

AB 170 Requirements for General Plans

WHAT IS AB 170?

Assembly Bill 170, Reyes (AB 170), was adopted by state lawmakers in 2003 creating Government Code Section 65302.1 which requires cities and counties in the San Joaquin Valley to amend their general plans to include data and analysis, comprehensive goals, policies and feasible implementation strategies designed to improve air quality. These amendments are due no later than one year from the due date specified for the next revisions of a jurisdiction's housing element.

COMPLIANCE DEADLINES

AB 170 requires cities and counties to comply no later than one (1) year from the date specified in Government Code Section 6588 for the next revision of the housing element after January 1, 2004 (Section 65302.1.e). Based upon the schedule outlined in the bill, jurisdictions in Fresno and Kern counties are required to adopt these amendments by June 30, 2009. Jurisdictions in Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare counties have until June 30, 2010 to comply.

AB 170 also requires cities and counties to submit their air quality amendments to the San Joaquin Valley Unified Air Pollution Control District (District) at least 45 days prior to adoption of those amendments, and the District then has 30 days to return comments (Section 65302.1.d). Therefore, if jurisdictions are planning to adopt on the due date, Fresno and Kern counties must submit their amendments to the District no later than May 17, 2009 and jurisdictions in Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare counties must submit by May 17, 2010.

Under certain circumstances, a jurisdiction may petition to the Governor's Office of Planning and Research (OPR) for an extension to comply with the requirements of AB 170. The following list provides links to OPR documents regarding AB 170 and general plans.

- OPR General Plan Guidelines Homepage:
<http://www.opr.ca.gov/index.php?a=planning/plans.html>
- OPR Planning Publications Homepage:
<http://opr.ca.gov/index.php?a=planning/planningpubs.html#genplan>
- OPR Planning Resources Homepage:
<http://www.opr.ca.gov/index.php?a=planning/planningpubs.html>

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- OPR State Agency Technical Resources for General Plans:
http://opr.ca.gov/planning/docs/State_Agency_Technical_Resources_for_General_Plans.pdf
- OPR Time Extensions Homepage:
<http://www.opr.ca.gov/index.php?a=planning/generalplan.html>

REQUIREMENTS

As required in Section 65302.1.b, cities and counties within the San Joaquin Valley must amend the general plan to include a discussion of the status of air quality and strategies to improve air quality. The elements to be amended include, but are not limited to, those elements dealing with land use, circulation, housing, conservation, and open space. Section 65302.1.c identifies four (4) areas of air quality discussion required in these amendments. These areas include: (1) a report describing local air quality conditions, attainment status, and state and federal air quality and transportation plans; (2) a summary of local, district, state, and federal policies, programs, and regulations to improve air quality; (3) a comprehensive set of goals, policies, and objectives to improve air quality; and (4) feasible implementation measures designed to achieve these goals.

The District has prepared this document to aid agencies in amending their general plans. The document provides general information that can be used as a base for the discussions to be included in the general plan. The document also provides many links to websites that may provide additional information and detail. The document is organized into four (4) sections as identified by the four (4) requirements presented above.

AIR QUALITY CONDITIONS AND ATTAINMENT STATUS

TOPOGRAPHY AND CLIMATE

The following discussion summarizes regional factors affecting the dispersion of air pollutants within the San Joaquin Valley Air Basin (SJVAB). Detailed discussion can be found in the San Joaquin Valley Air Pollution Control District's *Guide for Assessing and Mitigating Air Quality Impacts: Technical Document*, available on the District's website: <http://www.valleyair.org/transportation/CEQA%20Rules/GAMAQI%20Tech%20Doc%20Jan%202002%20Rev.pdf>.

Air pollutant emissions overall are fairly constant throughout the year, yet the concentrations of pollutants in the air vary from day to day and even hour to hour. This variability is due to complex interactions of weather, climate, and topography. These factors affect the ability of the atmosphere to disperse pollutants. Conditions that move and mix the atmosphere help disperse pollutants, while conditions that cause the

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atmosphere to stagnate allow pollutants to concentrate. Local climatological effects, including topography, wind speed and direction, temperature, inversion layers, precipitation, and fog can exacerbate the air quality problem in the SJVAB.

The SJVAB is approximately 250 miles long and averages 35 miles wide, and is the second largest air basin in the state. The SJVAB is defined by the Sierra Nevada in the east (8,000 to 14,000 feet in elevation), the Coast Ranges in the west (averaging 3,000 feet in elevation), and the Tehachapi mountains in the south (6,000 to 8,000 feet in elevation). The valley is basically flat with a slight downward gradient to the northwest. The valley opens to the sea at the Carquinez Straits where the San Joaquin-Sacramento Delta empties into San Francisco Bay. The San Joaquin Valley (Valley), thus, could be considered a “bowl” open only to the north.

During the summer, wind speed and direction data indicate that summer wind usually originates at the north end of the Valley and flows in a south-southeasterly direction through the Valley, through Tehachapi pass, into the Southeast Desert Air Basin. In addition, the Altamont Pass also serves as a funnel for pollutant transport from the San Francisco Bay Area Air Basin into the region.

During the winter, wind speed and direction data indicate that wind occasionally originates from the south end of the Valley and flows in a north-northwesterly direction. Also during the winter months, the Valley generally experiences light, variable winds (less than 10 mph). Low wind speeds, combined with low inversion layers in the winter, create a climate conducive to high carbon monoxide (CO) and particulate matter (PM10 and PM 2.5) concentrations.

