

# SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT

## REVISED STAFF REPORT

### Proposed Extreme Ozone Attainment Demonstration Plan

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Prepared by: Donald B Hunsaker, Jr., D.Env.  
Plan Development Supervisor

#### Background

Ozone is a colorless, odorless reactive gas comprised of three oxygen atoms. It is found naturally in the earth's stratosphere, where it absorbs the ultraviolet component of incoming solar radiation that could be harmful to life on earth. Ozone is also found near the earth's surface, where pollutants emitted from society's activities and natural sources react in the presence of sunlight to form ozone. Principal pollutants involved in these reactions are nitrogen oxides (NO<sub>x</sub>) and volatile organic compounds (VOCs); NO<sub>x</sub> and VOCs are termed ozone precursors. Hot sunny weather with stagnant wind conditions favors ozone formation, so the period from May through September is when high ozone levels tend to occur in the San Joaquin Valley Air Basin (SJVAB). This *Extreme Ozone Attainment Demonstration Plan (OADP)* addresses only ozone formed near the earth's surface.

Ozone is the prime ingredient of smog, and adversely affects human health and environmental resources. When inhaled, even at very low levels, ozone can cause acute respiratory problems, aggravate asthma, significantly decrease lung capacity in healthy adults, inflame lung tissue, and impair the defenses of the body's immune system. Children are most at risk from exposure to ozone, primarily due to their time spent outdoors and their developing respiratory systems. Asthmatics are also highly susceptible to ozone levels. Even healthy adults can experience reduction in lung function and damage to lung tissue from exposure to ozone. Ozone interferes with the ability of plants to make and store food; compromises growth, reproduction and overall plant health; and makes plants more susceptible to diseases, pest and other environmental stressors. In addition, ozone can kill or damage leaves on trees, and can adversely impact ecological functions of trees such as water movement, mineral nutrient cycling, and the provision of habitat. Ozone can also damage materials such as rubber, paper and plastics, thereby generating additional cost to society.

#### Ozone Standards and Regulatory Requirements

Because ozone is an air pollutant that can adversely affect human health, damage vegetation, and degrade materials, the U.S. Environmental Protection Agency (EPA) has established standards (termed National Ambient Air Quality Standards or NAAQS), under the authority of the Federal Clean Air Act, that identify safe levels for ozone in the

atmosphere to prevent and minimize these impacts. Ozone levels measured in the atmosphere at levels lower than the standards are viewed as safe, whereas levels above the standards represent a reasonable danger to public health and welfare (non-health related damages), and thus require action to reduce emissions of ozone precursors. EPA has issued two different standards for ozone: a 1-hour average of 0.12 parts per million and an 8-hour average of 0.08 ppm; each of these is subdivided into primary standards that protect public health and secondary standards that protect public welfare (for each of the 1-hr and 8-hr ozone standards, the numeric value of the standard is the same for primary and secondary standards). This Plan addresses only the 1-hour standards.

In 1997, EPA determined that the 1-hour standards were not necessary to protect public health given the promulgation of the 8-hour standards. On April 15, 2004 EPA issued a final rule revoking the 1-hour standards, effective June 15, 2005.

Areas in the United States where ozone levels measured in the ambient air exceed the 1-hour standards of 0.12 ppm are said to be in nonattainment of this standard. The 1-hour ozone NAAQS is based on the number of days per year with a 1-hour average concentration of 0.12 ppm or greater. An area is in compliance with the ozone NAAQS when measured 1-hour average ozone levels at any given monitoring station do not exceed 0.12 ppm more than one day per year over any consecutive three-year period (40 CFR 50.9). Thus an area that has a monitoring station with measured 1-hour average ozone levels greater than 0.12 ppm on four or more days over a three-year period has not attained the standards, even if all of the days occurred in only one of the three years.

This *Extreme OADP* sets forth the emission reductions and timeline for attaining the federal 1-hour ozone standards in the SJVAB by 2010. It also provides the technical information and analyses supporting the emissions reductions proposed in the control measures. The San Joaquin Valley Unified Air Pollution Control District (District), in conjunction with the California Air Resources Board (ARB), the EPA, and the eight regional Transportation Planning Agencies (TPAs) in the Valley, developed this plan to provide healthy air for all of the Valley's people and to meet requirements in the Federal Clean Air Act.

