

**1994 California State Implementation Plan  
Volume IV  
Local Emission Control Plans and Attainment  
Demonstrations**

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## Executive Summary

Solving California's multiple and regionally specific ozone problems is a considerable challenge. This is especially true for nonattainment areas classified as serious, severe, or extreme under the federal Clean Air Act. To ensure these areas would be properly addressed, Congress required each to prepare a comprehensive plan for attaining the national ozone standard by November 15 of this year.

There are six nonattainment areas in California subject to the 1994 ozone planning requirement. They are: the Sacramento Metropolitan area (encompassing all or portions of the Sacramento, Placer, El Dorado, Feather River, and Yolo-Solano air districts), San Diego County, the San Joaquin Valley (including the eight unified counties and the non-unified portion of Kern), the South Coast Air Basin, Ventura County, and the Southeast Desert modified air quality management area (including portions of Los Angeles and Riverside counties, and a section of Mojave Desert).

These areas have been exceptionally busy in preparing air quality plans to meet the requirements of the Clean Air Act. Their plans attempt to demonstrate attainment of the national ozone standard while simultaneously defining policies that minimize adverse impacts on the local economy. This was quite difficult given the complexity of the problem and numerous societal and physical constraints, such as the underlying rate of population growth and local meteorological conditions.

The specific attainment strategy for each area is described in separate chapters of this volume. Extensive modeling runs have been done to produce carrying capacity estimates for reactive organic gases (ROG) and oxides of nitrogen (NO<sub>x</sub>). The resulting emission calculations supporting each area's attainment demonstration and rate-of-progress assessments are provided in this volume. Where applicable, special issues and other SIP-related subjects raised by individual plans are also discussed.

State law assigns the Air Resources Board lead responsibility for all aspects of the State Implementation Plan (Health & Safety Code 39602). However, the law also grants significant discretion to local agencies carrying out individual control measures, as follows:

*"The primary responsibility for determining whether a control measure is reasonably available shall be vested in the public agency which has the primary responsibility for implementation of that control measure. The determination of reasonably available control measure (sic) by the public control agency responsible for implementation shall be conclusive unless the state board finds after a public hearing that such determination will not meet the requirements of the Clean Air Act." Health & Safety Code 41650(b).*

The Board fully approved the local plans for inclusion in the SIP at the November 15, 1994 meeting for those districts which had adopted a plan prior to the meeting. The stationary, area, and transportation source control measures adopted by local agencies are clearly reasonable. Moreover, in many cases, they represent the best pollution control methods available in the country. The Board also delegated authority to the Executive Officer to approve and submit to the U.S. EPA those plans which had not been acted upon by local districts prior to November 15, 1994. Those plans are being submitted under separate cover.

The Board took action to ensure that the final attainment strategies for each region reflect the new state and federal measures in Volumes II and III. At least two of the local plans incorporated one or more measures from the proposed Federal Implementation Plan (FIP). Since California intends to replace all FIP measures with either national standards or its own controls, it was necessary to replace references to FIP measures with appropriate state elements. Similarly, some of the local plans assigned control measures to ARB, the Bureau of Automotive Repair or the Department of Pesticide Regulation. Where these did not match the actual intentions of the referenced state agencies, they were replaced with the adopted state elements prior to ARB's approval of the overall SIP for each region.

The attainment strategies discussed in this volume range from manageable to exceedingly rigorous. The South Coast's persistent ozone problem demands strenuous effort, to no one's surprise. Yet Ventura County and the Sacramento Metropolitan Area also require far-reaching strategies. In addition, their earlier attainment deadlines provoke immediate and difficult decisions. The San Joaquin Valley, which is endeavoring to attain by the serious area deadline of 1999, also faces a formidable challenge.

The remaining nonattainment areas appear to be in relatively good shape. In San Diego County, California's existing program may well provide most of the needed emission reductions. Finally, the Southeast Desert and Kern County are benefitting from (and claiming appropriate credit for) emission reductions in upwind areas that are the source of overwhelming transport into their jurisdictions. The latter approach is the only way these areas can demonstrate attainment and is fully consistent with both state and federal transport policies.

## A. South Coast Air Basin

### Nature of the Regional Ozone Problem

The South Coast violates the federal ozone standard more frequently, and by a greater margin, than any other place in the country. In 1993, the standard was exceeded at one or more locations in the basin on 147 separate days. This represents a 47% reduction in NAAQS violation days since 1976 -- which is a substantial improvement -- but is still cause for great concern. The South Coast Air Basin also exceeds national air quality standards for PM10, carbon monoxide, and nitrogen dioxide. The South Coast emissions inventory of ozone



precursors is enormous, reflecting the size of the regional pollution problem. The 1990 baseline inventory of ROG was 1520 tons per day. The emissions of NOx totaled 1360 tons per day in that year. Approximately 44% of the ROG inventory is from stationary and area sources, while 56% is mobile-related. However, only 17% of the NOx inventory is from stationary and area sources. The vast majority of NOx, 83%, is from mobile sources of emissions.

## Status of the Local Plan

On September 9, 1994 the South Coast District's Governing Board approved a comprehensive, multi-pollutant attainment plan. That plan contains a distinct subset of strategies for demonstrating achievement of the national ozone standard by 2010. The plan also contains several, non-ozone SIP elements that must be submitted to the U.S. EPA this year, or which are being forwarded to correct and update earlier submittals. The District's adopted plan was officially submitted to the ARB on October 6, 1994 and is incorporated by reference herein. On December 9, 1994, the District's Governing Board further revised the 1996 rate-of-progress demonstration and the revisions are being submitted separately, but are incorporated by reference herein.

## Summary of Ozone Attainment Strategy

### Overview:

The South Coast control strategy for the federal ozone standard consists of a 79% reduction in VOC emissions and a 59% reduction in NOx emissions from the 1990 baseline inventory. The design of this strategy took into account the need to reduce NOx as a PM10 precursor. About 40% of the required reductions will be achieved by existing programs. These include ARB's low emission vehicle and clean fuel standards, and consumer product controls; several South Coast District rules -- including the NOx and SOx market trading program known by its acronym of "RECLAIM" (the Regional Clean Air Incentives Market); and a modest contribution from city and county ordinances. To achieve the remaining reductions, several new state, federal and local measures are required.

The South Coast attainment strategy relies on control measures which cover the entire range of emission categories. Among these are federal sources which state and local governments are preempted from regulating. Historically, these sources have been controlled to a much lesser degree than those under state or local jurisdiction. In addition, as the degree of control for stationary, area, and mobile sources increases in the outlying years, the contributions from federally preempted sources becomes more significant. The South Coast plan is dependent on U.S. EPA actions to reduce emissions from all federally preempted sources, and where national controls provide the only reasonable or most cost-effective means to achieve the needed emission reductions. Without such actions by U.S. EPA, attainment of the ozone standard is not possible in the Los Angeles basin.

Due to the extensive emission reductions required, and the need for advanced control technologies and techniques to fully mature, the SIP for the South Coast Air Basin must rely on the provisions of section 182(e)(5) of the Clean Air Act. This section, created specifically in recognition of the area's extreme ozone problem, allows for the anticipation of advanced techniques and technologies (see Volumes I and II). Both the ARB's and the District's SIP elements include some measures which are based on the reasonable anticipation of advancements in control technology and techniques that are expected to occur between 2000 and 2010. As required by the Act, none of these measures are needed to satisfy rate-of-progress requirements before 2000.

As indicated above, the South Coast's ozone strategy is a subset of the District's more comprehensive 1994 AQMP. Control measures that are not necessary for federal ozone attainment and/or rate-of-progress requirements will not be included as part of this SIP revision. These measures are identified in the South Coast Board Resolution, 94-37. The local plan is supplemented by ARB's motor vehicle and consumer products plans and the pesticide control plan adopted by the California Department of Pesticide Regulation to provide the emission reductions called for by corresponding measures in the AQMP. The measures from the AQMP submitted as part of the 1994 California SIP are spelled out below.

Table A-1 summarizes the emissions reductions needed to attain the federal ozone standard in the South Coast Air Basin. The Clean Air Act specifies 1990 as the base year, or starting point, for all emission reduction calculations. The carrying capacity is the amount of VOC and NOx that urban airshed modeling (UAM) indicates can be emitted into the air without exceeding the federal ozone standard. The difference between the two is the reduction in emissions needed to attain. South Coast's attainment strategy, summarized in Table A-2 shows how these reductions will be achieved. The first reductions come from existing programs: rules already adopted by the District, ARB and to a lesser degree the U.S. EPA. Additional local, state, and federal measures are proposed to make up the difference.

**Table A-1. Emission Reductions Needed to Attain in the South Coast Air Basin.**

	VOC (tpd)	NOx (tpd)
1990 Baseline Emissions Inventory	1517	1361
Carrying Capacity	323	553
Difference	1194	808

**Table A-2. Attainment Demonstration for South Coast Air Basin.**

	VOC (tpd)	NOx (tpd)
Reductions from Existing Program <sup>1</sup>	463	429
Additional Local Measures <sup>2</sup>	453	43
Additional State Measures <sup>3</sup>	231	227
Additional Federal Measures <sup>4</sup>	47	109
Total	1194	808

<sup>1</sup> Assumes all state and local control measures adopted through January 1994.

<sup>2</sup> Assumes 65 new measures, see Tables A-5 through A-10 at the end of this section.

<sup>3</sup> Assumes all measures in Volumes II and III.

<sup>4</sup> Assumes all U.S. EPA measures specified in Volume II.

In summary, the South Coast's federal ozone attainment plan relies on the following: locally proposed short and interim term measures for stationary and area sources (see Table A-5); locally proposed short and interim term measures for transportation control measures and indirect sources (see Table A-6); ARB measures for mobile sources and consumer products (see Volume II); other state level SIP elements (see Volume III); and several national standards (see Volume II).

