

## **CHAPTER 2**

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## 2.0 PROJECT DESCRIPTION

### 2.1 INTRODUCTION

The San Joaquin Valley Air Basin (SJVAB) does not currently meet the federal primary (health-based) and secondary (welfare-based) one-hour national ambient air quality standards (standards or NAAQS) of 0.12 parts per million (ppm) by volume for ozone. At levels above the federal standards, ozone adversely affects public health, diminishes the production and quality of many agricultural crops, reduces visibility, degrades man-made materials, and damages native and ornamental vegetation.

The San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD or District) has been implementing emission control measures to reduce one-hour ozone levels, and some demonstrable progress has been made over the past fifteen years. However, considerable additional emission reductions are needed to bring the SJVAB into attainment with the federal one-hour ozone standards. Because the District generally has authority over only a portion of the variety of air pollution sources in the SJVAB, it does not have the ability to effect all of the emissions controls needed to bring the SJVAB into attainment. Additional emission reductions to be implemented by the California Air Resources Board (CARB) and the U.S. Environmental Protection Agency (U.S. EPA) are needed to achieve attainment. As an extreme non-attainment area, the SJVAB must attain the standard by November 15, 2010.<sup>1</sup>

This plan was prepared to fulfill the requirements of the Federal Clean Air Act for extreme non-attainment areas for the federal one-hour ozone standard. As such, it describes the factors contributing to the SJVAB's persistent ozone air quality problem, quantifies air pollutant emissions that cause ozone to form in the SJVAB, identifies control measures (past, present and future) needed to reduce these emissions, and projects future air quality based on implementation of these controls. In addition, this plan fulfills state requirements for the California Clean Air Act Plan Triennial Progress Report, and fulfills federal requirements for demonstrating rate of progress in meeting emissions reductions targets.

### 2.2 PROJECT LOCATION

The San Joaquin Valley (Valley) is a major geographic, population, and agricultural region of California. The District, and the corresponding air basin, includes the counties of San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, Tulare and the Valley portion of Kern County. Comprising about 24,840 square miles, it represents approximately 16 percent of the geographic area of California and is the second largest air basin in California. The California Department of Finance estimates that the District's

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<sup>1</sup> On April 30, 2004 U.S.EPA issued a trial *final* rule revoking the federal one-hour ozone standard, effective June 15, 2005 (69 FR 23858). Effective June 15, 2005 the SJVAB would no longer be nonattainment for the federal one-hour standards and the November 15, 2010 date for attainment would be eliminated. Focus will then shift to the attainment of the eight-hour standards—and District state emission control measures committed to in this Extreme OADP would be implemented for their contribution toward reducing 8-hr ozone levels.

population will grow to 3.6 million by 2005. Major urban centers include Bakersfield, Fresno, Modesto and Stockton.

The Valley consists of a continuous inter-mountain valley that is approximately 250 miles long and averages 80 miles wide. It is defined by the Sierra Nevada mountains in the east (8,000 to 14,000 feet in elevation), the Coast Range in the west (reaching 5,020 feet in elevation), and the Tehachapi mountains in the south (6,000 to 8,000 feet in elevation). The Valley opens to the Carquinez Straits in the north where the San Joaquin-Sacramento Delta empties into San Francisco Bay. Except for its foothill and mountain areas, the SJVAB is essentially flat with a slight downward gradient to the northwest.

Approximately 31 percent of the total land area within the SJVAB is under public ownership. The federal government is the largest public landholder, with approximately 94 percent of the total public-owned land under its jurisdiction. For the most part, the holdings consist of National Forest lands, National Parks, wildlife refuge areas, plus a major military air base located on the Valley floor.

The Valley is predominately agriculturally oriented, including foothill and mountain areas devoted to grazing and timber sales. Currently, the majority of industry remains directly or indirectly related to providing services, products and support to agriculture. In addition, industries related to the production of natural resources are scattered throughout the District. Various lumbering operations that process timber harvested from the nearby National Forests and private forestlands are located along the east side of the District. The District also has substantial petroleum production fields in the southern counties, while oil refineries are located in Kern County. See Subchapter 3.2 for more detailed information on the SJVAB.

### **2.3 SJVAB PLANNING HISTORY**

After passage of the 1990 Federal Clean Air Act Amendments, U.S. EPA classified the SJVAB as “serious” non-attainment for the federal one-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 one-hour ozone standard by November 15, 1999 as required in the Federal Clean Air Act.<sup>2</sup> Consequently, in November 2001 U.S. EPA reclassified the SJVAB from “serious” to “severe” non-attainment (66 FR 56476); at the same time, U.S. EPA also changed the boundary of the SJVAB by removing a portion of

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<sup>2</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.

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 CARB provided all required items to U.S. EPA except for a plan demonstrating attainment of the federal one-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~~ *transmitted* by CARB to U.S. EPA on September 6, 2002)<sup>3</sup>.

On October 2, 2002, U.S. 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 one-hour ozone standard by November 15, 2005, were required to be submitted to U.S. EPA no later than March 18, 2004. This U.S. 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>4</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 U.S. EPA promulgation of the FIP. Stopping the clocks required submittal of the necessary revisions by the dates specified; these revisions are (1) a demonstration of attainment of the one-hour 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 percent per year 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 CARB provided all of the required items to U.S. EPA except for the plan demonstrating attainment of the federal one-hour ozone standard by November 15, 2005.<sup>5</sup>

The District and CARB *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.*

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<sup>3</sup> CARB ~~submitted~~ *transmitted* the 2002 and 2005 Rate of Progress Plan to U.S. 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>4</sup> Under the Federal Clean Air Act, U.S. EPA may develop and implement its own federal emission control measures if it finds that state and local measures do not meet requirements. This FIP is thus a temporary activity that supersedes the SIP; it remains in effect until such time as U.S. EPA turns the attainment demonstration program back to state and local agencies.

<sup>5</sup> On April 10, 2003, California submitted to U.S. 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 U.S. EPA in the October 2002 Federal Register notice, except for the Ozone Attainment Demonstration Plan. This Amended ROP Plan is based on CARB’s updated motor vehicle emissions model and updated activity data, and thus could be used to set conformity budgets. On July 10, 2003 U.S. EPA found the conformity budgets to be adequate. On September 4, 2003, U.S. EPA found the Amended ROP Plan to be complete, and it is under review at U.S. EPA ~~as of July 2004.~~

*This modeling indicated that the emissions reductions needed in 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 were unable to provide a Severe Area Ozone Attainment Demonstration Plan to U.S. EPA because the magnitude of the emissions reductions needed to attain the standard could not be put in place in time to show attainment by November 15, 2005. Photochemical modeling conducted in 2001 identified large emissions reductions needed for attainment. The magnitude of the reductions was outside of the District's regulatory authority to implement; consequently, attainment depended upon CARB's implementation of their own emission control measures on sources outside the authority of the District to regulate (primarily mobile sources). Most of CARB's rules were scheduled to go into effect in the post 2007 time frame<sup>6</sup>, which did not help the District demonstrate attainment for the SJVAB by 2005. In addition, U.S. 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 CARB 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 one-hour ozone standards in the SJVAB, and that these controls will not go into effect until after 2005. 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 U.S. EPA to reclassify an area to a higher classification. Higher classes reflect a more substantial non-attainment 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 non-attainment.<sup>7</sup>

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 U.S. EPA to reclassify the SJVAB as extreme non-attainment for the federal one-hour ozone standards. Consequently, on December 18, 2003, after extensive public debate and stakeholder discussion, the District's Governing Board voted unanimously to request U.S. EPA through CARB to classify the SJVAB as extreme non-attainment for the federal one-hour ozone standards.