The severity or magnitude of a given area's ozone nonattainment problem is given by the ozone design value, which is based on the fourth highest measured level in excess of 0.12 ppm in a three-year period at a given monitoring station. The overall design value for the SJVAB is given by the highest design value of all of the individual monitoring stations in the SJVAB. The SJVAB, which is comprised of San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, Tulare and Kern (Valley portion only) counties, has a 2003 design value of 0.15 ppm. In accordance with the Federal Clean Air Act, EPA uses the design value at the time of standard promulgation to assign nonattainment areas to one of several classes that reflect the severity of the nonattainment problem; classifications range from marginal nonattainment to extreme nonattainment. The Federal Clean Air Act contains provisions for changing the classifications using factors such as clean air progress rates and requests from States to move areas to a higher classification. On April 16, 2004 EPA issued a final rule classifying the SJVAB as extreme nonattainment, effective May 17, 2004 (69 FR 20550). Under this rulemaking, the SJVAB's attainment date is November 15, 2010.

## Planning History

After passage of the 1990 Federal Clean Air Act Amendments, EPA classified the SJVAB as “serious” nonattainment for the federal 1-hour ozone standards, based on the SJVAB’s design value for the 1987—1989 time period of data collection used for the original classification (56 *FR* 56694). As such, the SJVAB was required to attain the standard by November 15, 1999. In accordance with the Federal Clean Air Act, the District prepared and submitted in 1994 a plan demonstrating attainment by the required date.

The SJVAB failed to attain the federal 1-hour ozone standard by November 15, 1999 as required in the Federal Clean Air Act.<sup>1</sup> Consequently, in November 2001 EPA reclassified the SJVAB from “serious” to “severe” nonattainment (66 *FR* 56476); at the same time, EPA also changed the boundary of the SJVAB by removing a portion of eastern Kern County, required implementation of six emission control measures from the 1994 Plan, and required submittal by May 31, 2002 of a severe area ozone nonattainment plan meeting the specific provisions of Section 182 (d) of the federal Clean Air Act. In 2002, the District and ARB provided all required items to EPA except for a plan demonstrating attainment of the federal 1-hour ozone standard by November 15, 2005 (rules were submitted in late 2001/early 2002, and a *2002 and 2005 Rate of Progress Plan* was adopted by the District on May 16, 2002 and submitted by ARB to EPA on September 6, 2002)<sup>2</sup>.

On October 2, 2002, EPA issued a final rule specifying “severe” area requirements that had not yet been met for the SJVAB (67 *FR* 61784). These items, which included a plan demonstrating attainment of the federal 1-hour ozone standard by November 15, 2005, were required to be submitted to EPA no later than March 18, 2004. This EPA action [which was effective on September 18, 2002] triggered an 18-month clock for imposing emissions offset sanctions, a 24-month clock for imposing highway funding sanctions, and a 24-month clock for preparing a Federal Implementation Plan (FIP) for the SJVAB.<sup>3</sup> Failure to submit the required items by March 18, 2004 would trigger the offset sanctions; failure to submit the required items by September 18, 2004 would trigger the highway fund sanctions and EPA promulgation of the FIP. Stopping the clocks required submittal of the necessary revisions by the dates specified; these

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<sup>1</sup> The SJVAB’s failure to reach attainment by 1999 is due to a number of factors, including: (1) the emission inventory was not fully developed and understood in 1994, and as a result the attainment strategy did not adequately account for all emissions in the inventory; and (2) emissions from sources outside the District that are transported into the air basin and contribute to exceedances of the ozone standard were not adequately addressed.

<sup>2</sup> ARB submitted the *2002 and 2005 Rate of Progress Plan* to EPA on September 6, 2002 primarily to incorporate specific enforceable District control measures into the SIP. The motor vehicle emissions inventories in this plan were not used to set conformity budgets because they were based on dated modeling techniques and vehicle activity data not suited for budgets.

<sup>3</sup> Under the Federal Clean Air Act, EPA may develop and implement its own federal emission control measures if it finds that state and local measures do not meet requirements. This Federal Implementation Plan (FIP) is thus a temporary activity that supersedes the State Implementation Plan; it remains in effect until such time as EPA turns the attainment demonstration program back to state and local agencies.

revisions are (1) a demonstration of attainment of the 1-hr ozone standard by no later than November 15, 2005 [an ozone attainment demonstration plan (OADP)]; (2) a demonstration of creditable emission reductions of ozone precursors at a rate of at least 3%/yr until November 2005; (3) a rule addressing Reasonably Available Control Technology for lime kilns; (4) an inventory; and (5) contingency measures. In 2003, the District and ARB provided all of the required items to EPA except for the plan demonstrating attainment of the federal 1-hour ozone standard by November 15, 2005.<sup>4</sup>

The District and ARB began work on a severe ozone attainment demonstration plan in late 2001, which included photochemical modeling to determine the magnitude of emissions reductions needed to attain the standard in the SJVAB by November 15, 2005. This modeling indicated that the emissions reductions needed for attainment were beyond what the District, ARB, or EPA could accomplish individually; consequently, attainment depended upon the District's continued control of sources within its authority, in addition to ARB's implementation of their own emission control measures on sources outside the authority of the District to regulate (primarily mobile sources). Most of ARB's rules were scheduled to go into effect in the post-2007 time frame<sup>5</sup>, which did not help the District demonstrate attainment for the SJVAB by 2005. In addition, EPA was developing regulations to reduce emissions from sources under their control (e.g., locomotives, aircraft, diesel engines, etc.), but the federal implementation schedule for these rules was in the post-2005 time frame also.