### **Rate-of-Progress Calculations:**

Rate-of-progress calculations through the attainment year must be submitted with each area's attainment demonstration. These calculations are to satisfy Clean Air Act requirements for reasonable further progress. The Act requires a 15% reduction in VOC emissions between 1990 and 1996, and 3% annual reductions in VOC thereafter, averaged over 3-year periods. NOx reductions may be substituted for VOC. The target VOC emissions for milestone years are shown in the first line of Table A-3. The second line of Table A-3, indicating the region's performance in meeting each milestone, was calculated by ARB staff. This line includes among other things, the ARB's mobile and consumer product elements of the SIP. (For a full history of ROP revisions, see below.)

**Table A-3. Rate-Of-Progress Calculation for the South Coast Air Basin (tpd).**

	1996	1999	2002	2005	2008	2010
VOC Emissions to Meet ROP Target	1181	1019	890	767	647	568
VOC Emissions with Plan Reductions	1144	951	818	686	530	323

The South Coast's initial rate-of-progress plan, submitted to U.S. EPA in November of last year, showed full compliance with 15% VOC reductions between 1990-1996. However, since several numbers were in flux at that time, the District committed to revisit the 1996 assessment when new projections for vehicle miles traveled (VMT), population growth, and vehicle emissions became available. Subsequently, when the 1996 demonstration was updated, it was demonstrated that the 1996 rate-of-progress reductions for the South Coast Air Basin could be met with previously adopted measures. The final revision to the 1996 rate-of-progress plan was adopted by the District's governing Board on December 9, 1994 and is incorporated by reference herein. The District's documentation and ARB's Executive Order for the 1996 rate-of-progress final revision are being forwarded as a separate SIP revision to supplement the information contained in the November 15, 1994 submittal.

#### **Percentage of Adopted Measures:**

Federal policy guidance on SIP submittals requires that a "high percentage" of the emissions reductions needed for attainment and rate-of-progress demonstrations be in the form of adopted measures. If not, an incompleteness finding may be triggered. As discussed at length in Volume I, California believes the adopted component of the California SIP satisfies this criterion in every region. Table A-4 shows the percentage of South Coast emission reductions attributable to adopted regulations on sources under State or local jurisdiction. These figures include the benefits of all regulations adopted through mid-1994 and California's enhanced vehicle inspection and maintenance program enacted earlier this year (SB 629, Russell, SB 521, Presley, and AB 2018, Katz; all statutes of 1994). The emissions of federally preempted sources (like interstate trucks, smaller non-road engines, marine vessels operating outside the State's coastal waters, and aircraft) are excluded from the calculation, since California is powerless to affect them.

**Table A-4. Percent Adopted Measures South Coast Air Basin.**

<b>Attainment Demonstration</b>	<b>ROG</b>	<b>NOx</b>
Total Reductions Needed from State and Local Measures (tpd)	1171	584
Reductions from Adopted Measures (tpd)	808	566
Percent Reduction from Adopted Measures	75%	97%
<b>Rate of Progress Calculation</b>	<b>VOC/NOx</b>	
Total VOC Reductions Needed (tpd)	851	
Reductions from Adopted Measures (tpd)	808	
Percent Reduction from Adopted Measures	95%	

## Special Issues

### Relationship of South Coast SIP to the FIP:

The California SIP for the South Coast fully replaces the FIP and obviates any need for implementation of the FIP in order to attain federal air quality standards. Furthermore, adoption of statewide SIP elements (see Volumes II and III) and adoption of national emission standards replace all FIP measures included in the AQMP. The specific FIP measures in the local plan which are no longer necessary are:

- FIP-01 Enhanced In-use Compliance Program for Cars & Light/Medium Duty Trucks
- FIP-02 Restrictions on Importation of 49-State Motor Vehicles
- FIP-05 Non-road Vehicles and Engines, On-highway Motorcycles
- FIP-06 National Marine Engines
- FIP-07 National Phase 1 and 2 Non-road Vehicles and Engines
- FIP-08 Military Aircraft Operations
- FIP-09 Enhanced In-use Compliance Program for Non-road Engines over 37kw
- FIP-10 Emission Reductions from Pesticides Application

### Market Incentive Measures:

Market measures are an integral part of the South Coast plan. The baseline emission forecast includes reductions from the District's NOx and SOx RECLAIM program. In addition, the District is developing a comparable program for sources of VOC emissions. Six District

emission reduction credit programs for mobile sources are targeted for market-based incentives. The ARB's motor vehicle plan also includes numerous market based programs. The South Coast plan also lays the ground work for advanced pricing measures that will be submitted as enforceable measures when the necessary legislation is enacted. Three market incentive measures are identified in the South Coast AQMP: MKT-01, Emission/VMT Fee; MKT-02, At-the-Pump Pricing; and MKT-03, Congestion Pricing. No emission reductions are claimed in this SIP submittal for these measures. However, the South Coast Governing Board made specific note of pricing measures in its resolution adopting the plan, and a task force has been established to develop legislative language enabling such measures.

### **VOC Reclaim:**

The primary control approach for the coatings and solvents category is a proposed Regional Clean Air Incentives Market (RECLAIM) measure for VOC emissions. This measure will be similar to the recently adopted RECLAIM program for NO<sub>x</sub> and SO<sub>x</sub>. The South Coast plan contains twelve other VOC control measures that would be partially or fully subsumed under VOC RECLAIM (see Table A-10). These measures will become the primary strategy, and will be adopted and implemented separately, should the VOC RECLAIM program not proceed to completion.

### **Long Term Measures [Section 182(e)(5)]:**

The attainment strategy for the South Coast is reliant on the development of advanced control technologies and techniques as allowed under section 182(e)(5) of the Act. The Clean Air Act anticipates the use of these yet to be developed technologies or yet to be completed analyses, thus, the measures are not yet in fully developed rule form. The state and federal measures specified in Volumes II and several District measures are in this category. The reductions from state and federal advanced technology measures needed for attainment total approximately 122 tons per day of ROG and 118 tons per day of NO<sub>x</sub> in the year 2010. South Coast District long-range measures are specified in Table A-7 and add up to slightly less than 130 tons per day of ROG in 2010.

### **Other SIP Elements**

The 1994 California SIP revision for the South Coast Air Basin includes several elements in addition to the ozone attainment and rate-of-progress demonstrations. Specifically, the SIP revision also contains a list of best available control measures for PM<sub>10</sub>, contingency measures, a showing of increased vehicle occupancy in the region, and modifications to the previously submitted 1992 carbon monoxide plan. Each of the non-ozone elements is described briefly, below.

## **PM10 BACM SIP And Modeling Assessment:**

As previously mentioned, the AQMP is a multi-pollutant plan. The 1994 plan includes a list of best available control measures for PM10 in accordance with Section 189(b)(2) of the Clean Air Act. The South Coast plan also includes a modeling analysis addressing the need for PM10 precursor emission controls necessary to achieve the national PM10 standards. However, because that assessment is not due until February 1997 pursuant to Section 189(b)(2) of the Act, and because of the complexity of the modeling analysis and significant comments received during the local public hearing, the PM10 attainment demonstration was not adopted as a SIP element by the District's Governing Board, and was not forwarded to U.S. EPA at this time.

## **Contingency Measures:**

Table A-8 and A-9 list the contingency measures included in the South Coast plan. These were forwarded to U.S. EPA as part of the 1994 ozone SIP revision. Section 182(c)(9) of the Clean Air Act requires that the plan include contingency measures in the event that the area does not achieve applicable milestones, and to submit such measures with the 1994 ozone attainment demonstration. As shown in Tables A-8 and A-9, a total of eleven contingency measures have been identified. These are categorized in two groups: Stage I, or early implementation measures, and Stage II, measures which are not feasible at this time.

## **Average Vehicle Occupancy Requirements (AVO):**

Section 182(d)(1)(B) of the Clean Air Act requires the South Coast to develop an employer trip reduction program that achieves a 25% increase in regional AVO within four years. The program itself had to be submitted no later than November 1992 (and was). Now, a "convincing demonstration" is required that the regional AVO target has been achieved. With the assistance of an outside contractor, the South Coast has reviewed the performance of its trip reduction regulations and has demonstrated compliance with Clean Air Act requirements. Specifically, the District's analysis indicates a regional AVO of 1.52 during commute hours, which represents a 31% increase over the baseline year.

## **Revision to the 1992 Carbon Monoxide (CO) Plan:**

The 1994 plan includes a revision to South Coast's 1992 carbon monoxide plan. In the original CO plan, a committal was made to revise the plan when updates to the vehicle miles traveled and emission estimates were completed. Based on the updated emissions inventory and several revised modeling inputs, the CO control strategy was reassessed as reflected in this SIP revision. Additionally, this SIP revises the contingency measures included in the original CO plan in response to U.S. EPA's January 1993, finding that these measures were not in fully adopted form.

## Board Action

On November 15, 1994, the Board approved the local control measures in the South Coast federal ozone attainment strategy for inclusion in the 1994 California SIP. With respect to mobile strategies and other state-level SIP elements, the South Coast Governing Board recognized that other state agencies had primary responsibility and would achieve the necessary emission reductions. The combination of state, federal and local measures described in Volumes II, III and this Chapter satisfies all applicable requirements.