CARB forwarded this request to U.S. EPA on January 9, 2004. On February 23, 2004 U.S. EPA proposed approval of the request (69 FR 8126) and on April 18, 2004, U.S.

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<sup>6</sup> CARB's rulemaking activities are heavily influenced by the attainment planning schedule for the South Coast Air Basin, which as an extreme ozone non-attainment area must attain the federal one-hour ozone standard by November 15, 2010.

<sup>7</sup> In May 2001, The District requested U.S. EPA to designate the SJVAB as "Severe-17", which would have extended the attainment date to November 15, 2007. In November 2001, U.S. EPA denied the request because the "Severe-17" category can be assigned based only on design value, and the SJVAB's one-hour design value at the time of the request was not high enough for classification as "Severe-17" (66 FR 56476).

EPA signed the final rule approving the request. The classification as extreme non-attainment became final on May 17, 2004 (69 FR 20550). This classification changes the SJVAB’s attainment date for the federal one-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 non-attainment 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 one-hour ozone standard apply to the SJVAB as of May 17, 2004.<sup>8</sup> *The District is committed to submitting revised New Source Review and Title V rules reflecting “extreme” classification to EPA by May 16, 2005 as required by the Final Rule reclassifying the SJVAB to extreme nonattainment (69 FR 20552).*<sup>9</sup>

## 2.4 CALIFORNIA CLEAN AIR ACT CONTROL MEASURES

### 2.4.1 STATIONARY SOURCE CONTROL MEASURES

Table 2.4-1 presents the District’s rulemaking schedule and adoption activity for 2001-2003 as developed in the 2000 Triennial Plan Update and Plan Revision (SJVUAPCD 2001).

**TABLE 2.4-1  
2001 – 2003 Rulemaking Schedule**

Rule	Control measure	2000 Triennial Plan Schedule	Activity	Commitment
4103	Open Burning	2Q/01	Amendment	1997 Triennial Plan & EPA Requirement
4106	Prescribed Burning and Hazard Reduction Burning	2Q/01	New Rule	1997 Triennial Plan & EPA Requirement
4623	Organic Liquid Storage	2Q/01	Amendment	1997 Triennial Plan & EPA Requirement
4662	Organic solvent Degreasing	2Q/01	Amendment	1997 Triennial Plan & EPA Requirement
4663	Organic Solvent Degreasing	2Q/01	New Rule	1997 Triennial Plan & EPA Requirement
Regulation 8	Fugitive Dust	2Q/01	Amendment	PM10 ADP & EPA SIP Deficiency
4411	Oil Production Well Cellars	3Q/01	New Rule	1997 Triennial Plan & EPA Requirement
4601	Architectural Coatings	3Q/01	Amendment	1997 Triennial Plan & EPA Requirement

<sup>8</sup> EPA has an obligation to issue a FIP if they do not approve the Amended 2002 and 2005 Rate of Progress Plan for San Joaquin Valley Ozone that was submitted to them in April 2003. The District owes this Plan to EPA whether the District’s classification is extreme or severe.

<sup>9</sup> The District could revisit the NSR rule again after revocation of the federal 1-hour ozone standards; because no emission reductions are expected from this change in permitting, this future rule amendment is not discussed further in this EIR.

**TABLE 2.4-1  
2001 – 2003 Rulemaking Schedule (cont.)**

<b>Rule</b>	<b>Control measure</b>	<b>2000 Triennial Plan Schedule</b>	<b>Activity</b>	<b>Commitment</b>
4692	Commercial Charbroiling	3Q/01	New Rule	1997 Triennial Plan & EPA Requirement
4354	Glass Melting furnaces	2Q/02	Amendment	EPA SIP Deficiency
4305	Boilers, Process Heaters and Steam Generators	3Q/02	Amendment	EPA SIP Deficiency
4307	Dryers & Ovens	3Q/02	New Rule	EPA RACT Requirement
4311	Flares	3Q/02	New rule	EPA RACT Requirement
4312	Nitric Acid Plants	3Q/02	New Rule	EPA RACT Requirement
4313	Foundries	3Q/02	New Rule	EPA RACT Requirement
4351	Boilers, Steam Generators and Process Heaters – Reasonably Available Control Technology	3Q/02	Amendment	EPA SIP Deficiency
4610	Mirror Coating Operations	3Q/02	New Rule	EPA RACT Requirement
4693	Bakeries	3Q/02	New rule	EPA RACT Requirement
4696	Food Products Cooking	3Q/02	New rule	EPA RACT Requirement
4104	Reduction of Animal Matter	3Q/02	Amendment	EPA RACT Requirement
4701	Internal Combustion Engines	3Q/02	Amendment	EPA SIP Deficiency
4703	Stationary Gas Turbines	3Q/02	Amendment	EPA SIP Deficiency
4403	Components Serving Light Crude Oil or Gases at Light Crude Oil and Gas Production Facilities and Components at Natural Gas Processing Facilities	3Q/03	Amendment	Feasible Control Measure
4451	Valves, Pressure Relief Valves, Flanges, Threaded Connections and Process Drains at Petroleum Refineries and Chemical Plants	3Q/03	New rule	Feasible Control Measure

**TABLE 2.4-1  
2001 – 2003 Rulemaking Schedule (concluded)**

<b>Rule</b>	<b>Control measure</b>	<b>2000 Triennial Plan Schedule</b>	<b>Activity</b>	<b>Commitment</b>
4452	Pump and Compressor Seals at Light Crude Oil and Gases Production Facilities and Components at Natural Gas Processing Facilities	3Q/03	Amendment	Feasible Control Measure
4701	Internal Combustion Engines	3Q/03	Amendment	Feasible Control Measure
4703	Stationary Gas Turbines	3Q/03	Amendment	Feasible Control Measure

Section 40924(b)(2) of the California Health & Safety Code, as well as CARB’s guidance for triennial progress reports and plan revisions, directs districts to report actual emissions reductions achieved for each measure scheduled for adoption in the three year period addressed by each progress report and plan revision. Table 2.4-2 presents this information for the SJVAB, in the 2000 - 2002 time frame that is the focus of this Triennial Progress Report and Plan Revision.

