Ambient Air Quality Standards (NAAQS): Standards established by the USEPA that apply for outdoor air throughout the country. There are two types of NAAQS. Primary standards set limits to protect public health and secondary standards set limits to protect the environment and public welfare.

New Source Review (NSR): A program used in development of permits for new or modified industrial facilities which are in a non-attainment area, and which emit non-attainment criteria air pollutants. The two major requirements of NSR are Best Available Control Technology and Emissions Offset.

Nitrogen Oxides: Oxides of Nitrogen, NO_x. A general term pertaining to compounds of nitric acid (NO), nitrogen dioxide (NO_2), and other oxides of nitrogen. Nitrogen oxides are typically created during combustion processes, and are major contributors to smog formation and acid deposition. NO_2 is a criteria air pollutant, and may result in numerous adverse health effects. It absorbs blue light, resulting in a brownish-red cast to the atmosphere and reduced visibility.

Non-Attainment Area: A geographic area identified by the USEPA and/or CARB as not meeting either NAAQS or CAAQS standards for a given pollutant.

Opacity Regulations: Rules, laws, and regulations that require the measurement of the amount of light obscured by particle pollution in the atmosphere and limit the amount of allowable emissions from pollution sources. Opacity is used as an indicator of changes in performance of particulate control systems.

Ozone: A strong smelling, pale blue, reactive toxic chemical gas consisting of three oxygen atoms. It is a product of the photochemical process involving the sun's energy. Ozone exists in the upper atmosphere ozone layer as well as at the earth's surface. Ozone at the earth's surface causes numerous adverse health effects and is a criteria air pollutant. It is a major component of urban smog.

Paratransit: Transportation systems such as jitneys, car pooling, van pooling, taxi services and dial-a-ride services..

Particulate matter (PM): Solid or liquid particles of soot, dust, smoke, fumes, and aerosols.

- **Particulate Matter less than 10 microns (PM_{10}) in size:** A major air pollutant consisting of tiny solid or liquid particles of soot, dust, smoke, fumes, and aerosols. The size of the particles (10 microns or smaller, about 0.0004 inches or less) allows them to easily enter the air sacs in the lungs where they may be deposited, resulting in adverse health effects. PM_{10} also causes visibility reduction and is a criteria air pollutant.

- **Particulate Matter less than 2.5 microns ($PM_{2.5}$) in size:** A major pollutant consisting of tiny solid or liquid particles, generally soot and aerosols. The size of the particles (2.5 microns or smaller, about 0.0001 inches or less) allows them to easily enter the air sacs deep in the lungs where they may cause adverse health effects, as noted in several recent studies. $PM_{2.5}$ also causes visibility reduction.

Permit: Written authorization from a government agency (e.g., air quality management district) that allows for the construction and/or operation of an emissions generating facility or its equipment within certain specified limits.

Redevelop: To demolish existing buildings; or to increase the overall floor area existing on a property; or both; irrespective of whether a change occurs in land use.

Rezoning: An amendment to the map and/or text of a zoning ordinance to effect a change in the nature, density, or intensity of uses allowed in a zoning district and/or on a designated parcel or land area.

Sensitive Receptor (Sensitive Individual): Those segments of a population such as children, athletes, elderly, and sick that are more susceptible to the effects of air pollution than the population at large.

Sensitive Sites: Land uses where sensitive receptors are most likely to spend time, including schools and schoolyards, parks and playgrounds, day care centers, nursing homes, hospitals, and residential communities.

Setback: In zoning parlance, a setback is the minimum amount of space required between a lot line and a building line.

State Implementation Plan (SIP): A document prepared by each state describing existing air quality conditions and measures which will be taken to attain and maintain national ambient air quality standards (see AQMP).

Smog Check Program: A motor vehicle inspection program implemented by the California Bureau of Automotive Repair. It is designed to identify vehicles in need of maintenance and to assure the effectiveness of their emission control systems on a biennial basis. Enacted in 1979 and strengthened in 1990.

Station Car: A vehicle that operates at transit stations for the use of patrons of these transit services. The availability of station cars facilitates and encourages the use of mass transit systems.

Stationary Sources: Non-mobile sources such as power plants, refineries, and manufacturing facilities which emit air pollutants.

South Coast basin: Includes all of Orange county and the non-desert portions of Los Angeles, Riverside and San Bernardino counties.

Sulfur Dioxide (SO_2): A strong smelling, colorless gas that is formed by the combustion of fossil fuels. Power plants, which may use coal or oil high in sulfur content, can be major sources of SO_2. SO_2 and other sulfur oxides contribute to the problem of acid deposition. SO_2 is a criteria pollutant.

Toxic Air Contaminant (TAC): An air pollutant, identified in regulation by the CARB, which may cause or contribute to an increase in deaths or in serious illness, or which may pose a present or potential hazard to human health. TACs are considered under a different regulatory process (California Health and Safety Code section 39650 et seq.) than pollutants subject to CAAQS. Health effects due to TACs may occur at extremely low levels, and it is typically difficult to identify levels of exposure which do not produce adverse health effects.

Transportation System Management (TSM): A comprehensive strategy developed to address the problems caused by additional development, increased vehicle trips, and a shortfall in transportation capacity. Transportation Systems Management focuses on more efficiently utilizing existing highway and transit systems rather than expanding them. TSM measures are characterized by their low cost and quick implementation time frame, such as computerized traffic signals, metered freeway ramps, and one-way streets.

Visibility: A measurement of the ability to see and identify objects at different distances. Visibility reduction from air pollution is often due to the presence of sulfur and nitrogen oxides, as well as particulate matter.

Zero Emission Vehicles (ZEV): Vehicles which produce no emissions from the on-board source of power (e.g. an electric or fuel cell vehicle).

APPENDIX A

CITIES AND COUNTIES WITHIN THE

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

THAT HAVE ADOPTED

AIR QUALITY ELEMENTS IN GENERAL PLANS

&

EXAMPLE AIR QUALITY ELEMENTS*

*FOR ADDITIONAL EXAMPLES OF AIR QUALITY ELEMENTS LISTED IN ATTACHMENT A, PLEASE CONTACT LOCAL GOVERNMENTS DIRECTLY.

Cities and Counties within the South Coast Air Quality Management District that have Adopted Air Quality Elements in General Plans

City/County	Date
Agoura Hills	1994
Baldwin Park	2002
Buena Park	1994
Calabasas	1995
Carson	1994
Cathedral City	2002
Cerritos	2002
Chino	1991
Colton	1992
Commerce	1991
Cudahy	1992
Cypress	2001
El Segundo	1992
Fontana	1990
Garden Grove	1995
Glendale	1994
Grand Terrace	1999
Hemet	1992
Huntington Beach	1996
Indian Wells	1996
La Cañada-Flintridge	1995
La Habra	1992
La Quinta	2002

City/County	Date
Laguna Hills	2002
Lakewood	1996
Lawndale	1992
Long Beach	1998
Los Angeles	1992
Montclair	1999
Palm Desert	1980
Palm Springs	1993
Rancho Cucamonga	2001
Rancho Mirage	1997
Rancho Palo Verdes	1975
Redlands	1995
Riverside County	1995
San Bernardino County	1989
Santa Clarita	1991
South Gate	1993
Temecula	1993
Upland	1991
Walnut	1974
West Hollywood	1988
Whittier	1993
Yorba Linda	1993
Yucaipa	1992

Source – The California Planners' Book of Lists 2004: Governor's Office of Planning and Research

AIR QUALITY ELEMENT

EXAMPLE #1

CITY OF CHINO

City of Chino

Air Quality Element

City Council

Fred Aguiar, Mayor
Diane J. Erwin, Mayor Pro Tem [1]
Richard Sawhill, Council Member
Eunice Ulloa, Council Member
Al Yankey, Council Member

Planning Commission

Emil Torkar, Chairman
Pete Garcia, Vice Chairman
Reva Salter
Fred Nerio
Cal Morey
Earl C. Elrod
Kristi Smith

City Manager

Richard D. Rowe

Prepared By

Community Development Department
Earl P. Nelson, A.I.C.P., Director of Community Development
Brent Arnold, Associate Planner

November 1991

[1] City of Chino's Policy Committee Representative to the San Bernardino County, Regional Air Quality Plan.

RESOLUTION NO. 91-100

A RESOLUTION OF THE CHINO CITY COUNCIL AMENDING THE GENERAL PLAN TO INCLUDE AN AIR QUALITY ELEMENT AND REVISIONS TO THE CIRCULATION AND CONSERVATION/OPEN SPACE ELEMENTS TO ENSURE CONSISTENCY WITH THE AIR QUALITY ELEMENT. GENERAL PLAN AMENDMENT NO. 128.

WHEREAS, a draft Air Quality Element has been prepared in accordance with state law governing the content and intent of the General Plan Element, which includes the attached addendum of requested modifications for City Council action; and

WHEREAS, community workshops were held on October 21 and November 4, 1991 to receive citizen input and encourage citizen participation in the formulation of the Air Quality Element and its proposed goals, policies, and action programs; and

WHEREAS, the Development Review Committee reviewed the Element and recommended a Negative Declaration for the project; and

WHEREAS, the City Council discussed the Draft Air Quality Element at a regular hearing date on November 19, 1991, for the purpose of receiving public input; and

WHEREAS, the City Council recognizes the vital role that local governments must play in the attainment of state and federal air quality standards; and

WHEREAS, the City of Chino is committed to achieving healthful air standards in the City and other parts of the South Coast Air Basin at the earliest possible date; and

WHEREAS, the proposed Air Quality Element is the result of an extensive, cooperative effort between the County and 15 cities in San Bernardino County.

WHEREAS, the 1991 Air Quality Management Plan directs local governments to assume responsibility for implementation of 24 of the 126 control measures contained in the Plan, three of which expressly call for the adoption of an air quality element or its equivalent by local governments; and

WHEREAS, the Air Quality Management Plan calls for local government to take actions that will achieve an 8% region-wide reduction of reactive organic gases and oxides of nitrogen; and

WHEREAS, the General Plan is subject to amendment whenever conditions, study, public interest, and/or practices indicate such amendments to be in the interest of the public health, safety and welfare; and

WHEREAS, state law authorizes cities and counties to include an air quality element or its equivalent as part of their General Plan; and

WHEREAS, the Air Quality Element is designed to promote the health, safety and welfare of the public by seeking attainment of state and federal ambient air standards; and

WHEREAS, environmental documentation has been completed in accordance with the California Environmental Quality Act and local environmental guidelines; and

WHEREAS, the City Council has determined that the following conditions for self-certification have been met:

1. Consistency with the Regional Air Quality Management Plan

2. Consistency with the Regional Mobility Plan

3. Consistency with the Regional Growth Management Plan

4. Consistency with the Regional Housing Needs Assessment

WHEREAS, on November 4, 1991, the Planning Commission duly held a public hearing to consider the recommended Air Quality Element and public testimony with the following amendments to the Circulation and Conservation/Open Space Elements of the General Plan.

CIRCULATION ELEMENT

1. Page I-4, Policy 4: "The parking supply should be, to the maximum extent possible, managed in a fashion to encourage a reduction in single occupant vehicles utilizing parking facilities."

2. Page II-24, Parking 2B: "Off-street parking shall be provided in a manner to encourage multiple occupant vehicle use."

CONSERVATION/OPEN SPACE

1. The following actions located in the Implementation Table on page V-74 of the Conservation/Open Space Element shall delete all reference to the responsible

Agency/Department required to implement said action and all reference to time for action implementation. In place of these activities the timing column of the table shall read:

Conservation/Open Space Actions	Corresponding CAQE Actions
A5-2.1.1	A8-2.1.5*
A5-2.2.1	A8-5.1.2 and A8-5.1.4*
A5-2.3.1	A-5.1.2 and A8-5.1.4*

*Include in Time Information Column of Conservation/Open Space Element Implementation Table

In addition, action A5-7.3.1 shall be amended as requested by the Public Works Department.

2. Require High Pressure Sodium Vapor Lamps (HPSV). The City shall pursue the feasibility of requiring high sodium vapor lamps for all street lights and public parking lots.

WHEREAS, the proposed changes to the General Plan are reasonable and beneficial at this time because they will make the Chino General Plan Elements consistent with each other.

NOW, THEREFORE, BE IT RESOLVED, the Chino City Council approves the Air Quality Element of the Chino General Plan.

APPROVED and ADOPTED this 19th day of November, 1991.

Mayor, City of Chino

ATTEST:

City Clerk, City of Chino

State of California)
County of San Bernardino)§
City of Chino)

I, Kathleen A. Blomo, Chino City Clerk, hereby certify the foregoing Resolution of the City of Chino was duly adopted by said City Council at a regular meeting held on the 19th day of November, 1991, by the following vote:

AYES:	COUNCIL MEMBERS	AGUIAR,ERWIN,SAWHILL,YANKEY
NOES:	COUNCIL MEMBERS	NONE
ABSENT:	COUNCIL MEMBERS	ULLOA

K A Blomo
City Clerk, City of Chino

TABLE OF CONTENTS

PAGE

List of Figures ii

List of Tables iii

Introduction 1

Government Organization, Roles and Responsibilities 13

Ground Transportation 17

Air Transportation 23

Land Use 25

Particulate Emissions 28

Energy Conservation 30

Implementation Strategy 32

Implementation 34

Glossary 44

Bibliography 47

References 48

Index 49

Appendix 52

List of Figures

Figure		Page
1	South Coast Air Quality Management District Map	4
2	Annual Variation in San Bernardino County Ozone Exposure (1988)	5
3	San Bernardino County Carbon Monoxide Levels	6
4	San Bernardino County Nitrogen Dioxide Levels	7
5	Particulate (PM-10) Levels	8
6	Airflow Patterns in the South Coast Air Basin Influencing Pollutant Emission Migration	10

List of Tables

Table		Page
1	Percent of Days Exceeding Federal Standards and Maximum Concentrations	9
2	County Share of Basinwide Burden (%)	11
3	Agencies' Responsibilities in Air Quality Planning	12

Introduction

Why Prepare an Air Quality Element?

Southern California has the worst air pollution in the nation. Almost every day, smog stretches from the beach cities in Orange and Los Angeles Counties to the inland valleys of Riverside and San Bernardino Counties. The brown haze affects the health and scenic views of the approximate 12 million people who live within the 13,350 square mile region. This region is known as the South Coast Air Quality Management District (SCAQMD) (see Figure 1, page VIII-4).

With the aim of complying with all federal standards by 2007, the South Coast Air Quality Management District (SCAQMD) and Southern California Association of Governments (SCAG) jointly prepared the 1989 Air Quality Management Plan (AQMP). The AQMP calls upon local governments to achieve an 8% reduction region-wide in emissions from reactive organic gases and oxides of nitrogen. Specifically, local governments are asked to implement appropriate control measures contained in the AQMP to achieve this reduction. Each Control measure that is required for local jurisdiction implementation is noted in parentheses, i.e., (AQMP Control Measure No. 2.a.) at the end of the action which addresses that particular measure. Local governments are required to address air quality strategies comprehensively in the General Plan. The adoption of an Air Quality Element is recognized as a decisive method for satisfying this requirement.

Air Quality and Southern California

The primary influence on air quality in Southern California is our climate and topography. Our climate features warm sunshine and soft easterly sea breezes. Our topography consists of a desert-like terrain bounded by the Pacific Ocean on the west and mountains on the north and east. These characteristics help create an inversion layer trapping pollutants within the basin region. Air quality in the South Coast Air Basin, as a whole, is characterized by high levels of ozone (O_3), carbon monoxide (Co), nitrogen dioxide (No2) and particulate matter (PM10) (see Figures 2, 3, 4, 5 on pages VIII-5,-6,-7,-8).

The source of our air pollution problem is directly related to how we perform many daily activities, predominantly related to driving in an automobile. The motor vehicle, frequently with a single occupant, parked on a gridlock freeway, is responsible for about half of our air pollution. The other half is caused by stationary sources.

San Bernardino County regularly exceeds state and federal air quality standards for ozone, carbon monoxide, nitrogen dioxide, and particulate matter (see Table 1, page VIII-9). Violations of state and federal standards are acute during summer months when on-shore wind patterns transport pollutants from the western portion of the South Coast Air Basin--notably Los Angeles and Orange Counties--and combine with local emission sources in San Bernardino County to create some of the nation's worst air quality (see Figure 6, page VIII-10).

The last complete basin inventory was developed by the Air Quality Management District as part of the 1989 Air Quality Management Plan development process. The relative contribution of sources within San Bernardino County varies somewhat for each pollutant, but is well under 10% of the basin for each of the four criteria pollutants shown in Table 2, page VIII-11. The ability of the County, as a whole, to significantly influence air quality is limited by the fact that the County and the City of Chino currently contribute so little air pollution within the basin.

Southern California, as well as San Bernardino County, stands at a turning point in history. The growth of this region has made it the eleventh largest economic center in the world. In the next 20 years, the region's current population will grow by one third. Yet, with prosperity and growth also comes undesirable side effects. The freeways are extremely congested, housing prices continue to rise, and most of the region suffers from the effects of air pollution.

A new age of planning and cooperation will be needed to manage the projected growth in the region. Land use planning must emphasize air quality issues by understanding and coordinating the linkages between growth, housing, jobs, traffic, and air quality.

Difficult choices will be required by local governments if the region is to stay on a course which will guide us to cleaner air. This course is far different from before. The new approach will require a stronger commitment to regional goals, which often contrast individual goals, by local government, business, and citizens. It will also require cooperation among local governments when issues cross jurisdictional boundaries.

Cooperative Approach

Beginning in early 1990, Chino participated with the County of San Bernardino and 15 other cities within the County to meet its responsibilities of preparing an Air Quality Element as outlined in the Air Quality Management Plan (AQMP). By doing so, the City made its first formal contribution to air quality planning since the district's creation of the AQMP.

San Bernardino County/cities, in recognition of the inter-jurisdictional nature of air quality, as individual entities, united to prepare a Regional Air Quality Plan. The plan set up a framework which provides participating jurisdictions with the necessary information to develop their own local air quality elements. The document layed out certain goals, policies, and action programs which were arrived at by appointed technical and policy committee members of the participating jurisdictions. Each jurisdiction agreed to adopt the basic goals and policies into their City's General Plan. The goals, policies, and actions in this document are derived from the Regional Air Quality Element and input by members of the Planning Commission and City Council, and various City staff.

Legal Mandate

State and Federal air quality legislation establishes roles and responsibilities for several agencies. Table 3 (page VIII-12) identifies the various air quality planning agencies and their primary responsibilities. Most of local governments' responsibilities relate to their land use planning authority.

The extent of legal obligation on the part of local government to meet air quality standards mandated at the state and federal levels has not been clearly resolved. The federal government has clearly stated its intent to withhold certain funds to the region, or a local agency, if significant steps to meet federal air quality standards are not taken. This is one reason why establishment of local commitments are most appropriately accomplished in an expeditious and cooperative manner.

The SCAQMD and SCAG highly recommend adoption of an air quality element and/or amending the general plan to include air quality considerations. Conversely, adoption of a general plan element or amendment will not, in and of itself, meet local government responsibilities. The key is to translate air quality policy statements into actions--that is the challenge that must be met by Chino and other communities within the air basin.

Relationship to Other General Plan Elements

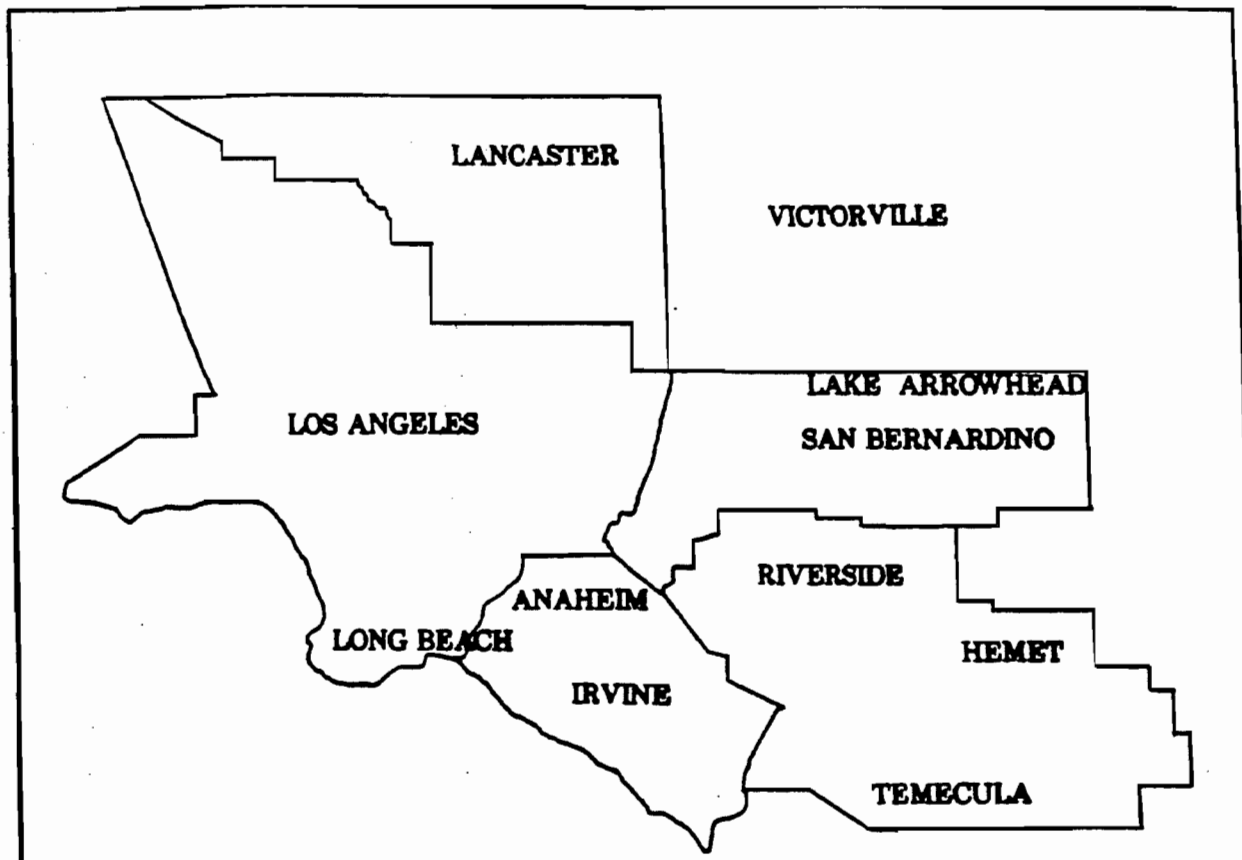
In determining the relationship of the air quality element to other general plan elements, it is appropriate to remind the reader of the relationship between growth, housing, jobs, circulation, and air quality noted before. Implementation of the Housing, Land Use, and Circulation Elements have a profound impact on the type and amount of air quality impacts which may occur. These elements provide goals and policies which influence housing supply, housing density, jobs, and the necessary backbone infrastructure to support growth in jobs and housing. Likewise, the Open Space/Conservation Element provides goals and policies about energy conservation and air quality.

Citizen Participation

The City of Chino encourages citizen input on development of general plan goals, policies, and actions programs. Public workshops were held in October and November of 1991 before the Planning Commission and City Council. The purpose of the workshops were to discuss the air quality element, and ask for public input from community residents and other interested parties.

FIGURE 1

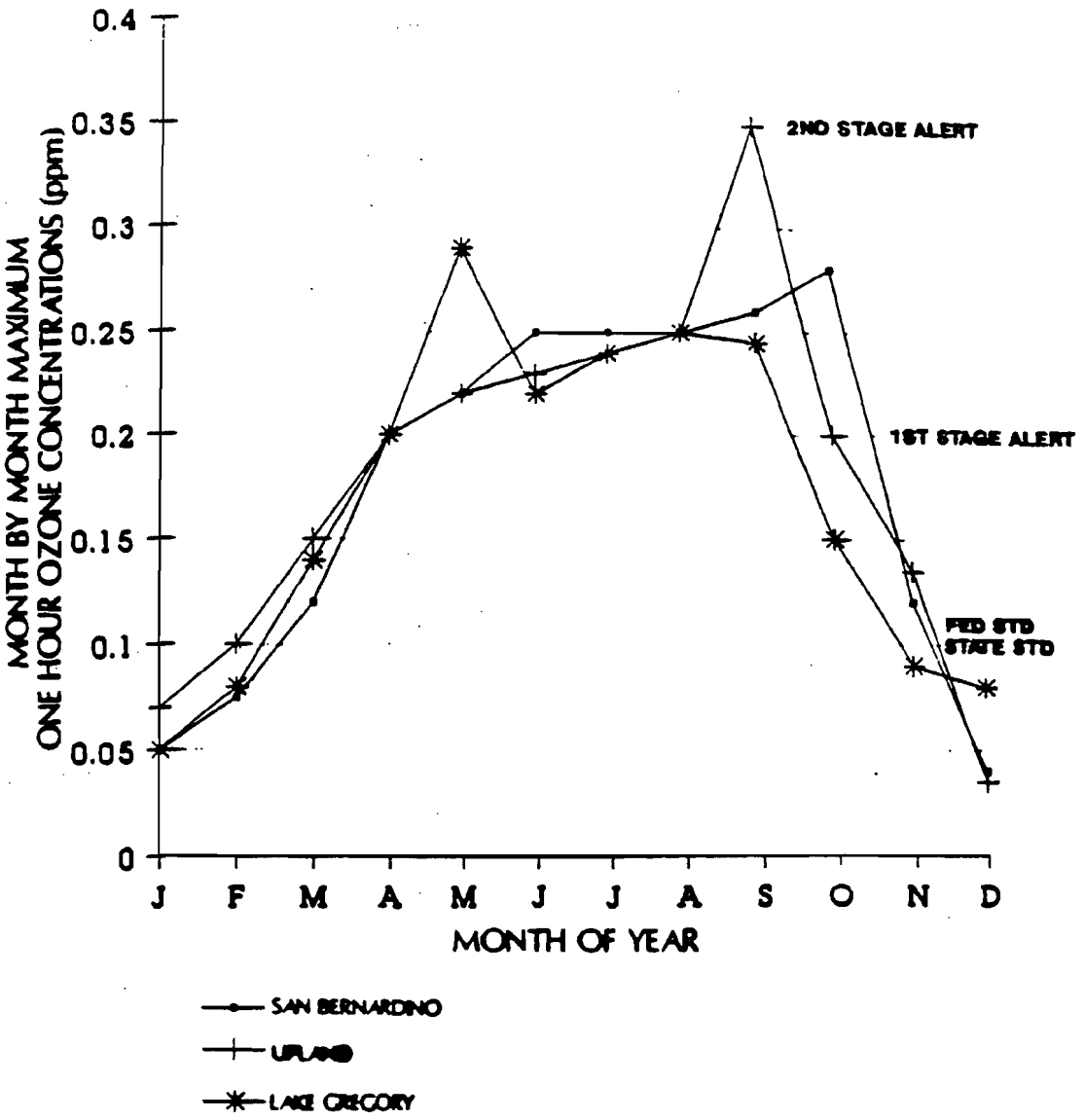
South Coast Air Quality Management District



Source: Regional Air Quality Plan EIR - San Bernardino County/Cities

FIGURE 2

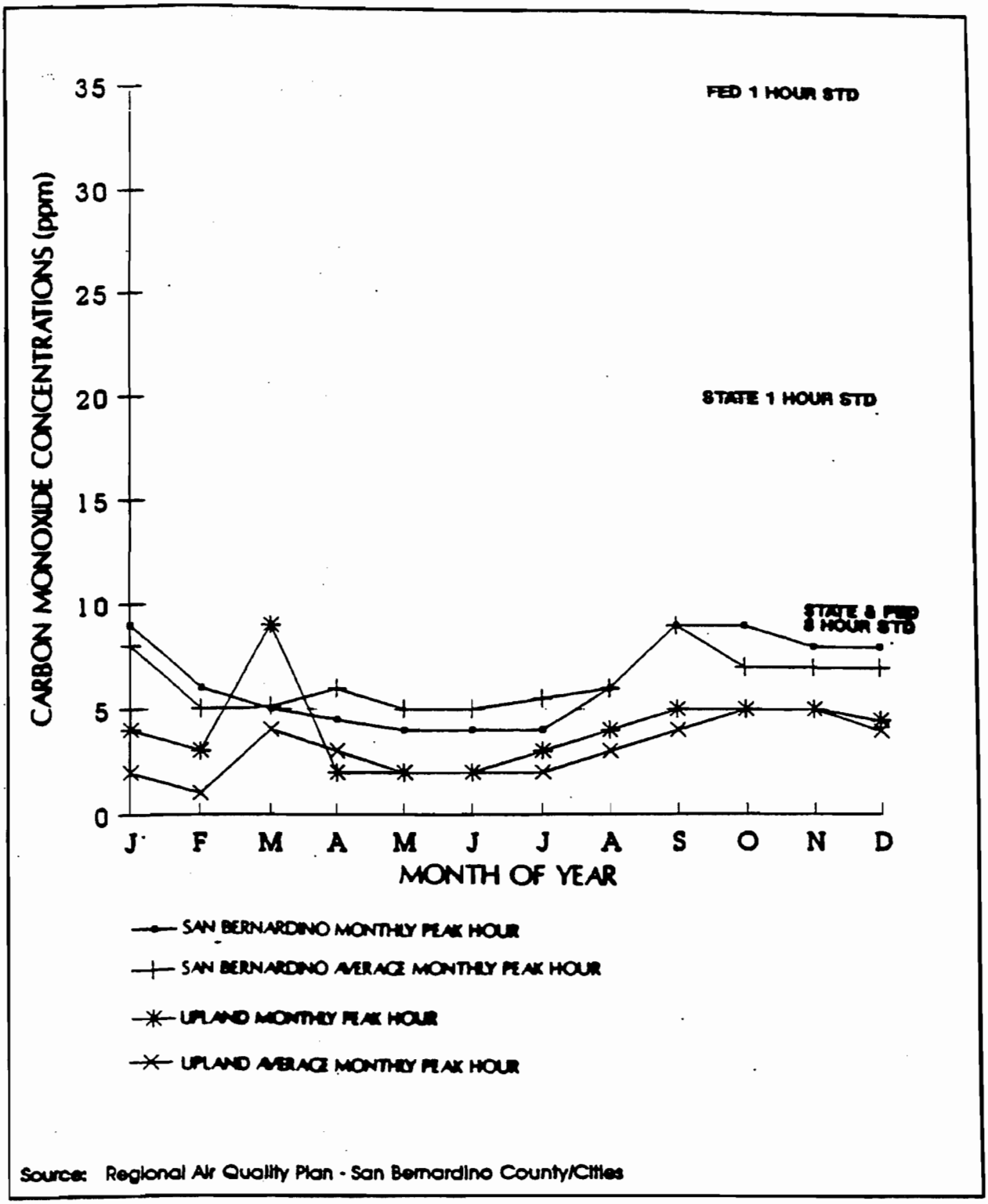
Annual Variation in San Bernardino County Ozone Exposure (1988)



