EXECUTIVE SUMMARY

INTRODUCTION

Air quality in Southern California continues to improve, with 1995 registering some of the lowest levels in decades. Yet Southern California still experiences the worst air quality in the nation requiring continued diligence to meet air quality standards. Continuing the progress toward clean air is a challenging task, not only to recognize and understand complex interactions between emissions and resulting air quality, but also to pursue the best possible set of strategies to improve air quality while maintaining a healthy economy. This 1997 Air Quality Management Plan (AQMP or Plan) is based on the 1994 AQMP, and carries forward most of the innovative strategies crafted in that Plan. The current AQMP places a greater focus on particulate matter (PM_{10}), since this is the first plan required by federal law to demonstrate attainment of the federal PM_{10} ambient air quality standards. The Plan also updates the demonstration of attainment for ozone and carbon monoxide, and includes a maintenance plan for nitrogen dioxide (NO_2), as the South Coast Air Basin (Basin) now qualifies for attainment of that federal standard.

The 1997 AQMP proposes policies and measures to achieve federal and state standards for healthful air quality in the Basin and those portions of the Mojave Desert and Salton Sea Air Basins (formerly named the Southeast Desert Air Basin) that are under South Coast Air Quality Management District (District) jurisdiction (namely, Antelope Valley and Coachella Valley). The Antelope Valley will remain under the District's jurisdiction until June 30, 1997. The Coachella Valley PM_{10} Plan is being prepared as a separate document, however, as that area is now the first PM_{10} serious nonattainment area to qualify for redesignation to attainment of the federal PM_{10} standards.

This revision to the Plan also addresses several state and federal planning requirements and incorporates significant new scientific data, primarily in the form of updated emissions inventories, ambient measurements, and new models. This Plan is consistent with the approaches taken in the 1994 AQMP for the attainment of the federal ozone air quality standard, and shows that with refinements to the 1994 AQMP control strategy, sufficient emission reductions are achieved to meet all federal criteria pollutant standards within the time frames allowed under the federal Clean Air Act.

Some notable regulatory actions have occurred since the 1994 AQMP, all of which have been accounted for in this Plan. These include new or amended rules which have been adopted since the release of the 1994 AQMP; the implementation of Phase II reformulated fuels (California Cleaner Burning Gasoline) in 1996; the replacement of the Regulation XV rideshare program with an equivalent emission reduction program under Rule 2202; and new incentive programs for generating emission credits. In keeping up with advancing computerized communications, the District has established a home page on the Internet (http://www.aqmd.gov) where key information can be browsed and downloaded. For the first time, this Plan is being made available via the Internet. In the future, the District plans to expand its services by offering electronic permit application processing.

WHY IS THIS PLAN BEING PREPARED?

The 1990 Clean Air Act (CAA) established deadlines for PM_{10} SIP submittals. In February, 1993, the U. S. Environmental Protection Agency (U.S. EPA) reclassified the South Coast Air Basin and Coachella Valley as "serious" nonattainment areas for PM_{10}. The CAA specified that four years from that reclassification date, a PM_{10} SIP must be submitted to U.S. EPA, and that submittal must demonstrate attainment of both the 24-hour and annual average PM_{10} ambient air quality standards by 2006 -- the latest date allowed under the act. This Plan is being prepared to meet that submittal deadline.

In addition, under state law, a comprehensive AQMP must also be prepared every three years, the next being due in 1997. Because there are key linkages between two criteria pollutants -- ozone and PM_{10} -- this AQMP integrates the technical and policy issues of both pollutants. The 1997 AQMP therefore satisfies both state and federal requirements for plan submittals.

WHAT IS NEW IN THIS PLAN REVISION?

Each revision of the AQMP represents a snapshot in time, based on best available information. The 1997 AQMP generally is very similar to the structure of the 1994 Plan but like all new editions includes significant enhancements. Key new elements are:

- Use of the most current air quality information (1995), including special particulate matter data from the PM_{10} Technical Enhancement Program (PTEP);
- Improved emissions inventories; especially for motor vehicles, fugitive dust, and ammonia sources;
- A similar, but fine-tuned overall control strategy with continuing emphasis on flexible, alternative approaches including intercredit trading;
- A determination that certain control measures contained in the 1994 AQMP, are infeasible, most notably the future indirect source measures;
- Enhanced modeling for particulates;
- Separate analyses for the desert portions within the District's jurisdiction: the Coachella Valley within the Salton Sea Air Basin; and the Antelope Valley within the Mojave Desert Air Basin. (Note: these desert areas were formerly referred to as the Southeast Desert Air Basin);
- Amendments to the federal Post-1996 Rate-of-Progress Plan and the Federal Attainment Plans for ozone and carbon monoxide;

- A Maintenance Plan for nitrogen dioxide; and
- An attainment demonstration and State Implementation Plan Revision for PM_{10}.