**TABLE 2.4-2  
Actual Emission Reductions for District Rules Affecting Ozone Precursor Emissions<sup>1</sup> (2000 – 2002)**

<b>Rule</b>	<b>Date</b>	<b>Title</b>	<b>Pollutant</b>	<b>Baseline (tons/day)</b>	<b>Actual Reductions</b>
4408	12/19/02	Glycol Dehydration Systems	VOC	1.7	1.5
4601	10/31/01	Architectural Coatings	VOC	9.3	1.3
4610	12/19/02	Glass Coating Operations	VOC	0.2	0.2
4623	12/20/01	Storage of Organic Liquids	VOC	2.8	0.2
4662	4/19/01	Organic Solvent Degreasing Operations	VOC	14.0	11.3
4692	3/21/02	Commercial Charbroiling	VOC	0.04	0.03
4693	5/16/02	Bakery Ovens	VOC	0.2	0.2
4703	4/25/02	Stationary Gas Turbines	NOx	9.6	5.4

<sup>1</sup> Rules may also reduce emissions of other pollutants (e.g., PM), but only ozone precursors are shown.

## 2.4.2 MOBILE SOURCE CONTROL MEASURES

The District is continuing to work with local governments through the Transportation Planning Agencies (TPAs) in developing reasonably available control measures (RACM)

affecting local transportation planning activity. The Memorandum of Understanding (MOU) among the District and the eight county TPAs is still in effect. The 2000 Triennial Progress Report and Plan Revision mentioned several 9000-series rules that were no longer being pursued due to state action; these rules are still inactive.

District and TPA staffs are working on specific actions and programs to reduce vehicle miles traveled (VMT) or to reduce emissions through other activities. Local governments in the SJVAB have committed to hundreds of Reasonably Available Control Measures in the period 2000 - 2002. The reader is referred to the Amended 2002 and 2005 Rate of Progress Plan for San Joaquin Valley Ozone for more information (SJVUAPCD, 2003c). The document is available on the District's website at [www.valleyair.org](http://www.valleyair.org). Descriptions of specific control measures are available in hardcopy at the District office in Fresno, at CARB's office in Sacramento, or at U.S. EPA Region 9's office in San Francisco.

The Indirect Source Rules represent a major rule development activity. Indirect Source Mitigation is aimed at controlling secondary emissions from development that attract or generate motor vehicle trips. The District is currently evaluating rules to implement the Indirect Source Mitigation measure that would require mitigation measures and/or emission based fees to fund projects that reduce emissions. Developers would have the option for mitigating emissions on-site through project design and location, credit for the installation of infrastructure and equipment at the project site that would reduce vehicle trips or emissions, and/or the payment of a fee. During the 2000—2002 period, the District began the process of revisiting prior rule development activities in this area (that did not result in development of indirect source rules). The 2003 PM10 Plan (SJVUAPCD, 2003d) and state legislation signed into law in 2003 (SB 700 series) are driving the District to adopt indirect source rules in the late 2004/early 2005 time frame.

### **2.4.3 VOLUNTARY PROGRAMS**

The District continued to implement several successful voluntary mobile source emission reduction programs in the 2000-2002 time frame. These programs are described below.

During the 2000 - 2002 time frame covered by this report, the **REduce Motor Vehicle Emissions (REMOVE)** Program utilized a portion of a \$4 motor vehicle registration surcharge fee allowed by State legislation for non-attainment areas for District-operated planning, monitoring, enforcement, technical studies, and emission reduction projects necessary to implement the California Clean Air Act (CCAA). The REMOVE Program funded projects that reduce motor vehicle emissions within the Valley through a competitive request for proposal (RFP) process. During the 2000-2001 funding cycle (2 years were treated as one cycle) and 2001-2002 funding cycles, the District continued to implement the REMOVE Program; projects funded at a cost of almost \$3,633,389 resulted in an estimated 460 tons of emissions reduction over the lifetime of the projects. The REMOVE Program is no longer in existence as of July 2004, but the District plans to replace it later in 2004 with a similar program.

The Heavy Duty Vehicle Emission Reduction Program provides financial incentives to municipalities, companies, fleet operators and individuals who purchase new heavy-duty, low-emission on-road vehicles from original equipment manufacturers (OEM); new OEM heavy-duty, low-emission engines for replacements; or retrofit technologies for heavy-duty on-road and non-road vehicles meeting criteria guidelines. The District is funding its Heavy Duty Vehicle Emission Reduction Program with Carl Moyer funds, provided through state legislative action. Approximately 9,500 tons of NOx reductions have resulted from Moyer Program projects.

Additionally, in 1996, the District began a Spare the Air Program. This voluntary program is designed to encourage ridesharing and discourage use of equipment and products that emit ozone precursors during the ozone season. The program is directed both to employers and the general public.

#### **2.4.4 LAND USE PROGRAMS**

Land use programs contain three basic elements: District CEQA review of projects in the SJVAB, District Guidelines for Assessing and Mitigation Air Quality Impacts, and District Air Quality Guidelines for General Plans.

In the CEQA Program, the District reviews projects each year from nearly all local planning agencies in the San Joaquin Valley. Local jurisdictions routinely include air quality mitigation measures recommended by the District in development projects. In addition, the District is increasingly functioning as lead agency on CEQA documents due to its discretionary action of permit issuance. For the period 2000-2002, the District reviewed and updated the Guide for Assessing and Mitigating Air Quality Impacts (SJVUAPCD 2002) to further assist local jurisdictions in analyzing and mitigating impacts, and issued a revised version on January 10, 2002. The District is preparing another update in 2004.

In the District's program to encourage air quality elements in city and county general plans, District staff provides assistance to cities and counties via its Air Quality Guidelines for General Plans (AQGGP) [SJVUAPCD 1994] and by reviewing general plans as they are updated. The AQGGP has been very well accepted. Nearly all cities and counties in the District that have prepared general plan updates have used the AQGGP since its approval in 1994. In 2002 the District began updating the AQGGP, and expects to issue a revised version in 2004.

### **2.5 PROPOSED CONTROL STRATEGY**

As a result of the previously Amended 2002 and 2005 Ozone Rate of Progress Plan (Ozone ROP) and the 2003 PM10 Plan (PM10 Plan), the District is already committed to develop a number of control measures in the form of new or amended rules. The control measures in the Ozone ROP are designed to reduce emissions of ozone precursors: NOx and VOC. During the winter months, these pollutants are also sources of secondary PM10, so the PM10 Plan includes control measures for NOx and VOC.