The SJVAB has an “Inland Mediterranean” climate averaging over 260 sunny days per year. The valley floor is characterized by warm, dry summers and cooler winters. For the entire Valley, high daily temperature readings in summer average 95°F. Temperatures below freezing are unusual. Average high temperatures in the winter are in the 50s, but highs in the 30s and 40s can occur on days with persistent fog and low cloudiness. The average daily low temperature is 45°F.

The vertical dispersion of air pollutants in the Valley is limited by the presence of persistent temperature inversions. Solar energy heats up the Earth’s surface, which in turn radiates heat and warms the lower atmosphere. Therefore, as altitude increases, the air temperature usually decreases due to increasing distance from the source of heat. A reversal of this atmospheric state, where the air temperature increases with height, is termed an inversion. Inversions can exist at the surface or at any height above the ground, and tend to act as a lid on the Valley, holding in the pollutants that are generated here.

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CRITERIA POLLUTANTS AND GREENHOUSE GASES

CRITERIA POLLUTANTS – The California Air Resources Board (ARB) and the federal Environmental Protection Agency (EPA) have established criteria air pollution standards in an effort to protect human health and welfare. Geographic areas are deemed "attainment" if these standards are met or nonattainment if they are not met. Nonattainment status is classified by the severity of the nonattainment problem, with marginal, moderate, serious, severe, and extreme nonattainment classifications for ozone. Nonattainment classifications for PM range from marginal to serious.

Current federal and state standards can be found online on the ARB website at: <http://www.arb.ca.gov/research/aaqs/aaqs2.pdf>

At the federal level the District is currently designated as serious nonattainment for the 8-hour ozone standard, attainment for PM₁₀ and CO, and nonattainment for PM_{2.5}. A new finding of "extreme" nonattainment with the 8-hour ozone standard is currently pending, and is expected to be approved by the federal EPA in 2009. At the state level the District is designated as nonattainment for the 8-hour ozone, PM₁₀, and PM_{2.5} standards.

The District's current attainment status can be found on the District's website at: <http://www.valleyair.org/aqinfo/attainment.htm>

The following section summarizes the pollutants of greatest importance in the San Joaquin Valley. It provides a description of the pollutants' physical properties, health and other effects, sources, and the extent of the problems.

In general, primary pollutants are directly emitted into the atmosphere, and secondary pollutants are formed by chemical reactions in the atmosphere. Air pollution in the Valley results from emissions generated in the Valley as well as from emissions and secondary pollutants transported into the Valley. It is thought that the bulk of the Valley's summer and winter air pollution is caused by locally generated emissions. Due to the Valley's meteorology, topography, and the chemical composition of the air pollutants, NO_x is the primary culprit in the formation of both ozone and PM_{2.5}.

Ozone – Ozone (O₃) and particulate matter are the two pollutants that are responsible for the bulk of the Valley's air quality problems. Ozone is the major component of the Valley's summertime "smog," and it affects human health and vegetation. Ozone is not emitted directly into the air, but is created by a series of chemical reactions between reactive organic gases (ROG) and oxides of nitrogen (NO_x) that take place in the presence of sunlight. ROG and NO_x are emitted from fuel combustion, agricultural processes, and industrial processes that are widespread throughout the Valley as well as from natural sources. Studies have also linked urban areas with both higher regional temperatures and higher ozone levels (a phenomenon known as the "urban heat island effect").

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High concentrations of ground level ozone can adversely affect the human respiratory system and aggravate cardiovascular disease and many respiratory ailments. Ozone also damages natural ecosystems such as forests and foothill communities, agricultural crops, and some man-made materials, such as rubber, paint, and plastics.

Reactive Organic Gases – Reactive organic gases (ROG), also known as volatile organic compounds (VOC), are photochemically reactive hydrocarbons that are important for ozone formation. The primary sources of ROG are petroleum transfer and storage, oil and gas production, mobile sources, organic solvent use, farming operations, and miscellaneous processes. No separate health standards exist for ROG as a group. Because some compounds that make up ROG are also toxic, like the carcinogen benzene, they are often evaluated as part of a toxic risk assessment.

Oxides of Nitrogen – Oxides of Nitrogen (NO_x) are a family of gaseous nitrogen compounds and are precursors to the formation of ozone and particulate matter. The major component of NO_x, nitrogen dioxide (NO₂), is a reddish-brown gas that is toxic at high concentrations. NO_x results primarily from the combustion of fossil fuels under high temperature and pressure. On-road and off-road motor vehicles and fuel combustion are the major sources of this air pollutant.

Particulate Matter – Particulate matter (PM) is any material except pure water that exists in the solid or liquid state in the atmosphere. Suspended particulate matter (airborne dust) consists of particles small enough to remain suspended in the air for long periods. Respirable particulate matter consists of particles small enough to be inhaled, pass through the respiratory system, and lodge in the lungs with resultant health effects. Respirable particulate matter includes “inhalable coarse particles,” with diameters larger than 2.5 micrometers and smaller than 10 micrometers (PM₁₀), and “fine particles,” with diameters that are 2.5 micrometers and smaller (PM_{2.5}).

PM₁₀ and PM_{2.5} are primary pollutants (emitted directly to the atmosphere) and secondary pollutants (formed in the atmosphere by chemical reactions among precursors. Generally speaking, PM_{2.5} sources tend to be combustion sources like vehicles, power generation, industrial processes, and wood burning, while PM₁₀ sources include these same sources plus roads and farming activities. Fugitive windblown dust and other area sources also represent a source of airborne dust in the Valley.