The District and ARB have acknowledged that emission reductions stemming from state and federal controls (which are outside of the District's authority to implement) are needed to demonstrate attainment of the 1-hr ozone standards in the SJVAB, and that these controls will not go into effect until after 2005. The District needed a mechanism to allow time for state and federal measures to come into effect in order to attain the standard. Since the District could not accelerate implementation of state and federal measures, other options were explored. Section 181(b)(3) of the Federal Clean Air Act allows states to request EPA to reclassify an area to a higher classification. Higher classes reflect a more substantial nonattainment problem that in turn requires more time to solve. The District's only option for pursuing a higher classification, with a later attainment date, was to request classification as extreme nonattainment.<sup>6</sup>

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<sup>4</sup> On April 10, 2003, California submitted to EPA the District's *Amended 2002/2005 Rate of Progress (ROP) Plan for San Joaquin Valley Ozone*, which provides all of the severe area SIP revisions required by EPA in the October 2002 *Federal Register* notice, except for the OADP. This Amended ROP Plan is based on ARB's updated motor vehicle emissions model and updated activity data, and thus could be used to set conformity budgets. On July 10, 2003 EPA found the conformity budgets to be adequate. On September 4, 2003, EPA found the *Amended ROP Plan* to be complete, and it is under review at EPA.

<sup>5</sup> ARB's rulemaking activities are heavily influenced by the attainment planning schedule for the South Coast Air Basin, which as an extreme ozone nonattainment area must attain the federal 1-hour ozone standard by November 15, 2010.

<sup>6</sup> In May 2001, The District requested EPA to designate the SJVAB as "Severe-17", which would have extended the attainment date to November 15, 2007. In November 2001, EPA denied the request because the "Severe-17" category can be assigned based only on design value, and the SJVAB's 1-hour design value at the time of the request was not high enough for classification as "severe-17." (66 FR 56476)

The District held numerous workshops and other public discussions (e.g., staff reports at Governing Board meetings) during the period 2001—2003 on the subject of requesting EPA to reclassify the SJVAB as extreme nonattainment for the federal 1-hour ozone standards. Consequently, on December 18, 2003, after extensive public debate and stakeholder discussion, the District's Governing Board voted unanimously to request EPA through ARB to classify the SJVAB as extreme nonattainment for the federal 1-hour ozone standards.

ARB forwarded this request to EPA on January 9, 2004. On February 23, 2004 EPA proposed approval of the request (69 FR 8126) and on April 18, 2004, EPA signed the final rule approving the request. The classification as extreme nonattainment became final on May 17, 2004 (69 FR 20550). This classification changes the SJVAB's attainment date for the federal 1-hour ozone standard to November 15, 2010, thereby providing time for critical state and federal emissions controls to come into effect in the post-2005 time frame. The classification to extreme also removes all prior "severe" area requirements and associated sanctions and FIP clock because once a nonattainment area is reclassified, the Federal Clean Air Act requirements of the new classification supersede those of the previous classification, and the previous attainment requirements (and any associated deficiencies) are moot (69 FR 8127). No sanctions or FIP clock for planning deficiencies for the Federal 1-hour ozone standards apply to the SJVAB as of May 17, 2004.<sup>7</sup>

### Revocation of 1-hour Ozone Standards

EPA plans to revoke the federal 1-hour ozone standards on June 15, 2005, in conjunction with its implementation of the more stringent federal 8-hour ozone standards that became effective on June 15, 2004. EPA promulgated the federal 8-hour ozone standards in 1997 (0.08 ppm by volume for primary and secondary standards); these were subsequently overturned in the US Circuit Court of Appeals for the District of Columbia in 1999 on the grounds that the agency had overstepped its authority and unlawfully usurped Congress' legislative power. However, the EPA appealed the case to the US Supreme Court. In February 2000, the Supreme Court found that that EPA had not overstepped its authority and had not unlawfully usurped Congress' legislative power; however, the Court did find that the implementation policy was unlawful. The Court confirmed that the Clean Air Act does not bar EPA from implementing the ozone standard. On November 13, 2002, the American Lung Association and eight other public interest groups filed a complaint alleging that EPA failed to designate areas for the 8-hour ozone standard. In response to this complaint, EPA published a proposed consent decree establishing April 15, 2004 as the date for promulgating attainment designations for the 8-hr ozone standard (67 FR 70070). EPA issued these designations on April 15, 2004. In addition, EPA also issued the Phase I