HOW WAS THIS PLAN REVISION PREPARED?

This AQMP Revision was developed based on input and participation of numerous individuals and groups since the adoption of the 1994 AQMP. In particular, as part of its actions on the 1994 Plan, the District Governing Board formed a PM_{10} Task Force to "oversee the expeditious development of a PM_{10} Attainment Plan consistent with requirements established in state and federal law." That Task Force, with a membership of 56 individuals representing business, industry, government, academia, and environmental groups, has convened at least once a month since its inception in June 1995.

To help provide important technical and scientific data to support the development of the PM_{10} Plan, the Governing Board in December 1994 established the PM_{10} Technical Enhancement Program (PTEP), a cooperative study designed to provide new ambient data for particulates, improved emissions inventories, and improved models to predict future levels of particulates. That program, jointly funded by the District, U.S. EPA, City of Los Angeles, County Sanitation Districts of Los Angeles, Western States Petroleum Association, Southern California Gas Company, CalMat, and Southern California Rock Products Association, successfully delivered critical new information which was directly input to this Plan.

The District and the Southern California Association of Governments (SCAG) sponsored several other plan-related task forces and working groups. In addition, public comments were received in response to public workshops and consultation meetings held in January 1996 (control measures), May 1996 (modeling), and June 1996 (emissions inventories). Regional public workshops were conducted in September 1996 and regional public hearings are being held in October 1996 to seek inputs on the draft AQMP.

In preparing this Plan, the District coordinated closely with both SCAG, The Southern California Economic Partnership (The Partnership) and the California Air Resources Board (ARB), as well as the U.S. EPA. SCAG has the primary responsibility for providing future growth projections and the development of transportation control measures; The Partnership has the responsibility for the coordination of market based Advanced Transportation Technology (ATT) implementation strategies and market growth indicators; ARB has the primary responsibility for the development of mobile source emissions inventories as well as mobile source and consumer product control measures. Their inputs are included in this Plan. Also, the U.S. EPA provided information on the status of the control efforts for federally regulated sources, and has initiated a public consultation process to further that effort.

IS AIR QUALITY IMPROVING?

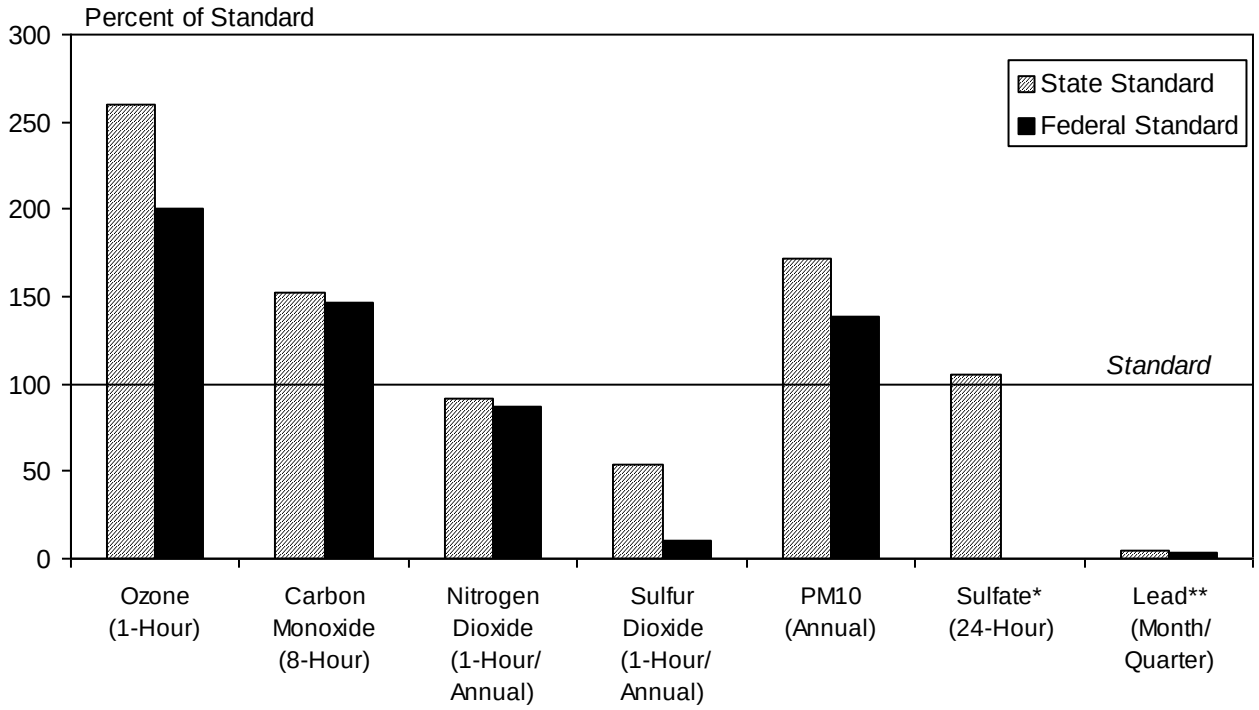
Yes. Air quality levels continue to show improvement. In 1995, for example, ozone levels peaked at 0.26 parts per million -- the lowest such level since the District was established. There were only 14 Stage I ozone episodes, also the lowest number since the episode program was initiated by the ARB in the 1970s. Nitrogen dioxide met the federal standards for the third year in a row, thereby qualifying the Basin for redesignation to attainment for that pollutant. (A maintenance plan for nitrogen dioxide is included in this Plan to satisfy one of the federal requirements needed for redesignation to attainment.) Annual average PM_{10} levels are nearly 25 percent lower than a decade ago at the highest PM_{10} site in the Metropolitan Riverside County Area.