Acute and chronic health effects associated with high particulate levels include the aggravation of chronic respiratory diseases, heart and lung disease, and coughing, bronchitis, and respiratory illnesses in children.

Carbon Monoxide – Carbon monoxide (CO) is an odorless, colorless gas that is highly toxic. It is formed by the incomplete combustion of fuels and is emitted directly into the air (unlike ozone). The main source of CO in the San Joaquin Valley

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is on-road motor vehicles. Other CO sources in the Valley include other mobile sources, miscellaneous processes, and fuel combustion from stationary sources.

Because of the local nature of CO problems, the ARB and EPA designate urban areas as CO nonattainment areas instead of the entire basin as with ozone and PM10. Motor vehicles are by far the largest source of CO emissions. Emissions from motor vehicles have been declining since 1985, despite increases in vehicle miles traveled (VMT), with the introduction of new automotive emission controls and fleet turnover.

Sulfur Dioxide – Sulfur Dioxide (SO₂) is a colorless, irritating gas with a "rotten egg" smell formed primarily by the combustion of sulfur-containing fossil fuels. The SJVAB is in attainment of both the federal and California standards. However, like airborne NO_x, suspended SO_x particles contribute to the poor visibility that sometimes occurs in the Valley. These SO_x particles are also a component of PM10. The prevalence of low-sulfur fuel use in Valley has minimized problems from this pollutant.

Lead – Lead (Pb) is a metal that is a natural constituent of air, water, and the biosphere. Lead is neither created nor destroyed in the environment, so it essentially persists forever. The health effects of lead poisoning include loss of appetite, weakness, apathy, and miscarriage; it can also cause lesions of the neuromuscular system, circulatory system, brain, and gastrointestinal tract.

Gasoline-powered automobile engines were a major source of airborne lead through the use of leaded fuels. The use of leaded fuel has been mostly phased out, with the result that ambient concentrations of Pb have dropped dramatically. Lead concentrations were last systematically measured in the SJVAB in 1989, when the average concentrations were approximately five percent of the state lead standard. Though monitoring was discontinued in 1990, lead levels are probably well below applicable standards, and the SJVAB is designated in attainment for lead.

A detailed discussion of selected criteria air pollutants can be found in the *District's Guide for Assessing and Mitigating Air Quality Impacts: Technical Document*, available on the District's website at: www.valleyair.org/transportation/ceqa_guidance_documents.htm

GREENHOUSE GASES – Greenhouse gases (GHGs) are gases that absorb and emit radiation within the thermal infrared range, trapping heat in the earth's atmosphere. There are no "attainment" concentration standards established by the federal or state government for greenhouse gases. In fact, GHGs are not generally thought of as traditional air pollutants because greenhouse gases, and their impacts, are global in nature, while air pollutants affect the health of people and other living things at ground level, in the general region of their release to the atmosphere. Common GHGs include water vapor, carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), ozone (O₃), and chlorofluorocarbons (CFCs). Some greenhouse gases occur naturally and are emitted

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to the atmosphere through both natural processes and human activities. Other GHGs are created and emitted solely through human activities. The principal greenhouse gases that enter the atmosphere because of human activities are CO₂, CH₄, N₂O, and fluorinated carbons.

- **Carbon Dioxide** – CO₂ enters the atmosphere through the burning of fossil fuels, solid waste, trees and wood products. CO₂ is also as a result of other chemical reactions (e.g., certain manufacturing processes). CO₂ is removed from the atmosphere through the photosynthesis process (the process in which plants absorb and convert CO₂ into energy).
- **Methane** – CH₄ is emitted during the production and transport of coal, natural gas, and oil. CH₄ is also the natural result of the ruminant digestive processes in livestock and other agricultural practices and by the decay of organic waste.
- **Nitrous Oxide** – N₂O is emitted during agricultural and industrial activities, as well as during combustion of fossil fuels and solid waste.
- **Fluorinated Gases** – Hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride are synthetic gases that are emitted from a variety of industrial processes. These gases are typically emitted in smaller quantities, but because of their potency, they are sometimes referred to as High Global Warming Potential gases (High GWP gases).

Detailed discussions of GHGs and current state and federal regulations, and links to other GHG resources can be found on the District's website at: http://www.valleyair.org/Programs/CCAP/CCAP_idx.htm

AIR QUALITY MONITORING DATA

The District, the ARB, the U.S. National Park Service, and the Santa Rosa Rancheria in Lemoore operate an extensive air monitoring network to measure progress toward attainment of the NAAQS. Air quality monitoring networks are designed to monitor areas with: high population densities, areas with high pollutant concentrations, areas impacted by major pollutant sources, and areas representative of background concentrations. Some monitors are operated specifically for use in determining attainment status, while others are operated for other purposes, such as for generating daily air quality forecasts. In total, the District utilizes ozone and PM data from over 60 monitors operated at 29 sites in the Valley. All monitors must comply with the pollutant standard for the San Joaquin Valley to be considered as attainment for that standard.