**Table A-5. Proposed Local Control Measures Stationary and Area Source Measures.**

Rule Number	Title
CTS-02	Emission Reductions Solvents/Coatings at Non-RECLAIM
CTS-02P	Emission Reductions Solvents/Coatings at Non-RECLAIM
CTS-02T	Emission Reductions Solvents/Coatings at Non-RECLAIM
CTS-03	Consumer Product Education Labeling Program
CTS-04	Public Awareness/Education Programs Area Sources
CTS-05	Further Reductions from Perchloroethylene Dry Cleaners
CTS-07	Further Reductions from Architectural Coatings
FUG-01	Emission Reduction from Organic Liquid Transfer
FUG-02	Emission Reduction from Active Draining of Liquid Products
FUG-03	Further Reduction from Floating Roof Tanks
FUG-04	Further Reduction from Fugitive Emissions
RFL-01	Emission Reduction from Utility Engine Refueling Operations
RFL-02	Further Reductions from Gasoline Dispensing Facilities
RFL-03	Emission Reductions from Pleasure Boat Fueling Operations



<b>Rule Number</b>	<b>Title</b>
CMB-03	Area Source Credits for Commercial & Residential Comb. Equip.
CMB-04	Area Source Credits for Energy Conservation
CMB-05	Clean Stationary Fuels
CMB-07	Emission Reductions from Petroleum Refinery Flares
MSC-01	Promotion of Lighter Color Roof & Road Mat. & Tree Planting
MSC-02	In-Use Compliance Program for Air Pollution Control Equipment
PRC-02	Further Emission Reductions from Bakeries
PRC-03	Emission Reductions from Restaurant Operations
PRC-04	Emission Reductions from Rubber Products Manufacturing
PRC-05	Reductions from Malt Beverage Production Facilities & Wine/Brand Facilities
SIP-01	SIP Amendments - for Miscellaneous Sources
WST-01	Emission Reductions from Livestock Waste
WST-02	Reductions from Composing of Dewatered Sewage Sludge
WST-03	Waste Burning
WST-04	Disposal of Materials Containing VOC
CMB-01F	Further Emission Reduction from Internal Combustion Engines
CMB-02F	Further Controls of Emissions from Internal Combustion Engines
BA-09	ODC Adjustments (Ozone Depleting Compound Adjustments)

**Table A-6. Proposed Local Control Measures Transportation/Indirect Source and Mobile Source Measures.**

<b>Measure</b>	
<b>Transportation/Indirect Sources Measures</b>	
<b>Rule Number</b>	<b>Title</b>
ISR-01	Special Event Centers
ISR-02	Regional Shopping Centers
ISR-03	Registration and Commercial Vehicles
ISR-04	Airport Ground Access
ISR-05	Trip Reduction for Schools
ISR-06	Enhanced Rule 1501 (Trip Reduction Employers)
ISR-07	Parking Cash-Out
TCM-01	Transportation Improvements
<b>On-Road Mobile Source Measures</b>	
MON-01	Credits Low Emission New Fleet Vehicles
MON-02	Eliminate Excessive Car Dealership Vehicle Starts
MON-04	Eliminate Excessive Curb Idling
MON-05	Emission Reduction Credit for Heavy Duty Buses
MON-06	Emission Reduction Credit for Heavy Duty Trucks
RME-01	Regional Mobility Adjustment
<b>Off-Road Mobile Source Measures</b>	

Measure	
MOF-03	Emission Reduction Credits for Leaf Blowers
MOF-04	Off-Road Mobile Source Emission Credit Program

**Table A-7. Proposed Local Control Measures Advanced Technology and Market Incentive Measures.**

Measure	
<b>Advanced Transportation Technology Measures</b>	
Rule Number	Title
ATT-01	Telecommunications
ATT-02	Advanced Shuttle Transit
ATT-03	Zero Emission Vehicles/Infrastructure
ATT-04	Alternative Fuel Vehicles/Infrastructure
ATT-05	Intelligent Vehicle Highway Systems
<b>Market Incentive Measures</b>	
Rule Number	Title
MKT-01	Emission/VMT
MKT-02	At-the-Pump Fee
MKT-03	Congestion Pricing
<b>Further Studies Measures</b>	
Rule Number	Title
FSS-04	Stage I Episode Plans

<b>Measure</b>	
<b>Long-Term Measures [Section 182(e)(5)]</b>	
Rule Number	Title
ADV-CTS	ADV-Tech-CTS (Coating Technologies)
ADV-FUG	Advanced Tech-Fug (Fugitive Emission Controls)
ADV-PRC	Advance Tech-PRC (Process Related Emissions/Stationary)
ADV-UNSP	Advance Tech-(Unspecified - Stationary Sources)
ADV-CTI	Advance Tech-CTS-02 (Long Term)

**Table A-8. Stage I - Contingency Control Measures.**

<b>Measure</b>	<b>Title (Responsible Agency)</b>
CTY-1	Accelerated implementation of Control Measures (District)
CTY-2	Command and Control Rules in Place of Education Outreach Program Measures (District)
CTY-3	Market Incentives Backstop Rule (District)
CTY-4	Enhanced Oxygenated Fuel Content For CO (ARB)
CTY-5	Accelerated Fleet Turnover Requirements (District)
CTY-6	Parking Cash-Out for Employers Having 25 or More Employees
CTY-7	Stringent Emission Limits for Goods, Movement Activities (aircraft, rail, and marine vessels)(EPA)
CTY-8	New Development (District) CTY-9 General Development (District)

**Table A-9. Stage II - Contingency Control Measures.**

<b>Measure</b>	<b>Title (Responsible Agency)</b>
CTY-10	Emission Charges of \$5,000 Per Ton of ROG for Stationary Sources Emitting Over 10 Tons Per Year (District)
CTY-11	Aerodynamic Devices for Trucks (ARB)

**Table A-10. Potential Substitute Measures for VOC RECLAIM.**

<b>Measure</b>	<b>Description</b>
CTS-A	Emission Reductions from Electronic Components Manufacturing
CTS-B	Emission Reductions from Petroleum Cold Cleaning
CTS-C	Further Emission Reductions From Solvent Cleaning Operations (Rule 1171)
CTS-D	Further Emission Reductions from Marine and Pleasure Craft Coating Operations (Rule 1106 and 1106.1)
CTS-E	Further Emission Reductions from Adhesives (Rule 1168)
CTS-F	Further Emission Reductions from Motor Vehicle and Mobile Equipment Non-Assembly Line Coating Operations (Rule 1151)
CTS-G	Further Emission Reductions for Paper, Fabric and Film Coating Operations (Rule 1128)
CTS-H	Further Emission Reductions from Metal Parts and Products (Rule 1107)
CTS-I	Further Emission Reductions from Screen Printing Operations (Rule 1130.1)
CTS-J	Further Emission Reductions from Wood Products (Rule 1136)
CTS-K	Further Emission Reductions from Aerospace Assembly and Component Manufacturing Operations (Rule 1124)
CTS-L	Emission Reductions from Automotive Assembly

## B. Southeast Desert Air Basin (La/Riverside Counties)

### Nature of the Regional Ozone Problem

Ozone concentrations in the Antelope Valley (Los Angeles County) and Coachella-San Jacinto Planning Area (Riverside County) exceeded the federal ozone standard on 14 and 23 days respectively in calendar year 1993. Both areas are included in the Southeast Desert modified air quality management area and are under the jurisdiction of the South Coast Air Quality Management District. Peak ozone concentrations in this region resulted in the classification of "severe-17" under the Clean Air Act.

The ozone pollution for both areas is primarily caused by emissions of precursors being transported from highly populated areas of the South Coast Air Basin many miles upwind. For the Antelope Valley, ozone-rich air masses are transported along a route northward through the Newhall and Soledad pass into the Antelope Valley. In the Coachella-San Jacinto area, the prevailing sea breeze transports pollutants through San Gorgonio pass (also known as Banning pass).

The 1990 emissions inventory in the Antelope Valley amounts to 35 tons per day for VOC and 28 tons per day for NO<sub>x</sub>. Of the VOC inventory, approximately 45% is from stationary sources, while 55% is attributed to mobile sources. Of the NO<sub>x</sub> inventory, only 7% is associated with stationary sources, and 93% is from mobile sources.

For the Coachella-San Jacinto planning area, the 1990 emissions inventory amounts to 49 tons per day for VOC and 44 tons per day for NO<sub>x</sub>. Of the VOC inventory, approximately 25% of the emissions are associated with stationary sources, while 75% are attributed to mobile sources. Of the NO<sub>x</sub> inventory, only 7% are associated with stationary sources, while 93% are attributed to mobile sources.

### Status of the Local Plan:

On September 9, 1994, the South Coast District's Governing Board approved a comprehensive, multi-pollutant plan, containing a distinct subset of the District's ozone strategy that demonstrates attainment of the national ozone standard for the desert regions. The adopted plans were submitted to the ARB and are incorporated by reference herein. On December 9, 1994, the District's governing Board approved additional revisions to the 1996 rate-of-progress demonstration

### Summary of Regional Attainment Strategy

#### Overview:

As mentioned earlier, scientific evidence and ozone trends strongly suggest that ozone exceedances in both areas are the result of South Coast Air Basin precursor emissions and

that local control of VOC and NO<sub>x</sub> emissions will have minimal effect. Improved regional ozone air quality will only result with improved conditions upwind, as confirmed by the attainment demonstration submitted for the South Coast Air Basin (see South Coast AQMP Appendices I-A and I-B). The control strategy adopted for both southeast desert areas is based on emissions reductions anticipated from state and federal actions, principally in the areas of on- and off-road sources. Additionally, new measures for consumer products and pesticides will benefit both areas.

### **Rate-of-Progress Calculations:**

Rate-of-progress calculations for 1996 through the attainment year must be submitted with each attainment demonstration. These calculations are to satisfy Clean Air Act requirements for reasonable further progress. The Act requires a 3% reduction in VOC emissions per year averaged over 3-year periods. NO<sub>x</sub> reductions may be substituted for VOC.

The first rate-of-progress plans, due on November 15, 1993, showed the required 15% reduction from 1990 to 1996. A revision to the 1996 rate-of-progress plan was adopted by the District's governing Board on December 9, 1994 and is being forwarded separately to U.S. EPA. Tables B-1 and B-2 summarize the 1996 rate-of-progress demonstration for the Coachella-San Jacinto Planning Area and Antelope Valley. The VOC emission target shows where emissions must be in that year. Next, the table shows the VOC emissions level that will result with the reductions in the plan.