Source: Regional Air Quality Plan EIR - San Bernardino County/Cities

FIGURE 3

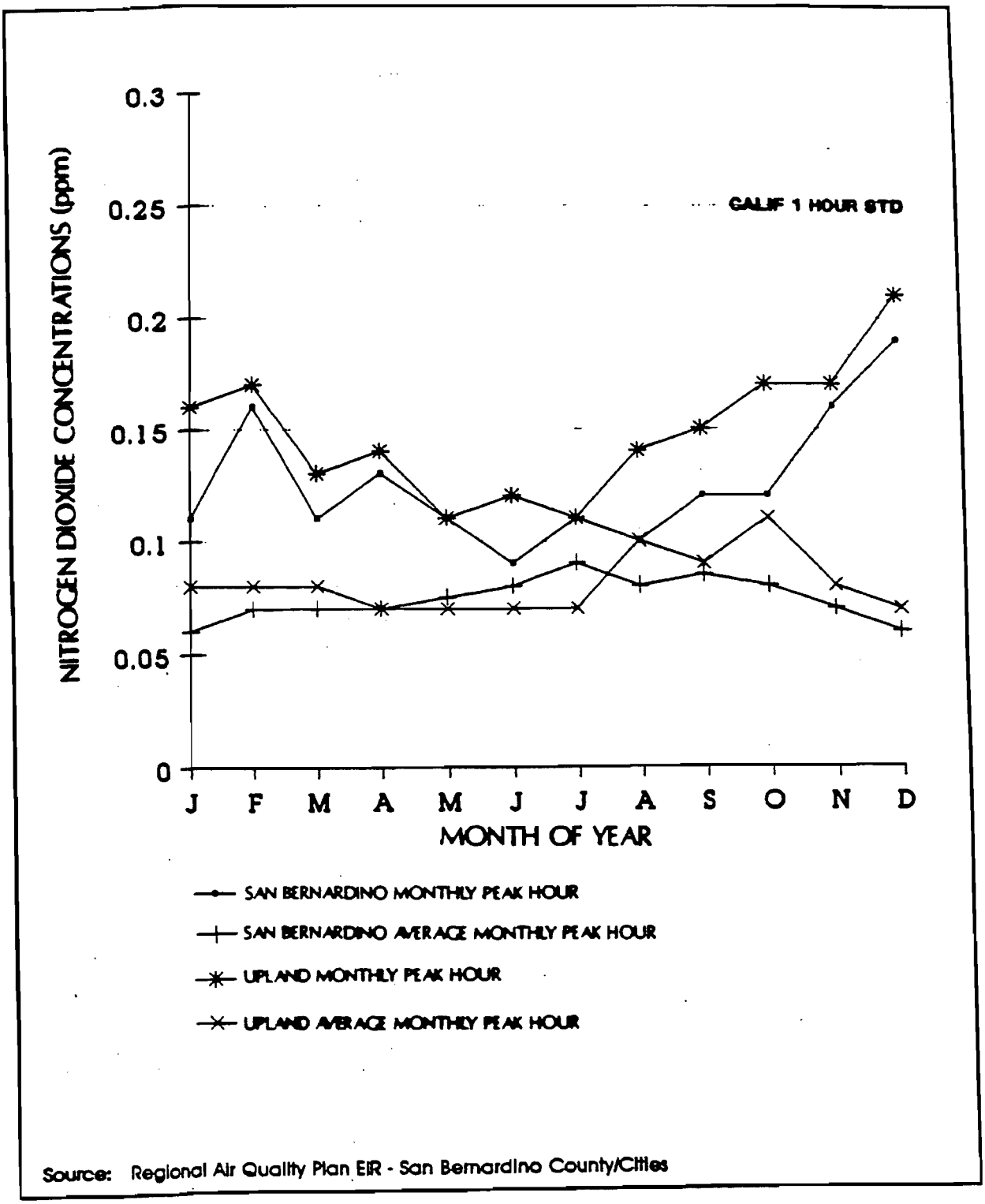
San Bernardino County Carbon Monoxide Levels



Source: Regional Air Quality Plan - San Bernardino County/Cities

FIGURE 4

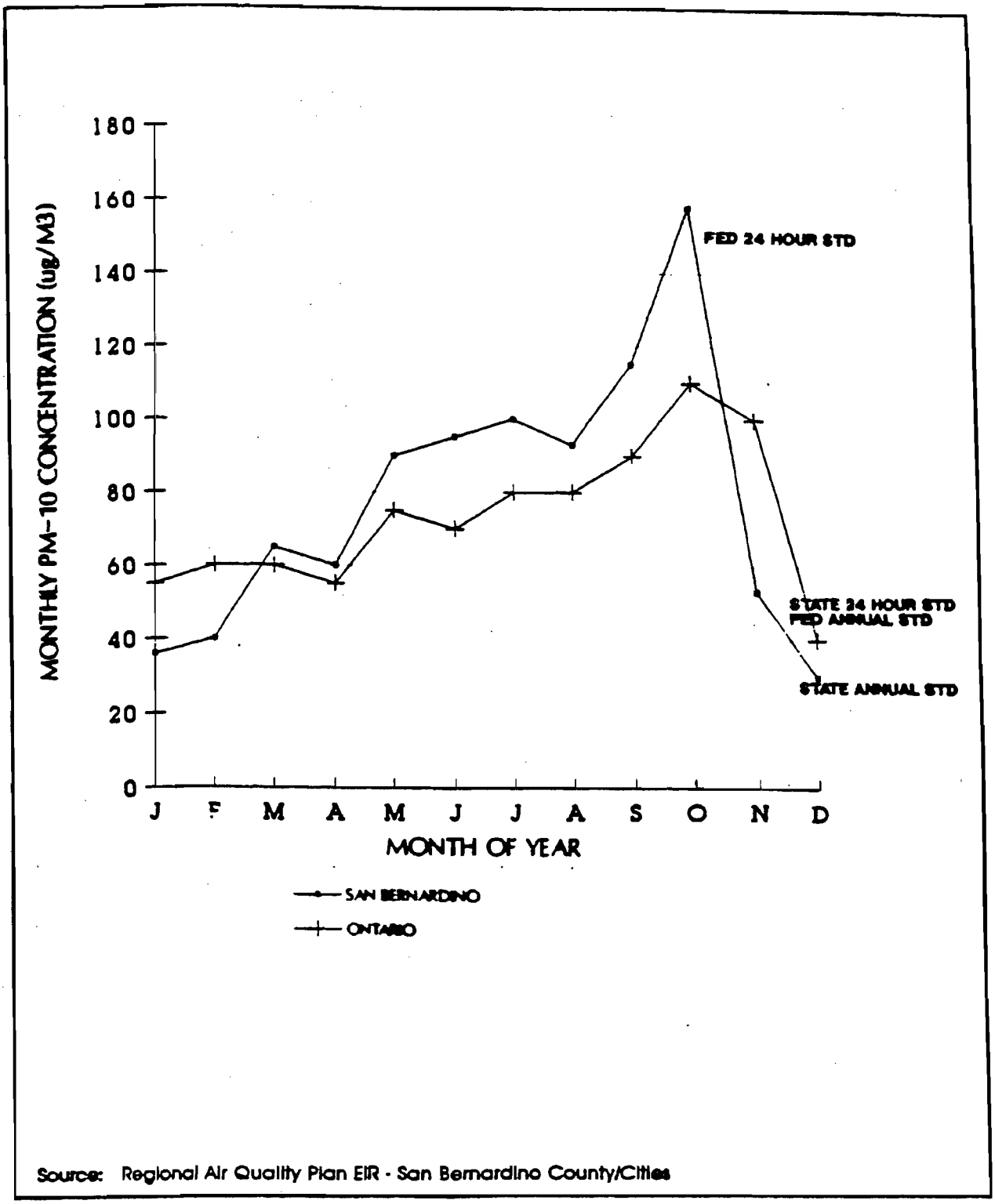
San Bernardino County Nitrogen Dioxide Levels



Source: Regional Air Quality Plan EIR - San Bernardino County/Cities

FIGURE 5

Particulate (PM-10) Levels



Source: Regional Air Quality Plan EIR - San Bernardino County/Cities

TABLE 1

Percent of Days Exceeding Federal Standards and Maximum Concentrations

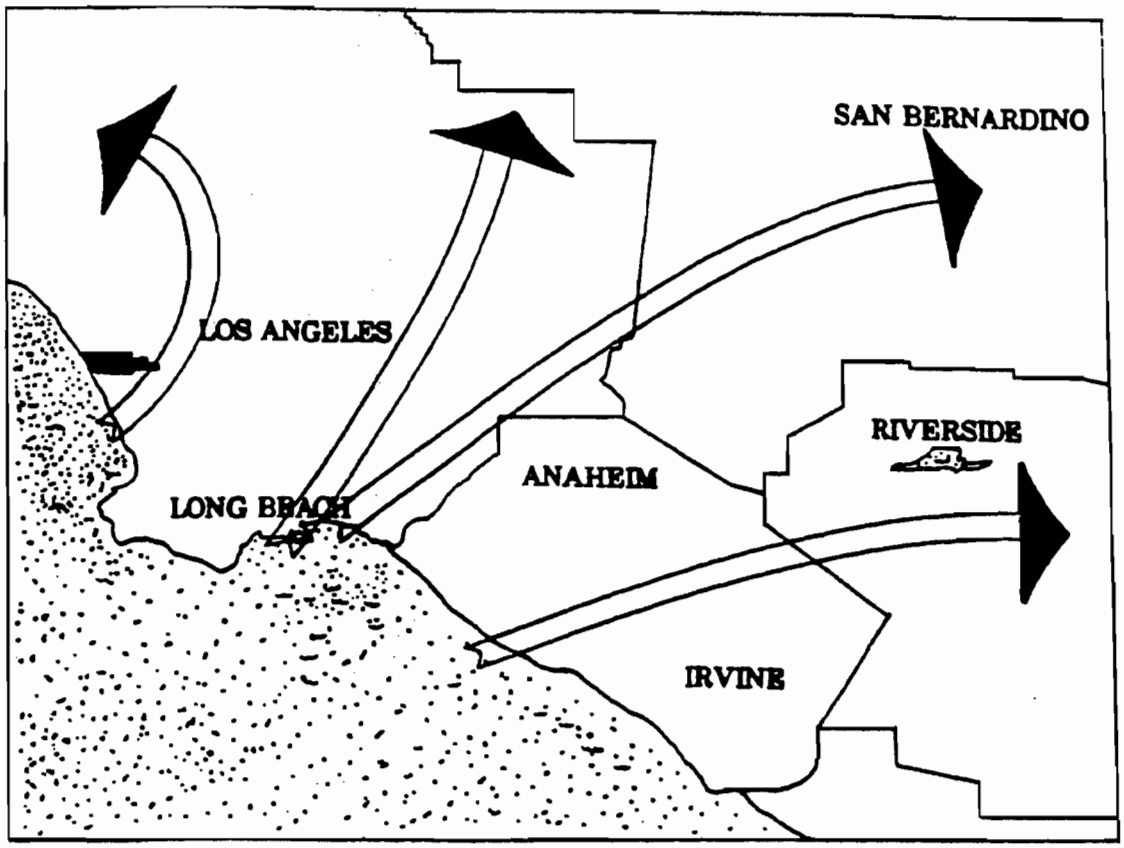
Pollutant	Standard	Upland	San Bernardino	Crestline
Ozone	1 Hour > 0.12 ppm	27%	32%	35%
	Max 1 Hour Conc. (ppm)	0.32	0.30	0.27
Carbon Monoxide	1 Hour > 35. ppm	0%	0%	ND
	8-Hour > 9. ppm	0%	0%	ND
Nitrogen Dioxide	Annual Avg. > 0.05 ppm	No	No	ND
	Annual Avg. (ppm)	0.045	0.041	ND
Respirable Particulates	24-Hour > 150 ug/m3	7%	5%	0%
	Max. 24-Hour Conc. (ug/m3)	254.*	271	87.

* = Data from Ontario Airport area, no measurement at Upland.
ND = No Date, no measurements at this site.

Source: Air Quality Management District 1989.

FIGURE 6

Airflow Patterns in the South Coast Air Basin Influencing Pollutant Emission Migration



Source: Regional Air Quality Plan EIR - San Bernardino County/Cities

TABLE 2

County Share of Basinwide Pollutant Emission Burden (%)

Pollutant	1985	1990	2000	2010
ROG	8.7	9.6	10.3	10.6
NOx	8.2	9.2	10.6	11.0
CO	7.5	9.0	10.9	11.4
PM-10	8.6	8.7	8.9	9.0

ROG = Reactive Organic Gas
NOx = Nitrogen Dioxide
CO = Carbon Monoxide
PM-10 = Suspended Particulates

Source: Regional Air Quality Plan. San Bernardino County/Cities. Technical Background Report.

TABLE 3

Agencies' Responsibilities in Air Quality Planning

Agency	Level of Government	Enabling Legislation	Responsibilities
EPA	Federal	Clean Air Act [2]	Establishes NAAQS. Approves SIP. Levies sanctions against nonattainment areas.
ARB	State	Federal Clean Air Act California Clean Air Act [3]	Prepares and submits SIP to EPA. Reviews regional plans to ensure every reasonable TCM action is taken to achieve standards at earliest practicable date. [4] Emission standards for mobile sources.
SCAG	Local	Federal Clean Air Act California Clean Air Act	Submits annual progress report to EPA and ARB. Responsible for transportation and land use measures. [5]
SCAQMD	Local		Adopt, implement, and enforce transportation control measures. [6]
CITY/COUNTY	Local		Implement land use and transportation control measures.

Source: Regional Air Quality Plan, San Bernardino County/Cities.

2 Amended in November, 1990.

3 AB 2595 Sher Act, 1988.

4 Health and Safety Code, Section 41503.5.

5 Health and Safety Code, Section 40717 (b-(b-f).

6 Health and Safety Code, Section 40716-17.

Government Organization, Roles and Responsibilities

Introduction

Air pollution in the South Coast Air Basin follows no precise boundaries. Its physical location is constantly shifting with seasonal meteorological conditions. This characteristic makes regulating air pollution most appropriately influenced by local government at a regional level.

Technical Information

San Bernardino County is a source area for air pollutants primarily during the winter months when emissions of nitrogen oxide and carbon monoxide travel westward, helping to create unhealthful levels of pollutants in Los Angeles and Orange Counties. During summer months, on-shore winds transport pollutants from the western portion of the basin (notably Los Angeles and Orange Counties) into San Bernardino County. These pollutants combine with local emission sources to create some of the nation's worst air quality. However, San Bernardino County is responsible for less than 10% of the South Coast Air Basin's pollutant emissions (see Table 2, page VIII-11).

Air quality in the South Coast Air Basin as a whole is characterized by high levels of ozone (O_3), carbon monoxide (Co), nitrogen dioxide (No2) and particulate matter (PM10). San Bernardino County is in attainment with federal standards for carbon monoxide and nitrogen dioxide (No2). However, the primary source areas for ozone and particulate emissions are Los Angeles and Orange Counties. This makes it very difficult to directly effect improvements in these pollutants, especially when combined with the wind flow influences discussed in the introduction.

Issues

Although San Bernardino County generates only 10% of the total emissions basin-wide, its residents are exposed to significantly greater health risks than other residents within the basin. San Bernardino County pays a high price for poor air quality. The ill effects of air pollution include: poor health, damage to property, landscaping, agriculture, and livestock; impaired visibility; all of which result in a reduction in the quality of life.

The following goals, policies and actions will aid the City of Chino in improving regional air quality by developing a coordinated approach with other agencies in San Bernardino County and the south coast air basin.

GOALS, POLICIES, AND ACTIONS

GOAL G8-1

Air Quality Improvement.

To achieve coordination of air quality improvement within the portion of the South Coast Air Basin in San Bernardino County and improved air quality through reductions in pollutants from Orange, Riverside and Los Angeles Counties.

POLICY P8-1.1

Establish a Coordinated Approach.

Coordinate with other jurisdictions in San Bernardino County to establish parallel air quality plans and implementation programs.

ACTION A8-1.1.1

Coordinated Review.

Work with the Planning Director's Committee of San Bernardino County to provide coordinated review and response to project proposals, etc., effecting air quality within the San Bernardino County portion of the South Coast Air Quality Management District.

ACTION A8-1.1.2

AQMP Regional Financing.

Work on regional financing of AQMP control measures by influencing San Bernardino Associated Governments, the South Coast Air Quality Management District, and other agencies to provide economic assistance for implementation of the measures.

ACTION A8-1.1.3

Local Input.

Participate in establishing an ongoing air quality implementation and development project referral process within the San Bernardino County portion of the South Coast Air Basin, adapting it as necessary to local circumstances, resources, and procedures.

POLICY P8-1.2

Integrate with Related Programs.

Cooperate in establishing a process to integrate air quality programs, implementation, monitoring, and reporting which will affect air quality improvements in San Bernardino County.

ACTION A8-1.2.1

Implement Congestion Management Plan.

Participate with San Bernardino Associated Governments (SANBAG) to create and implement the Congestion Management Plan (CMP).

ACTION A8-1.2.2

Establish Regional Transportation Management Agencies.

Participate with other agencies/ organizations to establish regional and sub-regional Transportation Management Agencies (TMA's) which may include Chino Hills, Ontario, Montclair, and San Bernardino County (AQMP Control Measure No. 2.a.).

ACTION A8-1.2.3

OmniTrans/RTD - Transit Improvements.

Work with OmniTrans/RTD/OCTD to improve transit within Chino and San Bernardino County. (AQMP Control Measure No. 2.g.)

POLICY P8-1.3

Affect Source Jurisdictions.

Cooperate actively with Los Angeles, Orange, and Riverside counties to comprehensively improve air quality at the emission source.

ACTION A8-1.3.1
Communication Network.
Participate in a joint communications network for the purpose of improving regional air quality through interagency program development and implementation, such as vanpools between neighboring cities and sharing costs of the capital outlay for such activities.

ACTION A8-1.3.2
Lobby Other Entities to Implement AQMP.
Directly lobby local agencies and private entities to comply with the AQMP.

POLICY P8-1.4
Encourage Community Participation.
Involve environmental groups, the business community, special interests, and the general public in the formulation and implementation of programs which effectively reduce air borne pollutants.

ACTION A8-1.4.1
Public Participation Programs.
Prepare public participation programs which target City residents, businesses, and industries for the purpose of educating them about how they can reduce air pollution.

ACTION A8-1.4.2
Educate Local Businesses.
Work with the Chamber of Commerce to educate and incorporate AQMP programs and Chino Air Quality Element actions into local business activities.

ACTION A8-1.4.3
Obtaining Public Input.
Gain public input during implementation of the City's Air Quality Element and SCAQMD's Air Quality Management Plan.

ACTION A8-1.4.4
Homeowner's Association/Neighborhood Groups.
Work with Homeowner's Associations and neighborhood groups to encourage implementation of the AQMP and Chino Air Quality Element.

POLICY P8-1.5
Support Innovative Approaches.
Advocate and support innovative strategies to improve air quality.

ACTION A8-1.5.1
Tier III Implementation.
Support Tier III implementation of the AQMP by supporting new technology which is not available today but will improve air quality in the future.

ACTION A8-1.5.2
Encourage Business/Research.
Support new approaches to improving air quality through encouraging business/research companies to utilize financing mechanisms provided by federal, state, and local sources.

ACTION A8-1.5.3
Support Creative Solutions.
Support agencies/organizations who provide creative solutions to improve air quality, such as auto buy-back programs and consumer product emissions fees.

ACTION A8-1.5.4

Regional Cooperation.

Cooperate with local and regional agencies by preparing a memorandum of understanding for obtaining the minimum pollutant emissions while maintaining the City's economic viability.

Ground Transportation

Introduction

San Bernardino County's residents commute by the tens of thousands to employment sites throughout Los Angeles and Orange Counties. Likewise, a large group of Chino residents commute out of the City to their work sites. They make this workday commute from a housing-rich to a job-rich area. This commuting pattern impacts transportation systems, which leads to traffic congestion.

Ground transportation related sources produce the largest amount of pollutant emissions in the South Coast Air Basin. These emissions are generated from about eight (8) million on-road vehicles. The vehicles are characterized by passenger cars, light duty trucks, medium duty vehicles, heavy duty vehicles, and motorcycles. In 1989, they travelled approximately 240 million miles within the basin.

One of the most important steps local governments can do to reduce pollutant emissions from mobile sources is to utilize programs which attract businesses that provide employment opportunities for their residents. Jobs/housing balance will be discussed in more detail in the land use section of this document. However, recognition of the linkage between land use, transportation, and air quality is crucial in bringing about a solution to the basin's air quality problem. Recognition of this linkage means understanding that residents of Chino, as well as the region, must make lifestyle changes to reduce demand on existing transportation systems.

Technical Information

Transportation related sources are responsible for most emissions of Co (96%) and NOx (72%) and for a significant amount of ROG (52%) and SOx (54%). Vehicular emissions of reactive organic gases (ROG) and carbon monoxide (Co) are higher at low speeds or idling, while nitrogen oxide (NOX) emissions increase with higher speeds and acceleration. Therefore, actions which reduce vehicle miles travelled must be combined with stringent tailpipe standards, better inspection, and vehicle maintenance programs to address pollutant emission reductions both locally and regionally.

The effects of travel distance and congestion have a profound effect on the amount of air pollutant emissions generated from ground transportation sources. The net effect is that vehicles (trips) which are driven longer distances for longer hours, result in increased amounts of pollutants. However, combining vehicle trips rather than a series of single destination trips create less pollutants, because vehicles emit more pollutants when they are cold.

Ridesharing, business induced transportation incentives/disincentives, modifying work schedules, tele-communication, and establishing transportation management agencies are some ways of reducing vehicular miles travelled (VMT). These actions mean riding together instead of riding alone; getting paid not to drive; and talking on the phone instead of driving; each inherently require changes in our day-to-day lifestyles.

These actions emphasize reducing pollutant emissions from ground transportation sources through reducing vehicle use (i.e., vehicle miles travelled (VMT) and number of trips). Reducing vehicle use means choosing another transportation mode, commute time of day, or whether to travel altogether.

The City prepared an analysis which assessed the feasibility of creating a Transportation Management Association (TMA) within a 430 acre business park and/or an adjacent 370 acre specific plan area. This analysis clearly showed that a TMA could be successful at some point in the future if both project areas were included.

Issues

Statistics compiled in the California Department of Transportation Travel Forecast Summary indicated that over 75% of those who travel from home to work in the Los Angeles region chose to drive alone. About 11% travelled from home to work with one other person; less than 7% utilized public transit.

Residents of the air basin must reduce their dependency on the single occupant vehicle to obtain cleaner air. Changing this commuting pattern is a monumental task and the primary issue with regard to ground transportation emission sources. Local government must take a leading role in this task.

The City has plans to assess the feasibility of establishing a Transportation Terminal in the downtown area. If established, it would provide a central location for transit services, commute activities, and shuttle services to commuter trains within the region.

The following goals, policies and actions will aid the City in obtaining a reduction in air pollutants from ground transportation sources and help to encourage the desired lifestyle changes.

GOALS, POLICIES, AND ACTIONS

GOAL G8-2

Ground Transportation.

To achieve a diverse and efficient ground transportation system which generates the minimum feasible pollutants.

POLICY P8-2.1

Eliminate Unnecessary Trips.

Use market incentives, regulations, and Transportation Demand Management in cooperation with other jurisdictions in the South Coast Air Basin to eliminate unnecessary vehicle trips which would otherwise be made.

ACTION A8-2.1.1

Neighborhood Services.

Examine the feasibility of adopting a zone ordinance amendment to permit essential services (postal, retail, convenience items, etc.) to be located in residential neighborhoods where these services are not within walking or bicycling distance.

ACTION A8-2.1.2
On-Site Services.
Examine the feasibility of providing services for civic center employees (i.e., cafeteria, banking, postal services, etc.) within walking distance.

ACTION A8-2.1.3
Trip Reduction Ordinance.
Adopt an ordinance requiring all employers within the City to reduce work trips by 12% by 1999, 20% by 2004 and 30% by 2010. This may be achieved through programs such as compressed work weeks, flex schedules, carpooling, and tele-communication, etc. (AQMP Control Measure No. 1.a. and 1.b.)

ACTION A8-2.1.4
Compliance with SCAQMD AVR.
Adopt an ordinance by 1994 requiring trip reduction plans to meet SCAQMD Average Vehicle Ridership (AVR) requirements (1.5) for facilities with tenants employing more than 100 employees and 25+ employees by 1995. (AQMP Control Measure No. 2.a.)

ACTION A8-2.1.5
Reduced Service During Stage 3 Smog Alerts.
Require City public facilities to operate at reduced staffing levels during Stage 3 smog alerts.

ACTION A8-2.1.6
Trip Reduction Program.
Implement a program which requires the City, as an employer, to reduce work trips by 12% by 1999, 20% by 2004 and 30% by 2010. This can be accomplished by requiring flex schedules, compressed work weeks, non-motorized transportation, carpooling, tele-communication, market incentives, etc. (AQMP Control Measure No. 1.a. and 1.b.)

POLICY P8-2.2
Reduce Vehicle Miles Travelled.
Use incentives, regulations and Transportation Demand Management in cooperation with other jurisdictions in the South Coast Air Basin to reduce the vehicle miles travelled for auto trips which still need to me made.

ACTION A8-2.2.1
Travel Demand Management.
Adopt an ordinance to require Travel Demand Management (TDM) programs for all new and existing developments. (AQMP Control Measure No. 2.b.)

POLICY P8-2.3
Improve Traffic Flow.
Improve traffic flow by implementing the state mandated Congestion Management Program (CMP), the AQMP, and other means to lessen roadway congestion.

ACTION A8-2.3.1
Congestion Management Plan (CMP).
Provide on-going participation in the CMP process within San Bernardino County.

ACTION A8-2.3.2
Adopt CMP Ordinance.
Adopt CMP ordinance by 1992 reflecting air quality goals, policies, and actions.

ACTION A8-2.3.3
Truck Routing/Deliveries.
Continue to require Truck Travel Demand Management Plans for commercial and industrial developments which include scheduling and routing of deliveries in conformance with this element. Companies with deliveries of a time-sensitive nature shall be required to submit plans which comply with the truck delivery restrictions where possible. (AQMP Control Measure No. 3.a.)

ACTION A8-2.3.4
Restrict Trucks from Major Arterials.
Adopt an ordinance restricting operating times for heavy duty vehicles on congested portions of major arterials during peak hours for deliveries which are not of a time sensitive nature. (AQMP Control Measure No. 3.a.)

ACTION A8-2.3.5
Traffic Signal Improvements.
Require interconnected signal control systems on all primary arterials including those which cross interjurisdictional boundaries. (AQMP Control Measure No. 4.)

ACTION A8-2.3.6
On-Street Parking During Peak Hours.
Eliminate peak hour on-street parking on arterials within the City. (AQMP Control Measure No. 2.b. and 4.)

ACTION A8-2.3.7
Surcharge for Truck Operations During Peak Periods.
Adopt an ordinance which establishes a surcharge and permit issuance procedures to permit the operation of commercial vehicles during periods of peak traffic congestion on congested portions of major arterials and establish a fine for those operating without a permit or not in compliance with their approved Truck Travel Demand Management Plans. (AQMP Control Measure No. 3.a.)

POLICY P8-2.4
Establish Fees.
Encourage market based incentives and disincentives to relieve peak hour/peak congestion within highly congested travel corridors in and adjacent to the City of Chino.

[Note: Future actions may be included under this policy if fees are determined to be needed for implementation of other Air Quality actions.]