More information and a map of air quality monitors within the SJVAB can be found on the ARB website at: http://www.arb.ca.gov/qaweb/basinselect.php?b_airs_code=09

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EMISSION INVENTORIES

An emission inventory is an itemized list of pollutants in a given area for a specified time period. Present and future year inventories are important parts of air quality planning and modeling. Air pollution comes from many sources such as large industrial facilities, as well as things we use in our daily lives such as cars and trucks, paints, and aerosol spray products. For convenience, sources of air pollution have been grouped into the categories listed below to reflect the source of emissions or the purpose of the estimate.

Area Source – Area source emissions are from sources that are not regulated by the District, or are individually so small that they may not be included in the District's survey system. These small sources may not individually emit significant amounts of pollutants, but when aggregated can make an appreciable contribution to the emission inventory. Examples of these area sources are residential water heating and use of paints, varnishes, and consumer products. Emissions from these sources are grouped into categories and calculated based on surrogate variables.

Of the more than 500 area-wide source categories established by the ARB, the District is responsible for estimating emissions from approximately 100. Emissions for the remaining categories are estimated by either ARB or the Department of Pesticide Regulation (DPR).

Point Source – Facilities that have valid District permits are called point sources. Refineries, gas stations, dry cleaners and industrial plants are examples of point sources in our District. The District's Technical Services Division collects and maintains a database with detailed information on each point source that submits data. Almost all facilities emitting greater than 2.5 tons/year of any air pollutant are included. The District's database contains information for more than 4,000 facilities.

Data on the activity, seasonal variations, and hours of operation are collected from each facility each year through a survey process. Emissions are calculated using detailed data for each of the facilities by various processes. Each year the District provides point source emissions inventory data to ARB to be included in their CEIDARS database.

Mobile Source – Mobile sources consist of motor vehicles among other mobile sources. Mobile sources are classified as being on-road or off-road. On-road motor vehicles consist of passenger cars, trucks, buses and motorcycles. Emissions from on-road motor vehicles are a major portion of the emission inventory, and are estimated by ARB using computer models. Off-road mobile sources generally consist of vehicles in which the primary function is not transportation. Examples of off-road vehicles include construction and farm equipment.

Other mobile sources include boats and ships, trains, and aircraft. The District estimates emissions for ships and aircraft in our area source inventory. The remaining sources are estimated by ARB as part of their off-road inventory.

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Natural Source – In addition to man-made air pollution, there are significant quantities of pollutants from natural source. Natural sources include biological and geological sources, wildfires, windblown dust, and biogenic emissions from plants and trees. Emissions from natural sources are estimated by ARB.

More information on current emission inventories and District methodologies can be found on the District's website at: http://www.valleyair.org/busind/pto/Tox_Resources/emissions_inventory.htm

Detailed information regarding current emissions inventory by region (air basin and county) can be found on the ARB website at: <http://www.arb.ca.gov/ei/emissiondata.htm>

SIGNIFICANT SOURCE CATEGORIES

The District has projected the top 10 sources for NO_x, VOC, and PM_{2.5} emissions for 2010. A detailed discussion on these projections can be found in the District's *2008 PM_{2.5} Plan* which can be found online at: http://www.valleyair.org/Air_Quality_Plans/AQ_Final_Adopted_PM25_2008.htm

The District's *Annual Report to the Community, October 2008* provides a brief discussion of sources of air pollution and identifies the top sources of emissions in the SJVAB. These sources are identified in the table below. The *Annual Report to the Community* can be found on the District's website at: http://www.valleyair.org/General_info/pubdocs/2008AnnualReportfinal-web.pdf

Top 10 Sources Criteria Pollutant Emissions		
NO _x	VOC	PM _{2.5}
Heavy Heavy-Duty Diesel Trucks	Farming Operations	Managed Burning and Disposal
Off-Road Equipment	Oil and Gas Production	Residential Fuel Combustion
Farm Equipment	Consumer Products	Farming Operations
Trains	Pesticides/Fertilizers	Heavy Heavy-Duty Diesel Trucks
Medium Heavy Duty Diesel Trucks	Light Duty Passenger Vehicles	Fugitive Windblown Dust
Light Duty Passenger Vehicles	Heavy Heavy-Duty Diesel Trucks	Paved Road Dust
Light Duty Trucks – LDT2	Off-Road Equipment	Unpaved Road Dust
Food and Agricultural Processing	Recreational Boats	Cooking
Oil and Gas Production	Light Duty Trucks – LDT2	Off-Road Equipment
Medium Duty Trucks	Food and Agriculture	Chemical Industrial Processes

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LOCAL, DISTRICT, STATE, AND FEDERAL POLICIES, PROGRAMS, AND REGULATIONS

All levels of government have some responsibility for protecting air quality. This section outlines the responsibilities of federal, state, regional, and local government agencies in air quality matters and explains how they interact.

FEDERAL

At the federal level, the EPA has been charged with implementing national air quality programs. The EPA's air quality mandates are drawn primarily from the federal Clean Air Act (CAA). The federal CAA was first signed into law in 1963. Congress substantially amended the federal CAA in 1970, 1977, and 1990.

The EPA deals with global, international, national, and interstate air pollution issues. Their primary role at the state level is one of oversight of state air quality programs. The EPA sets federal standards for vehicle and stationary sources and provides research and guidance in air pollution programs.