Based upon the revisions to the inventories for the Antelope Valley and Coachella-San Jacinto planning areas and a reassessment of the control strategies, the desert portion of the South Coast District will meet the 15% rate-of-progress requirements by utilizing previously adopted measures, plus the reductions attributed to the new enhanced inspection and maintenance program. However, the District cannot meet the post-1996 rate-of-progress requirements for either the Antelope Valley or the Coachella-Jan Jacinto planning areas. The inability to meet the post-1996 milestone targets in both areas is primarily caused by high projected growth rates. The District is requesting a waiver from these requirements under sections 182(C)(2)(B)(ii) of the Clean Air Act. These areas meet the Act's waiver criteria by having requirements equivalent for the next higher ozone classification. This includes satisfying the extreme area requirements for new source review, Title V, reasonably available control technology for major sources, all measures achieved in practice in extreme areas, and all feasible and technologically achievable measures. Staff believe that these areas also qualify for a waiver based on the overwhelming impact of transport in the Southeast Desert (see discussion in Chapter C, concerning the Mojave Desert).

**Table B-1. Rate-Of-Progress Calculation Coachella-San Jacinto Planning Area (tpd).**

	1996
VOC Emissions to Meet ROP Target	38
VOC Emissions with Plan Reductions	38

**Table B-2. Rate-Of-Progress Calculation Antelope Valley (tpd).**

	1996
VOC Emissions to Meet ROP Target	29
VOC Emissions with Plan Reductions	29

### Percentage of Adopted Measures:

U.S. EPA policy guidance indicates that a "high percentage" of the reductions needed for attainment and rate-of-progress demonstrations should be in the form of adopted measures. If not, an incompleteness finding may be triggered. This criterion applies to both ROG and NOx reductions. In the Southeast Desert, the attainment strategy is heavily reliant on emission reductions in the South Coast Air Basin. That District's plan clearly satisfies the "high percentage" criterion as shown in Chapter A, Table A-4.

### Board Action

The Board approved the ozone attainment strategy as contained in the South Coast plan. The Board authorized the Executive Officer to approve revisions to the Rate-of-Progress Plan, and to submit the revised plan as a SIP revision upon local adoption. The Board directed the Executive Officer to request a waiver from the post-1996 rate-of-progress requirements for this area. This request has been made as a separate submittal.

## C. Southeast Desert Air Basin (Mojave Desert)

### Nature of the Regional Ozone Problem

The Southeast Desert Modified Air Quality Maintenance Area is classified as "severe-17" under the Clean Air Act, due to ozone concentrations which exceed 19 pphm at several desert monitoring stations. Ozone pollution in the Southeast Desert is overwhelmingly dominated by transport from the South Coast Air Basin. In 1992, the federal ozone standard was exceeded on 75 days. In the Mojave Desert portion of this planning area, the 1990



emission inventory was 46 tons of VOC and 114 tons of NOx. The Mojave Desert's VOC emissions are 57% mobile, and 43% stationary and area sources. The breakdown is similar on the NOx side: 55% mobile and 45% stationary and area sources.

## **Status of the Local Plan**

The Mojave Desert AQMD's Attainment Demonstration and Post-1996 Reasonable Further Progress Plan were released for review on September 23, 1994. The District's Technical Advisory Committee considered the plan on October 13, 1994, and it was adopted by the District's governing board on October 26, 1994.

## **Summary of Attainment Strategy**

### **Overview:**

The attainment strategy for the entire Southeast Desert reflects the impact of transport on the region. The domain for the South Coast's urban airshed model extends into the Southeast Desert and was used to demonstrate attainment. The model incorporates substantial reductions to be achieved in the South Coast Air Basin, based on that area's attainment plan. In addition, the model anticipated the effectiveness of statewide measures in the Southeast Desert, and incorporated measures to be adopted by the Mojave Desert District. The emission reductions occurring directly within Mojave Desert come from a combination of state, federal, and district measures. The preliminary modeling analysis indicates that the Southeast Desert will attain the national ozone standard by 2007, the statutory deadline. Now that the statewide plan for mobile sources, consumer products, and pesticides is finalized, the modeling will be redone to confirm the Southeast Desert's attainment demonstration.

### **Rate-of-Progress Calculations:**

Rate-of-progress calculations for 1996 and every third year through attainment year are supposed to be submitted with each attainment demonstration. These calculations are to satisfy Clean Air Act requirements for reasonable further progress. More specifically, the Act requires a 15% reduction in VOC emissions from 1990 to 1996, and 3% reductions per year thereafter, averaged over 3-year periods. NOx reductions may be substituted for VOC.

Because the Southeast Desert is overwhelmed by transported air pollution and is, in effect, dependent upon the South Coast's attainment plan, ARB staff believes that rate-of-progress requirements should not be strictly applied to the Desert itself. Accordingly, the waiver from the post-1996 rate-of-progress requirements for the Mojave Desert portion of the federal planning area is appropriate.

As stated above, modeling simulations for the South Coast/Southeast Desert domain indicate that the Desert will attain, primarily from aggressive VOC and NOx controls in the South Coast Air Basin, by the year 2007. Emission reductions in the Desert will improve local ozone to some degree, but are not the primary focus of the attainment strategy.

The federal rate-of-progress requirements were established to assure steady improvements in air quality and sufficient annual progress toward attainment. For the Mojave Desert District, these improvements will be met, principally, through emission reductions in the South Coast Air Basin -- a region that fully complies with the rate-of-progress requirements.

### Special Issues

**Inappropriate Classification:** As mentioned above, the Mojave District's nonattainment problem is a result of transport from the South Coast Air Basin. ARB's transport analyses in 1989, 1990 and 1991, indicate that the maximum, locally-generated ozone concentrations (0.11 ppm) in Mojave Desert are less than the federal standard. However, because the federal Clean Air Act does not consider transport in establishing classifications, the Southeast Desert is classified as a "severe-17" nonattainment area. This results in additional requirements for the District, including employer-based trip reduction, higher offset thresholds, and greater emission reductions in its 1994 attainment plan. Such measures will not accelerate the attainment date for ozone, and are inappropriate to a sparsely populated area so heavily impacted by transported emissions. **Corrections to Prior SIP Submittals:** In addition to providing an attainment demonstration and a request for waiver from the post-1996 rate-of-progress requirements, the final SIP submittal for the Mojave District updated the 15% rate-of-progress plan submitted earlier this year (section 182(b)(1)). Based on revised emissions inventory data, the control strategy to meet the 1996 milestone target was amended. The revised control strategy deleted two proposed mobile source measures and relies more heavily on reductions achieved from California's motor vehicle control program. The revised calculations are depicted in Table C-1.

**Table C-1. Rate-Of-Progress Calculation Mojave Desert (tpd).**

	<b>1996</b>
VOC Emissions to Meet ROP Target	36
VOC Emissions with Plan Reductions	38
NOx Substitution	2

## Relationship of Mojave Desert SIP to the FIP:

The Mojave Desert District attempted to integrate its plan with the FIP by incorporating emission reductions from statewide measures contained in U.S. EPA's proposal. However, with the adoption of the statewide SIP element, the reductions from FIP measures are no longer necessary. The California SIP supplies most of the emission reductions attributed to the FIP by Mojave Desert. Because of the heavy reliance on emission reductions in the South Coast Air Basin for attainment purposes, elimination of the FIP reductions does not endanger Mojave Desert's attainment demonstration. Table C-2 shows the specific FIP measures in the local plan which are no longer necessary.

**Table C-2. FIP Measures Included in the Mojave Desert Plan.**

<b>Mobile Source Measures</b>
On-Road Heavy Duty Diesel Exhaust Standards
Utility Engine Standards
Lawn and garden Equipment Standards
Aquatic Pleasure Craft
<b>Areas Source Measure</b>
Pesticides

## Board Action

The Board approved Mojave's revised 15% Rate-of-Progress Plan, and attainment demonstration, allowing for their inclusion into the 1994 California SIP. Additionally, the Board requested a waiver for the Post-1996 Rate-of-Progress requirements based on overwhelming transport from the South Coast Air Basin.

## D. Sacramento Metropolitan Area

### Nature of the Regional Ozone Problem

The Sacramento region is classified as a "serious" ozone nonattainment area. While the number of days over the standard has decreased in recent years, the region continues to experience ozone episodes with peaks of 0.15 ppm.

The 1990 emission inventory for the Sacramento region is approximately 222 tons per day of ROG and 164 tons per day of NOx. Mobile sources account for about 60% of the 1990 ROG inventory and about 90% of the 1990 NOx inventory. The remainder of each is comprised of stationary and area emission sources.

### **Status of Local Plans:**

The Sacramento nonattainment area consists of five separate air pollution control districts: El Dorado, Feather River, Placer, Sacramento Metropolitan, and Yolo-Solano. The five districts and the Sacramento Area Council of Governments (SACOG) worked together to develop the required regional ozone attainment plan. The governing boards of each district had to adopt the regional plan before it could be submitted to U.S. EPA. The proposed regional plan was released for public review on October 4, 1994 and revised on October 19, 1994. Public workshops were conducted during the month of October. Each district board then held its own public hearing and approved the regional plan between November 3, 1994 and December 20, 1994. Because of this schedule, the ARB submitted the draft regional plan to the U.S. EPA on November 15, 1994, and requested U.S. EPA to review the plan in parallel with the district adoption process. The final regional plan is being submitted under separate cover and is incorporated by reference herein.

## **Summary of Attainment Strategy**

### **Overview:**

The Sacramento area is a fast growing region in which the emissions inventory has been traditionally dominated by mobile sources -- particularly the NOx inventory. The population in the region is expected to continue to grow at an overall rate of about 2% per year. Emission reductions from existing programs will not be sufficient to bring the area into attainment, so the regional plan includes new federal, state, and local measures.

The regional attainment strategy requires reductions of about 38% ROG and 40% NOx from the 1990 baseline emissions. The strategy emphasizes NOx reductions to the extent possible because modeling results indicate that NOx reductions are more effective in reducing ambient ozone concentrations, on a tonnage basis. The calculation of the emissions level that must be reached is based on photochemical modeling of the region performed by ARB. The attainment strategy for the Sacramento region relies heavily on mobile source NOx reductions. The region's NOx inventory is about 90% mobile source, and additional reductions from mobile sources are critical for attainment. At the same time, new ROG controls are proposed for source categories such as consumer products, solvents, and coatings, as well as from mobile sources. Emissions from stationary sources are projected to continue increasing while mobile ROG emissions show a steady decline as a result of existing programs. The Sacramento area plan proposes a bump-up in classification from "serious" to "severe," which allows the region to design a strategy that attains by 2005. Although every

effort was made to show attainment by the serious area deadline of 1999, no feasible control strategy could be identified to meet that timeframe. The full benefits of new state and federal measures, which are dependent on vehicle turnover, will not be realized by 1999. Because of this, extraordinary local measures would have to be imposed in the Sacramento region to meet a 1999 deadline. These measures would cause severe disruptions to the regional economy and were therefore deemed infeasible.