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<sup>7</sup> As of September 1, 2004, EPA still has a "FIP Obligation" for the SJVAB related to its need to approve the *Amended 2002 and 2005 Rate of Progress Report for San Joaquin Valley Ozone* by September 18, 2004. EPA received this ROP Plan for review in April 2003. This obligation stems from the October 2002 deficiency finding and the fact that the state owes EPA a 2002/2005 Rate of Progress Plan for the SJVAB regardless of the SJVAB's classification.

of the implementation rule for the 8-hour standards on April 15, 2004, which includes provisions on revocation of the 1-hour standard, anti-backsliding, and area classifications. The effective date of the 8-hour ozone designation is June 15, 2004. EPA designated the SJVAB as nonattainment for the federal 8-hour ozone standard, and classified the SJVAB, based on its 2001-2003 design value, as serious nonattainment. As such, the SJVAB's attainment date for the federal 8-hour ozone standards is June 15, 2013. EPA will require submittal of the 8-hour OADP for the SJVAB in 2007.

Phase I of the Final 8-hour Ozone Implementation Rule also gives the District the option of preparing an early 8-hour ozone increment of progress report or an early 8-hour OADP in lieu of submitting this *Extreme OADP* for the 1-hour ozone standards. Because EPA has found the 1-hour ozone standards are not necessary to protect public health, EPA has instructed states to focus resources on planning and implementation of the 8-hour ozone standards (69 *FR* 23858). Both of these options were evaluated as alternatives in the Final Environmental Impact Report (EIR) for the *Extreme OADP*.

### **Extreme Plan Requirements**

In reclassifying the SJVAB as extreme nonattainment, EPA noted that extreme area plans are required to meet all of the requirements for severe area plans<sup>8</sup>, plus the following requirements applicable to extreme areas (69 *FR* 20551-20552):

- A 10 ton per year major source definition
- Additional reasonably available control technology (RACT) rules for sources subject to the new lower major source cutoff
- A new source review offset requirement of at least 1.5 to 1
- A rate of progress demonstration of emission reductions of ozone precursors of at least 3 percent per year from 2005 until the attainment date
- Clean fuels for boilers as required at CAA section 182(e)(3); and
- Contingency measures.

The *Extreme OADP* meets the first and third requirements by including a commitment to submit a revised New Source Review Rule reflecting extreme requirements to EPA by May 16, 2005, as specified in EPA's final rule reclassifying the SJVAB as extreme nonattainment. The District could revisit the NSR rule again after EPA revokes the federal 1-hour ozone standards on June 15, 2005, due to the effects of revocation on new source review as specified in Phase I of the final rule implementing the federal 8-hour ozone standard (40 CFR 51.905(e))(4). The *Extreme OADP* meets the RACT requirements (second bullet) through inclusion of a RACT section in Chapter 4 that discusses sources subject to RACT under the classification of extreme. Chapter 7 shows how the emission reductions identified in this plan meet rate of progress

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<sup>8</sup> The CAA specifically excludes certain severe area requirements from the extreme area requirements, e.g., section 182(c)(6),(7) and (8). The *Extreme OADP* meets the severe area requirements.

requirements for 2008 and 2010. The clean boiler fuel provisions specified in the fifth bullet are already reflected in the District's rules. Chapter 4 discusses contingency measures. In addition to these specific requirements highlighted for the SJVAB by EPA, extreme plans must contain a provision for a "failure to attain" fee. The District adopted a "failure to attain" fee rule in May 2002.<sup>9</sup>

Because the *Extreme OADP* also contains a chapter fulfilling California Clean Air Act requirements, it is important to note that the plan fulfills requirements of the California Clean Air Act regarding the development of a triennial update and California Air Quality Attainment Plan revision that examines air pollutant exposure data, control measure implementation, and other air quality information with emphasis on meeting California ambient air quality standards. The California Clean Air documents in this *Extreme OADP* focus on the historical time period of 2000-2002, and project, where recommended by ARB guidance, into the next three-year planning period (2003-2005).

## Plan Contents

This *Extreme OADP* is a roadmap that identifies emission reductions needed to attain the federal 1-hour ozone standards by November 15, 2010. The principal components of an ozone attainment demonstration plan consist of a baseline emissions inventory, data describing measured ozone levels in the atmosphere for the area in question, descriptions of emissions controls that will reduce future emissions, a future emissions inventory that reflects decreases due to implementation of emissions controls as well as increases due to increased population, and a description of results from a photochemical model relating emissions to ambient ozone levels and demonstrating attainment of the appropriate standard at a future date.