In 1995, the federal air quality standard for ozone was exceeded at one or more locations in the Basin on 98 days. While this is the lowest number of days since recordkeeping began, it still is more frequent than any other area of the nation. Federal 24-hour standards for PM_{10} were exceeded on 7 percent of the days sampled, while carbon monoxide exceeded federal standards on only 4 percent of the days. Figure ES-1 shows the 1995 maximum air pollutant concentrations in the South Coast Air Basin as a percentage of air quality standards.

WHAT ARE THE APPLICABLE KEY FEDERAL AND STATE REQUIREMENTS THAT THIS PLAN REVISION ADDRESSES?

Federal

In November 1990, Congress enacted a series of amendments to the Clean Air Act intended to intensify air pollution control efforts across the nation. One of the primary goals of the 1990 amendments to the Clean Air Act (CAA) was an overhaul of the planning provisions for those areas not currently meeting National Ambient Air Quality Standards (NAAQS). The CAA identifies specific emission reduction goals, requires both a demonstration of reasonable further progress and attainment, and incorporates more stringent sanctions for failure to attain or to meet interim milestones.



* There is no federal standard for sulfate.

FIGURE ES-1

1995 Maximum Pollutant Concentrations in the South Coast Air Basin

The CAA requires the District to develop: (1) a Federal Attainment Plan for PM_{10} as required by Section 189(b)(2), and (2) a post-1996 Rate-of-Progress Plan as required in Section 182(c)(2)(B). In addition, any revisions to previous demonstrations of attainment must be resubmitted to U.S. EPA. For the Plan, this includes the ozone and carbon monoxide demonstrations for the Basin, and ozone demonstrations for the Los Angeles county portion of the Mojave Desert Air Basin (Antelope Valley), and for the Riverside nonattainment area of the Salton Sea Air Basin (Coachella - San Jacinto Planning Area).

State

The California Clean Air Act (CCAA) was signed into law on September 30, 1988. Through its many requirements, the CCAA serves as an important consideration in the Basin's attainment planning efforts.

Key CCAA requirements that the District must address in the 1997 AQMP are to: apply Best Available Retrofit Control Technology; reduce nonattainment pollutants and their precursors at a rate of five percent per year, or, if this cannot be done, include all feasible measures and an expeditious implementation schedule; reduce population exposure to severe nonattainment pollutants (i.e., ozone, carbon monoxide, and nitrogen dioxide for the Basin) according to a prescribed schedule; and, rank control measures by cost-

effectiveness and implementation priority. Additionally, state law requires market-based programs proposed as part of the attainment strategy to meet specific design requirements. As a result of recent legislation (SB 772, chaptered in 1995), the District is now prohibited from enforcing rules requiring employee trip reduction plans. However, the District is pursuing equivalent emissions reductions with Rule 2202, adopted in 1995, and through the efforts of the REACH (Reduce Emissions And Congestion on Highways) Task Force, which has developed several approaches for further analysis. Finally, state law requires the plan to provide for attainment of the federal and state ambient air quality standards at the earliest practicable date (Health & Safety Code Section 40462).

HOW HAS THE EMISSIONS INVENTORY CHANGED?