The rule development schedule shown in Table 2.5.-1 includes commitments from those plans for NO<sub>x</sub> and VOC reductions. The basis for those control measures is federal, state and local requirements or other considerations. These measures do not include commitments in the PM<sub>10</sub> Plan that would not impact ozone formation.

### 2.5.1 DISTRICT CONTROL MEASURES

Section 172 of the Federal Clean Air Act (FCAA) requires attainment demonstration plans to: “provide for the implementation of all reasonably available control measures as expeditiously as practical (including such reductions in emissions from existing sources in the area as may be obtained through the adoption, at a minimum, of reasonably available control technology) and shall provide for attainment of the national primary ambient air quality standards.”

To determine what stationary source control measures might be feasible for adoption in the SJVAB, the District considered CARB’s Identification of Performance Standards for Stationary Sources (as updated May 16, 2002); control measures committed to or successfully implemented in other regions [including South Coast Air Quality Management District, the Bay Area Air Quality Management District, and the Houston-Galveston (Texas) Area]; and control measures suggested by staff and members of the public at workshops held during the control measure development process. Some of those control measures were eliminated from the Ozone ROP and PM<sub>10</sub> Plan commitments, however, because:

- the District had already adopted rules as effective as those described;
- similar rules are currently being developed; or
- the SJVAB has few or no sources in the affected categories.

The District evaluated the remaining control measures, using baseline inventories, known control technology, potential emission reductions, and the feasibility of implementation by 2008. Based upon this evaluation, the District placed measures into the Control Measure schedule. From 2004 to 2007, the District’s rule development schedule will include the rules shown in Table 2.5-1. The schedule includes both new rules and amendments to existing rules that are necessary to satisfy applicable requirements including RACT, Best Available Retrofit Control Technology (BARCT), and reasonable further progress toward attaining the one-hour ozone standard.

The control measures indicated are those that the District commits to either developing as rules, or evaluating for possible rule development. Projects may be added or removed based on information received during the development of the Plan; detailed examination of the emission inventories and feasible control measures; or future local, state and federal requirements.

*The District may develop new To prevent conflicts between attainment plans and plan updates, any changes to the control measure schedules, in future years. which are*

~~approved in subsequently adopted plans or updates, are considered to also apply to this Plan, without the need to modify the tables shown. These schedules will be reflected in future SIP amendments that would be adopted by the District Governing Board, submitted to ARB for review and approval, and then submitted to EPA as a SIP amendment.~~

For the purposes of implementing this Extreme Ozone Attainment Demonstration Plan, the District is committed to adopt and implement control measures that will achieve, in aggregate, the emissions reductions specified in 2.5-1 and described in Section 2.5.3.

## 2.5.2 CONTROL MEASURES TABLE

Table 2.5-1 summarizes ozone precursor control measures grouped according to their proposed rule development schedule. In order to demonstrate compliance with the 2010 federal ozone standard, the District must have three years of “clean” air quality data. Therefore, control measures must be adopted as rules and implemented by operators by Spring 2008, in order for the measures to generate air quality benefits that satisfy the ozone attainment deadline. The control measures were scheduled based on a number of factors including the size of the existing emission inventory; the feasibility of control measures for the class and category of source; projected emission reductions which might result; similar controls already required or proposed by other districts; and possible implementation schedules.

Some control measures were considered which would require additional refinement of the emissions inventory and/or further research into feasible emission controls. These measures have been placed in Table 2.5-1 for further study.

Table 2.5-1 contains control measures for the rule projects currently scheduled to be developed in 2004 through 2007, as well as their projected adoption dates, emissions inventories for 2008 and 2010, and estimated reductions. These are measures for which the District has an adequate emissions inventory and/or for which reasonable control measures have been established by the District or other agency. The District has already begun rule development on many of the rules that are listed for 2004 and 2005 adoption. When available, emission inventory data for 2008 and 2010 was taken from the CARB SIP Emission Projects (Central California Ozone Study (CCOS) Domain), Version 2.11, datasets ([http://www.arb.ca.gov/app/emsinv/ccos/fcemssumcat\\_cc211.php](http://www.arb.ca.gov/app/emsinv/ccos/fcemssumcat_cc211.php)). This data reflects the daily summer average emissions from the various stationary source categories. The future year inventory was adjusted by CARB for projected growth and controlled for rule requirements that had would apply to the source category prior to the indicated year. No adjustment was made to the baseline for the control measures indicated in Table 2.5-1 but the results of the proposed control measures are reflected in the "reductions" column.

Due to the necessary assumptions made in compiling the data for the CCOS inventories, the CARB emission inventory, and the contracted study inventories, they may differ from the final rule development calculations. Specific emission baseline and reduction

information is generated as a routine step in the rule development process. Such information is typically based on detailed information about actual equipment and control levels and therefore is a more accurate reflection of the true emissions and reduction potentials in the SJVAB.

The emission reductions, indicated in Table 2.5-1, are based on percent reductions from the baseline emission inventories. These percentages reflect assumed control technologies, control effectiveness, and rule applicability and penetration rates. The percent reduction represents the District's reduction commitment for the particular control measure. The emission reduction numbers, in tons per day, in Table 2.5-1, are based on the current emission inventory data and reflect the outcome of the percentage commitment but are subject to revision as the inventories are refined.

### **2.5.3 2004 – 2007 CONTROL MEASURES**

This section provides specific information about the control measures, as shown in Table 2.5-1, which are scheduled for rule development between 2004 and 2007. Final details of the resulting rules will be determined during the rule development process based on applicable federal, state and local requirements, socioeconomic factors, and other information provided by public comments.

During the rule development process, the District examines the existing rules of other air districts and in-use and emerging control technologies to determine which level represents the best feasible control standard for a given measure. Emission reductions shown are based on implementing feasible controls on the applicable emission inventories. These reductions may be adjusted to reflect any new control technology, source data, or practices that are discovered during rule the development process.

#### **2.5.3.1 Control Measure A: New Rule 4409 (Oil and Gas Fugitives)**

Crude oil and gas production facilities and natural gas processing facilities contain a large number of various types of components such as pipes, flanges, valves, fittings, threaded connections, hatches, pressure relief valves, pumps, and compressors. Leakage of fluids or gases from these components can be expected to occur during process and transfer operations, causing fugitive VOC emissions. The actual percentage of leaking components for most of these facilities may be small, but due to the large number of components the fugitive VOC emissions from leaking components, in aggregate, could be significant.

Possible controls include lowering the current gaseous leak threshold of 10,000 parts per million by volume (ppmv), eliminating some existing exemptions, improving the existing inspection and repair programs by increasing the frequency of inspection, shortening the repair period for leaking components, and replacing frequently leaking components with Best Available Control Technology.