To meet the 2005 attainment date, the Sacramento area relies on a combination of new federal, state, and local measures. The state and federal measures are key to the attainment demonstration because they are the foundation for the region's local mobile source NOx programs. New state and federal emissions standards for heavy duty vehicles and off-road engines will provide a portion of the reductions needed by 2005; however, local fleet programs must fill the emission reduction gap. Table D-1 below summarizes emission reductions needed to attain the federal ozone standard in the Sacramento Metropolitan Area. The Clean Air Act specifies 1990 as the base year or starting point for all emission reduction calculations. The carrying capacity is the amount of ROG and NOx that Urban Airshed Modeling (UAM) indicates can be emitted into the air while still keeping the region's air under the federal ozone standard. The difference between the two is the reduction in emissions needed to attain the federal ozone standard.

**Table D-1. Reductions Needed to Attain in the Sacramento Metropolitan Area.**

	ROG (tpd)	NOx (tpd)
1990 Baseline Emissions Inventory	222	164
Carrying Capacity 137 98	85	66
Difference		

The attainment strategy, summarized in Table D-2, shows how these reductions will be achieved. The first reductions are from the existing program -- the rules already adopted by districts, ARB, and to a much lesser degree, the U.S. EPA. Additional local, state, and federal measures will make up the remaining reductions needed for attainment.

**Table D-2. Attainment Demonstration for the Sacramento Metropolitan Area.**

	ROG (tpd)	NOx (tpd)
Reductions from Existing Program <sup>v</sup>	55	40
Additional Local Measures <sup>vi</sup>	17	7
Additional State Measures <sup>vii</sup>	15	14
Additional Federal Measures <sup>viii</sup>	3	5
Total	90	6

<sup>v</sup> Assumes all state and local control measures adopted through January 1994.

<sup>vi</sup> Assumes 27 stationary and area measures, see Tables D-5 and D-6 at the end of this section, in addition to the regional mobile source programs for on- and off-road vehicles.

<sup>vii</sup> Assumes creditable mobile source, consumer product, and DPR pesticide elements that will be implemented by 2005; see Volumes II and III.

<sup>viii</sup> Assumes all creditable U.S. EPA measures that will be implemented by 2005, see Volume II.

### Rate-of-Progress Calculations:

Rate-of-progress calculations for 1996 through the attainment year must be submitted with the Sacramento area's regional attainment demonstration. These calculations are to satisfy Clean Air Act requirements for reasonable further progress. The Act requires a 3% reduction in VOC emissions per year, averaged over 3-year periods. NOx reductions may be substituted for VOC. In this case, NOx reductions are converted to "VOC-Equivalents" and substituted on a ton for ton basis. The emission target for each milestone year is shown in Table D-3.

**Table D-3. Rate-Of-Progress Calculations for the Sacramento Metropolitan Area (tpd).**

	1996	1999	2002	2005
VOC Emissions to Meet ROP Target	162	142	124	107

	1996	1999	2002	2005
VOC Emissions with Plan Reductions	175	148	140	125 <sup>ix</sup>
NOx Substitution (VOC-Equivalents)	13	6	16	38

### Percentage of Adopted Measures:

Federal policy guidance on SIP submittals requires that a "high percentage" of the emissions reductions needed for attainment and rate-of-progress demonstrations be in the form of adopted measures. If not, an incompleteness finding may be triggered. As discussed at length in Volume I, California believes the adopted component of the SIP for the Sacramento region satisfies this criterion. Table D-4 shows the percentage of emission reductions attributable to adopted regulations on sources under State or local jurisdiction. These figures include the benefits of all regulations adopted through mid-1994 and California's enhanced vehicle inspection and maintenance program enacted earlier this year (SB 629, Russell, SB 521, Presley, and AB 2018, Katz; all statutes of 1994). The emissions of federally preempted sources (like interstate trucks, smaller non-road engines, marine vessels operating outside the State's coastal waters, and aircraft) are excluded from the calculation, since California is powerless to affect them.

**Table D-4. Percent Adopted Measures in the Sacramento Metropolitan Area.**

<b>Attainment Demonstration</b>	<b>ROG</b>	<b>NOx</b>
Total Reductions Needed from State/Local Measures (tpd)	80	49
Reductions from Adopted Measures (tpd)	60	46
Percent Reduction from Adopted Measures	75%	94%

<b>2005 Rate-of-Progress Calculation</b>	<b>VOC/NOx</b>
Total VOC Reductions Needed from State/Local Measures (tpd)	98
VOC Reductions from Adopted Measures (tpd)	53

2005 Rate-of-Progress Calculation	VOC/NO <sub>x</sub>
NO <sub>x</sub> Substitution from Adopted Measures (VOC-Equivalent tpd)	38
Percent Reduction from Adopted Measures	93%

## Special Issues

### Relationship of Sacramento Area SIP to the FIP:

The Sacramento Area ozone attainment plan is intended to completely replace the FIP. The plan provides an attainment demonstration based on a combination of federal, state, and local measures. The attainment strategy does not rely on FIP measures, rather it builds on anticipated national standards for sources under federal jurisdiction. Upon approval of the SIP by U.S. EPA, the FIP for the Sacramento region can be rescinded.

### Bump-Up from Serious to Severe:

The Sacramento regional plan is based on a 2005 attainment demonstration. This necessitates a bump-up from the serious area classification to severe. The U.S. EPA Administrator is required to grant requests for voluntary reclassifications under Clean Air Act section 181(b)(3), so that sanctions and other harsh penalties may be avoided. As discussed above, no reasonable alternative could be identified to this approach. The 1999 attainment date could not be met without imposing extraordinary and economically disastrous measures.

As a severe area, the Sacramento region will be required to comply with additional Clean Air Act requirements. These include revisions to district new source review rules and the establishment of employer trip reduction programs. Also, it is anticipated that the existing permits for several industrial sources will need to be modified to satisfy the requirements of Title V of the federal Act. To alleviate the permitting impacts, the plan provides for the creation of a community bank. Extra reductions to fund the community bank are included in the regional attainment demonstration. With respect to trip reduction rules, the region should be able to meet that requirement within the next eighteen months. Districts have been developing trip reduction rules for some time, with a heavy emphasis on employer and employee flexibility. It is anticipated that these rules will meet the federal requirement.

### Contingency Measures:

The regional plan uses an episodic control strategy (with seasonal components) to meet the contingency measure requirements. The primary strategy is improved compliance with



vehicle speed limits, through public education and enhanced speed limit enforcement. This strategy, if triggered, would be focused in the urban area of the nonattainment region.

## Board Action

The Board approved the proposed Sacramento Area Regional Ozone Attainment Plan and directed staff to forward the plan to U.S. EPA following approval by all of the local district boards. The final plan is being submitted under separate cover.

**Table D-5. Proposed Local Control Measures Sacramento Metropolitan Area. District ROG Measures.**

ROG Measure	Affected District(s)	Adoption Date
Architectural Coatings	Yolo-Solano, Placer	March 1995
Adhesives	Sacramento, Placer	March 1995
Surface Prep & Clean Up	Sacramento, Placer, El Dorado	March 1995
Auto Refinishing Operations	Sacramento, Placer	March 1995
Wood Products Coatings	All	March 1995
Landfill Gas Control	All	March 1995
Fugitive Hydrocarbons	Sacramento, Placer, El Dorado	March 1995
Polyester Resin Operations	El Dorado	November 1996
Semiconductor Manufacturing	Placer	March 1995
Flatwood Paneling	Placer	March 1995
Graphic Arts	Placer	March 1995
Charbroilers	Sacramento	August 1995
Industrial Wastewater	Sacramento	March 1995
SOCMI Distillation & Reactors	Sacramento	November 1996

ROG Measure	Affected District(s)	Adoption Date
Underground Storage Tanks	Sacramento	November 1995
Pleasure Craft Coating	Yolo-Solano	April 1995
Gas Transfer/Motor Vehicles	Yolo-Solano	February 1995
Can Coating	Placer	March 1995
Metal Parts and Coating	El Dorado	December 1995
Pleasure Craft Fuel Transfer	Sacramento, Placer, Yolo-Solano, El Dorado	March 1997
Soil Remediation/Stripping	Yolo-Solano	May 1995

**Table D-6. Proposed Local Control Measures Sacramento Metropolitan Area. District NOx Measures.**

NOx Measure	Affected Districts	Adoption Date
Mobile Measures (on & off-road)	All	December 1995
Gas Turbines	Sacramento	November 1994
IC Engines	Sacramento, Placer, El Dorado	February 1995
Boilers & Steam Generators	Sacramento, Placer, El Dorado	December 1994
Residential Water Heaters	All	September 1995
Woodwaste Boilers	Placer	September 1995

## E. Ventura County

### Nature of the Local Ozone Problem

In recent years Ventura County has experienced an average of 11 days per year over the federal ozone standard. This represents significant air quality improvement over the last

decade. In the 1980s, the County averaged 55 days per year over the standard. The 1990 baseline emission inventory in the County amounts to about 87 tons per day for ROG and 81 tons per day for NO<sub>x</sub>. Of the ROG inventory approximately 52% is from stationary sources and 48% from mobile. For NO<sub>x</sub>, only 22% is from stationary sources, with the remaining 78% coming from mobile sources.

## Status of Local Plan

Ventura County's draft 1994 plan was released for public review on September 22, 1994. The plan was adopted by the Ventura County Air Pollution Control Board on November 8, 1994. The Ventura air district has been working with the regulated community, the public, and the other local agencies for over two years in the development of its plan, with the assistance of a special task force.