POLICY P8-2.5
Expand Transit.
Cooperate in efforts to expand bus, rail, and other forms of transit in the portion of the South Coast Air Basin within San Bernardino County and the inter-county links to Los Angeles, Orange and Riverside counties.

ACTION A8-2.5.1

Sub-Regional Transportation System.
Lobby regional transportation agencies to expand regional transit systems between residential areas and employment centers in San Bernardino County.

ACTION A8-2.5.2

Auto Use Restrictions.
Require special event centers which have the ability to attract over 10,000 persons to operate park-n-ride facilities and enhance transit performance to venues within Chino. (AQMP Control Measure No. 2.e.)

ACTION A8-2.5.3

City Shuttle.
Develop a City shuttle between regional land uses, park-n-ride facilities, and neighborhoods.

POLICY P8-2.6

Promote Non-Motorized Transportation.
Provide bicycle and pedestrian pathways and facilities to encourage non-motorized trips.

ACTION A8-2.6.1

Bike Trails.
Continue to implement the Circulation Element goals and policies which provide bike and pedestrian trails between residential neighborhoods and employment and commercial areas. (AQMP Control Measure No. 1.b.)

ACTION A8-2.6.2

Merchant Transportation Incentives.
Examine the feasibility to adopt a non-work trip reduction ordinances which require large retail and business establishments to offer customer travel incentives and facilities for non-motorized transportation needs. (AQMP Control Measure No. 2.d.)

ACTION A8-2.6.3

Bicycle Parking and Showers.
Adopt an ordinance requiring commercial and industrial facilities to provide bicycle parking and shower facilities for riders. (AQMP Control Measure No. 1.b.)

POLICY P8-2.7

Manage Parking Supply.
Manage the parking supply for public and private development to discourage auto use, while ensuring that economic development goals are not impacted.

ACTION A8-2.7.1

Rideshare Incentives in Public Parking Lots.
Provide incentives for ridesharing and non-single occupancy vehicles for those vehicles who use public parking lots. (AQMP Control Measure No. 2.b.)

ACTION A8-2.7.2

Limit Parking Supply by Zone.
Adopt an ordinance establishing a cap on the number of parking spaces permitted per square foot for particular uses. (AQMP Control Measure No. 2.b.)

ACTION A8-2.7.3
Preferential Parking for Rideshares.
Adopt an ordinance which requires employers/developers to provide preferential parking for rideshares. (AQMP Control Measure No. 2.b.)

POLICY P8-2.8
Encourage Market Incentives/Disincentives.
Promote a regional approach to increasing parking costs in order to discourage low vehicle occupancy.

ACTION A8-2.8.1
Parking Cost Standards.
Work with other cities to establish standard parking costs to ensure that the City is not placed at an economic disadvantage with other communities. (AQMP Control Measure No. 2.b.)

POLICY P8-2.9
Support Legislation.
Lobby for state and federal legislation which would improve vehicle/transportation technology and establish differential pricing mechanisms to assess the true cost of emissions.

ACTION A8-2.9.1
Emission Fee.
Support State and Federal legislation which establishes emission fees on gasoline products.

ACTION A8-2.9.2
Emission Surcharge.
Adopt an ordinance increasing the bail for vehicles ticketed for air pollutant emissions violations.

ACTION A8-2.9.3
Support Tax Credit/Tax Benefit.
Support legislation which provides favorable tax credits or benefits for employers who purchase or lease vans for employee use, employers who sponsor work day use of clean fuel vehicles, and employees who use employer sponsored vanpools. (AQMP Control Measure No. 2.a.)

POLICY P8-2.10
Institute Clean Fuel Systems.
Invest in clean fuel systems on all non-electric fleet vehicles.

ACTION A8-2.10.1
Clean Fuel Electric Vehicles.
Purchase vehicles which use clean fuels (such as electricity) for use as part of the City fleet. Attempt to achieve 10% of City fleet vehicles to be electric (or electric clean fuel) by the year 2000, and 20% by the year 2010.

ACTION A8-2.10.2
MPG Purchase Limitation.
Require all non-emergency and maintenance vehicles to obtain at least 25 MPG (highway) as a criteria for new fleet vehicle acquisition.

Air Transportation

Introduction

There are two airport facilities which directly impact the air quality within Chino: Ontario International Airport located within the City of Ontario and Chino Airport located in the southeastern portion of Chino. The emissions generated as a result of Ontario International Airport will be controlled by the City of Ontario (in terms of ground access and vehicle trip reductions), by the airport operator, Los Angeles Department of Airports, the various airlines (in terms of fleet replacement and on-site operational changes), and SCAQMD (in terms of various role changes, monitoring, etc.).

Chino Airport, a 950-acre facility, is owned by the County of San Bernardino and located near the southeast corner of Merrill and Euclid Avenues. It is classified as a "Basic Transportation Airport" functioning as a home base for business jets, corporate jets, and recreational aircraft. It is also the designated reliever facility for John Wayne Airport in Orange County.

Chino Airport serves the general aviation needs of southwestern San Bernardino County and parts of the surrounding three counties because of its convenient location. Many of the basic transportation airports within this region are already either, or close to, capacity. The demand for airport services will force some users to search elsewhere for accommodations and services. This activity will make the potential expansion capabilities of Chino Airport significant.

Technical Information

The Southern California Association of Governments projected that 43% of Los Angeles County airports and 100% of Orange County airports would be at capacity by 1985. These projections have held true and spatial demand, regionally, for based aircraft is greater than the area available.

The volume of based aircraft at Chino Airport is forecasted to increase from 1,100 in 1990 to 1,900 in 2005. While pollutant emissions at Chino Airport are currently not a significant problem, air and ground transportation related emissions associated with anticipated expansion are expected to increase.

The Chino Airport Master Plan envisions additional space for terminal/administrative facilities in order to accommodate the increased air transportation activities expected. Likewise, it is anticipated that airport support uses, such as, restaurants and hotels, will develop within or adjacent to the immediate airport facility.

Issues

A large portion of the airport facility and adjacent property is undeveloped. The City has agreed to support the implementation of the Chino Airport Master Plan which was prepared by the County. Implementation of the Master Plan may have significant impacts to air quality unless future development is required to adhere to air quality guidelines.

The following goals, policies, and actions will provide the framework to assure that implementation of the Chino Airport Master Plan produces the minimum amount of pollutant emissions.

GOALS, POLICIES, AND ACTIONS

GOAL G8-3

General Aviation Emissions.

To encourage the minimum feasible emissions from Chino Airport.

POLICY P8-3.1

Promote Improved Technology.

Support the South Coast Air Quality Management District in promoting the best available technology to reduce emissions in aircraft fleet and ground service vehicles.

ACTION A8-3.1.1

Cleaner Fuels.

Encourage airport service vehicles to use alternate (cleaner) fuels, i.e., electrification.

POLICY P8-3.2

Coordinate Airport Development.

Coordinate airport development to minimize pollutant emission from ground and air transportation systems.

ACTION P8-3.2.1

Airport Transportation Demand Management.

Coordinate airport development to minimize pollutant emission from ground and air transportation systems (i.e., indirect sources) by utilizing Transportation Demand Management (TDM) measures.

Land Use

Introduction

An efficient land use pattern served by a diverse transportation system can minimize air pollutants by minimizing congestion. This means balancing growth. Balanced growth is obtained by equalizing jobs and housing. (i.e., jobs/housing balance).

The purpose of jobs/housing balance is to allow workers to live closer to their jobs, thereby reducing traffic congestion and air pollution problems. However, cities and subregions develop on the fortunes of their constituent industries and supply of affordable housing. To achieve a jobs/housing balance and reduce vehicle miles travelled, growth must be managed. Ensuring the timely provision of infrastructure to serve new development, implementing an economic development strategy, and providing adequate housing for the employment population are essential elements of managing growth and balancing the jobs and housing within the community.

Technical Information

The West San Bernardino Valley subregion is expected to grow by 46.2% in population between 1990 and 2010. This same region will capture 4.7% of the projected regional and 22.9% of the county population growth over the same period.

The City of Chino, which is part of this subregion, is projected to increase in population by 7.5%, from 15,665 to 21,379 dwelling units.

There are approximately 1,088 acres of undeveloped industrial and 738 acres of undeveloped residential property within the City. Based on the growth projected in the West Valley area, residential build out may be accomplished by the year 2010. Industrial development is expected to lag slightly behind.

Employment in San Bernardino County is characterized by 10 main industrial groupings. Retail trade establishments are the largest employers which capture 26.5% of the total employment. Service establishments are the second largest employers and capture 26.5% of total business employment. Overall most businesses are small firms with fewer than 50 employees.

Issues

The socioeconomic background information contained in the San Bernardino County Regional Air Quality Plan projects the City's jobs/housing ratio to be 1.76 jobs per household by the year 2010. It is estimated that the City's existing jobs/housing ratio is 1.42 jobs per household. The existing and projected ratios reflect a community which has an appropriate balance between jobs and housing. Such a balance will certainly contribute to a reduction in air pollutants generated locally if vehicle miles travelled can be reduced.

It will be most difficult to achieve this balance without an exhaustive planning effort. Several factors will inhibit the City's ability to achieve the projected jobs/housing balance and desired reduction in vehicle miles travelled. First, Measure "M", effective

in 1988, fixes the housing supply making affordable housing programs difficult to implement. Second, the City does not currently have an economic development strategy to attract business and industry which fit the existing labor pool. Third, the City does not have a Capital Improvement Plan (CIP) consistent with state requirements which works to balance jobs/housing, or consider the timely provision of infrastructure to housing and employment sectors.

The following goals, policies, and actions will aid the City in improving air quality by promoting jobs/housing balance for the purpose of reducing vehicle miles travelled.

GOALS, POLICIES, AND ACTIONS

GOAL G8-4

Efficient Land Use Pattern.
To achieve a pattern of land uses which can be efficiently served by a diversified transportation system and development projects which directly and indirectly generate the minimum feasible air pollutants.

POLICY P8-4.1

Manage Growth.
Continue to ensure that the fundamental City documents, including the General Plan, achieves a community which is efficiently balanced in terms of jobs/housing and which adequately prepares for management of growth.

ACTION A8-4.1.1

Capital Improvement Plan.
Prepare and annually update a Capital Improvement Plan (CIP) to include state mandated air quality requirements.

ACTION A8-4.1.2

Economic Development Strategy.
Complete the preparation of an economic development strategy which examines the available labor pool and targets/markets the City to those industries/ businesses who best fit the labor pool characteristics.

ACTION A8-4.1.3

Coordinate Regional Job/Housing Balance.
Participate in the preparation of a Memorandum of Understanding (MOU) between participating jurisdictions in the Regional Air Quality Element (RAQE) as to mutually acceptable approoches to improve and maintain the jobs/housing balance in the West Valley area. (AQMP Control Measure No. 17.)

POLICY P8-4.2

Jobs/Housing Balance.
Create and execute programs which control and manage the balance between jobs and housing.

ACTION A8-4.2.1

Project Impacts.
Adopt an ordinance to establish criteria to assess the impacts of development projects upon air quality in terms of such factors as jobs created, traffic generated (by type), and direct/indirect pollutant emissions for certain size development.

ACTION A8-4.2.2

Draw From City Labor Pool.

Assess the feasibility of requiring businesses to employ a portion of its labor force from within the City or close proximity to the City.

ACTION A8-4.2.3

Growth Management Plan Performance.

Amend the Land Use Element to attain jobs/housing balance performance goals including jobs/housing targets by year, at a sub-regional level consistent with the Growth Management Plan (GMP). Prepare bi-annual assessment of the City's status in attaining its jobs/housing balance goals. (AQMP Control Measure No. 17.)

ACTION A8-4.2.4

New Jobs/Backbone Infrastructure.

Include in the City's C.I.P. a provision to provide backbone infrastructure to areas within the City where new jobs could be created which best fit the City's labor pools characteristics.

ACTION A8-4.2.5

Mixed Use Development.

Examine the feasibility of preparing a zoning ordinance amendment requiring mixed use development within the parameters established by Measure "M" in certain commercial zones.

POLICY P8-4.3

Protect Sensitive Receptors.

Protect sensitive receptors (schools, parks, hospitals) by supporting a regional approach to regulating the location and design of land uses which are especially sensitive to air pollution.

ACTION A8-4.3.1

Locational Requirements for Sensitive Receptors.

Prepare a zoning ordinance amendment which formulates standards for regulating the location and protection of sensitive receptors (such as schools, parks, hospitals, churches, etc.) from air pollutant emissions.

Particulate Emissions

Introduction

Particulate matter, or suspended particulates are solid and liquid particles of dust, soot, aerosol and other matter which are small enough to remain suspended in the air for a long period of time. A portion of the total particulate matter is caused by natural sources such as wind-blown dust and pollen. Man made sources include auto combustion, agriculture, factories, construction activity and roads (especially unpaved roads).

The City is transitioning from a primarily agricultural to urbanized community. While some agricultural activities currently operate within the City, the community make-up is predominately urban. Urban activities are the primary sources of particulate matter within Chino.

Technical Information

The primary source of particulate matter within Chino is from construction activity. The projected growth in this region and the amount of undeveloped land make construction activity the number one generator.

The adjacent San Bernardino County Dairy Preserve and agricultural activities located within the southern portion of the City, also generate particulate matter. It is expected that dust particles from agricultural uses within the City will diminish over time. However, impacts from the San Bernardino County Dairy Preserve and California Institution for Men will continue.

In the urbanized portion of the City, dust is generated from curbs and gutters, unpaved road shoulders, and parking lots. Presently, street sweepers clean each street 26 times annually. This totals approximately 4,160 miles of roadway per year. Statistics collected during the development of the San Bernardino County Regional Air Quality Plan show Chino's street sweeping program to be one of the most ambitious.

Issues

As the City continues to develop, construction activity will continue to produce particulates which will impact air quality. The current street sweeping program is adequate to mitigate impacts from streets, roads, natural sources, parking lots and agricultural uses. The primary issue will be to control particulate matter during new construction and on unpaved roads and lots.

The following goals, policies, and actions will aid the City in reducing air born particulates from activity within the City, including construction activity.

GOALS, POLICIES, AND ACTIONS

GOAL G8-5

Reduce Particulate Emissions.

Reduce to a minimum particulate emissions from such uses as construction, operation of roads, and buildings.

POLICY P8-5.1

Control Dust.

Reduce particulate emissions from roads, parking lots, construction sites and agricultural lands.

ACTION A8-5.1.1

Street Sweeping.

Continue to sweep City streets approximately twice per month. (AQMP Control Measure No. 12.a.)

ACTION A8-5.1.2

Control Particulate Emissions from Unpaved Roads.

Adopt an ordinance amendment to control particulate emissions created from unpaved roads, drives, vehicle maneuvering areas, parking lots, and vacant lots in conformance with the criteria established by the Air Resources Board. (AQMP Control Measure No. 12.b.)

ACTION A8-5.1.3

Limit Dust.

Adopt an ordinance amendment to control dust from vacant lands and operations and erosions from storm water washing into streets. (AQMP Control Measure No. 12.a.)

ACTION A8-5.1.4

Storage of Particulate Matter.

Eliminate the outdoor storage of sand, gravel and other particulate matter which is left uncovered or not confined at City facilities. (AQMP Control Measure No. 12.a.)

POLICY P8-5.2

Reduce Emissions from Building Materials and Methods of Construction.

Reduce emissions from building materials and methods of construction which generate excessive pollutants.

ACTION A8-5.2.1

Control Emissions, Construction, and Demolition.

Adopt an ordinance requiring the control of particulate emissions from construction and demolition activities and on-site construction traffic flow by requiring such things as truck wheel washers and paving of access roads. (AQMP Control Measure No. 12.a.)

ACTION A8-5.2.2

Particulate Emissions from Truck Hauling.

Require the installation of liners on truck beds, truck loads to be covered, and maintain freeboard levels for trucks use in construction activities. Establish penalties for commercial vehicles which are not in compliance. (AQMP Control Measure No. 12.a.)

POLICY P8-5.3

Reduce Emissions from Building Interiors.

To reduce interior air pollutants which produce poor air quality within building interiors.

Note: No Actions approved at this time. Actions might be added at a later date.

Energy Conservation

Introduction

Energy use contributes significantly to pollutant emissions, as well as gases that effect global warming. In 1987, approximately 80% of all emissions were related to energy use.

As population growth continues, it is imperative to advocate the efficient use of energy. It is also important to reduce the use of energy and encourage alternative energy sources.

Technical Information

The South Coast Air Quality Management District's 1991 Air Quality Management Plan requires local government to reduce its energy demand by 8% by January 1, 1994, 15% by 2000, and 30% by 2010. A recent League of California Cities' survey revealed that nearly 40% of responding cities have no organized energy management programs. The City of Chino is no exception.

Conservation measures involving building operation improvements, such as lighting, building area and boiler efficiency improvements, can lead to a significant reduction in energy consumption. Other areas where energy conservation can be achieved are: heating, ventilation and air conditioning (HVAC) system modifications, electrical use from space heating and cooling, food preparation, and energy efficient lighting in a variety of commercial and industrial facilities and residential homes. Additionally, industrial facilities use electricity in the manufacturing process for activities such as hydraulic pumping, air movement systems, electroplating, metal melting, drying and curing processes, and electric motor operation.

The use of cleaner types of energy is also an important aspect of reducing pollutant emissions. Electricity, ethanol, geothermal, LPG, methanol, natural gas, solar, and wind are considered clean fuels. The AQMP assumes that fuels which are cleaner and/or more efficient will be used, where appropriate, as an alternative to the high polluting fuels currently being used.

Issue

The primary issue with carrying out energy conservation actions is generating the initial capital for their creation and taking the necessary actions to implement them.

The following goals policies and actions will aid the City in conserving energy and reducing pollutant emissions which contribute to global warming.

GOALS, POLICIES, AND ACTIONS

GOAL G8-6

Reduce Energy Consumption.

To reduce emissions through reduced energy consumption.

POLICY P8-6.1

Energy Conservation.
Reduce energy consumption through energy conservation improvements and requirements.

ACTION A8-6.1.1

Energy Conservation Plan.
Develop a 5-year energy conservation plan which describes improvements to City buildings which will conserve energy or convert to cleaner fuels and include implementation of this plan in the City's annual budget.

ACTION A8-6.1.2

Energy Conservation Requirements.
Adopt an ordinance creating a program of local administrative practices to reduce local government energy demand 8% by January 1, 1994; 15% by the year 2000, and; 30% by the year 2010. (AQMP Control Measure No. 18.a.)

POLICY P8-6.2

Limit Water Heater Emissions.
To reduce emissions resulting from swimming pool water heaters and residential and commercial water heaters.

ACTION A8-6.2.1

Emission Reduction from Pool Heaters.
Adopt a regulation requiring an emission reduction from swimming pool water heaters. (AQMP Control Measure No. 18.a.)

ACTION A8-6.2.2

Emission Reduction From Water Heaters.
Adopt a regulation to require an emission reduction from residential and commercial water heaters. (AQMP Control Measure No. 18.a.)

POLICY P8-6.3

Recycle Wastes.
Promote local recycling of wastes and use of recycled materials.

ACTION A8-6.3.1

Waste Recycling.
Adopt a Source Reduction and Recycling Element to divert 25% of local solid waste requiring disposal by the year 1995 and 50% by the year 2000.

Implementation Strategy

Everyone wants cleaner air, a better place to live and work, and a healthy environment. The problem, however, as it relates to air quality, is that it will require a significant commitment by local government, business, and area residents to obtain cleaner air. The commitment comes in the form of modification to one's lifestyle. This type of change has the potential to be overwhelming.

The South Coast Air Quality Management District - Air Quality Management Plan, (and the control measures it contains) may appear overwhelming to area residents, business, and municipal government. The control measures noted in Appendix "A" of this document, in effect, ask local governments to use their land use regulatory powers to encourage the lifestyle change to obtain Federal air standards.

To successfully achieve the prescribed federal air quality standards, the City, local businesses, employees, and residents will all need to play a role in implementing these actions. The role of each party is separate and distinct but critical to our region being successful in this endeavor. The following are examples of the roles each of these parties may be asked to participate in.

City

Prepare an Air Quality Element; educate local businesses and residents about air quality issues; become a partner with local businesses and area residents to improve air quality within the air basin; require its employees to rideshare; buy fuel efficient fleet vehicles; save energy in City buildings; lobby other jurisdictions to do their fair share in improving air quality in the basin, etc.

Local Business

Work with the City in a partnership role to implement the various actions within this element; educate employees about how they can affect air quality; try to hire local residents; create flexible work hours for employees; encourage employees to rideshare; where feasible, permit telecommuting; schedule truck deliveries in off-peak hours; assist in establishing and/or participate in a Transportation Management Association; and provide showers and lockers for employees who bike or walk to work, etc.

Local Residents

Educate themselves about how they can affect air quality; become ridesharers, walk or bike to local activities within the City; plan their non-work trips so they are efficient; become familiar with and use local transit; when considering a job change, look for employment close to home; support the City and local business efforts to improve air quality, etc.

Recognizing the commitment and resources needed to accomplish such a change, and the inevitable impacts facing the people who will make that first commitment. The following guidelines are included to assist City Departments in implementing the Air Quality Element actions.

Guidelines for the City's Implementation of the Air Quality Element actions:

1. In all applicable cases, actions shall be implemented by utilizing market incentives available to the City or business community to encourage compliance with specific activities. If a market incentive approach fails to yield the desired air quality benefit, a direct regulatory approach shall be pursued, as a last resort.

2. The City shall form a partnership with businesses and area residents to achieve the goal of cleaner air through cooperation, sharing of available resources, and creative solutions to action implementation.

3. The City shall function, to the maximum extent possible, as a liaison between the business community, South Coast Air Quality Management District, other air quality planning agencies, and agencies with funding sources in order to facilitate action implementation. This role may include examining funding sources, establishing incentives, providing information, and consulting area residents.

The City is committed to achieving the air quality improvements set forth in the South Coast Air Quality Management District's Air Quality Management Plan. However, the City realizes that achieving such a goal may have a burden on businesses and residents. The aforementioned implementation guidelines will assist the City in achieving district requirements while sharing the responsibility with area residents and local business/industry.

Implementation

- Government Organization, Roles and Repsonsibilities
- Ground Transportation
- Air Transportation
- Land Use
- Particulate Emissions
- Energy Conservation

AIR QUALITY ELEMENT IMPLEMENTATION

GOVERNMENT ORGANIZATION, ROLES AND RESPONSIBILITIES

ACTIONS	GOALS AND POLICIES				RESPONSIBLE AGENCY / DEPARTMENT *									TIMING
	Goal G8-1 Air Quality Improvement				CD	PW	CS	MS	PD	FD	A	SBC	Other (specify)	
	P8-1.1	P8-1.2	P8-1.3											
Coordinated Review. Action A8-1.1.1	X				X									On-going
AQMP Regional Financing. Action A8-1.1.2	X				X						X			On-going
Local Input. Action A8-1.1.3	X				X									1991
Implement Congestion Management Plan. Action A8-1.2.1		X				X								1992
Establish Regional Transportation Management Agencies. Action A8-1.2.2		X				X					X			On-going
OmniTrans/RTD - Transit Improvements. Action A8-1.2.3 (AQMP Cntl Measure No. 2.g.)		X				X					X			On-going
Communication Network. Action A8-1.3.1			X								X			On-going
Lobby Other Entities to Implement AQMP. Action A8-1.3.2			X								X			On-going

* CD - Community Development Department
PW - Public Works Department
CS - Community Services Department
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AIR QUALITY ELEMENT IMPLEMENTATION

GOVERNMENT ORGANIZATION, ROLES AND RESPONSIBILITIES

ACTIONS	GOALS AND POLICIES				RESPONSIBLE AGENCY / DEPARTMENT *									TIMING
	Goal G8-1 Air Quality Improvement				CD	PW	CS	MS	PD	FD	A	SBC	Other (specify)	
	P8-1.4	P8-1.5												
Public Participation Programs. Action A8-1.4.1	X				X						X			On-going
Educate Local Businesses. Action A8-1.4.2	X				X						X			1992
Obtaining Public Input. Action A8-1.4.3	X				X									On-going
Homeowner's Association/Neighborhood Groups. Action A8-1.4.4	X				X						X			1992
Tier III Implementation. Action A8-1.5.1		X			X						X			On-going
Encourage Business/Research. Action A8-1.5.2		X			X						X			On-going
Support Creative Solutions. Action A8-1.5.3		X			X						X			On-going
Regional Cooperation. Action A8-1.5.4		X									X			On-going

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AIR QUALITY ELEMENT IMPLEMENTATION

GROUND TRANSPORTATION

ACTIONS	GOALS AND POLICIES				RESPONSIBLE AGENCY / DEPARTMENT *									TIMING
	Goal G8-2		Ground Transportation		CD	PW	CS	MS	PD	FD	A	SBC	Other (specify)	
	P8-2.1	P8-2.2												
Neighborhood Services. Action A8-2.1.1	X				X									1993
On-Site Services. Action A8-2.1.2	X										X			1994 *
Trip Reduction Ordinance. Action A8-2.1.3 (AQMP Cntl Measure No. 1.a. & 1.b.)	X					X								1994 *
Compliance with SCAQMD AVR. Action A8-2.1.4 (AQMP Cntl Measure No. 2.a.)	X				X						X			1994/1995
Reduced Service During Stage 3 Smog Alerts. Action A8-2.1.5	X										X			1991 *
Trip Reduction Program. Action A8-2.1.6 (AQMP Cntl Measure No. 1.a. & 1.b.)	X										X			1994 *
Travel Demand Management Action A8-2.2.1 (AQMP Cntl Measure No. 2.b.)		X			X									1994 *

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AIR QUALITY ELEMENT IMPLEMENTATION

GROUND TRANSPORTATION

ACTIONS	GOALS AND POLICIES				RESPONSIBLE AGENCY / DEPARTMENT *									TIMING
	Goal G8-2 Ground Transportation				CD	PW	CS	MS	PD	FD	A	SBC	Other (specify)	
	P8-2.3	P8-2.4	P8-2.5											
Congestion Management Plan. Action A8-2.3.1	X					X								1992
Adopt CMP Ordinance. Action A8-2.3.2	X					X								1992
Truck Routing/Deliveries. Action A8-2.3.3 (AQMP Cntl Measure No. 3.a.)	X					X								1994
Restrict Trucks from Major Arterials. Action A8-2.3.4 (AQMP Cntl Measure No. 3.a.)	X					X								1994
Traffic Signal Improvements. Action A8-2.3.5 (AQMP Cntl Measure No. 4.)	X					X								1995
On-Street Parking During Peak Hours. Action A8-2.3.6 (AQMP Cntl Measure No. 2.b. & 4.)	X					X								1994
Surcharge for Truck Operations During Peak Periods. Action A8-2.3.7 (AQMP Cntl Measure No. 3.a.)	X					X					X			1994
(Note: Future actions may be included under this policy if fees are determined to be needed for implementation of other Air Quality actions.)		X												
Sub-Regional Transportation System. Action A8-2.5.1			X								X			1992
Auto Use Restrictions. Action A8-2.5.2 (AQMP Cntl Measure No. 2.e.)			X			X								1992
City Shuttle. Action A8-2.5.3			X								X			1994

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AIR QUALITY ELEMENT IMPLEMENTATION

GROUND TRANSPORTATION

ACTIONS	GOALS AND POLICIES					RESPONSIBLE AGENCY / DEPARTMENT *									TIMING
	Goal G8-2 Ground Transportation					CD	PW	CS	MS	PD	FD	A	SBC	Other (specify)	
	P8-2.6	P8-2.7	P8-2.8	P8-2.9	P8-2.10										
Bike Trails. Action A8-2.6.1 (AQMP Cntl Measure No. 1.b.)	X					X		X							On-going
Merchant Transportation Incentives. Action A8-2.6.2 (AQMP Cntl Measure No. 2.d.)	X					X	X					X			1994
Bicycle Parking and Showers. Action A8-2.6.3 (AQMP Cntl Measure No. 1.b.)	X					X						X			1999
Rideshare Incentives in Public Parking Lots. Action A8-2.7.1 (AQMP Cntl Measure No. 2.b.)		X				X						X			1994
Limit Parking Supply by Zone. Action A8-2.7.2 (AQMP Cntl Measure No. 2.b.)		X				X	X								1994
Preferential Parking for Ridesharers. Action A8-2.7.3 (AQMP Cntl Measure No. 2.b.)		X				X	X								1992
Parking Cost Standards. Action A8-2.8.1 (AQMP Cntl Measure No. 2.b.)			X			X						X			1992
Emission Fee. Action A8-2.9.1				X		X						X			1994
Emission Surcharge. Action A8-2.9.2				X		X						X			1995
Support Tax Credit/Tax Benefit. Action A8-2.9.3				X								X			1995
Clean Fuel Electric Vehicles. Action A8-2.10.1					X		X					X			On-going 2000, 2010
MPG Purchase Limitation. Action A8-2.10.2					X	X				X		X			1992

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AIR QUALITY ELEMENT IMPLEMENTATION

AIR TRANSPORTATION

ACTIONS	GOALS AND POLICIES				RESPONSIBLE AGENCY / DEPARTMENT *									TIMING
	Goal G8-3 General Aviation Emissions				CD	PW	CS	MS	PD	FD	A	SBC	Other (specify)	
	P8-3.1	P8-3.2												
Cleaner Fuels. Action A8-3.1.1	X					X						X		1992
Airport Transportation Demand Management. Action A8-3.2.1		X			X	X						X		1992

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AIR QUALITY ELEMENT IMPLEMENTATION

LAND USE

ACTIONS	GOALS AND POLICIES				RESPONSIBLE AGENCY / DEPARTMENT *									TIMING
	Goal G8-4 Efficient Land Use Pattern				CD	PW	CS	MS	PD	FD	A	SBC	Other (specify)	
	P8-4.1	P8-4.2	P8-4.3											
Capital Improvement Plan. Action A8-4.1.1	X				X	X								1992
Economic Development Strategy. Action A8-4.1.2	X				X									1992
Coordinate Regional Jobs/Housing Balance. Action A8-4.1.3 (AQMP Cntl Measure No. 17.)	X				X									On-going/ 1992
Project Impacts. Action A8-4.2.1		X			X									1992
Draw From City Labor Pool. Action A8-4.2.2		X			X									1993
Growth Management Plan Performance. Action A8-4.2.3 (AQMP Cntl Measure No. 17.)		X			X			X			X			On-going/ 1994
New Jobs/Backbone Infrastructure. Action A8-4.2.4		X			X									1992
Mixed Use Development. Action A8-4.2.5 (AQMP Cntl Measure No. 1.b.)		X			X	X								1994
Locational Requirements for Sensitive Receptors. Action A8-4.3.1			X		X									1994

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AIR QUALITY ELEMENT IMPLEMENTATION

PARTICULATE EMISSIONS

ACTIONS	GOALS AND POLICIES				RESPONSIBLE AGENCY / DEPARTMENT *									TIMING
	Goal G8-5 Reduce Particulate Emissions.				CD	PW	CS	MS	PD	FD	A	SBC	Other (specify)	
	P8-5.1	P8-5.2	P8-5.3											
Street Sweeping. Action A8-5.1.1 (AQMP Cntl Measure No. 12.a.)	X					X								On-going
Control Particulate Emissions from Unpaved Roads. Action A8-5.1.2 (AQMP Cntl Measure No. 12.b.)	X					X								1994
Limit Dust. Action A8-5.1.3 (AQMP Cntl Measure No. 12.a.)	X				X	X								1994
Storage of Particulate Matter. Action A8-5.1.4 (AQMP Cntl Measure No. 12.a.)	X					X	X							1994
Control Emissions, Construction, and Demolition. Action A8-5.2.1 (AQMP Cntl Measure No. 12.a.)		X			X									1994
Particulate Emissions from Truck Hauling. Action A8-5.2.2 (AQMP Cntl Measure No. 12.a.)		X			X	X								1994
Note: No Actions approved at this time. Actions might be added at a later date.			X											

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AIR QUALITY ELEMENT IMPLEMENTATION

ENERGY CONSERVATION

ACTIONS	GOALS AND POLICIES				RESPONSIBLE AGENCY / DEPARTMENT *									TIMING
	Goal G8-6 Energy Consumption.				CD	PW	CS	MS	PD	FD	A	SBC	Other (specify)	
	P8-6.1	P8-6.2	P8-6.3											
Energy Conservation Plan. Action A8-6.1.1	X						X							1994
Energy Conservation Requirements. Action A8-6.1.2 (AQMP Cntl Measure No. 18.a.)	X						X				X			1994
Emission Reduction from Pool Heaters. Action A8-6.2.1 (AQMP Cntl Measure No. 18.a.)		X			X									1999
Emission Reduction from Water Heaters. Action A8-6.2.2 (AQMP Cntl Measure No. 18.a.)		X			X									2006
Waste Recycling. Action A8-6.3.1			X								X			1993

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Glossary

Air Quality Management Plan (AQMP)
A comprehensive policy document that delineates goals, policies, pollution reduction strategies, and implementation responsibilities for improving air quality in the South Coast Air Basin.