**CHAPTER 2: PROJECT DESCRIPTION**

<b>TABLE 2.5-1: Control Measure Schedule (2004 - 2007)</b> <b>(Except as noted, Emissions Data reflects CCOS SIP information using Summer Time Daily Averages)</b>								
Control Measure	Rule Number	Description	Adopt or Amend Rule	Pollutant	2008 Baseline (tpd)	2008 Reductions (tpd)	2010 Baseline (tpd)	2010 Reductions (tpd)
A	4409 New <sup>6</sup>	Oil and Gas Fugitives	3Q - 2004	VOC	10.4	4.7	10.2	4.7
B	4455 New <sup>6</sup>	Refinery & Chemical Fugitives	3Q -2004	VOC	0.5	0.2	0.5	0.2
C	9310 New	Fleet Rule - School Buses	4Q -2004	NOx	2.5	0.1	2.6	0.1
D	9510 New <sup>6</sup> 3180 New <sup>6</sup>	Indirect Source Mitigation <sup>1</sup>	2Q - 2005	NOx	N/A	2.8	N/A	4.0
E	4307 New <sup>6</sup>	Small Boilers, Process Heaters, Steam Generators, 2.0 - 5.0 MMBtu/hr <sup>2</sup>	4Q - 2004	NOx	8.8	1.0	9.0	1.0
F	4694 New <sup>6</sup>	Wineries - Fermentation and Storage	4Q - 2004	VOC	2.1	0.7	2.1	0.7
G	4352	Solid-Fuel Boilers, Steam Generators, and Process Heaters	4Q - 2004	NOx	3.8	<0.05 <sup>5</sup>	4.4	<0.05 <sup>4</sup>
H	4702 <sup>6</sup>	Stationary IC Engines	2Q - 2005	NOx	21.0	8.4	20.1	8.0
I	4309 New <sup>6</sup>	Commercial Dryers <sup>3</sup>	2Q - 2005	NOx	8.8	1.0	9.0	1.0
J	4565 New	Composting/Biosolids Operations <sup>3</sup>	2Q - 2005	VOC	0.7	--	0.7	0.1
K	4602	Automotive Coating	3Q - 2005	VOC	1.6	0.1	1.6	0.1
L	4570	Concentrated Animal Feeding Operations	2+Q - 2006	VOC	60.9	6.1	63.1	15.8
M	4662 4663 4602 4603 4604 4605 4606 4607 4653 4684	Organic Solvent Degreasing Organic Solvent Cleaning Motor Vehicle and Mobile Equipment Coating Surface Coating of Metal Parts and Products Can and Coil Coating Operations Aerospace Assemblies and Component Coating Wood Products Coating Graphic Arts Adhesives Polyester Resin Operations	2Q - 2006	VOC	4.9	1.0	5.1	1.3

TABLE 2.5-1: Control Measure Schedule (2004 - 2007) (Except as Noted, Emissions Data Reflects CCOS SIP Information Using Summer Time Daily Averages) (concluded)								
Control Measure	Rule Number	Description	Adopt or Amend Rule	Pollutant	2008 Baseline (tpd)	2008 Reductions (tpd)	2010 Baseline (tpd)	2010 Reductions (tpd)
N	New <sup>6</sup>	Water Heaters, 0.075 - 2.0 MMBtu/hr <sup>3</sup>	3Q - 2006	NOx	1.4	0.1	1.4	0.2
O	4401 <sup>6</sup>	Steam-Enhanced Oil Well Vents	3Q - 2006	VOC	13.2	0.7	12.8	1.4
P	4651	Soil Decontamination <sup>3</sup>	4Q - 2006	VOC	<0.05	--	<0.05	<0.05 <sup>4</sup>
Q	4103	Open Burning	1Q - 2007	NOx VOC	2.3 5.8	0.2 0.5	2.3 5.8	1.1 2.9
R	4682	Polymeric Foam Manufacturing	2Q - 2007	VOC	0.3	---	0.3	0.1
S	4703	Stationary Gas Turbines (< 10 MW, distributed generation) <sup>2</sup>	2Q - 2007	NOx	2.5	---	2.5	0.6
T	4621, 4624	Gasoline Storage & Transfer	3Q - 2007	VOC	3.3	---	3.4	0.9
U	New	Aviation Fuel Transfer, Phase I <sup>3</sup>	3Q - 2007	VOC	0.2	--	0.2	<0.05 <sup>4</sup>

<sup>1</sup>: CCOS data are not available. Emissions and reductions based on reductions generated by funding projects with Indirect Source Mitigation fees.

<sup>2</sup>: CCOS data are not available. Emissions and reductions based on preliminary draft staff report.

<sup>3</sup>: CCOS data are not available. Emissions and reductions based on contracted emissions inventory report.

<sup>4</sup>: Rules with an average daily emissions of less than 0.05 tons/day may be included to satisfy federal and state requirements for RACT, BACT or all feasible controls. Please see the control measure details for additional information.

<sup>5</sup>: All data reflect CCOS SIP information using summer daily planning inventories, except as noted.

<sup>6</sup>: This control measure appears in 2003 PM10 Plan (Tables 4-17 through 4-20, as amended, December 2003), but elements of the rule (e.g., estimated emissions reductions baseline emissions, rule description, etc.) have been updated for this Extreme OADP; consequently, the control measure elements may not match those presented in the 2003 PM10 Plan for the same measure. Furthermore, the following additional PM10 Plan control measures, which are not shown above in Table 4-1 because they were adopted as rules before the Table was developed (ca January 2004), are used in the Extreme OADP for attainment (Chapter 5) and rate of progress (Chapter 7) demonstrations: Rule 4604 (Can and Coil Coating), Rule 4408 (Glycol Dehydration Systems), Rule 4610 (Glass Coating Operations), Rule 4306 (Boilers, Steam Generators and Process Heaters), and Incentive Programs. Emissions reductions from these rules as given in Tables 4-17 through 4-20 of the 2003PM10 Plan were converted to summer emissions before being used elsewhere in this Extreme OADP.

### **2.5.3.2 Control Measure B: New Rule 4455 (Refinery and Chemical Fugitives)**

Petroleum facilities, gas liquids processing facilities, and chemical plants contain a large number of various types of components such as pipes, flanges, valves, threaded connections, pressure relief valves, process drains, pumps, and compressors. Leakage of fluids or gases from these components can be expected to occur during process and transfer operations, causing fugitive VOC emissions. The actual percentage of leaking components for most of these facilities may be small, but due to the large number of components the fugitive VOC emissions from leaking components, in aggregate, could be large.

In general, the state RACT/BARCT guidelines and similar rules from other air districts' rules establish lower leak thresholds, require operators to conduct more frequent inspections of components, and provide shorter periods to repair leaking components than currently allowed in Rules 4451 and 4452. Rule 4455 would replace those rules and would be more effective by implementing a rigorous leak detection and repair program and by requiring BACT equipment to replace frequently leaking devices.