### Emission Inventory and Transportation Conformity Budget:

The CCOS Inventory 2.11 was used as the basis for the *Extreme OADP*; portions of related inventories were used for specific purposes in the plan, but CCOS 2.11 is used for attainment and rate of progress demonstrations. The CCOS 2.11 inventory uses 1999 as the base year. Thus, future year inventories for 2008 and 2010 were projected from the 1999 emission inventory. Transportation conformity budgets, which affect the planning activities of the Valley TPAs, are included in the Plan. The ARB developed the transportation budgets using information provided by the TPAs, the mobile source emissions model EMFAC2002, Version 2.2, and emission reductions calculated by ARB and the District. The TPAs are required to use the most recent modeling assumptions when developing their projections. In the event that the TPAs identify minor errors in

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<sup>9</sup> Although the rule was adopted when the SJVAB was classified as severe nonattainment for the federal 1-hour ozone standards, the rule was written to cover both severe and extreme classifications; consequently, no revisions to rule language would be warranted solely because of the reclassification to extreme. EPA has not yet acted on this rule.

the conformity budgets and the resulting changes do not impact the control strategy or the attainment demonstration, ARB is authorized to alter the budgets prior to submittal to EPA.

Control Measure Commitments:

The *Extreme OADP* control strategy effectively combines NO<sub>x</sub> and VOC emission reduction measures from previous plans, together with new District and ARB measures, to demonstrate attainment of the federal 1-hour ozone standard by November 15, 2010, and to demonstrate that reductions in emissions of ozone precursors meet rate of progress milestones for 2008 and 2010. The 2003 *PM<sub>10</sub> Plan* approved by EPA effective June 25, 2004 contains District control measure commitments that reduce emissions of VOC and NO<sub>x</sub>, and ARB control measure commitments that reduce NO<sub>x</sub>. New District measures developed for the *Extreme OADP*, which largely address new state law requirements, supplement these reductions. In addition, the District identified candidate further study measures for possible future reductions, and also future areas of study that address source types largely outside of District authority to control. Lastly, ARB has identified VOC and NO<sub>x</sub> reductions for implementation in accordance with the *Extreme OADP*.

These measures provide a starting point for the rule development process that will give more opportunity for stakeholder and public input on the technical and economic feasibility of the controls and specific rule language appropriate for this region. The District is committing to achieve the reductions needed to attain the standard on schedule, but reserves the right to revise measures to ensure they are technically and economically feasibility based on local conditions, and to replace those that are ineffective with more effective measures. District staff is committed to work closely with stakeholders in this process.

The ARB is proceeding simultaneously with the adoption of State commitments for the San Joaquin Valley. The ARB has scheduled their measures to be adopted, along with approval of the District's *Extreme OADP*, at the ARB Board meeting on October 28-29, 2004 at the District's Fresno offices. Action by the District Governing Board on plan adoption has no impact on ARB's action committing to develop state control measures. ARB commits to adopt and implement measures to achieve the VOC and NO<sub>x</sub> reductions they identified, and reserves the right to change specific measures as needed to attain the overall reduction in the commitment.

Each TPA and its associated cities and county have adopted commitments for Reasonably Available Control Measures (RACM) specifically for the *Extreme OADP*. These control measures have not been separately quantified. Chapter 4 of the *Extreme OADP* describes the RACM process conducted by each of the eight TPAs. The control measure commitments made by the Valley TPAs and their associated cities and counties are described in *Regional Transportation Planning Agency Commitments for Implementation, Volume Five* (March 2004), a non-circulating reference document



available for review in the District's Central Office. In addition, the local government making the commitments could also provide a copy.