Air Resources Board (ARB)
The State Agency which prepares and submits the State Implementation Plan (SIP) to the Environmental Protection Agency (EPA). The ARB is also the agency that reviews regional plans to ensure that Transportation Control Measures are taken to achieve air quality standards at the earliest practicable date. This Agency establishes emissions standards for mobile sources.

Average Vehicle Ridership (AVR)
The average amount of occupants for a vehicle over a period of time.

Basic Transportation Airport
An airport which primarily services aircraft for commercial and recreational use. Generally, commuter, local and itinerant aircraft visit such airports. Air carrier aircraft usually do not have access to Basic Transportation Airports.

California Clean Air Act (CCAA)
The State Legislation which requires all non-attainment air basins to develop new attainment plans to meet Federal and State air quality standards.

California Environmental Quality Act (CEQA)
State legislation which requires all governmental agencies at all levels to document and consider the environmental considerations of their actions.

CalTrans
State of California Department of Transportation (CalTrans) is the State Agency which oversees the State network of roadways and highways.

Carbon Monoxide (C_o)
A colorless, odorless gas formed by the incomplete combustion of fuels. Carbon monoxide replaces oxygen in the blood and reduces its ability to transport oxygen to vital organs in the body.

Conformity Review
The process which ensures that local government actions and projects (i.e., planning, actions, permit activity, project approval, programming, or funding) do not prevent attainment of the National Ambient Air Quality Standards (NAAQS).

Congestion Management Plan (CMP)
A county-wide program which addresses congestion problems in a coordinated manner with other agencies in the county.

Control Measure
The nuts and bolts of the South Coast Air Quality Management Plan. Control measures are commitments to adopt rules and regulations to reduce pollutant emissions. There are 126 control measures in the Air Quality Management Plan, 17 of which are designated for local agency action.

District
A commonly-used abbreviation for the South Coast Air Quality Management District (SCAQMD).

Environmental Impact Report (EIR)
An informational document which provides public agencies and the public in general with detailed information about the effects which a proposed project is likely to have on the environment.

High Occupancy Vehicle (HOV) Lane
HOV lane on a highway or freeway which is restricted for use by vehicles carrying two or more passengers.

Memorandum of Understanding (MOU)

Mobile Sources
Emissions from on-road motor vehicles.

Oxides of Nitrogen (NOx)
Oxides of nitrogen are brownish gas that is formed in the atmosphere through a rapid reaction of the colorless gas nitric oxide (NO) with atmospheric oxygen. Oxides of nitrogen play an important role in visibility degradation within the basin. They are formed in the atmosphere from reactions involving NOx emissions from man-made combustion sources.

Oxides of Sulfur (SOx)
A colorless gas with a pungent irritating odor. It is created by the combustion of sulfur–containing fuel.

Ozone (O_3)
A secondary pollutant which is formed in the atmosphere through a reaction of reactive organic gases (ROG), nitrogen oxides (NOx), oxygen, and other hydrocarbon materials with sunlight.

Particulate Matter (PM)
Suspended particulates which included a complex mixture of man-made and natural substances including sulfates, nitrates, metals, elemental carbon, sea salt, soil organics and other materials.

Reactive Organic Gases (ROG)
Reactive organic gases are hydrocarbons, ROG emissions react with other pollutants in the presence of sunlight to form photo-chemical oxidants or ozone.

Regional Mobility Plan (RMP)
A comprehensive regional planning document for the Southern California Association of Governments (SCAG) region which provides specific means for recapturing and retaining the transportation mobility levels of 1984.

South Coast Air Quality Management District (SCAQMD)
The air pollution control district for the area which includes the County of Orange and the urbanized portions of Los Angeles, Riverside and San Bernardino Counties. (The agency's responsibilities as they pertain to conformity are detailed in Appendix C of this document.)

Southern California Association of Governments (SCAG)
The metropolitan planning organization for the six-county region which includes Imperial, Los Angeles, Orange, Riverside, San Bernardino and Ventura Counties. (The agency's responsibilities for conformity are detailed in Appendix C of this document.)

Transportation Control Measure (TCM)
Any demand management, systems management, facilities improvement, or technology-based measure (or mixture thereof) intended to influence choices of mode, time of day, or decisions whether to travel at all.

Transportation Demand Management (TDM)
Demand based techniques for reducing traffic congestion, such as ridesharing programs and flexible work schedules enabling employees to commute to and from work outside of peak hours.

Transportation Management Association (TMA)
An organization with its main purpose is to coordinate, among association members, Transportation Demand Management techniques to reduce traffic congestion.

Vehicle Miles Travelled (VMT)
The total miles traveled by all vehicles in a particular geographic area measured over a 24-hour period.

Bibliography

Guidelines for the Development of Local Air Quality Elements, Southern California Association of Governments, March 1990. A report that outlines an approach to preparing an air quality element which is consistent with other regional plans.

Draft Final 1991 Air Quality Management Plan for the South Coast Air Basin, Southern California Association Of Governments/South Coast air Quality Management District. A comprehensive plan which includes measures for bringing the air basin into compliance with State and Federal air quality standards.

Draft Air Quality Management Plan 1991 Revisions: Appendix IV-E - Southern California Association of Governments, December 1990. A report describing the air quality control measures pertaining to transportation, land use, and energy conservation.

San Bernardino County Regional Air Quality Plan, San Bernardino County/cities, March 1991. A regional plan prepared by San Bernardino County and certain cities within the county which includes goals, policies, and a menu of action programs that assist these agencies in complying with the Air Quality Management Plan in terms of bringing the Air district in compliance with Federal and State air quality standards.

San Bernardino County Regional Air Quality Plan, Technical Background Report, San Bernardino County/cities; March 1991. A report which describes the air quality condition in San Bernardino County.

San Bernardino County Regional Air Quality Plan, Socioeconomics Analysis of Selected Air Quality Measures, San Bernardino County/cities, March 1991. A socioeconomic analysis of the implementation of selected AQMP control measures.

Chino Airport Master Plan, County of San Bernardino, January 1987. A Master Plan by the County of San Bernardino outlining development strategy for the approximate 950 acre project area.

References

City of Chino

Community Development Department ..... Earl P. Nelson, Director
Community Services Department ..... Tina Sray, Manager of Parks and Facilities
Public Works Services ..... Tom Mace, Street Superintendent
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County of San Bernardino

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City of Montclair ..... Hall Fiederickson
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City of Redlands ..... Jeff Shaw
City of Rialto ..... Rod Taylor
City of San Bernardino ..... Valerie Ross
City of Upland ..... Jeff Bloom
City of Yucaipa ..... John McMains

Index

Actions

Adopt CMP Ordinance 20
Airport Transportation Demand Management 24
AQMP Regional Financing 14
Auto Use Restrictions 21
Bicycle Parking and Showers 21
Bike Trails 21
Capital Improvement Plan 26
City Shuttle 21
Clean Fuel Electric Vehicles 22
Cleaner Fuels 24
Communication Network 15
Compliance with SCAQMD AVR 19
Congestion Management Plan 19
Control Emissions, Construction, and Demolition 29
Control Particulate Emissions from Unpaved Roads 29
Coordinate Regional Job/Housing Balance 26
Coordinated Review 14
Draw From City Labor Pool 27
Economic Development Strategy 26
Educate Local Businesses 15
Emission Fee 22
Emission Reduction from Pool Heaters 31
Emission Reduction From Water Heaters 31
Emission Surcharge 22
Encourage Business/Research 15
Energy Conservation Plan 31
Energy Conservation Requirements 31
Establish Regional Transportation Management Agencies 14
Growth Management Plan Performance 27
Homeowner's Association/Neighborhood Groups 15
Implement Congestion Management Plan 14
Limit Dust 29
Limit Parking Supply by Zone 21
Lobby Other Entities to Implement AQMP 15
Local Input 14
Locational Requirements for Sensitive Receptors 27
Manage Parking Supply 21

Merchant Transportation Incentives 21
Mixed Use Development 27
MPG Purchase Limitation 22
Neighborhood Services 18
New Jobs/Backbone Infrastructure 27
Obtaining Public Input 15
OmniTrans / RTD - Transit Improvements 14
On-Site Services 19
On-Street Parking During Peak Hours 20
Parking Cost Standards 22
Particulate Emissions from Truck Hauling 29
Preferential Parking for Rideshares 22
Project Impacts 26
Public Participation Programs 15
Reduced Service During Stage 3 Smog Alerts 19
Regional Cooperation 16
Restrict Trucks from Major Arterials 20
Rideshare Incentives in Public Parking Lots 21
Storage of Particulate Matter 29
Street Sweeping 29
Sub-regional Transportation System 21
Support Creative Solutions 15
Support Tax Credit/Tax Benefit 22
Surcharge for Truck Operations During Peak Periods 20
Tier III Implementation 15
Traffic Signal Improvements 20
Travel Demand Management 19
Trip Reduction Ordinance 19
Trip Reduction Program 19
Truck Routing/Deliveries 20
Waste Recycling 31

Goals

Air Quality Improvement 13
Efficient Land Use Pattern 26
General Aviation Emissions 24
Ground Transportation 18
Reduce Energy Consumption 30
Reduce Particulate Emissions 28

Policies

Affect Source Jurisdictions 14
Control Dust 29
Coordinate Airport Development 24
Eliminate Unnecessary Trips 18
Encourage Community Participation 15
Encourage Market Incentives/Disincentives 22
Energy Conservation 31
Establish a Coordinated Approach 14
Establish Fees 20
Expand Transit 20
Improve Traffic Flow 19
Institute Clean Fuel Systems 22
Integrate with Related Programs 14
Jobs/Housing Balance 26
Limit Water Heater Emissions 31
Manage Growth 26
Promote Improved Technology 24
Promote Non-Motorized Transportation 21
Protect Sensitive Receptors 27
Recycle Wastes 31
Reduce Emissions from Building Interiors 29
Reduce Emissions from Building Materials and Methods of Construction 29
Reduce Vehicle Miles Travelled 19
Support Innovative Approaches 15
Support Legislation 22

Appendix

A. SCAQMD - AQMP, Control Measure/Chino Air Quality Element Action Matrix

B. Regional Air Quality Plan, San Bernardino County/Cities, Technical Background Report (under separate cover)

C. Regional Air Quality Plan, San Bernardino County/Cities, Socioeconomics Analysis - Selected Air Quality Measures (under separate cover)

AIR QUALITY ELEMENT APPENDIX A

SCAQMD-AQMP Control Measures/Chino Air Quality Element Action Matrix

Chino General Plan

November 1991

Air Quality Management Plan (AQMP) Control Measure/ Chino Air Quality Element (CAQE) Action Matrix

AQMP CONTROL MEASURE		CAQE ACTION	
1.a.	Person Work Trip Reduction.	A8-2.1.3 A8-2.1.6	Trip Reduction Ordinance. Trip Reduction Program.
1.b.	Non-Motorized Transportation.	A8-2.1.3 A8-2.1.6 A8-2.6.1 A8-2.6.3	Trip Reduction Ordinance. Trip Reduction Program. Bike Trails. Bicycle Parking and Showers.
2.a.	Employer Ridesharing and Transit Incentives.	A8-1.2.2 A8-2.1.4 A8-2.9.3	Establish Regional Transportation Management Agencies. Compliance with SCAQMD AVR. Support Tax Credit/Tax Benefit.
2.b.	Parking Management.	A8-2.2.1 A8-2.3.6 A8-2.7.1 A8-2.7.2 A8-2.7.3 A8-2.8.1	Travel Demand Management. On-Street Parking During Peak Hours. Rideshare Incentives in Public Parking Lots. Limit Parking Supply by Zone. Preferential Parking for Rideshares. Parking Cost Standards.
2.d.	Merchant Transportation Incentives.	A8-2.6.2	Merchant Transportation Incentives.
2.e.	Auto Use Restrictions.	A8-2.5.2	Auto Use Restrictions.
2.f.	HOV Facilities.		Not Applicable.
2.g.	Transit Improvements.	A8-1.2.3	OmniTrans/RTD - Transit Improvements.
3.a.	Truck Dispatching, Rescheduling and Rerouting.	A8-2.3.3 A8-2.3.4 A8-2.3.7	Truck Routing/Deliveries. Restrict Trucks from Major Arterials. Surcharge for Truck Operations During Peak Periods.
3.b.	Diverting Port-Related Truck Traffic to Rail.		Not Applicable.
4.	Traffic Flow Improvements.	A8-2.3.5 A8-2.3.6	Traffic Signal Improvements. On-Street Parking During Peak Hours.
5.	Non-Recurrent Congestion.		Not Applicable.

APPENDIX "A"

Air Quality Management Plan (AQMP) Control Measure/ Chino Air Quality Element (CAQE) Action Matrix

AQMP CONTROL MEASURE	CAQE ACTION
6. Aircraft and Ground Service Vehicles.	Not Applicable.
7. Centralized Ground Power Systems.	Not Applicable.
8. Airport Ground Access.	Not Applicable.
9. Replacement of High Emitting Aircraft.	Not Applicable.
10. General Aviation Vapor Recovery.	Not Applicable.
11. Rail Consolidation to Reduce Grade Crossings.	Not Applicable.
12.a. Paved Roads.	A8-5.1.1 Street Sweeping. A8-5.1.3 Limit Dust. A8-5.1.4 Storage of Particulate Matter. A8-5.2.1 Control Emissions, Construction and Demolition. A8-5.2.2 Particulate Emissions from Truck Hauling.
12.b. Unpaved Roads and Parking Lots.	A8-5.1.2 Control Particulate Emissions from Unpaved Roads.
13. Freeway and Highway Capacity Enhancements.	Not Applicable.
14. Railroad Electrification.	Not Applicable.
16. High Speed Rail.	Not Applicable.
17. Growth Management.	A8-4.1.3 Coordinate Regional Job/Housing Balance. A8-4.2.3 Growth Management Plan Performance.
18.a. Local Government Energy Conservation.	A8-6.1.2 Energy Conservation Requirements. A8-6.2.1 Emission Reduction from Pool Heaters. A8-6.2.2 Emission Reduction from Water Heaters.

APPENDIX "A" (cont'd.)

BACKGROUND STATEMENT

The air quality in San Bernardino County results from a unique combination of factors; air flow patterns and emission sources, both local and those located through the region, results in some of the worst air quality in the nation. San Bernardino County regularly exceeds state and federal air quality standards for Ozone (O_3), Carbon Monoxide (CO), Nitrogen Dioxide (NO_2) and Particulate Matter (PM_{10}). Exceedances are acute during summer months when onshore wind patterns transport pollutants from the western portion of the South Coast Air Basin, notably Los Angeles and Orange Counties and combine with local sources. San Bernardino County records the most severe violations of air quality standards for Ozone and PM_{10} in the summer months relative to the rest of the air basin.

REGULATORY FRAMEWORK

The Clean Air Act, promulgated in 1970 and amended twice thereafter (including the recent 1990 amendment), establishes the framework for modern air pollution control. The Act directs the Environmental Protection Agency (EPA) to establish ambient air standards for six pollutants: Ozone, Carbon Monoxide, Lead, Nitrogen Dioxide, Particulate Matter and Sulphur Dioxide. The standards (NAAQS) are divided into primary and secondary standards; the former are set to protect human health within an adequate margin of safety and the latter to protect environmental values such as plant and animal life.

According to the Act, states are required to submit a State Implementation Plans (SIP) for areas that exceed the NAAQS, or nonattainment areas. The SIP, which is reviewed and approved by the EPA, must demonstrate how the federal standards will be achieved. Failure to submit a plan or secure approval could lead to denial of federal funding and permits for such improvements as highway construction and sewage treatment plants. In cases where the SIP is submitted but fails to demonstrate achievement of the standards, the EPA is directed to prepare a Federal Implementation Plan.

In addition to the six pollutants regulated by federal legislation, the California Clean Air Act establishes standards for Hydrogen Sulphide, Sulphates and Vinyl Chloride. Responsibility for achieving these standards (which are more stringent that federal standards) is placed on the California Air Resources Board and local air pollution control districts. District plans for nonattainment areas must be designed to achieve a 5% annual reduction in emissions. The Air Quality Management Plan (AQMP) is, in turn, incorporated into the SIP.

With the aim of complying with all federal standards by 2007, the South Coast Air Quality Management District (SCAQMD) and Southern California Association of Governments (SCAG) jointly prepared the 1989 Air Quality Management Plan (AQMP). The Plan calls for implementation of rules and regulations by the Air Resources Board, the South Coast Air Quality Management District, the Environmental Protection Agency and Local Jurisdictions.

The AQMP calls upon local governments to achieve an 8% reduction regionwide in emissions from reactive organic gases and oxides of nitrogen. Specifically, local governments are asked to implement appropriate control measures contained in the AQMP to achieve this reduction. Several measures direct local government to adopt an Air Quality Element or its equivalent into its General Plan. If all of the applicable control measures are not implemented, the air quality standards cannot be achieved. In this event, the existing moratorium on location of stationary sources in the basin will be continue and federal funding and other permits may be denied until the standards are met.

In an effort to comply with federal and state regulations, and to improve air quality in the county and region, this Air Quality Element has been adopted.

Subtopic 2.6 CLEANER FUELS

Policy 2.6.1 **Support Legislation**

Promote state and federal legislation which would improve vehicle/transportation technology and which would establish differential pricing mechanisms to assess the true cost of emissions.

Programs:

2.6.1.1 Support legislation to stimulate the development of practical electric vehicles (15).

2.6.1.2 Support state legislation which would establish: - Emission Fees on gasoline products and Differential Registration Fees on motor vehicles according to the emission levels that they are designed to produce. - Include exploration of an option that imposes pollution fees on individual vehicles at time of mandated smog inspections, based on actual vehicle performance.

2.6.1.3 Support legislation which tightens the existing vehicle inspection program, both in terms of standards to be met and requirements for compliance.

Policy 2.6.2 **Institute Clean Fuel Systems**

Invest in clean fuel systems on new local government fleet vehicles.

Programs:

2.6.2.1 Institute clean fuel systems on new local government fleet vehicles (G-4).

TOPIC 3: AIR TRANSPORTATION

GOAL 3 Minimum feasible emissions from air carrier airports.

Policy 3.1 **Promote Improved Technology**

Promote requiring the best available technology to reduce emissions in aircraft fleet.

Programs:

3.1.1 Adopt/urge establishment of the best available technology and operational measures for aircraft and ground service vehicles (6).

3.1.2 Support phasing out of Stage II aircraft and the earliest possible transition to Stage III aircraft for operation within the Air Basin (9).

Policy 3.2 **Promote Centralized Ground Power**

Promote installation of centralized ground power systems at existing air carrier airports.

[1] Programs which further more than one air quality policy.

Policy 2.3.2 **Expand Transit in the Air Basin**

Promote expansion of all forms of transit in the urbanized portions of San Bernardino, Orange, Los Angeles and Riverside Counties.

Programs:

2.3.2.1 Influence the expansion of intraregional commuter and main line rail services, particularly those linking with destinations in San Bernardino County.

2.3.2.2 Support public transit providers in efforts to increase funding for transit improvements to supplement other means of travel (2.g).[1]

2.3.2.3 Jointly support efforts to establish a regionwide bus pass.

Subtopic 2.4 NON-MOTORIZED MEANS OF TRANSPORTATION

Policy 2.4.1 **Promote Non-Motorized Transportation**

Provide bicycle and pedestrian pathways to encourage non-motorized trips.

Programs:

2.4.1.1 Develop standards and guidelines for support facilities to incorporate into development plans for increased bicycle and pedestrian routes to link appropriate activity centers to nearby residential development.

Subtopic 2.5 PARKING MANAGEMENT

Policy 2.5.1 **Manage Parking Supply**

Manage parking supply to discourage auto use, while ensuring that economic development goals will not be sacrificed.

Programs:

2.5.1.1 Establish short and long-term parking management strategies at governmental and private facilities in ways that discourage single occupancy vehicle usage and reward high vehicle occupancy rates without placing the County at a competitive disadvantage.[1]

Policy 2.5.2 **Encourage Market Incentives/Disincentives**

Promote a regional approach to increasing parking costs in order to discourage low vehicle occupancy.

Programs:

2.5.2.1 Establish parking management strategies for governmental and private facilities in ways that discourage single occupancy vehicle usage and reward high vehicle occupancy rates without placing the County at an economic disadvantage in enticing jobs.[1]

[1] Programs which further more than one air quality policy.

Programs:

2.2.1.1 Jointly, through the County, SANBAG, and SCAG, participate with adjacent counties in expanding HOV lanes on the freeway system within those counties.

Policy 2.2.3 **Integrate Congestion Management Program**

Coordinate overlapping components of the State mandated Congestion Management Program and the Regional Air Quality Plan.

Programs:

2.2.3.1 Participate with SANBAG in defining and implementing a Congestion Management Program for San Bernardino County to insure appropriate coordination with air quality planning.

Policy 2.2.4 **Establish Congestion Fees**

Promote market based incentives and disincentives to relieve peak hour/peak direction congestion within highly congested travel corridors.

Programs:

2.2.4.1 Cooperatively initiate a pilot program to explore, jointly with Los Angeles, Orange and Riverside counties, methods and workability of Congestion Fees for peak hour/peak direction use to be levied within highly congested travel corridors, particularly those which generate emissions transported to San Bernardino County.

Subtopic 2.3 EXPANDED TRANSIT SYSTEMS AND SERVICES

Policy 2.3.1 **Expand Transit in the County**

Cooperate in efforts to expand bus, rail and other forms of transit in the portion of the South Coast Air Basin within San Bernardino.

Programs:

2.3.1.1 Participate with public transit providers serving San Bernardino County in a cooperative program to increase transit services with existing equipment and expand services through transit facility improvements.

2.3.1.2 Coordinate with public transit providers to increase funding for transit improvements to supplement other means of travel (2.g).[1]

2.3.1.3 Plan for intraregional commuter and main line rail service development including convenience facilities at rail stops.

2.3.1.4 Develop design standards that promote access to transit facilities.

[1] Programs which further more than one air quality policy.

Subtopic 2.1 AUTO USE

Policy 2.1.1 Eliminate Vehicle Trips

Use incentives, regulations and Transportation Demand Management in cooperation with other jurisdictions in the South Coast Air Basin to eliminate vehicle trips which would otherwise be made.

Programs:

2.1.1.1 Establish and implement a Transportation Demand Management Program.[1]

2.1.1.2 Define and implement auto limitation procedures in selected areas and at selected times, provided that alternative transportation modes are available.[1]

2.1.1.3 Establish incentives and regulations to eliminate work trips.[1]

Policy 2.1.2 Reduce Vehicle Miles Traveled

Use incentives, regulations and Transportation Demand Management in cooperation with other jurisdictions in the South Coast Air Basin to reduce the vehicle miles traveled for auto trips which still need to be made.

Programs:

2.1.2.1 Establish and implement a Transportation Demand Management Program.[1]

2.1.2.2 Establish and maintain telecommunications strategies to reduce the length of auto trips.

2.1.2.3 Define and implement auto limitation procedures in selected areas and at selected times, provided that alternative transportation modes are available.[1]

Subtopic 2.2 CONGESTION MANAGEMENT

Policy 2.2.1 Modify Work Schedules

Promote and establish modified work schedules which reduce peak period auto travel.

Programs:

2.2.1.1 Establish incentives and regulations to spread work trips over a longer period to reduce peak period congestion.[1]

Policy 2.2.2 Establish HOV Lanes

Participate in efforts to achieve increased designation, construction, and operation of HOV lanes on freeways in Los Angeles, Orange, Riverside and San Bernardino counties.

[1] Programs which further more than one air quality policy.

1.2.3 Establish and maintain an implementation/monitoring system devised as part of the Air Quality Plan preparation. Integrate with monitoring and reporting systems required for purposes which overlap with the Air Quality Plan.

Policy 1.3 **Affect Source Jurisdictions**

Cooperate actively with Los Angeles, Orange and Riverside counties to comprehensively improve air quality at the emission source.

Programs:

1.3.1 Jointly establish a communication network with key elected officials and staff involved in air quality planning in Los Angeles, Orange and Riverside counties as the basis for identifying and implementing parallel measures of mutual benefit.

Policy 1.4 **Encourage Community Participation**

Involve environmental groups, the business community, special interests and the general public in the formulation and implementation of programs which effectively reduce air borne pollutants.

Programs:

1.4.1 Design and conduct efforts to involve the public and affected/interested parties in the adoption of local air quality plans and implementation of air quality improvement programs.

- Conduct Public Forums
- Establish Communication and Education Programs
- Make written briefs available locally
- Conduct Planning Commission/City Council public workshops
- Utilize a variety of media forms to maximize citizen involvement

Policy 1.5 **Support Innovative Approaches**

Advocate and support innovative strategies to improve air quality.

Programs:

1.5.1 Support new approaches to improving air quality through:

- Supporting legislation;
- Cooperating with regional bodies;
- Establishing pilot programs; and
- Funding and/or participating in private/public partnerships.

TOPIC 2: GROUND TRANSPORTATION

GOAL 2 A diverse and efficiently operated ground transportation system which generates the minimum feasible pollutants.

[1] Programs which further more than one air quality policy.

Principles

1. **Air Quality and Economic Growth**

   Achieve air quality improvements in such a way that continued economic growth can be sustained.

2. **Market Incentives and Regulations**

   Achieve necessary air quality related life style and economic changes through market incentives where feasible and through regulatory measures where necessary.

GOALS, POLICIES AND PROGRAMS

Because the air quality problem is larger than any one jurisdiction, this Air Quality Element includes goals, policies and programs which have been accepted by the fifteen cities in the San Bernardino County portion of the South Coast Air Basin. These consensus goals, policies and programs provide a common foundation for coordinated action.