### **2.5.3.3 Control Measure C: New Rule 9310 (Fleet Rule – School Buses)**

The new rule is designed to reduce NO<sub>x</sub> and PM emissions from school buses. This rule is intended to achieve greater and earlier NO<sub>x</sub> and PM emission reductions than would occur through the normal vehicle replacement process for these buses.

Emissions from school bus fleets could be reduced in a number of ways, including:

- replacing existing buses with newer, cleaner buses before their normally scheduled retirement;
- replacing older engines of existing buses with newer engines using cleaner emissions technology;
- retrofitting emission control technology to existing buses; or
- modifying existing buses to use cleaner-burning diesel or alternate fuels.

Generally, older-model school buses emit more TACs and other air pollutants than the more current models. More than one-third of the existing school buses are fifteen years old or older, and were manufactured to less stringent emission standards than those for later-model school buses. The oldest buses would benefit most from either complete replacement or re-powering to reduce tailpipe emissions.

### **2.5.3.4 Control Measure D: New Rules 9510 (Indirect Source Mitigation Program) and 3180 (Indirect Source Mitigation Fee)**

Indirect sources are land use activities, such as housing developments, shopping malls, transportation hubs, and industrial sites, that attract or generate motor vehicle trips. Indirect

source emissions are not emitted directly from permitted equipment or activities at the location, as is the case for traditional stationary sources that have permits for boilers, engines or fuel storage tanks. ~~Indirect source emissions are created by portable equipment and motor vehicles at the site, resulting from the land use development.~~ *Indirect source emissions are created by motor vehicle trips to and from the site. The program is also considering emissions from area sources such as water heaters and landscape maintenance equipment. This program will have three phases at a minimum and will include residential, commercial, industrial, and institutional developments.*

*Under the Indirect Source Mitigation Program, development projects would be required to mitigate a portion of their emissions with onsite mitigation and/or by contributing to a mitigation fund that would be used to pay for the most cost-effective projects to reduce emissions. The amount of the fee can be revised depending on the emission reductions required to meet rate of progress and the emission reducing projects available to fund. The program could be managed by the District or delegated to cities and counties. This control measure will include residential, commercial, industrial, and institutional developments.*

Under the Indirect Source Mitigation Program, development projects would be required to mitigate a portion of their emissions with onsite mitigation or by contributing to a mitigation fund that would be used to pay for the most cost-effective projects to reduce emissions. The amount of the fee can be revised depending on the emission reductions and the emission reducing projects available to fund. The program could be managed by the District or delegated to cities and counties.

#### **2.5.3.5 Control Measure E: New Rule 4307 (Small Boilers, Process Heaters and Steam Generators, 2.0 – 5.0 MMBtu/hr)**

These units are not currently regulated by the District permitting process or a prohibitory rule. The District does not currently issue permits to operate for gas-fired equipment in this source category, but may do so in the future. Combustion modifications appropriate for small boilers, steam generators, and process heaters include low excess air, low NOx burners, water/steam injection, and flue gas re-circulation (FGR). Post-combustion controls can include the use of selective catalytic reduction (SCR) or selective non-catalytic reduction (SNCR) treatment of the exhaust stream.

#### **2.5.3.6 Control Measure F: New Rules 4694 (Wineries – Fermentation)**

Two winery processes that produce significant VOC emissions are wine fermentation and bulk wine storage. This control measure is designed to reduce the emissions from the fermentation and storage processes. Future rule development will address the VOC emissions from brandy production and storage.

While limited fermentation may be conducted at any time of the year, the primary fermentation season occurs in the fall, during a 90-day period following the grape harvest. Fermentation of a single batch of wine will normally be completed in a three to

ten day period, depending in the variety of wine and the chemistry of the particular batch. The process of fermentation produces VOC emissions which offgas to the atmosphere through tank openings.

These operations are not currently regulated by the District permitting process or a prohibitory rule. Emission controls (other than process refrigeration) are not currently being used during the production of wines. Reductions in VOC emissions could be achieved through the use of tanks with vapor collection and control systems, carbon adsorption, water scrubbers, catalytic incineration, condensation, and additional temperature control as appropriate.

**2.5.3.7 Control Measure G: New Rule 4352 (Solid Fuel Fired Boiler, Steam Generators and Process Heaters)**

Rule 4352 (Solid Fuel-Fired Boilers, Steam Generators, and Process Heaters) regulates the NOx and CO emissions from this category by specifying allowable emission rates. Rule 4352 currently contains the old definition for the major source NOx threshold so it applies only to units at facilities emitting over 50 tons of NOx per year. The rule is being amended to include the current major definition and ensure that all major sources are subject to this rule.

The rule's current emission limits may be made more stringent if amended to be consistent with current state's "all feasible measure" requirements. Existing facilities are already operating at or below the "all feasible" NOx limit so no NOx reductions would result from incorporating that limit.

**2.5.3.8 Control Measure H: New Rule 4702 (Stationary IC Engines)**

Rule 4702 currently controls emissions from spark-ignition stationary IC engines by requiring them to meet specific NOx emission limits when operating. All engines used in agricultural operations were previously exempted from Rule 4702 pursuant to state law, (California Health & Safety Code 42310(e)). That law was rescinded effective January 1, 2004 and the District is currently amending Rule 4702 to address this equipment category and other compression ignition engines.

NOx emissions reduction can be achieved by making such engines, as well as all diesel-fueled engines, subject to NOx emission limits in Rule 4702. Many farmers have recently installed new, cleaner-burning engines with funding under the Moyer program. Further reductions can be achieved by increasing the stringency of NOx emission limits to meet recently adopted BARCT standards and by making the standards applicable to certain engines now exempted from the rule.

There are several possible options that are commonly used to control engine emissions. The option with the highest reduction potential is to replace existing engines with electric motors and many locations already have hookup for electric motors. Other strategies would include replacing old engines with newer cleaner engines; retrofitting older

engines with add-on exhaust control devices; or converting existing engines to a cleaner-burning fuel or alternate fuels. The emission limits and compliance schedule for agricultural engines will be developed pursuant to the requirements of California Health & Safety Code 40724 and will reflect the most stringent technically and economically feasible of the candidate control options.

#### **2.5.3.9 Control Measure I: New Rule 4309 (Commercial Dryers)**

These units are currently subject to District permitting requirements, but not a specific prohibitory rule. The new rule would establish NO<sub>x</sub> and SO<sub>x</sub> emission standards for dryers subject to permitting requirements. Differing emission standards may be established based on the heat input capacity of the dryer, and whether the unit is new or existing. Dryers are typically direct-fired, meaning that the exhaust directly contacts the material being heated. To reduce particulate contamination, dryers are predominantly fired on natural gas or propane. Emission controls appropriate for dryers include use of PUC quality natural gas, excess air controllers, low-NO<sub>x</sub> burners, and flue gas recirculation (FGR).