#### Attainment Demonstration:

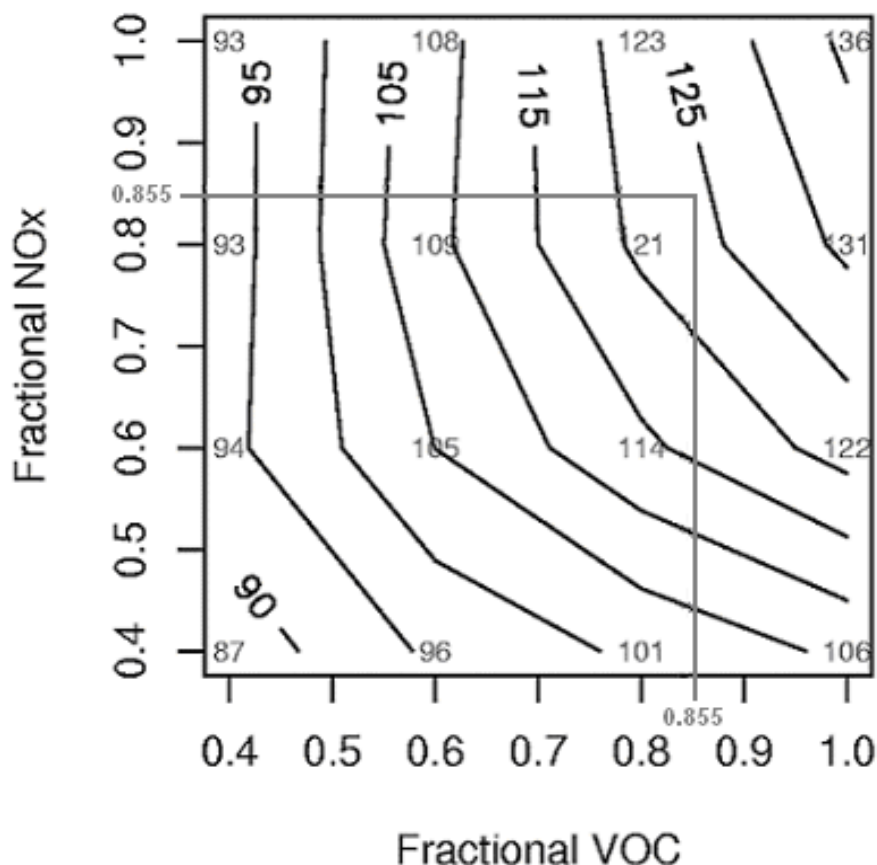
The District and ARB used EPA-approved modeling techniques to demonstrate attainment of the federal 1-hour ozone standards in the SJVAB by November 15, 2010. ARB used the Comprehensive Air Quality Model with Extensions (CAMx) to determine the effects of ozone precursor emissions changes on ozone formation. The CAMx modeling used data collected during the Central California Ozone Study (CCOS) in the summer of 2000. In particular, the episode of July 29-August 2, 2000 was selected for use in the attainment demonstration. The photochemical modeling meets EPA requirements.

Staff validated the CAMx model by comparing ozone levels measured during CCOS with ozone concentrations simulated by the model for the year 2000. Once the model was validated, modelers then used future year (2010) emissions to predict future year (2010) ozone levels. Modelers then reduced the 2010 inventory across the modeling region at incremental percentages, ran the model for each percent reduction, and recorded the predicted 2010 ozone levels. Repeating this process gives a series of predicted ozone levels for specified cuts in the 2010 inventory, which then allows one to plot the predicted ozone levels on a graph of fractions of the VOC and NOx 2010 inventories. These plots, called carrying capacity diagrams, revealed that both VOC and NOx emissions reductions were needed in the Fresno and Bakersfield area to reduce ozone levels using the July 30, 2000 episode day. Figure 1 presents the carrying capacity diagram used for the attainment demonstration in the *Extreme OADP*.

The District used Figure 1 to demonstrate attainment by starting with the 2010 emissions inventory used in the modeling, subtracting the emissions reductions from any rules not already reflected in the inventory (e.g., those from the *PM10 Plan* and the *Extreme OADP*), and then plotting the resulting fractions of each of the VOC and NOx inventories on Figure 1. If the intersection of the VOC and NOx lines is to the left of the "125" line, then attainment is demonstrated. If not, more reductions must be identified. For the *Extreme OADP*, the District determined that additional emissions reductions of five tons per day of NOx and five tons per day of VOC needed to be added to the already identified reductions in order to demonstrate attainment (Table 1). Plotting the fractions of each of the VOC and NOx inventories reflecting these reductions on the carrying capacity diagram demonstrated attainment, as is shown in Figure 1.

In accordance with the federal Clean Air Act, the District placed the additional reductions of five tons per day of VOC and five tons per day of NOx into the category of "Long-Term Measures," and will identify the specific control measures to achieve these reductions no later than spring of 2007. Because the District is required to complete two major air quality plans prior to this time (2006 *PM10 Plan* and the 2007 *8-hour Ozone Attainment Demonstration Plan*), controls with reductions of this magnitude should be readily identified through these other planning processes.

Figure 1. Carrying Capacity Diagram for Bakersfield on July 30, 2010



Rate of Progress Demonstration:

The federal Clean Air Act requires that extreme ozone nonattainment areas demonstrate emissions reductions in ozone precursors of 51% from 1990 to 2008, and of 57% from 1990 to 2010. The *Extreme OADP* shows that the SJVAB meets these milestones using a mix of VOC and NOx emissions reductions. EPA guidance allows NOx substitution for demonstrating rate of progress if certain conditions are met, including the availability of grid based photochemical modeling results showing the effectiveness of NOx emissions reductions in reducing ozone levels in the nonattainment area of interest. Through prior modeling studies and through the work presented in the *Extreme OADP*, the District and ARB have met all of the conditions for NOx substitution.