TOPIC 1: GOVERNMENT ORGANIZATION, ROLES & RESPONSIBILITIES

GOAL 1 Effective coordination of air quality improvement within the portion of the South Coast Air Basin in San Bernardino County and improved air quality through reductions in pollutants from Orange and Los Angeles counties.

Policy 1.1 **Establish Coordinated Approach**

Coordinate with other jurisdictions in San Bernardino County to establish parallel air quality plans and implementation programs.

Programs:

1.1.1 Adopt local air quality plans based on the San Bernardino County/Cities Regional Air Quality Plan.

1.1.2 Establish an ongoing air quality implementation and project referral process within the San Bernardino portion of the South Coast Air Basin, adapting it as necessary to local circumstances, resources and procedures.

Policy 1.2 **Integrate With Related Programs**

Coordinate a process to integrate related functional programs' implementation, monitoring and reporting.

Programs:

1.2.1 Establish a coordination process for relating parallel actions undertaken as part of other regional or countywide plans.

1.2.2 Participate with SANBAG in defining and implementing a Congestion Management Program for San Bernardino County.[1]

TOPIC 2: GROUND TRANSPORTATION		
GOAL	**POLICIES**	**PROGRAMS AND ACTION OPTIONS**
SUBTOPIC 5: PARKING MANAGEMENT		
A diverse and efficiently operated ground transportation system which generates the minimum feasible pollutants.	Manage Parking Supply 1. Manage parking supply to discourage auto use, while ensuring that economic development goals will not be sacrificed.	1. Establish short and long term parking management strategies for governmental and private facilities that discourage single occupancy vehicle usage and reward high vehicle occupancy rates without placing the County at an economic disadvantage in enticing jobs by means such as[1]: • Reducing or redirecting parking supply. • Creating Parking "Banks" of landscaping and other less intensive land uses which could be used for parking in the future or could be developed with a more intensive land use provided the tenant/owner effectively reduces the demand for parking (through Transportation Demand Management, Regulation XV programs, increased parking cost, etc.).
A diverse and efficiently operated ground transportation system which generates the minimum feasible pollutants.	Encourage Market Incentives/ Disincentives 2. Promote a regional approach to increasing parking costs in order to discourage low vehicle occupancy.	1. Establish parking management strategies for governmental and private facilities that discourage single occupancy vehicle usage and reward high vehicle occupancy rates without placing the County at an economic disadvantage in enticing jobs by means such as[1]: • Recapturing parking costs through: establish fees; single occupant surcharges; reduced employee subsidized parking; and increased parking enforcement.
SUBTOPIC 6: CLEANER FUELS		
A diverse and efficiently operated ground transportation system which generates the minimum feasible pollutants.	Support Legislation 1. Promote state and federal legislation which would improve vehicle/transportation technology and which would establish differential pricing mechanisms to assess the true cost of emissions.	1. Support legislation to stimulate the development of practical electric vehicles (15). 2. Support state legislation which would establish: 1) Emission Fees on gasoline products and Differential Registration Fees on motor vehicles according to the emission levels that they are designed to produce. Include exploration of an option that imposes pollution fees on individual vehicles at the time of mandated smog inspection, based on actual vehicle performance. 3. Support legislation which tightens the existing vehicle inspection program, both in terms of standards to be met and requirements for compliance.
	Institute Clean Fuel Systems 2. Invest in clean fuel systems on new local government fleet vehicles.	1. Institute clean fuel systems on new local government fleet vehicles (G 4).

[1] Programs which further more than one air quality policy

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09/15/2004 09:07AM
21/ 25

TOPIC 2: GROUND TRANSPORTATION		
GOAL	**POLICIES**	**PROGRAMS AND ACTION OPTIONS**
SUBTOPIC 2: CONGESTION MANAGEMENT (Continued)		
A diverse and efficiently operated ground transportation system which generates the minimum feasible pollutants.	Integrate Congestion Management Program 3. Coordinate overlapping components of the State mandated Congestion Management Program and the Regional Air Quality Plan.	1. Participate with SANBAG in defining and implementing a Congestion Management Program for San Bernardino County to insure appropriate coordination with air quality planning.
	Establish Congestion Fees 4. Promote market based incentives and disincentives to relieve peak hour/peak direction congestion within highly congested travel corridors.	1. Cooperatively initiate a pilot program to explore, jointly with Los Angeles, Orange and Riverside counties, methods and workability of Congestion Fees for peak hour/peak direction use to be levied within highly congested travel corridors, particularly those which generate emissions transported to San Bernardino County.
SUBTOPIC 3: EXPANDED TRANSIT SYSTEMS AND SERVICES		
A diverse and efficiently operated ground transportation system which generates the minimum feasible pollutants.	Expand Transit in the County 1. Cooperate in efforts to expand bus, rail and other forms of transit in the portion of the South Coast Air Basin within San Bernardino.	1. Participate with public transit providers serving San Bernardino County in a cooperative program to increase transit services with existing equipment and expand services through transit facility improvements. 2. Coordinate with public transit providers to increase funding for transit improvements to supplement other means of travel (2.g).[1] 3. Plan for intraregional commuter and main line rail service development including convenience facilities at rail stops through such means as: • Intensifying planned land uses in the vicinity of transit stops. • Consolidating parking facilities to support transit as well as adjacent uses. 4. Develop design standards that promote access to transit facilities.
	Expand Transit in the Air Basin 2. Promote expansion of all forms of transit in the urbanized portions of San Bernardino, Orange, Los Angeles and Riverside Counties.	1. Influence the expansion of intraregional commuter and main line rail services, particularly those linking with destinations in San Bernardino County. 2. Support public transit providers in efforts to increase funding for transit improvements to supplement other means of travel (2.g).[1] 3. Jointly support efforts to establish a regionwide bus pass.
SUBTOPIC 4: NON-MOTORIZED MEANS OF TRANSPORTATION		
A diverse and efficiently operated ground transportation system which generates the minimum feasible pollutants.	Promote Non-Motorized Transportation 1. Provide for bicycle and pedestrian pathways to encourage non-motorized trips.	1. Develop standards and guidelines to incorporate into development plans for increased bicycle and pedestrian routes and support facilities to link appropriate activity centers to nearby residential development.

[1] Programs which further more than one air quality policy

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20/ 25

TOPIC 2: GROUND TRANSPORTATION		
GOAL	**POLICIES**	**PROGRAMS AND ACTION OPTIONS**
SUBTOPIC 1: AUTO USE		
A diverse and efficiently operated ground transportation system which generates the minimum feasible pollutants.	Reduce vehicle miles traveled (Continued)	2. Establish and maintain telecommunications strategies to reduce the length of auto trips through such actions as:[1] • Implementing teleconferencing and telecommuting programs in public agencies (1.b.) • Requiring teleconferencing and telecommuting for private employers with more than 25 employees at a single location. Apply to existing businesses at license renewal times; to new businesses at project approval or permit stage (1.b.). 3. Define and implement auto limitation procedures in selected areas and at selected times, provided that alternative transportation modes are available, by (2.e.):[1] • Establishing regulations and procedures to limit direct auto access: - To special event centers; and - In auto-free zones during peak periods.
SUBTOPIC 2: CONGESTION MANAGEMENT		
A diverse and efficiently operated ground transportation system which generates the minimum feasible pollutants.	Modify Work Schedules 1. Promote and establish modified work schedules which reduce peak period auto travel	1. Establish incentives and regulations to spread work trips over a longer period to reduce peak period congestion, including such actions as (1.a):[1] • Implementing staggered, flexible and compressed work schedules in public agencies. • Requiring work schedule flexibility programs for employers with more than 25 employees at a single location. Apply to existing businesses at license renewal time; to new businesses at project approval or permit stage.
	Establish HOV lanes 2. Participate in efforts to achieve increased designation, construction, and operation of HOV lanes on freeways in Los Angeles, Orange, Riverside and San Bernardino Counties.	1. Jointly, through the County, SANBAG, and SCAG participate with adjacent counties in expanding HOV lanes on the freeway system within those counties by: • Initiating an HOV task force to work with CALTRANS in implementing HOV lanes within the urbanized and urbanizing portions of San Bernardino, Orange, Los Angeles and Riverside counties.

[1] Programs which further more than one air quality policy

09/15/2004 09:07AM
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19/ 25

TOPIC 2: GROUND TRANSPORTATION		
GOAL	**POLICIES**	**PROGRAMS AND ACTION OPTIONS**
SUBTOPIC 1: AUTO USE		
A diverse and efficiently operated ground transportation system which generates the minimum feasible pollutants.	Eliminate Vehicle Trips 1. **Use incentives, regulations and Transportation Demand Management in cooperation with other jurisdictions in the South Coast Air Basin to eliminate vehicle trips which would otherwise be made.**	1. Establish and implement a Transportation Demand Management Program through actions such as[1]: • Requiring TMA/TMO establishment for large employers and commercial/industrial complexes. Apply to new businesses at project approval or permit stage (2.a.). • Implementing employee rideshare and transit incentives in public agencies (2.a.). • Requiring employee rideshare and transit incentives for employers with more than 25 employees at a single location. Apply to existing businesses at license renewal time; to new businesses at project approval or permit stage (2.a.). • Participating in cooperative efforts to establish legislation affording incentives for purchase of Vanpools (2.c.). • Participating in the design and establishment of incentives which would eliminate vehicle trips. • Implementing telecommuting and telecommuting programs in public agencies (1.b.). • Requiring telecommuting and telecommuting for private employers with more than 25 employees at a single location. Apply to existing businesses at license renewal time; to new businesses at project approval or permit stage (1.b.). • Participating with SANBAG to develop a private/public telecommunication center in San Bernardino County. 2. Define and implement auto limitation procedures in selected areas and at selected times, provided that alternative transportation modes are available, by: • Establishing regulations and procedures to limit direct auto access(2.e.):[1] - To special event centers; and - In auto-free zones during peak periods. 3. Establish incentives and regulations to eliminate work trips including such actions as: • Implementing staggered, flexible and compressed work schedules in public agencies (1.a)[1]. • Requiring work schedule flexibility programs for employers with more than 25 employees at a single location. Apply to existing businesses at license renewal time; to new businesses at project approval or permit stage (1.a)[1].
	Reduce vehicle miles traveled 2. **Use incentives, regulations and Transportation Demand Management in cooperation with other jurisdictions in the South Coast Air Basin to reduce the vehicle miles traveled for auto trips which still need to be made.**	1. Establish and implement a Transportation Demand Management Program through actions such as[1]: • Requiring TMA/TMO establishment for large employers and commercial complexes. Apply to new businesses at project approval or permit stage (2.a.). • Implementing employee rideshare and transit incentives in public agencies (2.a.). • Requiring employee rideshare and transit incentives for employers with more than 25 employees at a single location. Apply to existing businesses at license renewal time; to new businesses at project approval or permit stage (2.a.). • Participating in cooperative efforts to establish legislation providing incentives for purchase of Vanpools (2.c.). • Participating in the design and establishment of incentives which would reduce vehicle miles traveled.

[1] Programs which further more than one air quality policy

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18/ 25

TOPIC 1: GOVERNMENT ORGANIZATION, ROLES & RESPONSIBILITIES		
GOAL	**POLICIES**	**PROGRAMS AND ACTION OPTIONS**
Effective coordination of air quality improvement within the portion of the South Coast Air Basin in San Bernardino County and improved air quality through reductions in pollutants from Orange and Los Angeles counties.	Support Innovative Approaches 5. Advocate and support innovative strategies to improve air quality.	1. Support new approaches to improving air quality through: • Supporting legislation; • Cooperating with regional bodies; • Establishing pilot programs; and • Funding and/or participating in private/public partnerships Potential actions could include: • Supporting legislation which would authorize imposition of consumer product Emission Fees, either at retail outlets or manufacturing points; • Instituting Time of Day, Seasonal and Place Control Measures; • Implementing an Auto Buy-Back Program; • Creating an Emissions Reduction Trust to administer emission offsets; • Investigating the feasibility of Highway Electrification and Automation; and • Supporting state enabling legislation to reassess the equitable distribution of property and sales tax revenues.

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09/15/2004 09:07AM
17/ 25

GOALS, POLICIES, PROGRAMS AND ACTION OPTIONS

TOPIC 1: GOVERNMENT ORGANIZATION, ROLES & RESPONSIBILITIES

GOAL	POLICIES	PROGRAMS AND ACTION OPTIONS
Effective coordination of air quality improvement within the portion of the South Coast Air Basin in San Bernardino County and improved air quality through reductions in pollutants from Orange and Los Angeles counties.	Establish Coordinated Approach 1. Coordinate with other jurisdictions in San Bernardino County to establish parallel air quality plans and implementation programs.	1. Adopt local air quality plans based on the San Bernardino County/Cities Regional Air Quality Plan. 2. Establish an ongoing air quality implementation and project referral process within the San Bernardino portion of the South Coast Air Basin, adapting it as necessary to local circumstances, resources and procedures.
	Integrate With Related Programs 2. Coordinate a process to integrate related functional programs' implementation, monitoring and reporting.	1. Establish a coordination process for relating parallel and implementive actions undertaken as part of other regional or countywide plans. 2. Participate with SANBAG in defining and implementing a Congestion Management Program for San Bernardino County.[1] 3. Establish and maintain an implementation/monitoring system devised as part of the Air Quality Plan preparation. Integrate with monitoring and reporting systems required for purposes which overlap with the Air Quality Plan.
	Affect Source Jurisdictions 3. Cooperate actively with Los Angeles, Orange and Riverside counties to comprehensively improve air quality at the emission source.	1. Jointly establish a communication network with key elected officials and staff involved in air quality planning in Los Angeles, Orange and Riverside counties as the basis for identifying and implementing parallel measures of mutual benefit.
	Encourage Community Participation 4. Involve environmental groups, the business community, special interests and the general public in the formulation and implementation of programs which effectively reduce air borne pollutants.	1. Design and conduct efforts to involve the public and affected/interested parties in the adoption of local air quality plans and implementation of air quality improvement programs, including: • Conduct Public Forums • Establish Communication and Education Programs • Make written briefs available locally • Conduct Planning Commission/City Council public workshops • Utilize a variety of media forms to maximize citizen involvement

[1] Programs which further more than one air quality policy

09/15/2004 09:07AM
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16/ 25

GOALS, POLICIES, PROGRAMS AND ACTION OPTIONS

Revised November 29, 1990

REGIONAL AIR QUALITY PLAN	
PURPOSE	**PRINCIPLES**
Achievement of state and federal air quality standards within established schedules in the South Coast Air Quality Management Plan and maintenance of air quality standards at prescribed levels once they are achieved.	Air Quality and Economic Growth 1. Achieve air quality improvements in such a way that continued economic growth can be sustained. Market Incentives and Regulations 2. Achieve necessary air quality related life style and economic changes through market incentives where feasible and through regulatory measures where necessary.

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Policy 5.2 **Reduce Emissions from Building Materials/Methods**

Reduce emissions from building materials and methods which generate excessive pollutants.

Programs:

5.2.1 Adopt incentives, regulations and procedures to prohibit the use of building materials and methods which generate excessive pollutants (F-9).

TOPIC 6: ENERGY CONSERVATION

GOAL 6 Reduced emissions through reduced energy consumption.

Policy 6.1 **Energy Conservation**

Reduce energy consumption through conservation improvements and requirements.

Programs:

6.1.1 Implement plans and programs to phase in energy conservation improvements through the annual budget process (18.a).

6.1.2 Adopt incentives and regulations to enact energy conservation requirements for private development.

Policy 6.2 **Limit Water Heater Emissions**

Reduce water heating emissions resulting from swimming pool heaters and residential and commercial water heaters.

Programs:

6.2.1 Adopt incentives and regulations to reduce emissions from swimming pool heaters (d-4).

6.2.2 Adopt incentives and regulations to reduce emissions from residential and commercial water heating (d-5).

Policy 6.3 **Recycle Wastes**

Promote local recycling of wastes and use of recycled materials.

Programs:

6.3.1 Implement provisions of AB 939 and adopt incentives, regulations and procedures to specify local recycling requirements (18.b).

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[1] Programs which further more than one air quality policy.

4.2.4 Develop and adopt an agreement among the participating jurisdictions as to mutually acceptable approaches to improve and maintain jobs/housing balance.

Policy 4.3 **Protect Sensitive Receptors**

Support a regional approach to regulating the location and design of land uses which are especially sensitive to air pollution.

Programs:

4.3.1 Participate with the SCAQMD in jointly formulating appropriate standards for regulating the location and protection of sensitive receptors (schools, day care facilities, hospitals and the like) from excessive and hazardous emissions.

Policy 4.4 **Integrate Planning Process**

Integrate air quality planning with the land use and transportation process.

Programs:

4.4.1 Locate and design new development in a manner that will minimize direct and indirect emission of air contaminants.

TOPIC 5: PARTICULATE EMISSIONS

GOAL 5 The minimum practicable particulate emissions from the construction and operation of roads and buildings.

Policy 5.1 **Control Dust**

Reduce particulate emissions from roads, parking lots, construction sites and agricultural lands.

Programs:

5.1.1 Adopt incentives, regulations and procedures to manage paved roads so they produce the minimum practicable level of particulates (12.a).

5.1.2 Adopt incentives, regulations and procedures to minimize particulate emissions during road, parking lot and building construction (f-4).

5.1.3 Adopt incentives, regulations and procedures to control particulate emissions from unpaved roads, drives, vehicle maneuvering areas and parking lots (12.b).

5.1.4 Adopt incentives, regulations and procedures to limit dust from agricultural lands and operations (where applicable) (E-3).

[1] Programs which further more than one air quality policy.

Programs:

3.2.1 Adopt/urge establishment of requirements for centralized ground power systems to be installed and used as soon as practicable at existing air carrier airports (7).

Policy 3.3 **Promote Improved Ground Access**

Promote conditioning of air carrier airports upon inclusion of plans for improved ground access.

Programs:

3.3.1 Adopt/urge establishment of an ordinance requiring air carrier airport operators to obtain permits based on approved plans for trip reduction, facility design and access improvements (8).

TOPIC 4: LAND USE

Goal 4 A pattern of land uses which can be efficiently served by a diversified transportation system and land development projects which directly and indirectly generate the minimum feasible air pollutants (17).

Policy 4.1 **Manage Growth**

Manage growth by insuring the timely provision of infrastructure to serve new development.

Programs:

4.1.1 Incorporate phasing policies and requirements in general plans and development plans to achieve timely provision of infrastructure (particularly transportation facilities) to serve development.

Policy 4.2 **Balance Growth**

Improve the balance between jobs and housing in order to create a more efficient urban form.

Programs:

4.2.1 Improve jobs/housing balance through new development and redevelopment project reviews and actions.

4.2.2 Improve jobs/housing balance at a subregional level in relation to major activity centers as new development occurs.

4.2.3 Continue support for and consider expansion of the CLOUT demonstration project to incorporate: incentive oriented tax credits; loan programs; small business development programs; and complementary land use policies, all aimed at improving the jobs/housing balance in the western San Bernardino/eastern Los Angeles Counties area.

[1] Programs which further more than one air quality policy.

Fugitive Dust - Dust particles that are introduced into the air through certain activities such as soil cultivation, off-road vehicles, or any vehicles operating on open fields or dirt roadways.

Lead

Lead is a gray-white metal that is soft, malleable, and resistant to corrosion. Sources of lead resulting in concentrations in the air include industrial sources and weathering of soils, followed by fugitive dust emissions. Health effects from exposure to lead include brain and kidney damage, learning disabilities, seizures and death. Fetuses, infants and children are more sensitive than others to the adverse effects of lead exposure. Exposure to low levels of lead can adversely affect the development and function of the central nervous system, leading to learning disorders, distractibility, inability to follow simple commands and a lower intelligence quotient.

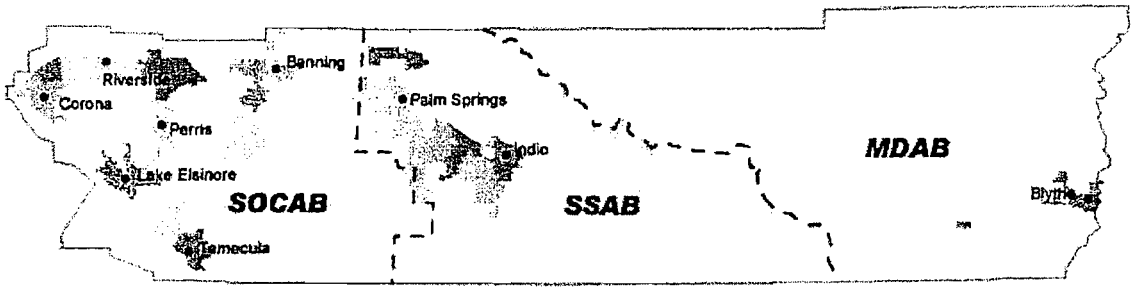
The SOCAB, SSAB and MDAB are all designated as attainment areas for both federal and state lead standards.

Particulate Matter

Particulate matter is the term used for a mixture of solid particles and liquid droplets found in the air. Coarse particles (larger than 2.5 but smaller than 10 micrometers, or PM_{10}) come from a variety of sources, including windblown dust and grinding operations. Fine particles (less than 2.5 micrometers, or $PM_{2.5}$) often come from fuel combustion, power plants and diesel buses and trucks. Fine particles can also be formed in the atmosphere through chemical reactions. PM_{10} and its health affects are discussed in greater detail later in the Particulate Matter section of this Element.

The SOCAB and SSAB are designated as non-attainment areas for both state and federal PM_{10}. The MDAB is designated as a non-attainment area for state PM_{10} standards, but as an attainment unclassified area for Federal standards (after meeting attainment standards, the MDAQMD discontinued monitoring efforts; consequently it cannot be given full attainment status).

The following table summarizes the attainment status for these six pollutants within each of the three air quality basins covering Riverside County.



Air Basin Boundary

SOCAB - South Coast Air Basin
SSAB - Salton Sea Air Basin
MDAB - Mojave Desert Air Basin

0 20 Miles

Source Information: SCAQMD.
The oldest data shown on this map is 1990

The County of Riverside or the RCIP consultants have no reason or information to believe that this map contains any inaccuracies, defects or misinformation. The County of Riverside and the RCIP consultants assume no warranties or legal responsibility, however, as to the absolute accuracy of any data or information contained within this map, regardless the location, subject and size. Data and information represented on this map is subject to update and modification without prior notification. The geographic information system and other sources should be queried for the most current information. This map or any information represented on it, shall not be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording, except as expressly permitted in writing by the County of Riverside

RIVERSIDE COUNTY AIR QUALITY BASINS

Figure AQ-1

Riverside County has made great strides in achieving state and federal air quality standards. The following provides a description of the six criteria air pollutants and their attainment status in each of the three Riverside County air basins.

Ozone

Ozone is a pungent, colorless gas typical of southern California smog. Elevated ozone concentrations result in reduced lung function, particularly during vigorous physical activity. Ozone levels peak during the summer and early fall months.

The SOCAB is designated as a non-attainment area for both federal and state ozone standards, meaning that air quality standards are being exceeded. The Environmental Protection Agency (EPA) has classified the entire Southern California Association of Governments region as an "extreme" non-attainment area, and has mandated that the South Coast Air Quality Basin achieve attainment by 2010. The SSAB and MDAB are both designated as non-attainment areas for federal and state ozone standards.

Carbon Monoxide

Carbon monoxide (CO) is formed by the incomplete combustion of fossil fuels, almost entirely from automobiles. It is a colorless, odorless gas that can cause dizziness, fatigue and impairments to central nervous system functions.

The SOCAB is designated as a non-attainment area for federal CO standards. However, the Riverside County area of SOCAB has not exceeded either federal or state CO standards in the past five years. The SSAB and MDAB have both been designated as attainment areas for federal and state Carbon Monoxide standards.

Nitrogen Oxides

Nitrogen dioxide (NO_2), a reddish brown gas, and nitric oxide (NO), a colorless odorless gas, are jointly referred to as nitrogen oxides or NO_x. NO_x is a primary component of smog and also contributes to other pollution problems such as high concentration of fine particulate matter, poor visibility, and acid deposition. NO_2 decreases lung function and may reduce resistance to infection.

The SOCAB has not exceeded either federal or state standards for nitrogen dioxides in the past five years. It is designated as a maintenance area (an area that was once classified as non-attainment but has recently shown achievement of air quality standards) under federal standards and as an attainment area under state standards. The SSAB and MDAB are designated as attainment areas for both federal and state NO_2 standards.

Sulfur Dioxide

Sulfur dioxide (SO_2) is a colorless irritating gas created mainly by industrial facilities. SO_2 irritates the respiratory tract, injures lung tissue when combined with fine particulate matter and reduces visibility and the level of sunlight.

The SOCAB, SSAB and MDAB are all designated as attainment areas for both federal and state sulfur dioxide standards.

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Issues and Policies

AIR QUALITY

"Air quality is viewed as such an important factor in the quality of life that its measurements are used as a major factor in evaluating the Plan's performance."

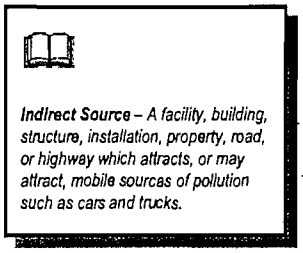
– RCIP Vision

Six criteria air pollutants have been established for every air basin within the State of California. These are pollutants for which acceptable levels of exposure can be determined and for which an ambient air quality standard has been set. As shown in Table AQ-1, Ambient Air Quality Standards, federal and state standards have been developed for ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide and PM_{10}. Federal primary standards for air pollutants have been established to protect the public health, while secondary standards protect the public welfare by preventing impairment of visibility and damage to vegetation and property.

Table AQ-1
Ambient Air Quality Standards

Pollutant	Averaging Time	State	Federal	
			Primary	Secondary
Ozone	1 Hour	0.09 ppm	0.12 ppm	Same as Primary Standard
	8 Hour	0.08 ppm	0.08 ppm	
Nitrogen Dioxide	Annual Average	0.053 ppm	0.053 ppm	Same as Primary Standard
	1 Hour	0.25 ppm	–	
Carbon Monoxide	8 Hour	9.0 ppm	9.0 ppm	–
	1 Hour	20.0 ppm	35.0 ppm	–
Suspended Particulate Matter (PM_{10} & $PM_{2.5}$)	Annual Geometric Mean	30 µg/m³	65 µg/m³ ($PM_{2.5}$)	–
	24 Hour	50 µg/m³	150 µg/m³ (PM_{10}) 15 µg/m³ ($PM_{2.5}$)	Same as Primary Standard
	Annual Arithmetic Mean	--	50 µg/m³	
Sulfur Dioxide	Annual Average	--	0.03 ppm	Same as Primary Standard
	24 Hour	0.04 ppm	0.14 ppm	
	3 Hour	--	--	0.5 ppm
	1 Hour	0.25 ppm	–	–
Lead	30 Day Average	1.5 µg/m³	--	--
	Calendar Quarter	--	1.5 µg/m³	Same as Primary Standard

Notes: ppm = parts per million; µg/m³ = micrograms per cubic meter of air
Source: California Air Resources Board Fact Sheet 39, 1998.



Indirect Source *– A facility, building, structure, installation, property, road, or highway which attracts, or may attract, mobile sources of pollution such as cars and trucks.*

To achieve the goals and objectives of the air quality plans at the local level, all cities and counties must adopt air quality elements or other elements/plans that fully address air quality as well as implement these plans to achieve compliance with state and federal standards. Local responsibilities for achieving compliance primarily focus on measures that control "Indirect Sources" such as facilities, buildings, structures, installations, real property, roads or highways that attract mobile sources of pollution.

Regulatory Restrictions

The combination of geographical features and high levels of pollutants produced in the region have resulted in the Environmental Protection Agency (EPA) designating the air basins in Riverside County as non-attainment areas (Table AQ-2). This means that due to the high level of pollutants in the region, the area is not expected to meet National Ambient Air Quality Standards in the near future.

The Federal Clean Air Act (1977 Amendments) requires that designated agencies in any region of the nation not meeting national clean air standards must prepare a plan demonstrating the steps that would bring the area into compliance with all national standards by December 31, 1987. In response, the Governor of California designated agencies to develop these plans.

For the South Coast Air Basin and the Salton Sea Air Basin, the agencies designated to develop regional air quality plans are the South Coast Air Quality Management District (SCAQMD) and the Southern California Association of Governments (SCAG). The two agencies first adopted an Air Quality Management Plan (AQMP) in 1979 and have revised it several times subsequently, as earlier attainment forecasts were shown to be overly optimistic. Equivalent regional air quality plans were created for the Mojave Desert Air Basin by the Mojave Desert Air Quality Management Basin (MDAQMD) in conjunction with SCAG.

In 1998, the California Legislature enacted the California Clean Air Act (CCAA). The CCAA requires regional emissions to be reduced by 5% per year, averaged over a 3-year period, until attainment can be demonstrated. Each region that did not meet a national or state air quality standard was required to prepare a plan which demonstrated how the 5% reductions were to be achieved. In response, the SCAQMD and MDAQMD revised their air quality plans to meet CCAA requirements.

The latest AQMP, approved in 1997, was designed to meet both federal and state air quality planning guidelines. Strategies for controlling air pollutant emissions in the AQMP are grouped into three "tiers," based on their anticipated timing for implementation. Tier I consists of the implementation of best available current technology and management practices that can be adopted within five years. Tier II is based on anticipated advancement in current technology and vigorous regulatory action, while Tier III controls consist of implementation measures which first require the development of new technologies.