#### **2.5.3.10 Control Measure J: New Rule 4565 (Composting/Biosolids Operations))**

This project would investigate the emissions and controls for composting biosolids to determine if emission controls are feasible and if VOC reductions are achievable. Biosolids are primarily generated as waste by-products from municipal wastewater treatment, livestock operations, agricultural operations and commercial and residential landscaping. A number of factors is increasing the potential emissions inventory for this category. These factors include:

- Growing populations in Valley communities increases demands on municipal wastewater treatment as well as generating more landscaping waste material.
- New and expanded confined animal feeding operations generate more livestock waste. The South Coast Air Quality Management District (SCAQMD) is currently working on a rule amendment to have the removal of livestock waste from the South Coast Air Basin as a control option, which may increase the District's inventory for this category.
- Recent changes to the California Health & Safety Code will phase out traditional open burning of agricultural waste, increasing pressure to compost.
- State and federal landfill regulations promote composting of greenwaste and other biodegradable materials to extend landfill capacities.

VOC emission controls are currently under investigation and could include vapor collection and control systems, forced aeration, and windrow of materials to generate beneficial soil amendments.

**2.5.3.11 Control Measure K: New Rule 4602 (Automotive Coating)**

Rule 4602 controls emissions from automobile and automotive parts and products coating operations by specifying coating material VOC limits, allowable application equipment, and emission control options. CAPCOA has proposed that districts adopt a uniform rule for this category based on the most stringent coating material limits required by the various districts. Amendments to Rule 4602 would incorporate those new standards and help establish a uniform automotive coating requirement throughout California.

**2.5.3.12 Control Measure L: New Rule 4570 (Concentrated Animal Feeding Operations)**

Operations involved with the raising of fowls or animals were previously exempted from District permitting pursuant to state law, (California Health & Safety Code 42310(e)) which was rescinded effective January 1, 2004. VOC emissions reduction may be achieved by controlling emissions from the feedlots and associated supporting operations.

The BACM and BARCT emission limits and compliance schedule for CAFOs will be developed pursuant to the requirements of California Health & Safety Code 40724.6 and will reflect the technical and economic feasibility of candidate control options.

**2.5.3.13 Control Measure M: Rule 4662 (Organic Solvent Degreasing Operations); Rule 4663 (Organic Solvent Cleaning, Storage and Disposal); Rule 4602 (Motor Vehicle and Mobile Equipment Coating); Rule 4603 (Surface Coating of Metal Parts and Products); Rule 4604 (Can and Coil Coating Operations); Rule 4605 (Aerospace Assemblies and Component Coating); Rule 4606 (Wood Products Coating); Rule 4607 (Graphic Arts); and Rule 4684 (Polyester Resin Operations)**

Rule 4662 controls VOC emissions from organic solvent degreasing operations by specifying solvent VOC limits, allowable application equipment, and emission control options. Rule 4663 controls VOC emissions from organic solvents used to clean parts and equipment outside of the degreasers covered by Rule 4662. The other rules address solvents used to prepare surfaces and clean equipment used in the applicable operation addressed by the rules. Since these rules were last amended, lower-VOC solvents (25 grams VOC per liter) are being required by other air districts. Amendments to these rules would incorporate this new standard and help establish a uniform organic solvent cleaning standard for businesses in California.

**2.5.3.14 Control Measure N: New Rule 4308 (Water Heaters, 0.075 – 2.0 MMBtu/hr)**

The new rule would likely affect new commercial, industrial, or institutional water heaters with a rated heat input capacity between 75,000 Btu/hr and 2 MMBtu/hr. NO<sub>x</sub> prohibitory rules may be coupled with a financial incentive program to accelerate the replacement or retrofit of higher-polluting units. These units are not currently regulated

by the District permitting process or by a prohibitory rule and the District does not anticipate issuing permits for these units in the future.

#### **2.5.3.15 Control Measure O: Rule 4401 (Steam Enhanced Oil Well Vents)**

Further emission reductions can be achieved by lowering the exemption thresholds to make more sources subject to the rule. The rule is enforced through District permit and enforcement programs and would include inspections, annual on-site emission source testing, and record keeping.

#### **2.5.3.16 Control Measure P: Rule 4651 (Soil Decontamination)**

This project would upgrade the control requirements for soil remediation operations. Soil remediation is normally conducted using either in-situ techniques, in which the contaminated soil is left in place, or ex-situ techniques, in which the soil is excavated then treated and replaced, or permanently removed from the site. In-situ remediation techniques include soil vapor extraction, bioremediation, and liquid displacement. Ex-situ remediation techniques include limited aeration, thermal desorption (drying); and landfilling. VOC emissions generated by remediation projects can be controlled by a variety of common VOC controls such as capture and thermal destruction, biofiltration beds, carbon adsorption, condensation, and burial in sealed drums or in impermeable landfills.

Past in-situ projects have predominantly relied on soil vapor extraction and either carbon adsorption or thermal destruction, but bioremediation has also gained favor for smaller projects. Bioremediation uses either naturally-occurring or specifically-introduced microbes to consume soil contaminants. Ex-situ remediation favors limited soil aeration for small or low-level concentration. Larger projects typically involve excavation and then landfilling the soil as a hazardous material. A limited survey of landfill operators indicated that as much as 90 percent of the contaminated soil received in 2002 was from sources outside the SJVAB.

#### **2.5.3.17 Control Measure Q: Rule 4103 (Open Burning)**

Rule 4103 prohibits agricultural burning on days that the District declares to be no-burn days. No-burn days are days during which meteorological conditions are not conducive to good ventilation and mixing, but they are not necessarily days expected to experience high ozone concentrations. Open burning would be controlled on days when the ozone standard is in jeopardy of being exceeded. This rule would also prescribe conditions under which burning must be conducted to minimize smoke and controls would be instituted on those days when emissions of NO<sub>x</sub> and VOC contribute to exceedances of the ozone standard.

Open burning is now required be phased out between 2005 and 2010, pursuant to the schedule in California Health & Safety Code 41855.5(a). California Health & Safety

Code 41855.6 allows the District to postpone the commencement date of a burn prohibition, provided several conditions exist, including the lack of economically feasible alternatives to burning. NO<sub>x</sub> and VOC emissions reduction will be achieved by the new requirement. The California Health & Safety Code 41855.5(d)(1) requires the District to develop a rule to regulate limited open burning for disposal of diseased crops and weed control.

**2.5.3.18 Control Measure R: Rule 4682 (Polymeric Foam Manufacturing)**

Plastic foam products include a wide range of materials, including packaging for food and fragile products, building insulation, and a variety of other consumer items. Foams are manufactured by utilizing blowing agents, commonly hydrocarbons, which form vapor-filled “cells” within the plastic. After manufacturing, foam products contain residual blowing agents, which diffuse, while stored at the facility and after being transported from the facility.