The federal CAA required the EPA to set National Ambient Air Quality Standards (NAAQS) for several problem air pollutants on the basis of human health and welfare criteria. Two types of NAAQS have been established: primary standards, which protect public health, and secondary standards, which protect public welfare (e.g., crops, forests, materials, visibility, etc.). Primary NAAQS have been established for the following criteria air pollutants:

- Carbon monoxide (CO)
- Ozone (O₃)
- Respirable particulate matter (PM₁₀)
- Fine particulate matter (PM_{2.5})
- Nitrogen dioxide (NO₂)
- Sulfur dioxide (SO₂)
- Lead (Pb)

All of the above, except CO, also have some form of secondary standard. The primary NAAQS standards are intended to protect, within an adequate margin of safety, those persons most susceptible to respiratory distress, such as people suffering from asthma or other illness, the elderly, very young children, or others engaged in strenuous work or exercise.

The EPA designates areas with air quality not meeting federal standards as "nonattainment." The federal CAA further classifies nonattainment areas based on the severity of the nonattainment problem, with marginal, moderate, serious, severe, and extreme nonattainment classifications for ozone. Nonattainment classifications for PM range from marginal to serious.

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The federal CAA requires areas with air quality violating the NAAQS to prepare an air quality control plan referred to as the State Implementation Plan (SIP). The SIP contains the strategies and control measures that states such as California will use to attain the NAAQS. The federal CAA amendments of 1990 require states containing areas that violate the NAAQS to revise their SIP to incorporate additional control measures to reduce air pollution. The SIP is a living document that is periodically modified to reflect the latest emissions inventories, planning documents, rules, and regulations of Air Basins as reported by the agencies with jurisdiction over them. The EPA reviews SIPs to determine if they conform to the mandates of the federal CAA amendments and will achieve air quality goals when implemented. If the EPA determines a SIP to be inadequate, it may prepare a Federal Implementation Plan (FIP) for the nonattainment area and impose additional control measures.

In addition to setting health-based standards for air pollutants, the EPA also oversees state and local actions to improve air quality. The following list provides a brief explanation of important regulations set forth by EPA:

Federal Clean Air Act (CAA)

- Requires air quality plans to include measures necessary to achieve NAAQS.
- Requires all plans, programs, and projects that require federal approval, including transportation plans, to conform to air quality plans.
- Requires sanctions if all feasible measures are not expeditiously adopted.
- The full text of the CAA can be found on the EPA website at <http://www.epa.gov/air/caa/>

Intermodal Surface Transportation Efficiency Act (ISTEA)

- Requires transportation projects to not impact the ability to attain air quality standards.
- Requires demonstration of expeditious implementation of Transportation Control Measures (TCMs).
- More information on ISTEA can be found on the Department of Transportation website at: <http://www.dot.gov/ost/govtaffairs/istea/>
- The text of the ISTEA can be found on the National Park Service website at: http://www.nps.gov/history/history/online_books/fhpl/istea.pdf

Federal Transportation Funding Reauthorization

- Provides funding for transportation projects that enhance air quality (e.g. Congestion Mitigation Air Quality (CMAQ), Transportation Enhancement, and Bicycle and Pedestrian Funding).
- Provides funding source for expeditious implementation of TCMs included in air quality plans.
- Information on the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) can be found on the National Highway Traffic Safety Administration website at: <http://www.nhtsa.dot.gov/people/perform/pages/funding.htm>

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STATE

States are required to develop and implement air pollution control plans designed to achieve and maintain the NAAQS established by the EPA. States may also establish their own standards, provided the state standards are at least as stringent as the NAAQS. California has established California Ambient Air Quality Standards (CAAQS) pursuant to Health and Safety Code Section 39606(b) and its predecessor statutes.

The California Legislature established the ARB in 1967. The ARB is the agency responsible for coordination and oversight of state and local air pollution control programs in California and for implementing the California Clean Air Act (CCAA) of 1988. The CCAA provides a planning framework for attainment of the CAAQS for ozone, CO, SO₂, and NO₂. The CCAA classifies ozone nonattainment areas as moderate, serious, severe, and extreme based on severity of violation of state ambient air quality standards. For each class, the CCAA specifies air quality management strategies that must be adopted. For all nonattainment categories, attainment plans are required to demonstrate a five-percent-per-year reduction in nonattainment air pollutants or their precursors, averaged every consecutive three-year period, unless an approved alternative measure of progress is developed. Air districts responsible for air basins with air quality that is in violation of CAAQS for ozone, CO, SO₂, and NO₂ are required to prepare an air quality attainment plan (AQAP) that lays out a program to attain the CCAA mandates.

Other ARB duties include monitoring air quality in conjunction with air monitoring networks maintained by air pollution control districts (APCDs) and air quality management districts (AQMDs), establishing CAAQS (which are more stringent than the NAAQS in many cases), setting emissions standards for new motor vehicles, and reviewing district input for the SIP required by the federal CAA amendments. The SIP consists of the emissions standards for vehicular sources set by the ARB as well as attainment plans adopted by the APCD or AQMD and approved by the ARB.