**TABLE 1**  
**SJVAB FEDERAL 1-HOUR OZONE ATTAINMENT CONCEPT**

| Category   | 2010 Summer Planning Inventory (tons/day) |              |
|--|---|--------------|
|  | VOC                                       | NOx          |
| 2010 Baseline Inventory <sup>a</sup>   | 367.6                                     | 401.7        |
| <b>District Rules-- Post-Inventory and Pre-PM10 Plan<sup>b</sup></b>           | <b>0</b>                                  | <b>0.1</b>   |
| Update to Estimated 2010 State Commitments in <i>PM10 Plan</i> <sup>c</sup>    | 2.5                                       | 14.9         |
| Update to Estimated 2010 District Commitments in <i>PM10 Plan</i> <sup>d</sup> | 9.4                                       | 26.3         |
| <b>Total Updated 2010 Commitments in <i>PM10 Plan</i></b>                      | <b>11.9</b>                               | <b>41.2</b>  |
| New ARB 2010 Commitments in <i>Extreme OADP</i> <sup>e</sup>                   | 15.0                                      | 10.0         |
| New District 2010 Commitments in <i>Extreme OADP</i> <sup>f</sup>              | 21.3                                      | 1.9          |
| <b>Total New 2010 Commitments from <i>Extreme OADP</i></b>                     | <b>36.3</b>                               | <b>11.9</b>  |
| <b>Total Reductions through <i>PM10 Plan</i> and <i>Extreme OADP</i></b>       | <b>48.2</b>                               | <b>53.2</b>  |
| <b>Reductions Needed from Long-Term Measures</b>                               | <b>5</b>                                  | <b>5</b>     |
| <b>Total Reductions</b>  | <b>53.2</b>                               | <b>58.2</b>  |
| <b>Total Reductions as % of 2010 Inventory</b>                                 | <b>14.5%</b>                              | <b>14.5%</b> |

<sup>a</sup> See Table 3-1; CCOS Summer Inventory, Version 2.11, January 2004; reflects control measures through September 2002.

<sup>b</sup> Represents District Rule 4313 for Lime Kilns, which is estimated to provide 0.1 tpd of 2010 NOx reductions. This rule was not included in the emissions reductions used in the 2003 *PM10 Plan*; it was adopted in March 2003 after the September 2002 cutoff date for the inventory.

<sup>c</sup> Based on updates to estimated annual emissions reductions in the 2003 *PM10 Plan*, Tables 4-14 and 4-17. State measures reflect 2.5 tpd of VOC reductions from I/M enhancements that are not shown in the 2003 *PM10 Plan*, and 4.9 tpd of NOx reductions from Smog Check II that are shown in the 2003 *PM10 Plan*.

<sup>d</sup> Based on updates to estimated emissions reductions from District measures given in the 2003 *PM10 Plan*, as shown in Table 4-1 in this *Extreme OADP* (Footnote 6). Also includes emissions reductions from control measures in the *PM10 Plan* that were adopted as rules before creation of Table 4-1 (Rules 4604, 4408, 4610, 4306, and incentives—see Footnote 6 in Table 4-1) converted to summer totals thru the EIC codes affected by the control measure categories using summer and annual CCOS inventories. Residential wood combustion emissions excluded.

<sup>e</sup> New state measures above and beyond those in the 2003 *PM10 Plan*; see Table 4-3 in the *Extreme OADP*.

<sup>f</sup> New District measures above and beyond those in the 2003 *PM10 Plan*; does not include measures affected by Footnote d above. Only includes Table 4-1 measures that were not in the 2003 *PM10 Plan*.

### California Clean Air Act Triennial Progress Report and Plan Revision

The *Extreme OADP* also fulfills requirements in Section 40924 of the California Health and Safety Code (CH&SC), which requires air pollution control districts in the state designated as nonattainment for the state standards for ozone, carbon monoxide, sulfur dioxide, or nitrogen dioxide, to prepare a report every three years summarizing progress in meeting the schedules for developing, adopting, and implementing the air pollution control measures contained in each district's plan for attaining the California air quality standards. Section 40925(a) of the CH&SC requires districts to review and revise their original *1991 Air Quality Attainment Plan (AQAP)* to correct for deficiencies in meeting the interim measures of progress incorporated into the plan pursuant Section 40914 [emission reductions], and to incorporate new data or projections into the Plan. This requirement, termed a Triennial AQAP Revision, is on the same reporting schedule as the Triennial Progress Report, and is usually combined with the progress report. Because state law requires these plans, ARB (and not EPA) is the reviewing authority.