## Summary of Attainment Strategy

### Overview:

Ventura's proposed attainment strategy relies on numerous existing, already-adopted District, ARB, and U.S. EPA regulations, fifteen additional District measures (see Table E-6), six measures drawn from the draft Federal Implementation Plan for Ventura County (see Table E-5), and a centralized vehicle inspection and maintenance program. With this strategy, Ventura was able to show attainment at all monitoring sites by 2005 with roughly a 50% reduction in both ROG and NO<sub>x</sub> emissions (as compared to the 1990 baseline). Table E-1 summarizes emissions reductions needed to attain the federal ozone standard in Ventura. The Clean Air Act specifies 1990 as the base year or starting point for all emission reduction calculations. The carrying capacity is the amount of VOC and NO<sub>x</sub> that Urban Airshed Modeling (UAM) indicates can be emitted into the air while still keeping the region's air under the federal ozone standard. The difference between the two is the reduction in emissions needed to attain the federal ozone standard. Ventura's attainment strategy, summarized in Table E-2, shows how these reductions will be achieved. The first reductions are from rules already adopted by the District, ARB and, to a much lesser degree, U.S. EPA. Additional future local, state, and federal measures are to deliver the remaining reductions needed for attainment.

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<sup>ix</sup> Although additional reductions from VOC committals were available to meet ROP requirements, the plan preferentially substituted all available NO<sub>x</sub> reductions from adopted measures first.

### **Table E-1. Emission Reductions Needed to Attain in Ventura County.**

	ROG (tpd)	NOx (tpd)
1990 Baseline Emissions Inventory	87	81
Carrying Capacity	45	40
Difference	42	41

**Table E-2. Attainment Demonstration for Ventura County**

	ROG (tpd)	NOx (tpd)
Reductions from Existing Program <sup>x</sup>	30	24
Additional Local Measures <sup>xi</sup>	5	1
Additional State Measures <sup>xii</sup>	6	4
Additional Federal Measures <sup>xiii</sup>	1	13
TOTAL	42	42

### Rate-of-Progress Calculations:

Rate-of-progress calculations for 1996 and every third year through attainment must be submitted with Ventura's attainment plan. These calculations are to satisfy Clean Air Act requirements for reasonable further progress. The Act requires a 3% reduction in VOC emissions per year, averaged over 3-year periods. NOx reductions may be substituted for VOC. The emissions target for each milestone year is shown in Table E-3.

**Table E- 3. Rate-Of-Progress Calculation for Ventura County (tpd)**

	1996	1999	2002	2005
VOC Emissions to Meet ROP Target	69	60	53	46
VOC Emissions with Plan Reductions	64	61	58	56

	1996	1999	2002	2005
NOx Substitution	NA	1	5	10

**Percentage of Adopted Measures:**

Federal policy guidance on SIP submittals indicates that a "high percentage" of the emission reductions needed for attainment and rate-of progress demonstrations should be in the form of adopted measures. If not, an incompleteness finding may be triggered. As discussed at length in Volume I, ARB believes the adopted components of the SIP will satisfy this condition for all regions. Table E-4 shows the percentage of emission reductions attributable to adopted regulations on Ventura emission sources under State or local jurisdiction. These figures include the benefits of all regulations adopted through mid-1994 and California's enhanced vehicle inspection and maintenance program enacted earlier this year (SB 629, Russell, SB 521, Presley, and AB 2018, Katz; all statutes of 1994). The emissions of federal preempted sources (like interstate trucks, smaller non-road engines, marine vessels operating outside the State's coastal waters, and aircraft) are excluded from these calculations, since California is powerless to affect them.

**Table E-4. Percent Adopted Measures for Ventura County**

<b>Attainment Demonstration</b>	<b>ROG</b>	<b>NOx</b>
Total Reductions Needed from State/Local Measures (tpd)	40	32
Reductions from Adopted Measures (tpd)	32	25
Percent Reduction from Adopted Measures	80%	78%

<b>2005 Rate-of-Progress Calculation</b>	<b>VOC/NOx</b>
Total VOC Reductions Needed from State/Local Measures (tpd)	39
VOC Reductions from Adopted Measures (tpd)	32
NOx Substitution from Adopted Measures (VOC-Equivalent tpd)	10
Percent Reduction from Adopted Measures	100%

## Special Issues

Fully Centralized I/M: The District plan included reductions from a fully centralized enhanced I/M program, as opposed to California's negotiated hybrid program currently being implemented by the California Bureau of Automotive Repair. The District estimates that a fully centralized program would achieve slightly more control than the adopted program by 2005. As discussed in Volume III, this measure could not be forwarded to the U.S. EPA as a SIP revision, because there is no legal authority in state law to carry it out. At the November 15, 1994 hearing the Board replaced the additional reductions assumed by the District with reductions from the statewide SIP element. This includes ARB's mobile source and consumer product measures not anticipated in Ventura County's plan.

### Relationship of Ventura SIP to the FIP:

Ventura County attempted to integrate its plan with the FIP, assuming that substantial portions of the FIP would be promulgated. Ventura substituted local stationary source rules of its own, set a few of the most controversial FIP measures aside (e.g., the 1.5 gm/bhp-hr NOx standard for heavy-duty trucks in 1999, various fees, and the stationary source cap rules), and incorporated half a dozen FIP measures (see Table E-5). At the November 15, 1994 Board hearing the local plan was made consistent with the final, state-level measures set forth in Volumes II and III, and with California's recommendations for national standards in lieu of several FIP measures. The SIP elements described in Volumes II and III supply most of the emission reductions attributed to the FIP by Ventura County. However, movement of the shipping channel was assumed, and that measure produces large NOx emission reductions that cannot be easily replaced. Therefore, this measure was retained in the District's Plan.

**Table E-5. FIP Measures Included in Ventura Plan**

<b>Area Source Measures</b>	
Pesticides	Assumed FIP measure, with some allowance for DPR adjustments
<b>Mobile Source Measures</b>	
Importation of 49-state vehicles	Assumed FIP measure
Enhanced in-use compliance program for LDV/MDV	Assumed FIP measure

Nonroad vehicles and engines and on-highway motorcycles	Assumed FIP measure for on-highway and nonroad motorcycles and spark ignited marine engines
Enhanced in-use compliance program for nonroad engines over 50 hp	Assumed FIP measure for diesel marine engines and farm equipment
Ships and ports	Assumed FIP measure, opting for movement of shipping channel instead of fees

### Additional SIP Submittals:

In addition to providing a new attainment demonstration, post-1996 rate-of-progress calculations, and contingency measures, the final Ventura County SIP revision updated the 1990 emission inventory (Clean Air Act section 182(a)(1)), the 15% rate-of-progress plan (section 182(b)(1), and the vehicle miles travelled demonstration (section 182(d)(1)(A)). All of these corrections are important for conformity purposes, and to keep Ventura's plan as current as possible.

**Table E-6. Proposed District Control Measures**

Number	Title (Full implementation date)
R-105	Glycol Dehydrators (4/96)
R-317 <sup>xiv</sup>	Clean-up Solvents (1/6)
R-322	Painter Certification (12/98)
R-324	Screen Painting (1/97)
R-327	Electronic Components (6/97)
R-403	Gasoline Dispensing (1/96)
R-410	Marine Tanker Loading (7/97)
R-419	Tank Degassing (4/95)

Number	Title (Full implementation date)
R-420	Pleasure Craft Fuel Transfer (12/97)
R-421	Utility Engine Refueling (12/95)
R-424	Gasoline Transfer (9/96)
R-425 <sup>xiv</sup>	Fugitive Emissions (7/95)
R-606	Soil Decontamination (9/95)
N-101	Gas Turbines (4/97)
N-102	Small Commercial Boilers (6/95)

## Board Action

The Board approved both Ventura's attainment plan and post-1996 rate-of-progress plan, incorporating the state elements described in Volumes II and III. The Board also replaced the FIP measures and fully centralized I/M program proposed in Ventura's attainment plan with the state's mobile source, consumer products, and pesticide elements. In so doing, attainment can still be demonstrated in Ventura by 2005. Finally, the Board approved the updates to the 15% rate-of-progress plan and the other SIP revisions previously described.

## F. San Diego County

### Nature of the Local Ozone Problem

In 1993, ozone concentrations in San Diego County exceeded the federal ozone standard on 14 days. On all but one of those days, the District believes the exceedances were caused largely or entirely by pollution transported from the South Coast Air Basin. Transport from the Los Angeles region occurs in two ways. First, when pollution flows out over the ocean, is carried south by prevailing winds, then comes back to shore in San Diego. The second major transport route is via aloft winds that carry emissions overland to San Diego, then, when the temperature heats up and the atmosphere becomes unstable, mixes pollution downward. Maximum ozone concentrations of about 0.18 ppm occur during transport episodes. Exceedences of the standard during episodes without a transport component are significantly lower.



The 1990 emission inventory for San Diego County was 310 tons per day of ROG and 240 tons per day of NOx. The ROG inventory is approximately 32% stationary or areas sources and 68% mobile. The NOx inventory is overwhelmingly mobile: 88% versus the 12% contribution from stationary and area sources.

## Status of the Local Plan

San Diego released a draft 1994 plan for public review in September. The San Diego County Air Pollution Control Board held a public hearing and adopted the plan on November 1, 1994.

## Summary of Attainment Strategy

### Overview:

San Diego's photochemical modeling simulations indicate that federal ozone standard violations resulting from local pollution could be eliminated with combined VOC and NOx reductions of 26% and 27%, respectively, from the 1990 baseline. Based on this assessment, San Diego's plan predicts attainment of the standard without any additional controls beyond existing local, state, and federal regulations. Therefore, San Diego proposed no additional controls in its attainment strategy and relies instead on the emission reductions achieved through the continued implementation of existing programs. Foremost among these are reductions from California's motor vehicle program. Table F-1 summarizes emissions reductions needed to attain the federal ozone standard in San Diego. The Clean Air Act specifies 1990 as the base year or starting point for all emission reduction calculations. The carrying capacity is the amount of VOC and NOx that modeling indicates can be emitted into the air while still keeping the region's air under the federal ozone standard. The difference between the two is the reduction needed to attain the federal ozone standard. San Diego's attainment strategy, summarized in Table F-2, shows how these reductions will be achieved. In this case, all of the required reductions are covered by existing programs. Additional state measures, scheduled to take effect before 1999, provide added insurance that the required progress will be made.