For this Plan Revision, a 1993 emissions inventory is relied upon to establish baseline and future year projections. The inventories were developed according to procedures stemming from the Federal Clean Air Act. To meet state and federal law requirements, updated 1987 and 1990 emissions inventories are also provided.

The 1993 emissions inventory now represents the most comprehensive emissions inventory ever established for the South Coast Air Basin. Key area source emissions were revised for solvent usage categories, fugitive dust, and ammonia sources. On-road mobile sources are estimated with the latest approved emissions factors supplied by the ARB using EMFAC7G. An updated marine vessels inventory was prepared as part of this plan development.

Using the 1993 emissions inventory, future emission forecasts are also developed. These forecasts reflect demographic and economic growth forecasts by SCAG. In addition, emission reductions resulting from ARB and District regulations adopted by September 1996 are included in the forecasts.

HAS THE OVERALL CONTROL STRATEGY CHANGED SIGNIFICANTLY?

No. The basic control strategy remains essentially the same as that adopted in the 1994 AQMP. However, there are some refinements proposed with this revision. At the time of adoption of the 1994 Plan, two aspects of the AQMP were considered: (1) the control measures needed to meet federal CAA requirements for the attainment of the ozone standards (referred to as "1994 CA-SIP measures"), and (2) additional control measures needed to meet the federal PM_{10} standards (referred to as "1994 AQMP measures.") Because there was no federal requirement at that time to demonstrate PM_{10} attainment in the 1994 Plan (although it is a federal requirement for the 1997 Plan), those additional measures over and above the 1994 CA-SIP measures were not submitted to U.S. EPA as a revision to the State Implementation Plan.

With a few exceptions, it has now been determined that the basic strategy contained within the 1994 CA-SIP measures are sufficient to demonstrate attainment of both the ozone and PM_{10} federal standards. The notable changes to the control strategy include: (1) removal of the future indirect source measures (ISRs); (2) less reliance on Transportation Control Measures (TCMs) and on long-term future technologies as allowed under Section 182(e)(5) of the CAA; and (3) removal of some otherwise infeasible control measures.

WHAT CONDITIONS HAVE CHANGED TO REFLECT ATTAINMENT OF BOTH OZONE AND PM_{10} STANDARDS?

Since the adoption of the 1994 Plan, the District has embarked on a cooperative study to gain new information on particulates. Described earlier, the PTEP study has provided the District with a wealth of important information which has significantly improved the ability to predict future levels of PM_{10}. In particular, these studies have shown that: (1) fugitive dust emissions are considerably lower (e.g., less than half) of the previous estimates; (2) ammonia emissions from dairy farms in the Chino area, which play a key role in the formation of ammonium nitrate PM_{10}, are about one-fourth as high as previously estimated; (3) ambient levels of PM_{10} in the Basin are now approximately 20 percent lower than those used in the 1994 AQMP (new 1995 data versus previously used 1986 data); and (4) new modeling tools are able to simulate future year particulate levels more reliably than in the past.

With the new data and tools, it can now be determined that fewer additional reductions in emissions are needed to meet the federal ambient air quality standards by the statutory deadline of 2006, and that there is greater confidence than in the past on these results.

For ozone, based on discussions with ARB and following the recommendations from the U.S. EPA and ARB modeling guidelines, of the five modeling episodes, the June 1985 meteorological episode was dropped from the 1997 AQMP analysis. The 1985 episode is the oldest episode used for modeling and represented extreme meteorological conditions. Federal air quality standards allow for the exclusion of the highest measured ozone day by allowing on average one exceedance each year or three exceedances over three years without causing a violation of the ozone air quality standard.

WHAT OTHER REQUIREMENTS ARE ADDRESSED IN THIS PLAN?

The 1990 Federal Clean Air Act Amendments require the development of near-term and long-term transportation control measures (TCMs) as well as contingency measures. The federal Clean Air Act requires that both “near-term” and “long-term” TCMs be developed for the Basin. Near-term measures must be implemented before the year 2000, and are primarily defined as transportation improvements as contained in the Regional Mobility

Element (RME) as provided by SCAG. Long-term measures are to be implemented post 2000, and are included in the Advanced Transportation Technology Incentive Measures.