The MDAQMD adopted its Air Quality Attainment Plan in 1995 to meet state ozone standards and the Attainment Demonstration Plan in 1996 to meet federal ozone standards. While the Mojave Desert Air Basin is classified by the state as a non-attainment area for PM_{10} (coarse particles larger than 2.5 but smaller than 10 micrometers), state law does not require an air quality plan to meet this standard, and as such, no plan has been adopted.

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MOJAVE DESERT AIR BASIN

The Mojave Desert Air Basin (MDAB), comprised of 21,000 square miles, encompasses the eastern portion of Riverside County consisting of the Palo Verde Valley along with portions of Los Angeles, Kern and San Bernardino Counties. Air quality conditions in the Riverside County MDAB are partly under the jurisdiction of the SCAQMD and partly under the jurisdiction of the Mojave Desert Air Quality Management District (MDAQMD).

The MDAB consists of an assemblage of mountain ranges interspersed with long broad valleys that often contain dry lakes. Many of the lower mountains that dot the vast terrain rise from 1,000 to 4,000 feet above the valley floor. Prevailing winds in the MDAB are out of the west and southwest. These prevailing winds are due to the proximity of the MDAB to coastal and central regions and the presence of the Sierra Nevada mountains, which pose as a natural barrier to the north; air masses pushed onshore in southern California by differential heating are channeled through the MDAB. The MDAB is separated from the southern California coastal and central California valley regions by mountains whose passes form the main channels for these air masses.

During the summer months, the MDAB is generally influenced by a Pacific Subtropical High Cell that sits off the coast, inhibiting cloud formation and encouraging daytime solar heating. The MDAB is rarely influenced by cold air masses moving south from Canada and Alaska, with desert moisture arriving from infrequent warm, moist and unstable air masses from the south. The MDAB averages between three and seven inches of precipitation per year.

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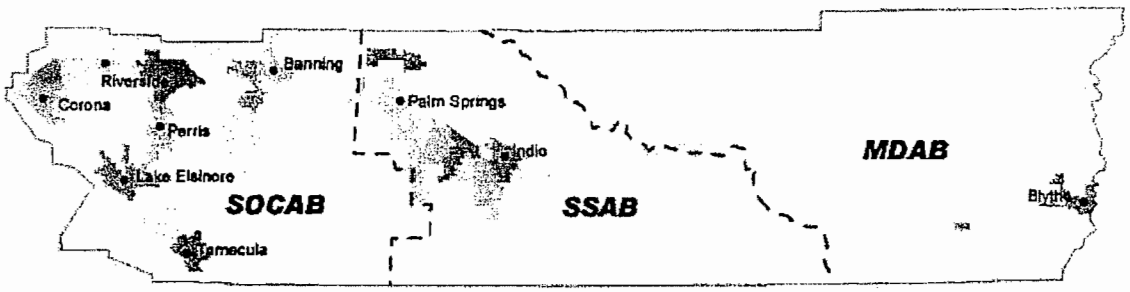

Source Information: SCAQMD.
The oldest data shown on this map is 1990.

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Air Basin Boundary

SOCAB - South Coast Air Basin
SSAB - Salton Sea Air Basin
MDAB - Mojave Desert Air Basin

0 20 Miles

RIVERSIDE COUNTY AIR QUALITY BASINS

Figure AQ-1

This phenomenon is frequently observed in the middle of late afternoon on hot summer days when the smog appears to clear up suddenly. Winter inversions frequently break by mid-morning, thereby preventing contaminant build-up.

The combination of low wind speeds and low level inversions produces the greatest concentration of pollutants. On high wind days other air pollutants including particulate matter such as dust and soil are swept and carried in the air. On days of no inversion or on days of winds averaging over 15 miles per hour, there will be no important smog effects, during either summer or winter.

Smog - A combination of smoke, ozone, hydrocarbons, nitrogen oxides, and other chemically reactive compounds which, under certain conditions of weather and sunlight, may result in a murky brown haze that causes adverse health effects. The primary source of smog in California is motor vehicles.

In the winter, the greatest pollution problems are carbon monoxide and oxides of nitrogen because of extremely low level inversions and air stagnation during the night and early morning hours. Smog levels are much lower during this season due to the lack of strong inversion during the daylight hours and the lack of intense sunlight which is needed to produce photochemical reactions.

In the summer, the longer daylight hours and the brighter sunshine combine to cause a reaction between hydrocarbons and oxides of nitrogen to form more smog. Carbon monoxide is not as great a problem in summer because inversions are not as low and intense in the surface boundary layer (within 100 feet of the ground) as in winter and because horizontal ventilation is better in summer.

The basin-wide average occurrence of inversion at the ground surface is 11 days per month; the averages vary from two days in June to 22 days in December and January. The potential for high concentration varies seasonally for many contaminants. During late spring, summer and early fall, light winds, low mixing heights and brilliant sunshine combine to produce conditions favorable for the maximum production of photochemical oxidants, mainly ozone. During the spring and summer, when fairly deep marine layers are frequently found in the Basin, sulfate concentrations are at their peak.

SALTON SEA AIR BASIN

Subtropical High Cell - An area of atmospheric high pressure located at approximately 30 degrees north and south latitude. Air tends to sink near high-pressure centers, which inhibits precipitation and cloud formation. This is why high-pressure systems tend to bring bright, sunny days with calm weather.

The middle part of Riverside County (between San Gorgonio Pass and Joshua Tree National Monument), belongs in the Salton Sea Air Basin (SSAB), along with Imperial County. Air quality conditions in this portion of the County, although in the SSAB, are also administered by the SCAQMD. The SCAQMD is responsible for the development of the regional Air Quality Management Plan and efforts to regulate pollutant emissions from a variety of sources.

The SSAB portion of Riverside County is separated from the SOCAB region by the San Jacinto Mountains and from the Mojave Desert Air Basin to the east by the Little San Bernardino Mountains. During the summer, the SSAB is generally influenced by a Pacific Subtropical High Cell that sits off the coast, inhibiting cloud formation and encouraging daytime solar heating. The SSAB is rarely influenced by cold air masses moving south from Canada and Alaska, as these systems are weak and diffuse by the time they reach the desert. Most desert moisture arrives from infrequent warm, moist and unstable air masses from the south. The SSAB averages between three and seven inches of precipitation per year.

The Setting

Riverside County is located within three air basins, as can be seen on Figure AQ-1, Riverside County Air Quality Basins They are the South Coast Air Basin (SOCAB), Salton Sea Air Basin (SSAB) and the Mojave Desert Air Basin (MDAB). Air quality within each basin is not only affected by various emissions sources (mobile, industry, etc.), but also by atmospheric conditions such as wind speed, wind direction, temperature and rainfall. The following provides a description of each air basin and its relevant climate and meteorological conditions affecting air pollution.

SOUTH COAST AIR BASIN

Western Riverside County (west of the San Gorgonio Pass) is located within the South Coast Air Basin (SOCAB), which includes all of Orange County and the non-desert portions of Los Angeles, Riverside and San Bernardino Counties. Air quality conditions in the SOCAB are under the jurisdiction of the South Coast Air Quality Management District (SCAQMD).

According to the Air Quality Management Plan (AQMP), the worst air quality problem in the nation occurs in the South Coast Air Basin. With very light average wind speeds, the basin atmosphere has a limited capability to disperse air contaminants horizontally. The dominant daily wind pattern is a daytime sea breeze (onshore breeze) and a nighttime land breeze (offshore breeze), broken only occasionally by winter storms and infrequent strong Santa Ana winds from the Great Basin, Mojave, and deserts to the north.

Santa Ana Winds - Santa Ana winds are generally defined as warm, dry winds that blow from the east or northeast (offshore) occurring predominantly between the months of December and February. The winds develop when a region of high pressure builds over the Great Basin (the high plateau east of the Sierra Mountains and west of the Rocky Mountains including most of Nevada and Utah) and move locally across the Mojave Desert and then over and through passes in the San Gabriel, San Bernardino and San Jacinto Mountains.

On virtually all spring and early summer days, most of the pollution produced during an individual day is moved out of the basin through mountain passes, or is lifted by the warm, vertical currents produced by the heating of mountain slopes. In those seasons, the basin can be "flushed" of pollutants by a transport of ocean air during the afternoon. From late summer through the winter months, the flushing is less pronounced because of lower wind speeds and the earlier appearance of offshore winds. With extremely stagnant wind flows, the drainage winds may begin near the mountains by late afternoon. Remaining pollutants are trapped and begin to accumulate during the night and the following morning. A low average morning wind speed in pollution source areas is an important indicator of air stagnation potential.

The vertical dispersion of air pollutants in the South Coast Air Basin is hampered by the presence of a temperature inversion in the layers of the atmosphere near the surface of the Earth. In a normal situation, as temperatures decrease with altitude, air continues to rise as it remains warmer than the surrounding air. With an inversion layer, air cannot continue to expand upwards, as it is trapped by the warmer air above.

Inversion layer - A layer of warm air that traps the cooler air and any pollutants it carries below.

However, as the day progresses and the sun warms the ground, the surface layer of air approaches a temperature equal to that of the inversion layer. When these temperatures become equal, the inversion layer begins to erode at its lower edge. If enough warming takes place, the inversion layer becomes weaker and weaker and finally "breaks." The surface air layers can then mix upward without limit.

Ambient Air - Outside air, any portion of the atmosphere not contained by walls and a roof.

It is an intent of this Air Quality Element to provide background information on the physical and regulatory environment affecting air quality in the County. This element also identifies goals, policies and programs that are meant to balance the County's actions regarding land use, circulation and other issues with their potential effects on air quality. This element in conjunction with local and regional air quality planning efforts addresses ambient air quality standards set forth by the Federal Environmental Protection Agency and the California Air Resources Board (CARB).

Chapter 9: Air Quality Element

Introduction

> *Air quality attainment goals established by the South Coast Air Quality Management District have been more than met despite the substantial growth in the region in the last 20 years. Most of this is a result of significantly improved engine technology and the replacement of more polluting vehicles. However, local initiatives that expanded transit options, concentrated development more efficiently, and increased local employment opportunities have also contnbuted to air quality improvement.*
>
> *– RCIP Vision*

WHY IS AIR QUALITY IMPORTANT?

The quality of the air we breathe directly affects our health, environment, economy and our quality of life. Because the inside of our bodies are in constant contact with the outside world through the oxygen we inhale, air pollutants make their way to our lungs and into our blood stream. An overabundance of pollutants in the air can cause mild to severe health effects, including increased hospitalization and emergency room visits, respiratory illnesses, increased risk of developing cancer, decreased breathing capacity, lung inflammation, difficulty in exercising and even a reduction in life-span.

Just as we are affected by air pollution, so too are plants and animals. Animals must breathe the same air and are subject to the same types of negative health effects. Certain plants and trees may absorb air pollutants which can stunt their development or cause premature death. There are also numerous impacts to our economy including lost work days due to illness, a desire on the part of business to locate in areas with a healthy environment, and increased expenses from medical costs. Pollutants may also lower visibility and cause damage to property Certain air pollutants are responsible for discoloring painted surfaces, eating away at stones used in buildings, dissolving the mortar that holds bricks together, and cracking tires and other items made from rubber.

WHAT CAN WE DO ABOUT AIR QUALITY?

Air quality is a regional issue, effecting and affected by every city and county. Although Riverside County generates the lowest emissions of any county in the South Coast Air Basin, air quality in the County is among the Basin's worst due to onshore winds transporting vast amounts of pollutants from Los Angeles and Orange Counties into the Inland Empire.

While the County and the region have made great strides in reducing air pollution, it is committed to meeting state and federal air quality guidelines. Policies and programs addressed in this element will focus on the two main sources of air pollutant emissions: mobile sources and stationary sources. Mobile sources include automobiles, motorcycles, trucks and airplanes. Motor vehicles constitute the largest generator of air pollutant emissions in Riverside County. Stationary sources produce significant amounts of pollutants and include electrical power-generating facilities, manufacturing, fabrication, miscellaneous industrial processes and combustion of natural gas.

9. Air Quality Element

AIR QUALITY ELEMENT

EXAMPLE #2

COUNTY OF RIVERSIDE

TOPIC 5: PARTICULATE EMISSIONS

GOAL	POLICIES	PROGRAMS AND ACTION OPTIONS
The minimum practicable particulate emissions from the construction and operation of roads and buildings.	Control Dust 1. Reduce particulate emissions from roads, parking lots, construction sites and agricultural lands.	1. Adopt incentives, regulations and procedures to manage paved roads so that they produce the minimum practicable level of particulates (12.a). 2. Adopt incentives, regulations and procedures to minimize particulate emissions during road, parking lot and building construction (I-4). 3. Adopt incentives, regulations and procedures to control particulate emissions from unpaved roads, drives, vehicle maneuvering areas and parking lots (12.b). 4. Adopt incentives, regulations and procedures to limit dust from agricultural lands and operations (where applicable) (E-3).
	Reduce Emissions from Building Materials/Methods 2. Reduce emissions from building materials and methods which generate excessive pollutants.	1. Adopt incentives, regulations and procedures to prohibit the use of building materials and methods which generate excessive pollutants (F-9).

TOPIC 6: ENERGY CONSERVATION

GOAL	POLICIES	PROGRAMS AND ACTION OPTIONS
Reduced emissions through reduced energy consumption.	Energy Conservation 1. Reduce energy consumption through conservation improvements and requirements.	1. Implement plans and programs to phase in energy conservation improvements through the annual budget process (18.a). 2. Adopt incentives and regulations to enact energy conservation requirements for private development.
	Limit Water Heater Emissions 2. Reduce water heating emissions resulting from swimming pool heaters and residential and commercial water heaters.	1. Adopt incentives and regulations to reduce emissions from swimming pool heaters (d-4). 2. Adopt incentives and regulations to reduce emissions from residential and commercial water heating (d-5).
	Recycle Wastes 3. Promote local recycling of wastes and use of recycled materials.	1. Implement provisions of AB 939 and adopt incentives, regulations and procedures to specify local recycling requirements (18.b).

TOPIC 4: LAND USE		
GOAL	**POLICIES**	**PROGRAMS AND ACTION OPTIONS**
	Protect Sensitive Receptors 3. Support a regional approach to regulating the location and design of land uses which are especially sensitive to air pollution.	1. Participate with the SCAQMD in jointly formulating appropriate standards for regulating the location and protection of sensitive receptors (schools, day care facilities, hospitals and the like) from excessive and hazardous emissions.
	Integrated Planning Process 4. Integrate air quality planning with the land use and transportation planning processes.	1. Locate and design new development in a manner that will minimize direct and indirect emission of air contaminants through such means as: • Promoting mixed use development to reduce the length and frequency of vehicle trips. • Providing for increased intensity of development along existing and proposed transit corridors. • Providing for the location of ancillary employee services (including, but not limited to child care, restaurants, banking facilities, convenience markets) at major employment centers for the purpose of reducing midday vehicle trips.

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TOPIC 4: LAND USE		
GOAL	**POLICIES**	**PROGRAMS AND ACTION OPTIONS**
A pattern of land uses which can be efficiently served by a diversified transportation system and land development projects which directly and indirectly generate the minimum feasible air pollutants (17).	Manage Growth 1. Manage growth by insuring the timely provision of infrastructure to serve new development.	1. Incorporate phasing policies and requirements in general plans and development plans to achieve timely provision of infrastructure (particularly transportation facilities) to serve development through: • Tying growth to Level of Service (LOS) standards; and • Using Urban Limit Lines or phasing areas to manage growth.
	Balance Growth 2. Improve the balance between housing and jobs in order to create a more efficient urban form.	1. Improve jobs/housing relationships through new development and redevelopment project reviews and actions through: • Project review procedures, ensuring that individual projects have a positive or neutral impact on housing/jobs balance; • Revising the General Plan Land Use designations; • Revising the Zoning Code; • Imposing exactions or linkage fees on projects which negatively impact housing/jobs balance; • "Fast-Tracking" projects which improve jobs/housing balance; • Project review procedures, ensuring that site design allows for alternative modes of transportation (bus stops, bus turnouts, bikeways, pedestrian routes, etc.); • Phasing growth to ensure that job expansion and housing production occur at a targeted pace; • Indexing residential development in housing-rich areas to commercial/industrial construction or availability; • Encouraging/allowing mixed use development; • Providing density/intensity bonuses to projects which improve housing/jobs balance; • Encouraging/allowing Planned Unit Development; • Giving incentives for employer-provided housing; • Providing subsidies to attract new businesses; • Utilizing tax exempt bond financing to encourage job-creating businesses; and • Providing infrastructure improvements and/or land for industrial and commercial development. 2. Improve jobs/housing relationships at a subregional level in relation to major activity centers as new development occurs by: • Allowing/encouraging intensified development around transit nodes and along transit corridors; and • Using an urban limit lines or phasing areas to manage growth; 3. Continue support for and consider expansion of the CLOUT demonstration project to incorporate: incentive oriented tax credits; loan programs; small business development programs; and complementary land use policies, all aimed at improving the housing/jobs balance in the western San Bernardino/eastern Los Angeles Counties area. 4. Develop and adopt an agreement among the participating jurisdictions as to mutually acceptable approaches to improve and maintain housing/jobs balance.

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TOPIC 3: AIR TRANSPORTATION		
GOAL	**POLICIES**	**PROGRAMS AND ACTION OPTIONS**
Minimum feasible emissions from air carrier airports.	Promote Improved Technology 1. Promote requiring the best available technology to reduce emissions in aircraft fleet.	1. Adopt/urge establishment of the best available technology and operational measures for aircraft and ground service vehicles (6). 2 Support phasing out of Stage II aircraft and the earliest possible transition to Stage III aircraft for operation within the Air Basin (9).
	Promote Centralized Ground Power 2. Promote installation of centralized ground power systems at existing air carrier airports.	1. Adopt/urge establishment of requirements for centralized ground power systems to be installed and used as soon as practicable at existing air carrier airports (7).
	Promote Improved Ground Access 3. Promote conditioning of air carrier airports upon inclusion of plans for improved ground access.	1. Adopt/urge establishment of an ordinance requiring air carrier airport operators to obtain permits based on approved plans for trip reduction, facility design and access improvements (8).

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Health Effects of Ambient Air Pollutants

Ozone

Ozone 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 ozone. Short term exposure (lasting for a few hours) to ozone at levels typically observed in Southern California can result in aggravated respiratory diseases such as emphysema, bronchitis and 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.

Elevated ozone levels are associated with increased school absences. In recent years, a correlation between elevated ambient ozone levels and increases in daily hospital admission rates, as well as mortality, has also been reported. An increased risk for asthma has been found in children who participate in multiple sports and live in high ozone communities.

Ozone exposure under exercising conditions is known to increase the severity of the above mentioned observed responses. Animal studies suggest that exposures to a combination of pollutants which include ozone may be more toxic than exposure to ozone alone. Although lung volume and resistance changes observed after a single exposure diminish, with repeated exposures biochemical and cellular changes appear to persist, which can lead to subsequent lung structural changes.

Particulate Matter

A series of scientific studies has linked particulate matter, especially fine particles, with a variety of significant health problems. A consistent correlation between elevated ambient fine particulate matter (PM_{10} and $PM_{2.5}$) levels and an increase in mortality rates, respiratory infections number and severity of asthma attacks, and the number of hospital admissions has been observed in different parts of the United States and various areas around the world. In recent years, some studies have reported an association between long-term exposure to air pollution dominated by fine particles and increased mortality, reduction in life-span, and an increased mortality from lung cancer.

Daily fluctuations in fine particulate matter concentration levels have also been related to hospital admissions for acute respiratory conditions in children, to school and kindergarten absences, to a decrease in respiratory lung volumes in normal children and to increased medication use in children and adults with asthma. Recent studies show lung function growth in children is reduced with long-term exposure to particulate

APPENDIX C

HEALTH EFFECTS

OF

AMBIENT AIR POLLUTANTS

Ambient Air Quality Standards

AIR POLLUTANT	STATE STANDARD CONCENTRATION/ AVERAGING TIME	FEDERAL PRIMARY STANDARD CONCENTRATION/ AVERAGING TIME	MOST RELEVANT EFFECTS
Ozone	0.09 ppm, 1-hr. avg. >	0.12 ppm, 1-hr avg.> 0.08 ppm, 8-hr avg.>	(a) Short-term exposures: (1) Pulmonary function decrements and breathing difficulty. (2) Risk to public health implied by alterations in pulmonary morphology and host defense in animals; (b) Long-term exposures: Risk to public health implied by altered connective tissue metabolism and altered pulmonary morphology in animals after long-term exposures and pulmonary function decrements in chronically exposed humans; (c) Vegetation damage; (d) Property damage
Carbon Monoxide	9.0 ppm, 8-hr avg. > 20 ppm, 1-hr avg. >	9 ppm, 8-hr avg.> 35 ppm, 1-hr avg.>	(a) Aggravation of angina pectoris and other aspects of coronary heart disease; (b) Decreased exercise tolerance in persons with peripheral vascular disease and lung disease; (c) Impairment of central nervous system functions; (d) Possible increased risk to fetuses
Nitrogen Dioxide	0.25 ppm, 1-hr avg. >	0.053 ppm, ann. avg.>	(a) Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; (b) Risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; (c) Contribution to atmospheric discoloration
Sulfur Dioxide	0.04 ppm, 24-hr avg.> 0.25 ppm, 1-hr. avg. >	0.03 ppm, ann. avg.> 0.14 ppm, 24-hr avg.>	(a) Broncho constriction accompanied by symptoms which may include wheezing, shortness of breath and chest tightness, during exercise or physical activity in persons with asthma
Suspended Particulate Matter (PM_{10})	20 µg/m3, ann. geometric mean > 50 µg/m3, 24-hr average>	50 µg/m3, ann. arithmetic mean > 150µg/m3, 24-hr avg.>	(a) Excess deaths from short-term exposures and exacerbation of symptoms in sensitive patients with respiratory disease; (b) Declines in pulmonary function, especially in children; (c) Increased risk of premature death from heart or lung diseases in elderly
Suspended Particulate Matter ($PM_{2.5}$)	12 µg/m3, ann. arithmetic mean	15 µg/m3, ann. arithmetic mean > 65 µg/m3, 24-hr avg.>	
Sulfates	25 µg/m3, 24-hr avg. ≥		(a) Decrease in ventilatory function; (b) Aggravation of asthmatic symptoms; (c) Aggravation of cardio-pulmonary disease; (d) Vegetation damage; (e) Degradation of visibility; (f) Property damage
Lead	1.5 µg/m3, 30-day avg. ≥	1.5 µg/m3, calendar quarter>	(a) Learning disabilities in children; (b) Impairment of blood formation and nerve conduction
Visibility-Reducing Particles	In sufficient amount such that the extinction coefficient is greater than 0.23 inverse kilometers (to reduce the visual range to less than 10 miles) at relative humidity less than 70 percent, 8-hour average (10am - 6pm)		Visibility impairment on days when relative humidity is less than 70 percent
Hydrogen Sulfide (H_2S)	0.03 ppm, 1-hr. avg. ≥		Odor (rotten egg smell) Headache

Source: South Coast Air Quality Management District

APPENDIX B

AMBIENT AIR QUALITY STANDARDS

AQ 17.6 Reduce emissions from building materials and methods that generate excessive pollutants, through incentives and/or regulations.

AQ 17.7 Separate trucks from other vehicles in industrial areas of the County with the creation of truck-only access lanes to promote the free flow of traffic. (AI 43)

AQ 17.8 Adopt regulations and programs necessary to meet state and federal guidelines for diesel emissions. (AI 121)

AQ 17.9 Encourage the installation and use of electric service units at truck stops and distribution centers for heating and cooling truck cabs, and particularly for powering refrigeration trucks in lieu of idling of engines for power. (AI 120)

AQ 17.10 Promote and encourage the use of natural gas and electric vehicles in distribution centers.

AQ 17.11 Create and implement street-sweeping plans, as appropriate, in areas of the County disproportionately affected by particulate matter pollution.

Multi-jurisdictional Cooperation

Particulate matter concentrations are a regional issue. In addition to those created in Riverside County, particulates originating in surrounding cities and counties are transported into Riverside County by prevailing winds. Therefore, any meaningful attempt to decrease particulate concentrations in the County will involve cooperation with local and regional governments and a tightening of state and federal standards.

Policies:

AQ 16.1 Cooperate with local, regional, state and federal jurisdictions to better control particulate matter.

AQ 16.2 Encourage stricter state and federal legislation on bias belted tires, smoking vehicles, and vehicles that spill debris on streets and highways, to better control particulate matter. (AI 113)

AQ 16.3 Collaborate with the SCAQMD and MDAQMD to require and/or encourage the adoption of regulations or incentives to limit the amount of time trucks may idle. (AI 120)

AQ 16.4 Collaborate with the EPA, SCAQMD, MDAQMD, and warehouse owners and operators to create regulations and programs to reduce the amount of diesel fumes released due to warehousing operations. (AI 121)

Control Measures

Riverside County can implement simple control measures to reduce the amount of particulates produced within its borders. Strict enforcement of these and current regulations can then lead to a substantial decrease in particulate concentrations in the County and neighboring areas.

Policies:

AQ 17.1 Reduce particulate matter from agriculture, construction, demolition, debris hauling, street cleaning, utility maintenance, railroad rights-of-way, and off-road vehicles to the extent possible. (AI 123)

AQ 17.2 Enforce regulations against illegal fires.

AQ 17.3 Identify and create a control plan for areas within the County prone to wind erosion of soil.

AQ 17.4 Adopt incentives, regulations and/or procedures to manage paved and unpaved roads and parking lots so they produce the minimum practicable level of particulates (AI 111)

AQ 17.5 Adopt incentives and/or procedures to limit dust from agricultural lands and operations, where applicable. (AI 123)

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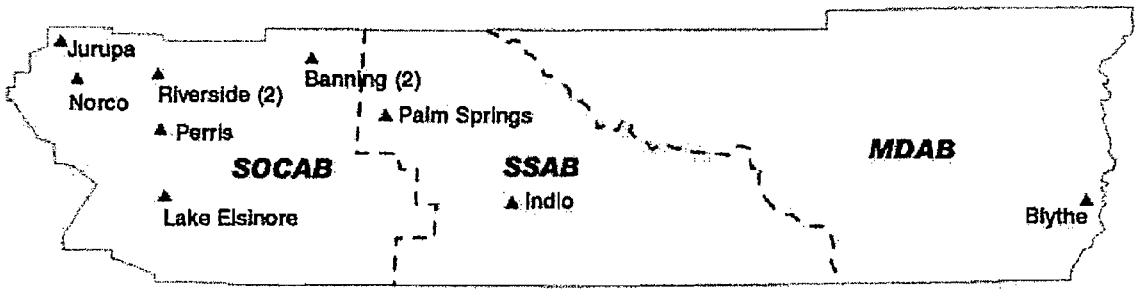

▲ Monitoring Sites

Air Basin Boundary

SOCAB - South Coast Air Basin
SSAB - Salton Sea Air Basin
MDAB - Mojave Desert Air Basin

Source Information: SCAQMD.
The oldest data shown on this map is 1990.

The County of Riverside or the RCIP consultants have no reason or indication to believe that this map contains any inaccuracies, defects or misinformation. The County of Riverside and the RCIP consultants assume no warranties or legal responsibility, however, as to the absolute accuracy of any data or information contained within this map, regardless the location, subject and size. Data and information represented on this map is subject to update and modification without prior notification. The geographic information system and other sources should be queried for the most current information. This map or any information represented on it, shall not be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording, except as expressly permitted in writing by the County of Riverside.

0 20 Miles

RIVERSIDE COUNTY AIR MONITORING NETWORK

Figure AQ-2

precipitates rather than dust, smoke or soot. Riverside County is also responsible for generating large amounts of particulate matter from sources such as agriculture, warehousing operations, and truck traffic.

While Riverside County is dedicated to implementing policies to control particulate matter produced within its own boundaries, it has no control over particulate imported from beyond its boundaries. The solution to the problem of imported particulate matter in western Riverside County is the adoption of adequate control measures by those responsible jurisdictions in Los Angeles and Orange Counties. By adhering to the control measures contained in the AQMP, these jurisdictions can have a positive impact on particulate matter pollution in the SOCAB portion of Riverside County.

The air quality concerns in the Salton Sea Air Basin (SSAB) portions of the County differ somewhat from those in western Riverside County. Unlike the SOCAB region, particulates in SSAB are primarily dust, smoke and soot. While in 1993 and 1994, PM_{10} concentrations were under the federal standard, concentrations in 1995 were slightly above federal limits. The maximum annual average PM_{10} concentration in 1995 was recorded at 4% above the federal standard; however, the measurement included one day with high winds without which the SSAB would have been under the federal standard. The far more stringent state standards were exceeded on 44% of the days in 1995.

The Mojave Desert Air Basin (MDAB), like the SOCAB and SSAB, is designated as a non-attainment area for PM_{10}. Particulates in the MDAB are primarily fugitive caused by high winds or vehicle travel on unpaved roads. Particulates in the area are generally not caused by exhaust stacks or primary emission points.