**Table F-1. Emission Reductions Needed to Attain in San Diego County**

	VOC (tpd)	NOx (tpd)
1990 Baseline Emissions Inventory	313	238
Carrying Capacity	232	175
Difference	81	63

**Table F-2. Attainment Demonstration for San Diego County**

	ROG (tpd)	NOx (tpd)
Reductions from Existing Program <sup>xv</sup>	81	63
Additional Local Measures	NA	NA
Additional State Measures <sup>xvi</sup>	1	1
Additional Federal Measures	0	0
Total	82	64

**Rate-of-Progress Calculations:**

Rate-of-progress calculations for 1996 through the attainment year must be submitted with each area's attainment demonstration. These calculations are to satisfy Clean Air Act requirements for reasonable further progress. The Act requires a 3% reduction in VOC emissions per year, averaged over 3-year periods. NOx reductions may be substituted for VOC, however, no substitution is necessary in San Diego's case. The emissions target for each milestone year is shown in Table F-3.

**Table F-3. Rate-Of-Progress Calculations for San Diego County (tpd)**

	1996	1999
VOC Emissions to Meet ROP Target	241	232 <sup>xvii</sup>
VOC Emissions with Plan Reductions	236	232

<sup>x</sup> Assumes all state and local control measures adopted through January 1994.

<sup>xi</sup> Assumes 15 additional measures, see Table E-6 at the end of this section.

<sup>xii</sup> Assumes creditable mobile source, consumer product, and pesticide elements implemented by 2005 as shown in Volumes II and III).

<sup>xiii</sup> Assumes creditable federal measures implemented by 2005, as specified in Volume II, including moving the shipping channel.

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<sup>xiv</sup> Revisions to current rules to replace proposed FIP measures.

<sup>xv</sup> Assumes state and local control measures adopted through mid-1994.

<sup>xvi</sup> Assumes measures in Volumes II and III implemented prior to 1999, except for enhanced I/M which the District prefers to claim as a contingency measure.

<sup>xvii</sup> Staff adjusted the 1999 target consistent with San Diego's carrying capacity for VOC emissions. Although U.S. EPA policies are not final concerning ROP demonstrations in such situations, staff believe achievement of the overall attainment target should be sufficient. Up to 74 tons per day of NO<sub>x</sub> reductions are available for substitution, should U.S. EPA rule otherwise.

## Percentage of Adopted Measures:

Federal policy guidance on SIP submittals indicates that a "high percentage" (nominally, but not absolutely 80%) of the emission reductions needed for attainment and rate of progress demonstrations should be in the form of adopted measures. If not, an incompleteness finding may be triggered. As discussed above, San Diego is not anticipating a need for any additional measures. If this is confirmed, then 100% of the District's attainment strategy and 100% of its rate-of-progress demonstration will be met with adopted regulations.

## Special Issues

### Reclassification:

San Diego was originally classified as a severe nonattainment area for ozone under the federal Clean Air Act. However, all of the highest ozone levels which occur in San Diego are the result of transported pollution from the Los Angeles area. ARB and the District agreed that the severe classification did not properly reflect San Diego air quality and requested U.S. EPA to reclassify San Diego to serious using its authority of section 181(a)(4) of the Act. In August 1994, in support of this request, ARB and the District provided U.S. EPA with urban airshed modeling results showing that San Diego can attain the federal ozone standard by the serious classification deadline. Previously, California submitted evidence of the transport contribution from South Coast to San Diego. U.S. EPA granted the reclassification request prior to the November 15, 1994, deadline for SIP submittal. Accordingly, the San Diego plan addresses serious area requirements, only, rather than severe.

### Corrections to Prior SIP Submittal:

In addition to providing a new attainment demonstration and the post-1996 rate-of-progress calculation, the final SIP submittal for San Diego County updated the 15% rate-of-progress plan submitted in 1993 (section 182(b)(1)). Based on revised emissions inventory data, demonstration of 15% rate-of-progress no longer relies upon enhanced I/M or the three non-RACT measures contained in the 1993 submittal for San Diego County (Automotive

refinishing; Plastic, Glass, Composites and Rubber Coatings; and Further Control of Can Coating).

## **Board Action**

At its November 15, 1994 hearing, the Board approved the San Diego attainment and rate-of-progress plan for inclusion in the SIP.

## **G. San Joaquin Valley**

### **Nature of the Problem**

The San Joaquin Valley is classified as a "serious" ozone nonattainment area. The nonattainment area includes the counties of San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, Tulare, and the San Joaquin Valley portion of Kern County. The entire Valley is within the jurisdiction of the San Joaquin Valley Unified Air Pollution Control District (District). The valley-wide 0.16 ppm ozone design value is based on ozone concentrations recorded near Fresno. Comparable values are recorded in the southern part of the Valley, near Bakersfield. For the Valley as a whole, the federal ozone standard was exceeded on an average of 42 days per year from 1990 through 1992. Most exceedances occurred in the central and southern parts of the Valley. The northern part of the Valley (San Joaquin, Stanislaus and Madera Counties) averaged less than one exceedance per year during the same period.

In 1990 the Valley had an emission inventory of 580 tons per day of reactive organic gases (ROG) and 710 tons per day of oxides of nitrogen (NO<sub>x</sub>). Stationary sources account for about 62% of ROG emissions, and approximately 54% of NO<sub>x</sub> emissions valley-wide.

### **Status of Local Plan**

The District Board adopted its Post-1996 Rate-of-Progress Plan, and revisions to its 15% Plan, on November 3, 1994. The District Board adopted its Attainment Demonstration on November 14, 1994.

### **Summary of Attainment Strategy**

#### **Overview:**

The attainment demonstration for the San Joaquin Valley is based on results from the air quality model that was developed as part of the San Joaquin Valley Air Quality Study. The San Joaquin Valley Model was tested and evaluated against data collected during intensive field monitoring conducted in 1990, and its performance meets model performance criteria established by both the U.S. EPA and the ARB. The model demonstrated that the locally

adopted plan, together with the statewide SIP elements adopted by the ARB, will result in attainment of the federal ozone standard throughout the San Joaquin Valley by the Act's 1999 deadline. However, the model is being further refined, and future evaluations may compel additional changes to the Valley's SIP.

Current modeling results indicate a valley-wide carrying capacity on the order of 350 tons per day of ROG and 360 tons per day NO<sub>x</sub>. The carrying capacity is the amount of ROG and NO<sub>x</sub> that the air quality model indicates can be emitted into the air while keeping the region's air under the federal ozone standard. However, it should be noted that valley-wide estimates of carrying capacities must be treated as a general guide to the emission levels that must be reached in order to attain the ozone standard. The model shows that ozone levels are affected by the location and source of emissions, and conversely, of the reductions needed to bring the valley into attainment.

For example, the modeling indicates that ozone levels in the Kern and Fresno areas, the two areas where the ozone peaks occur, are much more strongly influenced by local emissions than by valley-wide emissions. The modeling also indicates that different ratios of VOC and NO<sub>x</sub> reductions may be desirable in each of these areas to attain the ozone standard. The final attainment strategy for the region is based on an analysis of how the plan's emission reductions affect peak ozone levels in these sub-regions. For this reason, the basin-wide carrying capacity indicates only the general magnitude of reductions needed in the Valley.

Tables G-1, G-3, and G-5 below, show estimates of the reductions needed to meet the federal ozone standard in each subregion based on the preliminary carrying capacity. The Clean Air Act specifies 1990 as the baseyear or starting point for all emission reduction calculations. The difference between the baseline inventory and carrying capacity is the reduction in emissions needed to attain the federal ozone standard. For the northern region, no "difference" is shown because the area does not record enough exceedances to constitute a violation under the federal criteria of "one exceedance per year" (see discussion in Special Issues section).

Preliminary attainment calculations for each subregion are shown in Tables G-2, G-4, and G-6. The first reductions are from the existing program -- the rules already adopted by districts, ARB, and to a lesser degree the U.S. EPA. Additional, local, state, and federal measures are proposed to make up the remaining reductions needed for attainment. Measures included in the District's 1991 state air quality plan will provide additional reductions of 37 tons per day of ROG and 34 tons per day of NO<sub>x</sub> valley-wide. Reductions from these measures are apportioned on a subregional basis in the Tables G-2, G-4, and G-6.

**Table G-1. Reductions Needed to Attain San Joaquin Valley-Northern Sub-Region (tpd)**

	<b>ROG</b>	<b>NOx</b>
1990 Baseline Emissions Inventory	129	124
Carrying Capacity <sup>xviii</sup>	>129	>124
Difference	--	--

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<sup>xviii</sup> Based on the fact that the federal standard is exceeded very infrequently, not enough to produce a violation at any monitoring site in the north Valley.

Table G-2. Attainment Demonstration San Joaquin Valley Northern Sub-Region (tpd)

	ROG	NOx
Reductions from Existing Program <sup>xix</sup>	15	8
Additional Local Measures <sup>xx</sup>	5	---
Additional State Measures <sup>xxi</sup>	8	2
Additional Federal Measures <sup>xxii</sup>	---	1
Total	28	11

<sup>xix</sup> Assumes all state and local control measures adopted through January 1994.

<sup>xx</sup> 18 measures, see Table G-9 at the end of this section.

<sup>xxi</sup> Assumes the entire mobile source control, consumer product, and DPR pesticide elements, see Volume II.

<sup>xxii</sup> Assumes all U.S. EPA measures specified in Volume II.