The State of California, through the ARB and Bureau of Automotive Repair, develops programs to reduce pollution from vehicles and consumer products. The following list provides a brief explanation of important regulations set forth by the State of California:

California Clean Air Act (CCAA)

- Requires all feasible control measures, including transportation control measures, to reduce emissions.
- Provides for indirect source programs in attainment plans.
- Contains targets for emission reductions, vehicle miles traveled, and average vehicle ridership.
- More information on CAAQS can be found on the ARB website at: <http://www.arb.ca.gov/research/aaqs/caaqs/caaqs.htm>

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AB (Assembly Bill) 170

- In adding Section 65302.1 to the Government Code, requires cities and counties in the Valley to incorporate strategies to improve air quality in their general planning efforts.
- The full text of the AB 170 can be found on the Official California Legislative Information website at: http://www.leginfo.ca.gov/cgi-bin/postquery?bill_number=ab_170&sess=CUR&house=A&search_type=bill_update

SB (Senate Bill) 709:

- Adds Chapter 5.7 to Part 3 of Division 26 of the Health and Safety Code, giving the District more responsibility in terms of permitting, fee implementation, and agricultural assistance, but also gives the District the authority to require the use of best available control technology for existing sources, promote cleaner-burning alternative fuels, and encourage and facilitate ridesharing.
- Adds Section 9250.16 to the Vehicle Code to allow the District to adopt a surcharge on motor vehicle registration fees in counties within the District.
- The California Health and Safety Code can be found on the Official California Legislative Information website at: <http://www.leginfo.ca.gov/cgi-bin/calawquery?codesection=hsc&codebody=&hits=20>
- The California Vehicle Code can be found on the Official California Legislative Information website at: <http://www.leginfo.ca.gov/cgi-bin/calawquery?codesection=veh&codebody=&hits=20>

California Government Code Section 65089:

- Requires trip reduction and travel demand management in Congestion Management Programs.
- The full text of the Section 65089 can be found on the Official California Legislative Information website at: <http://www.leginfo.ca.gov/cgi-bin/calawquery?codesection=gov&codebody=&hits=20>

REGIONAL

Air pollution does not respect political boundaries. Therefore, many air quality problems are best managed on a regional basis. In 1991 the State Legislature determined that management of an air basin by a single agency would be more effective than management through each county within that basin. Air basins are geographic areas sharing a common "air-shed." Most major metropolitan areas in California now fall under the authority of multi-county APCDs or AQMDs.

Air districts have the primary responsibility for control of air pollution from all sources other than direct motor vehicle emissions, which are the responsibility of the ARB and EPA. Air districts adopt and enforce rules and regulations to achieve state and federal ambient air quality standards and enforce applicable state and federal law.

The District has jurisdiction over air quality matters in the SJVAB. The District was formed in 1991. Its headquarters are located in Fresno with regional offices located in

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Bakersfield in the Southern Region and Modesto in the Northern Region. The District has jurisdiction over the eight counties within the air basin and includes the counties of Fresno, Kern, Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare. Note that the eastern portion of Kern County falls outside the SJVAB and lies within the Mojave Desert Air Basin.

Until the passage of the CCAA, the primary role of county APCDs was controlling stationary sources of pollution, such as industrial processes and equipment. With the passage of the CCAA and federal CAA amendments, air districts were required to implement transportation control measures and were encouraged to adopt indirect source control programs to reduce mobile source emissions. These mandates created the necessity for air districts to work closely with cities, counties, and regional transportation planning agencies to develop new programs.

The District entered into a memorandum of understanding with the transportation planning agencies of the eight counties in the SJVAB in 1992. This memorandum of understanding ensures a coordinated approach in the development and implementation of transportation plans throughout the Valley. This action has helped the Regional Transportation Planning Agencies comply with pertinent provisions of the federal and state Clean Air Acts as well as related transportation legislation (such as the Intermodal Surface Transportation Efficiency Act).

The District develops plans and implements control measures in an effort to advance Valley attainment of CAAQS and NAAQS. The District has developed plans to attain state and federal standards for ozone and particulate matter. The District's air quality plans include emissions inventories to measure the sources of air pollutants, to evaluate how well different control methods have worked, and to show how air pollution will be reduced. The plans also use computer modeling to estimate future levels of pollution and make sure that the Valley will meet air quality goals on time. The District Governing Board approved three major plans in 2007-2008.

2007 Ozone Plan

- The District approved the *2007 Ozone Plan* on April 30, 2007. This plan included an indepth analysis of all possible control measures and projected that the Valley will achieve the 8-hour ozone standard (as set by EPA in 1997) for all areas of the SJVAB no later than 2023.
- This plan went above and beyond minimum legal requirements by including a "Fast Track" control strategy. Through Fast Track, new strategies produce real reductions (even though they can not be legally counted in the plan at this time) and will clean the air before the deadline.
- The ARB approved the *2007 Ozone Plan* on June 14, 2007.
- The District's *2007 Ozone Plan* can be found online at the District's website at: http://www.valleyair.org/Air_Quality_Plans/AQ_Final_Adopted_Ozone2007.htm

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2007 PM 10 Plan

- The District has compiled a series of PM10 Plans, with the first one in 1991. Based on PM10 measurements from 2003-2006, EPA found that the SJVAB had reached the federal PM10 standard.
- The District's *2007 PM10 Maintenance Plan and Request for Redesignation*, approved on September 21, 2007, assures that the Valley will continue to meet the PM10 standard and requests that EPA formally redesignate, or label, the Valley to attainment status. On April 5, 2008, EPA stated their intent to approve the PM10 Maintenance Plan.
- The District's *2007 PM10 Maintenance Plan* can be found online at the District's website at: http://www.valleyair.org/Air_Quality_Plans/docs/Maintenance%20Plan10-25-07.pdf

2008 PM 2.5 Plan

- The District approved the *2008 PM2.5 Plan* on April 30, 2008. Building upon the strategy used in the *2007 Ozone Plan*, the District agreed to additional control measures to reduce directly produced PM2.5. The *2008 PM2.5 Plan* estimates that the SJVAB will reach the PM2.5 standard (as set by EPA in 1997) in 2014.
- The ARB approved the Plan on May 22, 2008, and the plan has been submitted to EPA.
- The District's *2008 PM2.5 Plan* can be found online at the District's website at: http://www.valleyair.org/Air_Quality_Plans/AQ_Final_Adopted_PM25_2008.htm

LOCAL

Local government's responsibility for air quality increased significantly with the passage of the CCAA and the federal CAA amendments. Both of these pieces of legislation place new emphasis on reducing motor vehicle trips and vehicle miles traveled at the local level. Although the District is required to address state air quality standards by way of TCMs and indirect source programs in its air quality attainment plans, cities and counties, through their Councils of Government, are responsible for most implementation.