While sources and severity of particulate pollution differ in subareas of the County, it is the County's objective to control particulate matter throughout all of Riverside County. However, where necessary, the County shall tailor its control measures and implementation procedures to best address the unique situations found in each area. One example of such an area is the Mira Loma community, where particulate pollutant levels are among the worst in the nation. In such an area, strong measures must be taken immediately to protect the health and welfare of residents, especially children, the elderly and those with respiratory illnesses.

Monitoring

Air quality monitoring stations are locating throughout Riverside County (Figure AQ-2). However, at times it may be necessary to locate additional monitors in those areas of the County suspected of producing excessively high levels of particulates. This more localized data may then assist control and law enforcement efforts in reducing and minimizing particulate matter levels.

Policies:

AQ 15.1 Identify and monitor sources, enforce existing regulations, and promote stronger controls to reduce particulate matter.

pedestrian overpasses, and bus turnouts. These projects improve mobility and air quality by encouraging efficient transportation use.

Policies:

AQ 14.1 Emphasize the use of high occupancy vehicle lanes, light rail and bus routes, and pedestrian and bicycle facilities when using transportation facility development to improve mobility and air quality.

AQ 14.2 When developing new capital facility improvement plans, also consider measures such as Transportation Demand Management, Transportation Systems Management, or job/housing balance strategies.

AQ 14.3 Monitor traffic and congestion to determine when and where the County needs new transportation facilities to achieve increased mobility efficiency.

AQ 14.4 Preserve transportation corridors with the potential of high demand or of regional significance for future expansion to meet project demand. (AI 53)

PARTICULATE MATTER

The Environmental Protection Agency (EPA) defines particulate matter (PM) as either airborne photochemical precipitates or windborne dust. Consisting of tiny solid or liquid particles of soot, dust, smoke, fumes, and aerosols, common sources of PM are manufacturing and power plants, agriculture, diesel trucks and other vehicles, construction sites, fire and windblown dust. Generally PM settles from atmospheric suspension as either particulate or acid rain and fog that has the potential to damage health, crops, and property. Particulate of 2.5 microns or smaller (2.5 microns is approximately equal to .000098 inches) may stay suspended in the air for longer periods of time and when inhaled can penetrate deep into the lungs. Among the health effects related to $PM_{2.5}$ are premature death, decreased lung function and exacerbation of asthma and other respiratory tract illnesses.

Particulate sized between 2.5 and 10 microns (10 microns is approximately equal to .0004 inches), known as PM_{10} also pose a great risk to human health. PM_{10} can easily enter the air sacs in the lungs where they may be deposited, resulting in an increased risk of developing cancer, potentially changing lung function and structure, and possibly exacerbating preexisting respiratory and cardiovascular diseases. It can also irritate the eyes, damage sensitive tissues, sometimes carry disease, and may even cause premature death. $PM_{2.5}$ and PM_{10} are especially hazardous to the old, young and infirm.

Although it produces less than 10% of the South Coast Air Basin's particulate matter, western Riverside County, which is part of the SOCAB, exceeds federal standards more than any other urban area in the nation, and has the highest particulate concentration in the SOCAB. These high levels of particulate matter are largely imported from the urbanized portions of Los Angeles and Orange Counties. This imported particulate is generally composed of photochemical

AQ 13.3 Encourage the construction of high-occupancy-vehicle (HOV) lanes whenever possible to relieve congestion, safety hazards and air pollution as described in the AQMP.

TRANSPORTATION FACILITY DEVELOPMENT

Please see the General Plan Circulation Element, Planned Circulation Systems section for additional information and policies.

Regionally, transportation facility development means increasing capacity through the expansion of highway and transit systems to meet population and land use demand. Though major construction projects often require massive capital investment, mobility and capacity are increased. These projects include: major highways in high growth regions, construction of high occupancy vehicle (HOV) lanes where severe traffic problems occur, and the construction of rapid transit corridors and facilities. Unfortunately, this strategy responds slowly to changing demands on the transportation system and may burden the region with debt.

Estimates for the development of additional facilities and systems over the next twenty years call for billions of dollars in investment. While federal government spending will account for a large portion of the funding required, additional revenues will have to be raised through a variety of means, including the gas tax, sales tax, user fees, tolls and bonds.

The costs of regional transportation projects also include growth in population, housing and services, and their impact on the transportation system. This raises traffic volume to or above the system's designed capacity while decaying air quality. When major transit corridors become congested, for example, daily commuters take alternate routes to avoid traffic delays. Once a new route becomes operational, commuters abandon these alternative routes for the new or improved systems until they too become congested. However, trying to build out of this situation does not solve the problem because it fuels an unbridled cycle of more growth, traffic, transportation facility development and smog. Continued transportation facility development results in increased growth, higher taxes, and minimal net gains in mobility for each dollar spent. All of this only lessens the chances for good air quality.

Just as there is a need regionally, capital improvements are also required locally to keep traffic moving and reduce emissions. It is the intent of the County to continue such improvements. However, the County recognizes that large construction projects are not always the best option for meeting transportation demands and that other, less expensive alternatives, are sometimes available. These alternatives include demand management, transportation systems management, and strategies to improve the job/housing ratio. While the County cannot meet all of its mobility and air pollution challenges using these alternatives, they may supplement needed capital improvements to help meet the County's transportation demands.

The transportation facility development required must improve mobility by encouraging multiple-occupancy vehicle use and alternative travel modes for both short and long trips. Therefore, the County must emphasize construction projects such as single purpose, high occupancy vehicle lanes, park-n-ride lots, light rail and bus routes. It should also give priority to bicycle paths and trails,

travel and idling time for cars, buses and trucks. Congestion increases transportation costs and vehicle emissions, and frays nerves. Moreover, a lack of fleets using alternative fuels adds to poor air quality.

Because transportation systems management provides an important weapon for relieving congestion, improving mobility, and enhancing air quality, the County should use it extensively in its fight for cleaner air.

Traffic Flow

It is a goal of the County to manage its transportation systems in a manner in which mobility and efficiency are enhanced. Improving the flow of traffic promotes mobility on our streets, resulting in decreased impacts on air quality.

Policies:

AQ 12.1 Manage traffic flow through signal synchronization, while coordinating with and permitting the free flow of mass transit vehicles, when possible. (AI 117)

AQ 12.2 Synchronize signals throughout the County with those of its cities, adjoining counties and the California Department of Transportation. (AI 117)

AQ 12.3 Construct and improve traffic signals with channelization and Automated Traffic Surveillance and Control systems at appropriate intersections (AI 117)

AQ 12.4 Eliminate traffic hazards and delays through highway maintenance, rapid emergency response, debris removal, and elimination of at-grade railroad crossings, when possible. (AI 119)

AQ 12.5 Encourage business owners to schedule deliveries at off-peak traffic periods.

Channelization - Involves the separation or regulation of conflicting traffic movements into definite paths of travel by traffic islands or pavement markings, to facilitate the safe and orderly movement of vehicles and pedestrians.

Transportation System Management Improvements

Proper management and oversight of the County-owned fleet can provide a highly effective tool for reducing direct and indirect impacts on air quality. It is therefore a goal of the County to continually improve its own transportation system and cooperate with officials in all levels of government to enhance regional efforts to improve transportation systems management.

Policies:

AQ 13.1 Manage the County of Riverside transportation fleet fueling standards to achieve an appropriate alternate fuel fleet mix. (AI 118)

AQ 13.2 Cooperate with local, regional, state, and federal jurisdictions to better manage transportation facilities and fleets.

High Occupancy Vehicles (HOV) Lanes -Carpools, vanpools, buses and motorcycles are the only vehicles allowed to use HOV lanes. Generally, HOV lanes require two-person carpools, though there are some roadways that require a minimum of three (with the exception of super-ultra-low-emission vehicles, which may use HOV lanes with only a single occupant).

AQ 10.2 Use incentives, regulations and Transportation Demand Management in cooperation with surrounding jurisdictions when possible to eliminate vehicle trips which would otherwise be made. (AI 47)

AQ 10.3 Assist merchants in encouraging their customers to shift from single occupancy vehicles to transit, carpools, bicycles, or foot. (AI 48)

AQ 10.4 Continue to enforce the County's Transportation Demand Management Ordinance and update as necessary.

Special Events

Temporary special events provide recreational and retail opportunities for residents. However, these events may also result in traffic congestion on roadways adjacent to the event. The following policies are designed to alleviate traffic congestion and the accompanying pollution caused by excess vehicle travel times.

Policies:

AQ 11.1 Establish requirements for special event centers to provide off-site parking and park-n-ride facilities at remote locations. Remote parking should be as close to practicable to the event site and the operator should supply shuttle services. (AI 116)

AQ 11.2 Promote the use of peripheral parking by increasing on-site parking rates and offering reduced rates to peripheral parking with tickets sold for non-ridesharing patrons. (AI 116)

AQ 11.3 Encourage special event center operators to advertise and offer discounted transit passes with event tickets (AI 116)

AQ 11.4 Encourage special event center operators to advertise and offer discount parking incentives to carpooling patrons, with two or more persons per vehicle, for on-site parking facilities. (AI 116)

TRANSPORTATION SYSTEMS MANAGEMENT

Transportation systems management improves traffic flow through modification in the operation of existing transit facilities and fleets. This increases mobility and thereby improves air quality. Commerce, industry and public welfare require adequate mobility. Poor transportation systems management, on the other hand, creates congested highways, perpetuates poorly maintained and polluting fleets, weakens the County's economy and diminishes its citizens' health and well-being.

An at-grade railroad crossing is one where the street and the rail line form an intersection, and physically cross one-another.

The County's rapidly growing population combined with unsynchronized traffic signals, delays at grade-level rail crossings, non-uniform street widths, inadequate roadway maintenance and poor emergency response, has resulted in increased congestion. Increased congestion means stop-and-go traffic and longer

vanpools, and to take the bus or light rail. Alternatively, workers may work longer hours and so eliminate a trip to the office once or twice a week. Two other TDM strategies that eliminate work trips are telecommuting and work-at-home programs. When individuals must drive, TDM calls for changes in their work schedules to avoid peak traffic periods. A similar TDM strategy encourages large trucks to operate at night. Because traffic at night is lighter, accidents are less likely, and when they do occur, they may not tie up the freeway for hours as they would during the day.

TDM strategies for reducing trips that are not work related are also important. Among these are merchant transportation incentives, such as discounts to customers who use public transit and free bus passes. Some measures reduce both work and non-work related trips. For example, by pricing parking spaces and providing convenient parking for people who rideshare, parking management encourages the use of carpools, vanpools and public transit. It also eliminates on-street parking which adds to congestion.

TDM alone, however, is not the answer. Transit improvements and facility development must accompany these changes. Efforts to encouraging a shift to transit will fail unless transit operators make convenient, safe and reliable transit service available. Similarly, a lack of work centers now blocks the development of telecommuting. The County can take steps to foster the development of such work centers. Changing transportation demand will also require facility development, such as park-n-ride lots, bus turnouts, off-site parking, and facilities for bicycles and pedestrians.

The County's Transportation Demand Management Ordinance for new developments, designed to meet the requirements of the Riverside County Congestion Management Program and the Air Quality Management Plan, promotes the development of TDM strategies early in the development review process. The ordinance sets goals for reducing vehicle trips generated by new developments, a minimum road level-of-service for all new development projects and a reduction in overall vehicle trips emanating from the County. This ordinance also establishes potential TDM measures to be used where appropriate including off-site telecommunications facilities, carpooling, alternative work schedules, transit ridership incentives, and an enhanced pedestrian and bikeway circulation system.

Trip Reduction

As the automobile is the major source of air pollution in the region, the County recognizes the importance of reducing the number of vehicle trips and miles traveled. Policies in this section are not intended to create additional regulation, but to create incentives to reduce vehicle trips, encourage alternative schedules and conform to policies created by regional governments.

Policies:

AQ 10.1 Encourage trip reduction plans to promote alternative work schedules, ridesharing, telecommuting and work-at-home programs, employee education and preferential parking. (AI 47)

Table AQ-4
Commute Distance by Home County

Home County	1992	1993	1994	1996	1998	1999
Los Angeles	15.8 miles	13.3 miles	15.3 miles	14.6 miles	15.3 miles	14.9 miles
Orange	14.9	14	15.8	15.7	14.2	16.1
Riverside	**20.9**	**22.8**	**22.2**	**24.1**	**21**	**21.6**
San Bernardino	20.4	20	21.3	25	22.4	21.3
Ventura	17.7	15.4	16.2	17.8	15.9	16.3
Imperial*	NA	NA	NA	11.8	12.1	14.5

* Imperial County was included for the first time in the 1996 study.
Source: 1999 SCAG State of the Commute Report

Table AQ-5
Commuting Time for Trip to Work by Home County

Home County	1992	1993	1994	1996	1998	1999
Los Angeles	37 minutes	33 minutes	30 minutes	33 minutes	31 minutes	34 minutes
Orange	32	29	30	30	31	33
Riverside	**38**	**37**	**36**	**38**	**36**	**37**
San Bernardino	35	36	36	38	37	35
Ventura	28	26	28	28	26	27
Imperial	NA	NA	NA	20	23	24

* Imperial County was included for the first time in the 1996 study.
Source: 1999 SCAG State of the Commute Report

Table AQ-6
Commuting Time for Return Trip Home by Home County

Home County	1992	1993	1994	1996	1998	1999
Los Angeles	42 minutes	36 minutes	34 minutes	36 minutes	38 minutes	41 minutes
Orange	35	34	38	37	34	41
Riverside	**41**	**43**	**43**	**46**	**40**	**38**
San Bernardino	42	39	42	47	39	41
Ventura	32	30	31	32	30	33
Imperial	NA	NA	NA	21	24	23

* Imperial County was included for the first time in the 1996 study.
Source: 1999 SCAG State of the Commute Report

Transportation Demand Management (TDM) - Low-cost ways to reduce demand by automobiles on transportation systems, such as programs to promote telecommuting, flextime and ridesharing.

Transportation Demand Management (TDM) can help unclog freeways and reduce commute times, thereby improving air quality. However, it means planning driving patterns to reduce the number of cars and trucks using the roads at any one time. This in the essence of TDM.

As stated in the Circulation Element, TDM strategies help reduce work-related trips by encouraging individuals who now drive alone to form carpools and

Please see the General Plan Land Use Element Land Use Designation Policies section and Appendix J, Community Center Guidelines for additional information.

AQ 8.5 Develop community centers in conformance with policies contained in the Land Use Element. (AI 14)

AQ 8.6 Encourage employment centers in close proximity to residential uses. (AI 14)

AQ 8.7 Implement zoning code provisions which encourage community centers, telecommuting and home-based businesses. (AI 1)

AQ 8.8 Promote land use patterns which reduce the number and length of motor vehicle trips. (AI 26)

Please see the General Plan Circulation Element Planned Circulation Systems section for further policies regarding alternative modes of travel.

AQ 8.9 Promote land use patterns that promote alternative modes of travel. (AI 26)

Multi-jurisdictional Coordination

The County of Riverside recognizes the regional context of the policies it creates. Because air pollutants do not recognize political boundaries, often the policies of one community may adversely impact residents of another. This is particularly true with respect to pollutants emitted by motor vehicles, which underscores the importance of regional and subregional cooperation.

Policies:

AQ 9.1 Cooperate with local, regional, state and federal jurisdictions to reduce vehicle miles traveled and motor vehicle emissions through job creation. (AI 18)

AQ 9.2 Attain performance goals and/or VMT reductions which are consistent with SCAG's Growth Management Plan. (AI 26)

TRANSPORTATION DEMAND MANAGEMENT

Please see the General Plan Circulation Element Transportation Demand Management section for additional information.

Vehicles are an essential part of life in California. People use them to go to work, run errands and transport goods all across the state and nation. However, while they serve a valuable function, many streets and freeways are increasingly overburdened with traffic. Everyday, cars and trucks jam onto the freeway at the beginning and end of each workday. Inching along the average twenty-two mile commute for Riverside County residents, automobiles spew pollutants into the air, while long sunny days change these pollutants into other noxious compounds. Most cars carry a single occupant, adding to the congestion and smog. When traffic does move, accidents often involving large trucks bring traffic to a grinding halt.

The good news is that our commute times and distance traveled to and from work have been stable over the last decade. The bad news is that Riverside County residents drive the furthest distance and have some of the longest commute times in all of southern California (Tables AQ-4, AQ-5 and AQ-6).

Policies:

AQ 7.1 Provide incentives to encourage new firms to locate within the County and existing firms to expand operations. (AI 18)

AQ 7.2 Work with SCAQMD and MDAQMD to develop a means to encourage the location of new commercial and industrial development in those localities where jobs are most needed. (AI 18)

AQ 7.3 Create a loan program to encourage small businesses to locate within the County. (AI 18)

AQ 7.4 Offer incentives to businesses to control emissions and implement the AQMP. (AI 18)

AQ 7.5 Reduce regulations on small businesses wherever possible and thereby encourage small business development and job creation. The County shall set performance standards as well as design standards, thus giving small business owners as many options as possible to comply with County regulations. (AI 18)

AQ 7.6 Adopt policies freeing small businesses from unnecessary and duplicative paperwork. (AI 18)

AQ 7.7 Assemble information collected from County agencies and departments concerning the business community to develop programs that better serve their needs. (AI 18)

Jobs-to-Housing Ratio

One of the challenges facing the County is to provide the appropriate quantity of residential and employment-generating uses within close proximity to each other in order to reduce the amount of vehicle miles traveled and minimize impacts on air quality. In addition to providing incentives for businesses to locate within Riverside County, it is important to consider the jobs-to-housing ratio when approving the construction of new developments, including the use of mixed-use land patterns and the placement of new public facilities.

Policies:

AQ 8.1 Locate new public facilities in job-poor areas of the County. (AI 18)

AQ 8.2 Emphasize job creation and reductions in vehicle miles traveled in job-poor areas to improve air quality over other less efficient methods. (AI 18)

AQ 8.3 Time and locate public facilities and services so that they further enhance job creation opportunities. (AI 18)

AQ 8.4 Support new mixed-use land use patterns and community centers which encourage community self-sufficiency and containment, and discourage automobile dependency. (AI 14)

Table AQ-3
Home County by Work County

	Home County					
Work County	**Los Angeles**	**Orange**	**Riverside**	**San Bernardino**	**Ventura**	**Imperial**
Los Angeles	90%	17%	8%	16%	18%	0%
Orange	6	79	10	7	0	0
Riverside	**0**	**0**	**68**	**9**	**0**	**1**
San Bernardino	2	2	8	68	0	0
Ventura	2	0	1	0	80	1
San Diego	0	1	4	0	1	1
Imperial	0	0	1	0	0	97

Source: 1999 SCAG State of the Commute Report

Education and Job Training

To stay competitive, the business community requires an educated and trained work force. While County residents are among the most talented and skilled in southern California, job training and education programs should be provided as an incentive for businesses to locate within the County. This will help ensure residents are trained and qualified to meet the specific needs of the business community.

Policies:

AQ 6.1 Assist small businesses by developing education and job training programs, especially in job-poor areas. (AI 124)

AQ 6.2 Collaborate with local colleges and universities to develop appropriate educational programs to assist residents in obtaining job skills to meet market demands.

Business Development

To the extent possible, the Air Quality Element will be an economic development program designed to enhance employment opportunities in Riverside County. Attempts to improve air quality should not prevent business development, especially within job-poor areas. In fact, business development should be identified as a critical factor in increasing air quality. Increasing employment opportunities within the County will allow residents to obtain jobs locally and decrease commute times. Decreased commute times mean less time spent in air polluting vehicles.

AQ 5.3 Update, when necessary, the County's Policy Manual for Energy Conservation to reflect revisions to the County Energy Conservation Program.

AQ 5.4 Encourage the incorporation of energy-efficient design elements, including appropriate site orientation and the use of shade and windbreak trees to reduce fuel consumption for heating and cooling.

JOBS AND HOUSING

Imagine commuting in the morning and driving only a few short miles to work. There would be no commutes over an hour, no crowded freeways that resemble parking lots and no fighting traffic. This is the life of people who live near work. And as more residents are able to live and work within the County, this will be the commuting pattern of most residents. This will save fuel, ease congestion, speed traffic, cut emissions and improve air quality. However, if nothing is done, the risks are great. SCAG predicts that by the year 2010 commutes between Riverside County and Los Angeles County may increase by 600% over 2000 levels.

Part of the solution to the region's air quality problems is a better jobs-to-housing ratio. The objective of the jobs to housing ratio concept is to reduce Vehicle Miles Traveled (VMT) by locating jobs and housing closer together. In the ideal situation, the appropriate number of housing units in various income categories are provided to house the County's workforce. While this does not ensure that residents will live and work within Riverside County, the likelihood of it occurring does increase.

As stated in the General Plan Housing Element, traffic patterns on the major east-west transportation routes indicate that Riverside County serves as a bedroom community that supplies approximately 18% of the labor pool for the Los Angeles-Orange County metropolitan area (Table AQ-3, Home County by Work County). Statistics for 1990 to 2000 show that Riverside County's jobs-household ratio is slowly improving, however, from 0.80 jobs per household in 1990 to 0.90 in 1997 and 0.94 in 2000. The unincorporated area shows a severe shortage of jobs, however, with only 0.48 jobs per household in the western County and 0.26 jobs per household in the eastern County in 1997. This is the reverse of the jobs to housing ratio experienced in Los Angeles and Orange Counties where there were approximately 1.46 and 1.52 jobs per household respectively in the year 2000.

A "household" consists of all the people occupying a dwelling unit, whether or not they are related.

Whenever possible, the County should offer incentives to businesses and individuals to control emissions and implement the AQMP. In job-poor areas, the County should stress job creation and reductions in vehicle miles traveled to improve air quality over other less efficient methods. Among the positive approaches available to the County to encourage job creation in job-poor areas are: education; job training and placement services; technical assistance to incoming businesses; reducing regulation and paperwork on businesses; fast-tracking and fee waivers; and low interest loans.

AQ 4.3 Encourage centrally heated facilities to utilize automated time clocks or occupant sensors to control heating.

AQ 4.4 Require residential building construction to comply with energy use guidelines detailed in Title 24 of the California Administrative Code.

AQ 4.5 Require stationary pollution sources to minimize the release of toxic pollutants through:

- Design features;
- Operating procedures;
- Preventive maintenance;
- Operator training; and
- Emergency response planning

AQ 4.6 Require stationary air pollution sources to comply with applicable air district rules and control measures.

AQ 4.7 To the greatest extent possible, require every project to mitigate any of its anticipated emissions which exceed allowable emissions as established by the SCAQMD, MDAQMD, SOCAB, the Environmental Protection Agency and the California Air Resources Board.

AQ 4.8 Expand, as appropriate, measures contained in the County's Fugitive Dust Reduction Program for the Coachella Valley to the entire County.

AQ 4.9 Require compliance with SCAQMD Rules 403 and 403.1, and support appropriate future measures to reduce fugitive dust emanating from construction sites.

AQ 4.10 Coordinate with the SCAQMD and MDAQMD to create a communications plan to alert those conducting grading operations in the County of first, second, and third stage smog alerts, and when wind speeds exceed 25 miles per hour. During these instances all grading operations should be suspended. (AI 111)

Energy Efficiency and Conservation

Recycling and conservation efforts established and encouraged by the County can reduce the amount of pollutants emitted within the County. Efforts to recycle wastes can reduce the amount of pollutants emitted from the production of new materials while preserving raw materials. Conservation measures minimize the impacts of not only the consumption of, but also the production of energy sources.

Policies

AQ 5.1 Utilize source reduction, recycling and other appropriate measures to reduce the amount of solid waste disposed of in landfills.

AQ 5.2 Adopt incentives and/or regulations to enact energy conservation requirements for private and public developments. (AI 62)

AQ 2.3 Encourage the use of pollution control measures such as landscaping, vegetation and other materials, which trap particulate matter or control pollution. (AI 114)

AQ 2.4 Consider creating a program to plant urban trees on an Area Plan basis that removes pollutants from the air, provides shade and decreases the negative impacts of heat on the air. (AI 114)

Mobile Pollution Sources

Mobile sources are subdivided into two categories: on-road (generally motorized vehicles like automobiles, motorcylces and trucks) and non-road sources (trains, boats, jet skis and all-terrain vehicles). The County's land use distribution, proximity to Orange and Los Angeles Counties, and subsequent auto-generated traffic have had a tremendously detrimental impact on air quality. Vehicle miles traveled (VMT) have doubled over the past 20 years, with mobile pollution sources constituting approximately 60% of air pollution in the region.

Transportation Management Associations *- Non Profit organizations formed so that employers, developers, building owners, local government representatives, and others can work together and collectively establish policies, programs, and services to address local transportation problems.*

Policies:

AQ 3.1 Allow the market place, as much as possible, to determine the most economical approach to relieve congestion and cut emissions.

AQ 3.2 Seek new cooperative relationships between employers and employees to reduce vehicle miles traveled.

AQ 3.3 Encourage large employers and commercial/industrial complexes to create Transportation Management Associations. (AI 115)

AQ 3.4 Encourage employee rideshare and transit incentives for employers with more than 25 employees at a single location.

Stationary Pollution Sources

Stationary pollution sources are generally divided into two subcategories for analysis: point sources (such as power plants and refinery boilers) and area sources (including small emission sources such as residential water heaters and architectural coatings). Agricultural and industrial land uses are generally the main stationary pollution sources in Riverside County, though most urbanized land areas and their associated activities also contribute to poor air quality in the region. While industrial sources are addressed here, agricultural source impacts, due to their primary emissions of PM_{10}, are addressed in the Particulate Matter section of this element.

Policies:

AQ 4.1 Encourage the use of building materials/methods which reduce emissions.

AQ 4.2 Encourage the use of efficient heating equipment and other appliances, such as water heaters, swimming pool heaters, cooking equipment, refrigerators, furnaces and boiler units.

AQ 1.4 Coordinate with the SCAQMD and MDAQMD to ensure that all elements of air quality plans regarding reduction of air pollutant emissions are being enforced. (AI 111)

AQ 1.5 Establish and implement air quality, land use and circulation measures that improve not only the County's environment but the entire region's. (AI 111)

AQ 1.6 Establish a level playing field by working with local jurisdictions to simultaneously adopt policies similar to those in this Air Quality Element

AQ 1.7 Support legislation which promotes cleaner industry, clean fuel vehicles and more efficient burning engines and fuels. (AI 113)

AQ 1.8 Support the introduction of federal, state or regional enabling legislation to permit the County to promote inventive air quality programs, which otherwise could not be implemented. (AI 113)

AQ 1.9 Encourage, publicly recognize and reward innovative approaches that improve air quality. (AI 113)

AQ 1.10 Work with regional and local agencies to evaluate the feasibility of implementing a system of charges (e.g., pollution charges, user fees, congestion pricing and toll roads) that requires individuals who undertake polluting activities to bear the economic cost of their actions where possible. (AI 111)

AQ 1.11 Involve environmental groups, the business community, special interests, and the general public in the formulation and implementation of programs that effectively reduce airborne pollutants.

Sensitive Receptors

Children may suffer from asthma or other chronic diseases as a result of exposure to polluted air.

Sensitive receptors refer to those segments of the population most susceptible to poor air quality (i.e. children, elderly and the sick) and to certain at-risk sensitive land uses such as schools, hospitals, parks, or residential communities. The intent of the following policies is to reduce the negative impacts of poor air quality on the County's sensitive receptors.

Policies:

AQ 2.1 The County land use planning efforts shall assure that sensitive receptors are separated and protected from polluting point sources to the greatest extent possible. (AI 114)

AQ 2.2 Require site plan designs to protect people and land uses sensitive to air pollution through the use of barriers and/or distance from emissions sources when possible. (AI 114)

matter. Seniors, people with pre-existing respiratory and/or cardiovascular disease and children appear to be more susceptible to the effects of PM_{10} and $PM_{2.5}$.

Carbon Monoxide (CO)

Carbon monoxide 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 (unborn babies), and patients with chronic hypoxemia (oxygen deficiency) as seen in high altitudes are the 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 carbon monoxide. Exposure to high levels of carbon monoxide can slow reflexes and cause drowsiness, and result in death in confined spaces at very high concentrations.

Reduction in birth weight and impaired neurobehavioral development has been observed in animals chronically exposed to CO resulting in carboxyhemoglobin levels similar to those observed in smokers. Recent studies have found increased risks for adverse birth outcomes with exposure to elevated CO levels. These include pre-term births and heart abnormalities. Additional research is needed to confirm these results.

Nitrogen Dioxide (NO_2)

Population-based studies suggest that an increase in acute respiratory illness, including infections and respiratory symptoms in children (not infants), is associated with long-term exposures to NO_2 at levels found in homes with gas stoves, which are higher than ambient levels found in Southern California. Increase in resistance to air flow and airway contraction is observed after short-term exposure to NO_2 in healthy individuals. Larger decreases in lung functions are observed in individuals with asthma and/or chronic obstructive pulmonary disease (e.g. chronic bronchitis, emphysema) than in healthy individuals, indicating a greater susceptibility of these sub-groups.

In animals, exposure to levels of NO_2 considerably higher than ambient concentrations results in increased susceptibility to infections, possibly due to the observed changes in cells involved in maintaining immune functions. The severity of lung tissue damage associated with high levels of ozone exposure increases when animals are exposed to a combination of ozone and NO_2.