The California Clean Air Act portion of the *Extreme OADP* represents the third Triennial Progress Report and Plan Revision for the District; as such, it focuses on the historical time period of 2000-2002, and projects, where recommended by ARB guidance, into the next three-year planning period (2003-2005). Consequently, these state documents cover a different time frame than the remainder of this *Extreme OADP* that addresses federal requirements.

The information presented in this part of the plan shows that the SJVAB trends for most of the ARB-mandated ozone air quality indicators showed either a downward trend or little movement up or down for the period of interest (2000-2002), although the overall trend for most of the indicators is one of improving air quality with respect to the ARB-mandated base year of 1988. The District continues to be actively involved in determining and implementing all feasible control measures, and works closely with downwind adjacent districts to evaluate control measures implemented and planned.

### **California Environmental Quality Act (CEQA)**

The *Extreme OADP* underwent a thorough environmental review in accordance with the requirements of CEQA. On July 1, 2004 the District issued a notice announcing the preparation of, and soliciting input for, a Draft *Environmental Impact Report (EIR)* on the Draft *Extreme OADP*; the comment period closed on August 1, 2004, with one comment received. On August 6, 2004 the District issued a Draft *EIR* for public review and comment; the comment period closed September 7, 2004. In the Draft *EIR*, the District evaluates the environmental impacts of the *Extreme OADP* as the project, and also evaluates alternatives consisting of the early 8-hour increment of progress plan and the early 8-hour ozone attainment demonstration plan (each of which is identified by EPA as a viable option to fulfill unmet attainment demonstration obligations for the federal 1-hour ozone standard). No comments were received on the Draft *EIR*. The District revised some sections of the *DEIR* to make it consistent with the proposed

Extreme OADP, made additional minor editorial corrections, and then issued the revised DEIR as the Final EIR for the Extreme OADP.

## Public Review Process

The District held three sets of public workshops (six workshops in total) during the preparation of the *Extreme OADP*. These included a public workshop on the technical issues related to the emissions inventory and modeling (July 23, 2003); workshops emphasizing candidate control measures, preliminary modeling, and technical issues (January 6-7, 2004); and workshops on the Draft *Extreme OADP* (August 12-13, 2004). All workshops were held in Fresno with video-teleconference links to Modesto and Bakersfield; the August workshops included a community meeting at night, also based in Fresno, with video-teleconference links to Modesto and Bakersfield. Also, in conjunction with the January workshops, the District issued a *Status Report* on the *Extreme OADP* (about 25 pages long) that lists District and ARB control measures to be used in the *Extreme OADP* and that describes preliminary photochemical modeling results for the plan.

In addition to about fifty oral comments on the Draft *Extreme OADP* made during the August workshops, five comment letters were received on the Draft *Extreme OADP*. In response to these comments, staff modified the text of the Draft *Extreme OADP*, and these changes are reflected in the Proposed *Extreme OADP*. In addition, staff summarized the comments and provided responses as an attachment to the Proposed *Extreme OADP*. Most comments identified feasibility issues applicable to specific industries or specific rules. Since most of the issues raised require detailed analysis that typically occurs during rule development, the District commits to addressing them during the rule development process. Several comments were concerned with the proposed Indirect Source Rules Program and with the air quality benefits of additional refinery emission controls, and with the need to conduct sub-regional photochemical modeling for future ozone plans. Others pointed out that the public review timeline for the Draft *Extreme OADP* was too short. Staff met with several key stakeholder groups during August 2004 to better understand and address these issues.

Lastly, the photochemical modeling used in *Extreme OADP* was developed in a multi-agency, multi-organizational public process involving other districts, ARB, EPA, industry, universities, research institutes, and private consultants. In addition, the photochemical modeling conducted for the *Extreme OADP* was the focus of a day-long meeting of the Central California Ozone Study Technical Committee on June 29, 2004.

After the posting of the Proposed *Extreme OADP* and before the September 16, 2004 District Governing Board meeting at which the *Extreme OADP* was received and filed, District and ARB staff identified a series of minor technical adjustments to the attainment demonstration that did not change any of the control measure requirements in the *Extreme OADP* nor did they change the plan's conclusions and findings. These adjustments were noted to the District Governing Board at the September 16, 2004

meeting and were summarized in an Errata sheet distributed at the meeting. The District Governing Board directed staff to incorporate the changes noted in the Errata sheet into the Proposed *Extreme OADP* for the October 8, 2004 public hearing.

Notices for the October 8, 2004 public hearing have been published in eight San Joaquin Valley newspapers of general circulation, and were mailed to affected sources and interested parties. The notice established a comment period for the proposed Extreme OADP that closed on September 24, 2004. One set of comments was received; the District summarized the comments and prepared responses. The comments and responses are included in the Governing Board package and will be posted on the District's web site.