Local government responsibilities for air quality are found in four areas: (1) land use planning; (2) reviewing and mitigating the environmental impacts of development projects; (3) developing and maintaining the transportation infrastructure in the community, including transit systems; (4) implementing local air quality programs such as commute-based trip reduction and rideshare.

Land Use – State law places responsibility for land use planning in the hands of city and county governments. With this responsibility comes the authority to approve development projects. As part of their duties, cities and counties are required to prepare a "general plan." The general plan is a comprehensive document that sets a community's goals and policies for development over a long period (often 20 years) and designates in general terms where certain land uses will be allowed. The general plan has seven mandatory elements, but any issues can be addressed as

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the city or county sees fit. Air quality can be addressed within one or more of the mandatory elements, usually the Land Use, Conservation, or Circulation Elements. Section 65302.1 of California Government Code, added by AB 170 in 2003, requires cities and counties in the San Joaquin Valley to amend appropriate elements of general plans to include data, analysis, comprehensive goals, policies, and feasible implementation strategies to improve air quality.

Environmental Review – The California Environmental Quality Act (CEQA) was enacted by the state legislature in 1970 and has been amended on numerous occasions. It applies to government initiated plans, projects, and regulations as well as to private projects requiring discretionary approval from a state or local agency. Under CEQA, a local planning agency is designated as the lead agency for most private development projects. CEQA requires the lead agency to conduct an initial study to determine if a project may have a significant adverse impact on the environment. Lead agencies are required to consult with and request comments from responsible agencies, agencies that exercise authority over resources, which may be affected by the project. The lead agency may choose to require or not require the measures suggested by the responsible agency. Projects with significant adverse impacts require the lead agency to prepare a report referred to as an Environmental Impact Report (EIR). Projects that will not have a significant effect, or projects that are modified to avoid significant effects, require the lead agency to prepare a Negative Declaration. CEQA allows lead agencies to disapprove a project if necessary to avoid one or more significant effects on the environment. The planning agencies' authority to disapprove projects compels developers to include measures in the project to reduce significant environmental impacts.

The District has prepared three guidance documents to aid agencies in performing environmental reviews. The documents are briefly described below:

- ***Air Quality Guidelines for General Plans (AQGGP)*** – The AQGGP is a guidance and resource document for cities and counties to use to address air quality in their general plans. The AQGGP includes goals, policies, and programs to reduce vehicle trips, reduce miles travelled, and improve air quality. The AQGGP can be found on the District's website at: <http://www.valleyair.org/transportation/Entire-AQGGP.pdf>
- ***Guideline for Assessing and Mitigating Air Quality Impacts (GAMAQI)*** – The GAMAQI is an advisory document, that provides Lead Agencies, consultants, and project applicants with uniform procedures for addressing air quality in environmental documents. The document includes a discussion of the District's role in the CEQA process, identifies actions that can be taken by land use agencies to reduce air quality impacts, and the District' thresholds of significance. The *Technical Document* contains information for use in air quality assessments, such as air quality data, regulatory setting, climate, topography, etc. The GAMAQI can be found on the District's website at: <http://www.valleyair.org/transportation/CEQA%20Rules/GAMAQI%20Jan%202002%20Rev.pdf>

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- **Environmental Review Guideline (ERG)** – The ERG fulfills CEQA requirements for agencies to adopt procedures and guidelines for implementing CEQA. The document is intended to guide District staff in carrying out CEQA and to assure the public that environmental impacts related to District actions are thoroughly and consistently addressed. The ERG can be found on the District's website at: http://www.valleyair.org/transportation/CEQA%20Rules/ERG%20Adopted%20_August%202000_.pdf

Transportation Infrastructure – The federal CAA amendments require transportation plans to conform to the air quality goals of the SIP. This means that states must assure that transportation programs do not undermine the attainment of air quality standards. The Regional Transportation Planning Agencies are responsible for making the conformity finding. The Air District's role in this process is one of consultation.

Air Quality Programs – The CCAA allows air districts to delegate the implementation of transportation control measures to any local agency as long as the following conditions are met: (1) the agency must submit an implementation plan to the district for approval; (2) the agency must adopt and implement measures at least as stringent as those in the district's plan; and (3) the district must adopt procedures for reviewing the performance of the local agency in implementing the measures. Some local agencies prefer to maintain local control of these programs to ensure that all local concerns and issues are addressed. Local government's close working relations with the individuals and businesses affected by the programs may generate more public interaction and program support. On the other hand, large businesses with worksites in more than one jurisdiction often prefer dealing with a regional agency so that compliance is uniform. A transportation control measure in which local government has an important role is in low-emission fleet vehicle programs. Cities and counties often operate the largest vehicle fleets in their jurisdictions. Programs to convert vehicle fleets to cleaner burning fuels have significant air quality benefits and can provide a model to private industry.