Sulfur Dioxide (SO_2)

Exposure of a few minutes to low levels of SO_2 can result in airway constriction in some asthmatics. All asthmatics are sensitive to the effects of SO_2. In asthmatics, increase in resistance to air flow, as well as reduction in breathing capacity leading to severe breathing difficulties, are observed after acute exposure to SO_2. In contrast, healthy individuals do not exhibit similar acute responses even after exposure to higher concentrations of SO_2. Animal studies suggest that despite being a respiratory irritant, it does not cause substantial lung injury at ambient concentrations. However, very high

levels of exposure can cause lung edema (fluid accumulation), lung tissue damage, and sloughing off of cells lining the respiratory tract.

Some population-based studies indicate that the mortality and morbidity effects associated with fine particles show a similar association with ambient SO_2 levels. In these studies, efforts to separate the effects of SO_2 from those of fine particles have not been successful. It is not clear whether the two pollutants act synergistically or one pollutant alone is the predominant factor.

Sulfates

Most of the health effects associated with fine particles and sulfur dioxide at ambient levels are also associated with sulfates. Thus, both mortality and morbidity effects have been observed with an increase in ambient sulfate concentrations. However, efforts to separate the effects of sulfates from the effects of other pollutants have generally not been successful. Clinical studies of asthmatics exposed to sulfuric acid suggest that adolescent asthmatics are possibly a subgroup susceptible to acid aerosol exposure. Animal studies suggest that acidic particles such as sulfuric acid aerosol and ammonium bisulfate are more toxic than non-acidic particles like ammonium sulfate. Whether the effects are attributable to acidity or to particles remains unresolved.

Lead

Fetuses, infants, and children are more sensitive than others to the adverse effects of lead exposure. Exposure to low levels of lead can adversely affect the development and function of the central nervous system, leading to learning disorders, distractibility, inability to follow simple commands, and lower intelligence quotient. In adults, increased lead levels are associated with increased blood pressure. Lead poisoning can cause anemia, lethargy, seizures and death. It appears that there are no direct effects of lead on the respiratory system. Lead can be stored in the bone from early-age environmental exposure, and elevated blood lead levels can occur due to breakdown of bone tissue during pregnancy, hyperthyroidism (increased secretion of hormones from the thyroid gland) and osteoporosis (breakdown of bony tissue). Fetuses and breast-fed babies can be exposed to higher levels of lead because of previous environmental lead exposure of their mothers.

APPENDIX D

COACHELLA VALLEY

MODEL DUST CONTROL ORDINANCE

Section 100 Purpose

The purpose of this ordinance is to establish minimum requirements for construction and demolition activities and other specified sources in order to reduce man-made fugitive dust and the corresponding PM10 emissions.

Section 200 Definitions

For the purpose of this ordinance, the following definitions are applicable:

1 AGRICULTURAL OPERATIONS are any operation directly related to the growing of crops, or raising of fowls or animals for the primary purpose of making a livelihood.

2 AQMD is the South Coast Air Quality Management District and the representatives thereof.

3 AVERAGE DAILY TRAFFIC (ADT) is the number of motor vehicles that traverse a given unpaved or paved surface during a specified 24-hour period. ADT levels are calculated as the average daily volume over a specified 48-hour period as determined by the City (County) in consultation with the AQMD.

4 BULK MATERIAL is all sand, gravel, soil, aggregate and other organic and inorganic particulate matter.

5 CHEMICAL DUST SUPPRESSANTS are non-toxic chemical soil binders that are not prohibited for use by the City (County), the California Regional Water Quality Control Board, the California Air Resources Board, the U.S. Environmental Protection Agency (U.S. EPA), or any other law, rule or regulation, used to reduce dust on disturbed surfaces.

6 COACHELLA VALLEY BEST AVAILABLE CONTROL MEASURES (CV BACM) are methods to prevent or mitigate the emission and/or airborne transport of fugitive dust, as identified in the Coachella Valley Fugitive Dust Control Handbook.

7 COACHELLA VALLEY FUGITIVE DUST CONTROL HANDBOOK is the most recently approved reference document by the AQMD that includes a description of fugitive dust control measures, guidance for preparation of Fugitive Dust Control Plans, notification forms, signage provisions, and test methods.

8 CONSTRUCTION ACTIVITIES are any on-site activities preparatory to or related to the building, alteration, rehabilitation, or improvement of property, including, but not limited to the following activities; grading, excavation, trenching, loading, vehicular travel, crushing, blasting, cutting, planning, shaping, breaking, equipment staging/storage areas, weed abatement activities or adding or removing bulk materials from storage piles.

9 DEMOLITION ACTIVITIES are the wrecking or taking out of any load-supporting structural member of a structure or building and related handling operations or the intentional burning of any structure or building.

10 DISTURBED SURFACE AREA is any portion of the earth's surface (or material placed thereupon) that has been physically moved, uncovered, destabilized, or otherwise modified from its undisturbed native condition (including vehicular disturbances) thereby increasing the potential for the emission of fugitive dust. This definition does not include land that has been restored to a native condition, such that the vegetative ground cover and soil characteristics are equal to surrounding native conditions.

11 EARTH-MOVING OPERATIONS are the use of any equipment for an activity where soil is being moved or uncovered.

12 FINISH GRADE is the final grade of the site that conforms to the approved grading plan.

13 FUGITIVE DUST is any solid particulate matter that becomes airborne, other than that emitted from an exhaust stack, directly or indirectly as a result of human activities. PM10 is a subset of fugitive dust and is defined as particulate matter with an aerodynamic diameter of 10 microns or less.

14 FUGITIVE DUST CONTROL PLAN is a document that describes fugitive dust sources at a site and the corresponding control measures and is prepared in accordance with the guidance contained in the Coachella Valley Fugitive Dust Control Handbook.

15 HIGH-WIND EPISODE is when wind speeds exceed 25 miles per hour as measured by:

A. the closest AQMD monitoring station, or
B. a certified meteorological monitoring station, or
C. an on-site wind monitor calibrated and operated on-site in accordance with the manufacturer's specifications with a data logger or strip chart.

16 OPERATOR is any person who owns, leases, operates, controls, or supervises any potential fugitive dust generating operation subject to the requirements of this ordinance. This definition includes any person who has been officially designated by a property owner as the person responsible for fugitive dust control at a site, as indicated in an approved Fugitive Dust Control Plan.

17 PAVED ROAD is an improved street, highway, alley, public way, or easement that is covered by roadway materials (e.g., cement, asphalt or asphaltic concrete).

18 PHYSICAL ACCESS RESTRICTION is any barrier, including but not limited to; curbs, fences, gates, posts with fencing, shrubs, trees, or other measures that are effective in preventing vehicular and Off-Highway Vehicle (OHV) use of a specified site.

19 SILT is any bulk material with a particle size less than 75 micrometers in diameter that passes through a Number 200 sieve as determined by American Society of Testing and Materials (ASTM) Test Method C 136 or any other test method approved by the U.S. EPA and AQMD.

20 SITE is the real property on which construction, demolition, or other activities subject to this ordinance may occur.

21 STABILIZED SURFACE is any portion of land that meets the minimum standards as established by the applicable test method contained in the Coachella Valley Fugitive Dust Control Handbook.

22 STORAGE PILE is any accumulation of bulk material with a height of three feet or more and a total surface area of 300 or more square feet.

23 UNPAVED PARKING LOT is an area utilized for parking vehicles and associated vehicle maneuvering that is not covered with roadway materials (e.g., cement, asphalt or asphaltic concrete).

24 UNPAVED ROAD is any service roads, internal access roads, heavy and light duty equipment paths and other roadways which are not covered by typical roadway materials (e.g., cement, asphalt, asphaltic concrete).

25 TEMPORARY UNPAVED PARKING LOTS are those used less than 24 days per year.

Section 300 Performance Standards and Test Methods

All performance standards and test methods referenced in this ordinance shall be based on the methodologies included in the Coachella Valley Dust Control Handbook.

Section 400 Control Requirements

410. Work Practices – All Fugitive Dust Sources

1 No operator shall conduct any potential dust-generating activity on a site unless the operator utilizes one or more Coachella Valley Best Available Control Measures, as identified in the Coachella Valley Fugitive Dust Control Handbook for each fugitive dust source such that the applicable performance standards are met.

2 Any operator involved in any potential dust-generating activity on a site with a disturbed surface area greater than one acre shall, at a minimum, operate a water application system as identified in the Coachella Valley Fugitive Dust Control Handbook, if watering is the selected control measure.

Performance Standards and Test Methods

3 No person subject to the requirements contained in Section 410.1 shall cause or allow visible fugitive dust emissions to exceed 20 percent opacity, or extend more than 100 feet either horizontally or vertically from the origin of a source, or cross any property line.

420. Construction and Demolition Activities

1 Any operator applying for a grading permit, or a building permit for an activity with a disturbed surface area of more than 5,000 square feet, shall not initiate any earth-moving operations unless a Fugitive Dust Control Plan has been

prepared pursuant to the provisions of the Coachella Valley Fugitive Dust Control Handbook and approved by the City (County).

2 A complete copy of the approved Fugitive Dust Control Plan must be kept on site in a conspicuous place at all times and provided to the City (County) and AQMD upon request.

3 Any operator involved in demolition activities shall comply with AQMD Rule 1403 (Asbestos Emissions from Demolition/Renovation Activities) requirements, and the requirements of Title 40, Part 61 of the code of Federal Regulations.

4 Any operator involved in earth-moving operations shall implement at least one of the following short-term stabilization methods during non-working hours:
   A. maintaining soils in a damp condition as determined by sight or touch; or
   B. establishment of a stabilized surface through watering; or
   C. application of a chemical dust suppressant in sufficient quantities and concentrations to maintain a stabilized surface.

5 Within 10 days of ceasing activity, an operator shall implement at least one of the following long-term stabilization techniques for any disturbed surface area where construction activities are not scheduled to occur for at least 30 days:
   A. revegetation that results in 75 percent ground coverage provided that an active watering system is in place at all times; or
   B. establishment of a stabilized surface through watering with physical access restriction surrounding the area; or
   C. use of chemical stabilizers to establish a stabilized surface with physical access restriction surrounding the area.

6 Any operator shall remove all bulk material track-out from any site access point onto any paved road open to through traffic:
   A. within one hour if such material extends for a cumulative distance of greater than 25 feet from any site access point; and
   B. at the conclusion of each workday.

7 Any operator of a project with a disturbed surface area of five or more acres or of any project that involves the import or export of at least 100 cubic yards of bulk material per day shall install and maintain at least one of the following control measures at the intersection of each site entrance and any paved road open to through traffic with all vehicles exiting the site routed over the selected device(s):
   A. pad consisting of minimum one inch washed gravel maintained in a clean condition to a depth of at least six inches and extending at least 30 feet wide and at least 50 feet long; or
   B. paved surface extending at least 100 feet and at least 20 feet wide; or
   C. wheel shaker / wheel spreading device consisting of raised dividers (rails, pipe, or grates) at least three inches tall and at least six inches apart and 20 feet long; or

D. a wheel washing system.

8 Any operator required to submit a Fugitive Dust Control Plan under Section 420.1 shall install and maintain project contact signage that meets the minimum standards of the Coachella Valley Fugitive Dust Control Handbook, including a 24-hour manned toll-free or local phone number, prior to initiating any type of earth-moving operations.

9 Any operator of a project with a disturbed surface area of 50 or more acres shall have an Environmental Observer on the site or available on-site within 30 minutes of initial contact that:

A. is hired by the property owner or developer; and
B. has dust control as the sole or primary responsibility; and
C. has successfully completed the AQMD Coachella Valley Fugitive Dust Control Class and has been issued a Certificate of Completion for the class; and
D. is identified in the approved Fugitive Dust Control Plan as having the authority to immediately employ sufficient dust mitigation 24-hours per day, seven days a week and to ensure compliance with this ordinance, the approved Fugitive Dust Control Plan, and AQMD regulations.

Performance Standards and Test Methods

10 No operator required to submit a Fugitive Dust Control Plan under Section 420.1 shall cause or allow visible fugitive dust emissions to exceed 20 percent opacity, or extend more than 100 feet either horizontally or vertically from the origin of a source, or cross any property line.

11 Exceedance of the visible emissions prohibition in Section 420.10 occurring due to a high-wind episode shall constitute a violation of Section 420.10, unless the operator demonstrates to City (County) all the following conditions:

A. all Fugitive Dust Control Plan measures or applicable Coachella Valley Best Available Control Measures were implemented and maintained on site; and
B. the exceedance could not have been prevented by better application, implementation, operation, or maintenance of control measures; and
C. appropriate recordkeeping was complied and retained in accordance with the requirements in Section 420.12 through 420.15; and
D. documentation of the high-wind episode on the day(s) in question is provided by appropriate records.

Reporting / Recordkeeping

Before Construction

12 The operator of a project with ten acres or more of earth-moving operations shall:

A. forward two copies of a Site-Specific, Stand Alone [8½ by 11 inch] Fugitive Dust Control Plan to the AQMD within ten days after approval by the City (County). [Note: A separate AQMD approval will not be issued]; and
B. notify the City (County) and the AQMD at least 24-hours prior to initiating earth-moving operations.

During Construction

13 Any operator involved in earth-moving operations shall compile, and maintain for a period of not less than three years, daily self-inspection recordkeeping forms in accordance with the guidelines contained in the Coachella Valley Fugitive Dust Control Handbook.

14 Any operator involved in earth-moving operations that utilizes chemical dust suppressants for dust control on a site shall compile records indicating the type of product applied, vendor name, and the method, frequency, concentration, quantity and date(s) of application and shall retain such records for a period of not less than three years.

After Construction

15 Any operator subject to the provisions of Section 420.12 shall notify the City (County) and the AQMD within ten days of the establishment of the finish grade or at the conclusion of the finished grading inspection.

430. Disturbed Vacant Lands / Weed Abatement Activities

1 Owners of property with a disturbed surface area greater than 5,000 square feet shall within 30 days of receiving official notice by the City (County) prevent trespass through physical access restriction as permitted by the City (County).

2 In the event that implementation of Section 430.1 is not effective in establishing a stabilized surface within 45 days of restricting access, the owner shall implement at least one of the following long term stabilization techniques within an additional 15 days, unless the City (County) has determined that the land has been restabilized:
A. uniformly apply and maintain surface gravel or chemical dust suppressants such that a stabilized surface is formed; or
B. begin restoring disturbed surfaces such that the vegetative cover and soil characteristics are similar to adjacent or nearby undisturbed native conditions. Such restoration control measure(s) must be maintained and reapplied, if necessary, such that a stabilized surface is formed within 8 months of the initial application.

3 Any operator conducting weed abatement activities on a site that results in a disturbed surface area of 5,000 or more square feet shall:
A. apply sufficient water before and during weed abatement activities such that the applicable performance standards are met; and

B. ensure that the affected area is a stabilized surface once weed abatement activities have ceased.

Performance Standards and Test Methods

4 No person subject to the provisions of Sections 430.1 through 430.3 shall cause or allow visible fugitive dust emissions to exceed 20 percent opacity, or extend more than 100 feet either horizontally or vertically from a source, or cross any property line, and shall either:

A. maintain a stabilized surface; or

B. maintain a threshold friction velocity for disturbed surface areas corrected for non-erodible elements of 100 centimeters per second or higher.

Reporting / Recordkeeping

5 Within 90 days of ordinance adoption, operators of property with disturbed surface area of 5,000 or more square feet shall notify the City (County) of the location of such lands and provide owner contact information.

6 Any person subject to the provisions of Sections 430.1 through 403.3 shall compile, and retain for a period of not less than three years, records indicating the name and contact person of all firms contracted with for dust mitigation, listing of dust control implements used on-site, and invoices from dust suppressant contractors/vendors.

440. Unpaved Roads

1 Owners of private unpaved roads with average daily traffic levels between 20 and 150 vehicles must take measures (signage or speed control devices) to reduce vehicular speeds to no more than 15 miles per hour.

2 Owners of a cumulative distance of six or less miles of private unpaved roads shall pave each segment having 150 or more average daily trips or, alternatively apply and maintain chemical dust suppressants in accordance with the manufacturer's specifications for a travel surface and the performance standards included in Section 440.4 in accordance with the following treatment schedule:

A. one-third of qualifying unpaved road segments within one year of ordinance adoption; and

B. remainder of qualifying unpaved road segments within three years of ordinance adoption. (Note: treatments in excess of annual requirements can apply to future years.)

3 Owners of a cumulative distance of more than six miles of private unpaved roads shall stabilize each segment having 150 or more average daily trips in accordance with the following treatment schedule:

A. at least two miles paved or four miles stabilized with chemical dust suppressants in accordance with the manufacturer's specifications for a

travel surface and the performance standards established in Section 440.4 within one year of the ordinance adoption; and

B. at least two miles paved or four miles stabilized with chemical dust suppressants in accordance with the manufacturer's specifications for a travel surface and the performance standards included in Section 440.4 in accordance with the following treatment schedule annually thereafter until all qualifying unpaved roads have been stabilized. (Note: treatments in excess of annual requirements can apply to future years).

Performance Standards and Test Methods

4 Owners of any private unpaved road shall not allow visible fugitive dust emissions to exceed 20 percent opacity, or extend more than 100 feet either horizontally or vertically from the origin of a source, and shall either:

A. not allow silt loading to be equal to or greater than 0.33 ounces per square foot; or

B. not allow the silt content to exceed six percent.

Reporting / Recordkeeping

5 Within 90 days of ordinance adoption, owners of unpaved roads shall provide to the City (County) and the AQMD the location and ADT estimates for all unpaved roads.

6 Owners of unpaved roads that utilize chemical dust suppressants shall compile, and retain for a period of not less than three years, records indicating the type of product applied, vendor name, and the method, frequency, concentration, quantity and date(s) of application.

450. Unpaved Parking Lots

1 Owners of parking lots established subsequent to ordinance adoption are required to pave such areas, or alternatively apply and maintain chemical dust suppressants in accordance with the manufacturer's specifications for traffic areas and the performance standards included in Section 450.4.

2 Owners of existing private unpaved parking lots shall implement one of the following control strategies within 180 days of ordinance adoption:

A. pave; or

B. apply and maintain dust suppressants in accordance with the manufacturer's specifications for traffic areas and the performance standards included in Section 450.4;

C. apply and maintain washed gravel in accordance with the performance standards included in Section 450.4.

3 Owners of private temporary unpaved parking lots (those that are used 24 days or less per year) shall apply and maintain chemical dust suppressants in accordance with the manufacturer's specifications for traffic areas and the

performance standards included in Section 450.4 prior to any 24-hour period when more than 40 vehicles are expected to enter and park. The owner of any temporary unpaved parking lot greater than 5,000 square feet shall implement the disturbed vacant land requirements contained in Section 430 during non-parking periods.

Performance Standards and Test Methods

4 The operator of any private unpaved parking lot shall not allow visible fugitive dust emissions to exceed 20 percent opacity, or extend more than 100 feet either horizontally or vertically from the origin of a source, and shall either:

A. not allow silt loading to be equal to or greater than 0.33 ounces per square foot; or

B. not allow the silt content to exceed eight percent.

Reporting / Recordkeeping

5 Within 90 days of ordinance adoption, owners of unpaved parking lots shall provide to the City (County) and the AQMD the location and ADT estimates and the size (in square feet) of unpaved parking lots.

6 Owners of unpaved parking lots that utilize chemical dust suppressants or apply gravel shall compile, and retain for a period of not less than three years, records indicating the type of product applied, vendor name, and the method, frequency, concentration, quantity and date(s) of application.

460. Public or Private Paved Roads

1 Any owner of paved roads shall construct, or require to be constructed all new or widened paved roads in accordance with the following standards:

A. curbing in accordance with the American Association of State Highway and Transportation Officials guidelines or as an alternative, road shoulders paved or treated with chemical dust suppressants or washed gravel in accordance with the performance standards included in Section 440.4 with the following minimum widths:

Average Daily Trips	Minimum Shoulder Width
500 - 3,000	4 feet
3,000 or greater	8 feet

B. paved medians or as an alternative, medians surrounded by curbing and treated with landscaping, chemical dust suppressants, or washed gravel applied and maintained in accordance with the performance standards included in Section 440.4.

2 Any owner of public or private paved roads shall remove or cause to be removed any erosion-caused deposits of greater than 2,500 square feet within

24-hours after receiving notice by the City (County) or the AQMD or prior to resumption of traffic where the paved area has been closed to vehicular traffic.

Section 500 Administrative Requirements

1 Any operator preparing a Fugitive Dust Control Plan shall complete the AQMD Coachella Valley Fugitive Dust Control Class and maintain a current valid Certificate of Completion.

2 At least one representative of each construction or demolition general contractor and subcontractor responsible for earth-movement operations shall complete the AQMD Coachella Valley Fugitive Dust Control Class and maintain a current valid Certificate of Completion.

3 All reporting / recordkeeping required by Section 420 shall be provided to the City (County) and AQMD representatives immediately upon request.

4 All reporting / recordkeeping required by Section 430 through Section 460 shall be provided to the City (County) and AQMD representatives within 24-hours of a written request.

Section 600 Exemptions

1 The provisions of this ordinance shall not apply to:
   A. agricultural operations including on-field sources and unpaved roads used solely for agricultural operations.
   B. any dust-generating activity where necessary fugitive dust preventive or mitigative actions are in conflict with either federal or State Endangered Species Act provisions as determined in writing by the appropriate federal or state agency.
   C. any action required or authorized to implement emergency operations that are officially declared by the City (County) to ensure the public health and safety.

2 The provisions of Section 420.1 shall not apply to any construction or demolition activity meeting any of the following activity levels or requirements:
   A. the activity is occurring entirely within an enclosed structure from which no visible airborne particulate matter escapes; or
   B. activities that do not require issuance of a grading permit or those that require a building permit provided that the project results in 5,000 or less square feet of soil disturbance.

3 The provisions of Section 420.8 shall not apply to:
   A. projects that takes two weeks or less to complete provided that a long-term stabilization technique(s) identified in Section 430 are implemented; and
   B. line projects (i.e., pipelines, cable access lines, etc.).

Compliance

1 A person violating any section of this ordinance or with any portion of an approved Dust Control Plan is guilty of an infraction punishable by a fine of not more than one hundred dollars ($100.00) for a first violation and a fine not exceeding four hundred dollars ($400.00) for a second violation within one year. A third violation, or more, within one year shall each be prosecuted at a level consistent with a misdemeanor violation.

2 In addition to any other remedy provided by law, failure to correct any condition indicated in a notice of violation within one hour of issuance will allow the City (County) to initiate one or more of the following actions where appropriate:

- A Criminal proceedings.
- B Civil proceedings to obtain an injunction; or any other relief against the owner or operator to stop operations at the site.
- C Refusal to issue future permits and/or release of securities held until owner or operator has adequately demonstrated compliance with the notice of violation.
- D Correction of the condition by the City (County) through the use of any securities held under this ordinance.

APPENDIX E

FUNDING RESOURCES AVAILABLE

TO LOCAL JURISDICTIONS

TO SUPPORT

THE IMPLEMENTATION OF SUGGESTED POLICIES/STRATEGIES

FUNDING RESOURCES AVAILABLE TO LOCAL JURISDICTIONS TO SUPPORT THE IMPLEMENTATION OF SUGGESTED POLICIES/STRATEGIES

AB2766 Subvention Fund. Cities within the jurisdiction of the South Coast Air Quality Management District (AQMD) receive a portion of the fees charged to register motor vehicles. AQMD disburses this fund to the cities on a quarterly basis. The revenue must be used to fund projects and programs that *reduce emissions from mobile sources*. Additional revenue is available to match AB2766 subvention funding for certain types of expenditures from the Mobile Source Air Pollution Reduction Review Committee's (MSRC) AB2766 Local Government Match Program. A separate application is required for the MSRC matching fund.

Contact: South Coast AQMD
Transportation Programs
(909) 396-3271
Website: www.aqmd.gov/Business/Transportation/AB2766SubventionFunding

AQMD Financial Assistance for Small Business. Small businesses that are planning to purchase air pollution control equipment may apply for a loan guarantee under the California Capital Access Program (CalCAP). The program guarantees the repayment of your loan and motivates banks and other lenders to offer loans to small businesses for pollution control equipment. Guarantees are available for loans from $15,000 to $250,000 and may be up to 90 percent of the loan amount. To be eligible for assistance, a business must be subject to AQMD rules and regulations and must meet the definition of small business set by the U.S. Small Business Administration (typically less than 500 employees and $5 million annual gross revenue).

Contact: South Coast AQMD
Public Affairs
1-800-CUT-SMOG
Website: www.aqmd.gov/Business/Financial Assistance

AQMD Lower Emission School Bus Program. AQMD requires public schools and private operators with more than 15 or more school buses to purchase or lease cleaner buses to protect children from exposure to toxic diesel emissions. AQMD grants are available to public school districts for the *purchase of clean school buses* (e.g. compressed natural gas or low-emitting diesel), and for the retrofit of diesel buses with

particulate traps. To qualify for grants to purchase new buses, school districts agree to retire an equivalent number of the oldest, most polluting buses in the district's fleet. Funds are first distributed in proportion to the number of residents within each county. School Districts in LA county receive about 61 percent, Orange county - 18 percent, San Bernardino county - 11 percent, and Riverside receives - 10 percent. LA Unified School District is restricted to a maximum of 50 percent of the total funds distributed to LA County. Additional funding criteria apply.

Contact: South Coast AQMD
Technology Advancement Office
(909) 396-3331
Website: www.aqmd.gov/Education/CleanAirTechnologies/Implementation/SchoolBusProgram

Carl Moyer Memorial Air Quality Standards Attainment Program. The state legislature created this funding program to develop state air quality measures. The Carl Moyer program is designed to facilitate the introduction and use of low-emission, heavy-duty engines. Funds may be used to help purchase or repower new vehicles. New vehicles and equipment must achieve a 30 percent reduction of NO_x emissions compared to current emission standards. Alternative fuel engines, (e.g. compressed natural gas, liquefied natural gas, propane and electricity) will be given preference for funding. However, cleaner diesel engines may be considered in the off-road category if a CARB-certified alternative fuel engine is not available for a specific application. Vehicles and equipment must remain in operation for at least five years, and 75 percent of their use must be within the South Coast basin.

Contacts: South Coast AQMD
Technology Advancement Office
On-Road, Off-Road, Locomotive, Construction
(909) 396-3331
Website: www.aqmd.gov/Education/CleanAirTechnologies/Implementation/CarlMoyerProgram

Congestion Mitigation and Air Quality Improvement (CMAQ) Program. This program is implemented by the local transportation commissions or metropolitan planning organization. Funding is available for transit improvement projects and alternative fuels.

Website: www.fhwa.dot.gov/environment/cmaq.htm

Mobile Source Air Pollution Reduction Review Committee (MSRC) – Competitive Grants. The discretionary funds are to be used for clean air projects that results in direct and tangible reductions in air pollution from vehicles within the South Coast Air District. Project categories include clean fuel vehicles, alternative fuel infrastructure, transportation control measures; such as ridesharing telecommuting,

videoconferencing, parking management, traffic synchronization and research and development of new clean air technologies, as well as educational projects.

Contacts: South Coast AQMD
info@msrc-cleanair.org
Website: www.msrc-cleanair.org

MSRC – Local Government Match Program. This program provides matching funding against local funds for investments such as alternative fuel infrastructure and vehicles. Local governments such as cities and counties are eligible to apply for funding. Historically, project categories include clean fuel vehicles, alternative fuel infrastructure, and transportation.

Contacts: South Coast AQMD
info@msrc-cleanair.org
Website: www.msrc-cleanair.org

Rule 2202 Air Quality Investment Program (AQIP). AQMD requires employers with over 250 employees to reduce emissions from employee commute trips. One option available to employers under Rule 2202 is to invest in the AQMD's Air Quality Investment Program (AQIP) in lieu of implementing other rule requirements. AQIP revenue is placed in a restricted fund to be used to reduce emissions to mitigate the impacts of not participating in an employee commute reduction program. The objective of the program is to use the AQIP fund to reduce emissions to levels that are equivalent to levels that would have been achieved if the employer had implemented other strategies in the rule. The AQMD accepts emission reduction proposals and awards contracts on a bi-annual basis. Qualified AQIP proposals may include the purchase of clean on-road and off-road vehicles, and projects that enhance mobility (e.g. shuttle services).

Contacts: South Coast AQMD
Technology Advancement Office (909) 396-3331
Website: www.aqmd.gov/Education/CleanAirTechnologies/
Implementation/Rule2202AirQualityInvestmentProgram

Sempra Energy. Rebates, grants and loans are available until funding is depleted. *Flex Your Power's* website is a great resource for energy efficiency and conservation information. Incentives/rebates, technical assistance, retailers, product guides, case studies and more are found on this website.

Website: www.fypower.org

U.S. Department of Energy (U.S.DOE)-Clean Cities Program. The United States Department of Energy (DOE) established the Clean Cities Program as a locally based public/private alliance to expand the use of alternative fuels to gasoline and diesel fuel. By combining local decision-making with voluntary action by partners, the grassroots

approach of Clean Cities departs from traditional top-down federal programs. It creates an effective plan carried out at the local level for creating a sustainable nationwide alternative fuels market.

Contacts: US DOE
Roxanne.deppsy@ee.doe.gov
(206) 553-2155
California Energy Commission (CEC)
pward@energy.state.ca.us
(916) 654-4639
Website: www.eere.energy.gov/cleancities