**Table G-3. Reductions Needed to Attain San Joaquin Valley-Central Sub-Region (tpd)**

	ROG	NOx
1990 Baseline Emissions Inventory	126	115
Carrying Capacity	88	90
Difference	38	25

**Table G-4. Attainment Demonstration San Joaquin Valley Central Sub-Region (tpd)**

	ROG	NOx
Reductions from Existing Program <sup>xxiii</sup>	27	9
Additional Local Measures <sup>xxiv</sup>	8	6

	ROG	NOx
Additional State Measures <sup>xxv</sup>	4	2
Additional Federal Measures <sup>xxvi4</sup>	---	0
Total	39	16

<sup>xxiii</sup> Assumes all state and local control measures adopted through January 1994.

<sup>xxiv</sup> 18 measures, see Table G-9 at the end of this section.

<sup>xxv</sup> Assumes the entire mobile source control, consumer product, and DPR pesticide elements, see Volume II.

<sup>xxvi</sup> Assumes all U.S. EPA measures specified in Volume II.

**Table G-5. Reductions Needed to Attain San Joaquin Valley-Southern Sub-Region (tpd)**

	ROG	NOx
1990 Baseline Emissions Inventory	217	367
Carrying Capacity	145	165
Difference	72	202

**Table G-6. Attainment Demonstration San Joaquin Valley Southern Sub-Region (tpd)**

	ROG	NOx
Reductions from Existing Program <sup>xxvii</sup>	58	164
Additional Local Measures <sup>xxviii</sup>	22	20
Additional State Measures <sup>xxix</sup>	3	1
Additional Federal Measures <sup>xxx</sup>	---	---



	ROG	NOx
Total	83	185

<sup>xxvii</sup> Assumes all state and local control measures adopted through January 1994.

<sup>xxviii</sup> 18 measures, see Table G-9 at the end of this section. Note that NOx controls may not apply to some sources in Western Kern County oil fields; this exclusion is not reflected in this table.

<sup>xxix</sup> Assumes the entire mobile source control, consumer product, and DPR pesticide elements, see Volume II.

<sup>xxx</sup> Assumes all U.S. EPA measures specified in Volume II.

### Rate-of-Progress Calculations:

Rate-of-progress calculations for 1996 through the attainment year must be submitted along with the attainment demonstrations. These calculations are to satisfy the Clean Air Act requirement to show a steady rate of progress in reducing emissions. The Act requires a 3% reduction in VOC emissions per year averaged over 3-year periods. The milestone years for "serious" ozone nonattainment areas are 1996 and 1999. The first rate-of-progress (ROP) plan, due on November 15, 1993, showed the required 15% reduction from 1990 to 1996. The District adopted a revised ROP on October 14, 1994, which was approved by the ARB and forwarded to U.S. EPA to update the 1993 submittal.

**Table G-7. Rate-of-Progress Calculation San Joaquin Valley Air Basin (tpd)**

	1996	1999
VOC Emissions to Meet ROP Target	433	383
VOC Emissions with Plan Reductions	430	430
NOx Substitution (VOC-Equivalents)	0	47

### Percentage of Adopted Measures:

Federal policy guidance on SIP submittals indicates that a "high percentage" of the emissions reductions needed for attainment and rate-of-progress demonstrations should be in the form of adopted measures. If not, an incompleteness finding may be triggered. As discussed at length in Volume I, ARB believes the adopted components of the SIP satisfy this criterion for all regions. Table G-8 shows the percentage of emission reductions attributable to adopted regulations on sources under State or local jurisdiction. These figures include the benefits of all regulations adopted through mid-1994 and California's enhanced vehicle

inspection and maintenance program enacted earlier this year (SB 629, Russell, SB 521, Presley, and AB 2018, Katz; all statutes of 1994). The emissions of federally preempted sources (like interstate trucks, smaller non-road engines, marine vessels operating outside the State's coastal waters, and aircraft) are excluded from the calculation, since California is powerless to affect them.

**Table G-8. Percent Adopted Measures San Joaquin Valley Air Basin (tpd)**

<b>Attainment Demonstration</b>	<b>ROG</b>	<b>NOx</b>
Total Reductions Needed from State and Local Measures (tpd)	221	306
Reductions from Adopted Measures (tpd)	181	253
Percent Reduction from Adopted Measures	72%	83%

## Special Issues

### Subregional Attainment Demonstrations:

The northern part of the Valley experiences far fewer exceedances of the national ozone standard than the central and southern parts of the Valley. In future years, the north Valley will also realize significant emission reductions beyond those provided by existing programs, and is not expected to experience future violations of the federal standard.

Model results also indicate that emission reductions within a sub-region are far more effective in lowering ozone levels than equivalent reductions valley-wide. Thus, separate attainment demonstrations have been developed for the Fresno and Kern areas. This makes a sub-regional evaluation of the Valley's attainment demonstration essential.

### Transport:

The Valley's preliminary modeling results indicate that emissions from the San Francisco Bay Area and the Sacramento Metropolitan Area may have a substantial impact on ozone concentrations in the northern part of the San Joaquin Valley (Stockton and Modesto). This is the portion of the Valley that recorded less than one exceedance of the national ozone standard per year from 1990 to 1992. Transport from the Bay Area and Sacramento appears to have very little impact in the central and southern parts of the Valley where the highest ozone levels and largest numbers of exceedances were recorded. It appears that high ozone levels in these areas can be attributed primarily to emissions generated within the Valley.

The ARB has adopted transport mitigation requirements for inter-basin transport as required by state law; it has also committed to review the adequacy of these requirements as they pertain to attainment of the state ozone standard when the Valley modeling work is complete.

**Table G-9. Proposed Local Control Measures San Joaquin Valley**

Local Measure No.	Title (full implementation date)
4403	Components Serving Gas Production Facilities (1991)
4601	Architectural Coatings (1998)
4692	Commercial Charbroiling (1998)
4354	Glass Melting Furnaces (1997)
4607	Graphic Arts (1997)
4642	Landfill Gas Control (1997)
4412	Oil Workover Rigs (1998)
4623	Organic Liquid Storage (1996)
4662	Organic Solvents Degreasing (1998)
4663	Organic Solvent Waste (1998)
4306	Smaller Boilers, Process Heaters and Steam Generators (1999)
4611	Smaller Printing Operations (1999)
4703	Stationary Gas Turbine Engines (1999)
4702	Stationary IC Engines (1997)
4622	Stationary Storage Tanks/Fuel Transfer into Vehicle Fuel Tanks (1998)

Local Measure No.	Title (full implementation date)
4411	Well Cellars (1998)
4693	Wineries (1997)
	Transportation Control Measures

## Board Action

The ARB approved all three plans on November 15, 1994.

## H. San Joaquin Valley Planning Area (Kern County):

### Nature of the Local Ozone Problem

In 1990, when the Clean Air Act was amended, all of Kern County was within a single air pollution control district, straddling two separate air basins: the San Joaquin Valley and the Southeast Desert. In May 1992, following the creation of a unified, eight-county district in the San Joaquin Valley, the non-Valley portion of Kern County was spun off into a separate jurisdiction. The new district goes by the name of the "Kern County APCD," but it should be understood that its boundaries encompass only the southeastern portion of the County.

Kern County's ozone problem is like that of the greater Southeast Desert Air Basin: dominated by overwhelming transport from upwind areas. In Kern's case, both the San Joaquin Valley and the South Coast Air Basin are contributors. However, Kern appears to have less pollution than its desert neighbors, based on the limited data that are available. Kern's first ozone and NO<sub>x</sub> monitoring station began collecting ambient data in June 1993. During that smog season, only two slight exceedances of the federal ozone standard were recorded. Data from the 1994 are not fully tabulated, but the District indicates the readings were similar. If this is confirmed, it suggests that Kern County has a marginal ozone problem.

The 1990 baseline emission inventory for eastern Kern County is quite small, consisting of 17 tons per day of ROG and 41 tons per day of NO<sub>x</sub>. Of the total ROG emissions, 39% is from stationary and area sources, and the remaining 61% is mobile. For NO<sub>x</sub>, the breakdown is 56% stationary and area sources and 44% mobile. This unusual split reflects a large amount of mining and quarry activity in the area, and a very low population.

## Status of the Local Plan

The Kern District's Attainment Demonstration, 15% Rate-of Progress, and Post-1996 Rate-of-Progress Plans were approved by the Kern District Board on December 1, 1994. No public comments were received.

## Summary of Attainment Demonstration

### Overview:

The attainment demonstration for this area reflects the nature of the problem in this transport region. The Kern County APCD is a recipient of transport from both the San Joaquin Valley and South Coast Air Basins. In early recognition of the issue, a draft protocol, incorporating model boundary condition and transport analyses, was submitted to U.S. EPA, Region IX for review and comment. U.S. EPA approved the protocol in a July 15, 1994 letter to the District.

To quickly summarize, boundary conditions of the San Joaquin Valley and South Coast Models were analyzed to confirm that neither basin will be transporting concentrations which exceed the federal standard into eastern Kern County by 1999. In addition, transport analyses were conducted on the only two exceedances measured at the Mojave monitoring station in the Kern County District. These exceedances, both in the "marginal range" (less than 13.8 pphm), were determined to be caused by transport events. This indicates that attainment in eastern Kern is reliant upon reductions from the two upwind air basins.

## Rate-of-Progress Plan

Although the Kern District is reliant upon emission reductions from upwind areas, the District was able to develop a plan which fully complies with the 15% Post-1996 Rate-of-Progress requirements through their 1994 attainment year. The district's 15% Rate-of-Progress Plan was amended to eliminate the committals status of the previously submitted plan. The rate-of-progress calculations are provided by Table H-1 as follows:

**Table H-1. Rate-Of-Progress Calculations for the Kern District (tpd)**

	1996	1999
VOC Emissions to Meet ROP Target	13.2	11.7
VOC Emissions with Plan Reductions	13.2	13.3
NOx Substitution	0	1.6

## Board Action

Given that the Kern District plans were not adopted at the time of the Board's action, the Board delegated the approval of the attainment and rate-of-progress plans to the Executive Officer. The plans were subsequently approved and submitted as part of the 1994 California SIP.

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