GOALS, POLICIES, AND OBJECTIVES

The District's primary responsibility is the control of air pollution from stationary sources (sources other than direct motor vehicle emissions, which are the responsibility of the ARB and EPA). Permitting stationary sources provides a number of benefits to the public and to regulated sources. It provides an opportunity for the project proponent, the District, and the interested public to provide input and to assess a project's compliance with federal, state, and local air requirements prior to beginning construction. It also provides a mechanism to consolidate and simplify the applicable air regulations in one brief document; and it provides guidance to both the applicant and the District that can be used on an ongoing basis to assure that the equipment or process is operating in compliance with those rules.

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Because of the severity of the air quality problems, permits are required in the Valley for very small sources of emissions; as little as two pounds of emissions per day can trigger permitting requirements. The permitting process involves two steps. The first step requires the applicant to apply for and receive an Authority to Construct (ATC) permit. Construction of new or modified facilities or equipment may not legally proceed until an ATC is issued by the District. The requirements that must be met to obtain a permit in the Valley are among the strictest in the nation, requiring mitigation of emissions using best available control technology (BACT) and for non-agricultural sources offsetting emissions when above certain thresholds (SB 700). The second step, issuing the Permit to Operate (PTO), occurs after the applicant has properly installed the equipment allowed by the Authority to Construct.

In addition to permitting stationary sources the District is required by the CCAA to develop "indirect source" control programs in their attainment plans. Indirect sources are defined as any building, facility, activity center, etc. that attracts motor vehicle trips. The District committed to reducing PM10 and NOx emissions from indirect sources in the *2003 PM10 Plan* and the *2004 Extreme Ozone Attainment Demonstration Plan*. The District's Governing Board adopted District Rule 9510 (Indirect Source Review) in October 2006 as a result of this commitment. District Rule 9510 requires applicants to mitigate project impacts through the incorporation of on-site emission reducing design elements and/or the payment of fees that would be used to fund off-site emissions reduction projects.

The District's Air Quality Attainment Plans include measures to promote air quality elements in county and city general plans as one of the primary indirect source programs. The general plan is the primary long range planning document used by cities and counties to direct development. Since air districts have no authority over land use decisions, it is up to cities and counties to ensure that their general plans help achieve air quality goals

The *Air Quality Guidelines for General Plans* (AQGGP), adopted by the District in 1994 and amended in 2005, is a guidance document containing goals and policy examples that cities and counties may want to incorporate into their General Plans to satisfy Section 65302.1. When adopted in a general plan and implemented, the suggestions in the AQGGP can reduce vehicle trips and miles traveled and improve air quality. The specific suggestions in the AQGGP are voluntary. The District strongly encourages cities and counties to use their land use and transportation planning authority to help achieve air quality goals by adopting the suggested policies and programs.

More information on land use strategies can be found on the District's website at: http://www.valleyair.org/transportation/land_use_strategies.htm

A copy of the District's *Air Quality Guidelines for General Plans* can be found on the District's website at: <http://www.valleyair.org/transportation/Entire-AQGGP.pdf>

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FEASIBLE IMPLEMENTATION MEASURES

AB 170 requires general plans to include feasible implementation measures to reduce air quality impacts. Effective types of mitigation depend on the size and type of project being considered. The District therefore recommends different mitigation strategies for different types of projects.

The District has identified three (3) mitigation strategies, based on project size, which can be used to develop plan-specific feasible mitigation measures.

1) General plan updates, large specific plans, new town

Mitigation Strategies:

- Adopt air quality element/general plan air quality policies/specific plan policies
- Adopt Local Air Quality Mitigation Fee Program (Stockton and Turlock have adopted such programs)
- Fund TCM program: transit, bicycle, pedestrian, traffic flow improvements, transportation system management, rideshare, telecommuting, video-conferencing, etc.
- Adopt air quality enhancing design guidelines/standards
- Designate pedestrian/transit oriented development areas on general plan/specific plan/ planned development land use maps
- Adopt ordinance limiting woodburning appliances/fireplace installations
- Fugitive dust regulation enforcement coordinated with SJVUAPCD
- Energy efficiency incentive programs
- Local alternative fuels programs
- Coordinate location of land uses to separate odor generators and sensitive receptors

2) General plan amendments, small specific plans, and some zone changes

Mitigation Strategies:

- Apply general plan policies, local ordinances and programs from above to the project site or adopt similar site specific programs
- Provide pedestrian/transit oriented project design
- Contribute to Local Air Quality Mitigation Fee Fund
- Contribute towards TCM implementation programs
- Commit to on-site improvements; bikeways, transit infrastructure, pedestrian enhancements
- Provide traffic flow improvements for areas impacted by the project

3) Tentative maps, site plans, conditional use permits

Mitigation Strategies:

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- Apply general plan policies and local ordinances and programs from above to the project site
- Pedestrian/Transit oriented site design
- Provide on-site improvement: bikeways, transit infrastructure, pedestrian enhancements
- Contribute to Local Air Quality Mitigation Fee Fund
- Contribute to TCM implementation
- Energy conservation measures above and beyond requirements
- Pay for fleet vehicle conversions to alternative fuels

These strategies can also be found on the District's website at: http://www.valleyair.org/transportation/air_quality_mitigation_strategie.htm :

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