Under federal conformity regulations, all federal or federally funded projects must conform to the SIP, and must not be a cause of impeding progress toward attainment of the federal standards. To establish conformity, emissions from future projects must be accounted for in the future baseline emissions inventories, such that the attainment demonstrations include these future emissions. For transportation projects, planning is now underway out to the year 2020. To establish conformity for those outyear projects, the 2010 emissions budget provided in this Plan serves as the emissions budget beyond 2010. For information purposes only, the Plan also includes an analysis for the year 2020. The analysis indicates that continued reductions in emissions due to such factors as continuing fleet turnovers to low and zero emitting vehicles will counteract growth-related emissions increases, such that attainment of the standard is maintained from 2010 to 2020.

WHAT HAPPENED TO THE FEDERAL IMPLEMENTATION PLAN?

In 1995, the U.S. EPA Administrator signed the Federal Implementation Plan (FIP) for the South Coast, Ventura, and Sacramento regions. The FIP was prepared under court order in response to legal challenges to an earlier AQMP.

Subsequent to the 1994 AQMP, the U.S. Congress rescinded the California FIP. However, in approving the CA-SIP measures and the local measures contained in the 1994 AQMP, the U.S. EPA established a consultative process to evaluate the assignment of emission reductions to federal transportation sources. That consultative process would be completed in 1997. In the event that the expected emission reductions from federal sources are not realized, then a revised ozone attainment demonstration would be developed by the end of 1997.

WHAT CONSIDERATIONS HAVE BEEN MADE FOR POSSIBLE NEW FEDERAL STANDARDS FOR PARTICULATE MATTER AND OZONE?

In light of new epidemiological and other health data, the U.S. EPA is currently reevaluating the federal standards for particulate matter and ozone. At this time it is highly probable that new standards will be promulgated in 1997. For ozone, it is likely that the current 1-hour standard will be replaced by an 8-hour standard. For particulate matter, it is likely that a new fine particulate standard ($PM_{2.5}$) will be established for both a short-term (24-hour) and long-term (annual) averaging period. It is also probable that a form of the current PM_{10} standards will be retained.

This Plan does not have to address these possible future standards. Forthcoming U.S. EPA policies will establish the timelines, as required under the CAA, to meet any new

standards. However, the District is cognizant of these developments, and, as part of the air quality modeling, is providing comparative information regarding the current attainment strategies relative to the potential new standards. Generally, this assessment shows that the new standards, if promulgated, will be more restrictive than the current standards.

HAS THE ATTAINMENT PROJECTION CHANGED FOR FEDERAL OR STATE STANDARDS?

No. The 1997 AQMP proposes to attain the state and federal standards in the same time frame as proposed in the 1994 AQMP. (See Figure ES-2.)

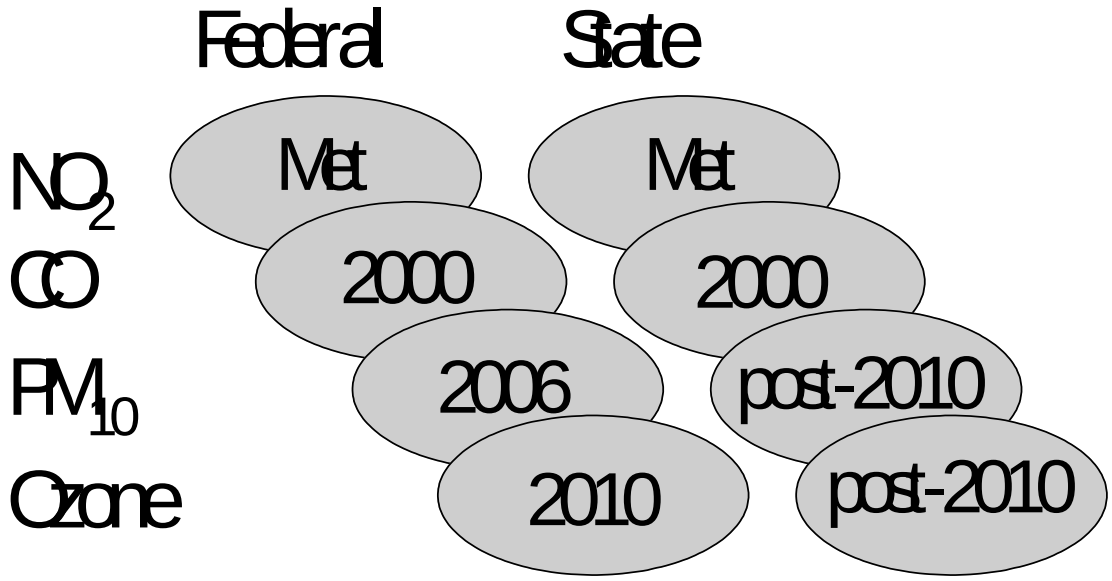


FIGURE ES-2

Attainment Target Dates