Rule 4682 limits emissions from polystyrene foam, polyethylene, and polypropylene manufacturing, but only for selected operations and equipment within the process. This rule would be expanded to include VOC emission reduction or control from product curing areas and general product storage, similar to those employed by several of the existing sources.

Possible controls for this category include switching to an alternative, non-VOC blowing agent or employing capture and control systems for the VOC emissions. All ten manufacturers within the SJVUAPCD are still utilizing primarily VOC blowing agents.

**2.5.3.19 Control Measure S: Rule 4703 (Stationary Gas Turbines)**

Rule 4703 limits NO<sub>x</sub> emissions from turbines. Existing turbines in the San Joaquin Valley generally employ water or steam injection, dry low-NO<sub>x</sub> combustion technology, or selective catalytic reduction, or some combination thereof, to control NO<sub>x</sub> emissions. Since this rule was last amended in 2002, CARB published emission standards for turbines used in electrical power generation. The CARB standards apply to new or modified turbines but may be attainable by existing turbines depending on the development of new burner technology. The control measure would examine if the CARB NO<sub>x</sub> and CO limits are feasible for stationary gas turbines, rated <10.0 MW. Turbines rated greater than 10 MW are subject to requirements similar to the CARB limits.

**2.5.3.20 Control Measure T: Rule 4621 (Storage and Transfer of Gasoline) and Rule 4624 (Organic Liquid Loading)**

Rules 4624 and 4621 contain VOC emission control performance limits for tanks and equipment used to store and transfer organic liquid, specifically gasoline. Since the last rule update, the standards for control of VOC fugitive emissions have become more stringent. Strengthening the current rule standards is feasible and would result in

additional emission reductions. Possible control enhancements include increased inspection and maintenance frequencies, tank seal repair or replacement, and retrofitting old systems with newer technologies.

#### **2.5.3.21 Control Measure U: New Rule 4621 (Aviation Fuel Transfer, Phase 1)**

This operation would investigate the emission inventory and feasible control measures for bulk aviation fuel storage tanks. Fugitive VOC emissions are released from these tanks due to spillage and vapor displacement during Phase 1 operations and from venting through relief valves to prevent excessive pressure from diurnal heating.

Rule 4621 addresses Phase 1 requirements for tanks holding motor vehicle fuel, but not aviation fuel. Also, while Rule 4623 addresses fueling motor vehicles, it does not apply to fueling aircraft since aircraft do not have uniform fueling points and the Phase 2 equipment is not certified for that use.

Fugitive emissions can be controlled with pressure-vacuum relief valves on storage tanks, submerged fill tubes to reduce splashing, and vapor recovery or destruction systems similar to those used for Phase I motor vehicle fueling operations.

#### **2.5.4 POTENTIAL CONTROL MEASURES REQUIRING FURTHER STUDY**

Table 2.5-2 indicates the Further Study categories that the District will investigate for potential emission reductions. Assuming controls are feasible and emission reductions are significant, rule development activity for these categories would most likely not occur until 2006 or later. These projects would address categories for which adequate emission inventories are not currently available or for which emission control strategies must be further researched and developed.

The further study measures in Table 2.5-2 are not District commitments for specific emission reductions or for future rulemaking. They will be further evaluated for possible emission reduction opportunities. Staff has already begun emission inventory improvement, and research on potential control measures, on several of these measures. Some of these categories are believed to have small baseline emission inventories that would be the least effective in generating significant emissions. Other control measures may be proposed based on technology-forcing standards proposed by other districts and for which a particular emission standard has not been demonstrated or is not commonly available. Each of the measures in Table 2.5-2 will be further evaluated and may be either placed in the rule development schedule or ruled out as potential control measures.

**TABLE 2.5-2  
Potential Control Measures Requiring Further Study**

<b>Further Study</b>	<b>Rule Number(s)</b>	<b>Description</b>	<b>Pollutant</b>
A	2280	Portable Equipment	NO <sub>x</sub>
B	New	Asphalt Plant Dryers/Heaters	NO <sub>x</sub> , VOC
C	4402, 4625	Sumps, Pits, and Wastewater Processing Equipment	VOC
D	New	Fugitive Emissions – Heavy Oil Stream	VOC
E	4653	Adhesives	VOC
F	4607	Graphic Arts	VOC
G	4641	Cutback Asphalt Application	VOC
H	4607	Restaurants, Under-fired Charbroilers	VOC
I	4902	Residential Water Heaters	NO <sub>x</sub> , VOC
J	New	Furnaces	NO <sub>x</sub>
K	New	Brandy Production	VOC

**2.5.4.1 Further Study Project A: Rule 2280 (Portable Equipment Registration Program)**

Portable engines create NO<sub>x</sub> emissions by burning diesel fuel, gasoline, natural gas, or propane/liquefied petroleum gas. Such units are required to register with either the District or with CARB and are subject to the emission standards of the applicable portable engine registration program. New units are subject to emission standards set by CARB and the U.S. EPA for the current year of manufacture.

Emissions from older diesel engines can be significantly higher (12 grams NO<sub>x</sub>/bhp-hr) than currently manufactured diesel engines (5.9 grams NO<sub>x</sub>/bhp-hr). Starting in 2006, the new engine standard will drop to 3.0 gram (NO<sub>x</sub> + VOC)/bhp-hr for larger engines, with all new engines meeting that standard by 2008. It is important to note that manufacturers may meet the emission standards on a production-averaged basis and that individual engines or engine types may have higher emissions.

The state portable equipment regulation program is currently under revision to address the health risks associated with emissions of diesel particulate emissions. These emissions can be effectively controlled with either diesel oxidation catalyst, and catalyzed diesel particulate filters. Both catalysts also reduce 50-90 percent of VOC emissions, when used in conjunction with lower-sulfur fuel. The diesel fuel sulfur limit will be lowered to 15 ppmv effective September 1, 2006. Similar catalysts for NO<sub>x</sub> reduction are under development for off-road engine applications and may be suitable for portable engine applications after further refinement.

It is also feasible to generate NO<sub>x</sub> reductions through the replacement of existing, older portable engines with newer units according to an advanced retirement schedule.

#### **2.5.4.2 Further Study Project B: New Rule (Asphalt Plant Dryers/Heaters)**

Asphalt is produced using a mixture of mineral and petroleum components. During production, the mineral components, gravel and crushed rocks, is heated to remove excess moisture before mixing with the petroleum-based binding agent. Heat may also be used to heat the petroleum binder during mixing and storage. A direct-fired heater is typically used for the drying/mixing process, so the heater exhaust is contaminated with PM<sub>10</sub> and VOC released from the heated products. PM<sub>10</sub> and VOC emissions, commonly seen as blue smoke, may also result from the material handling and storage equipment. Significant NO<sub>x</sub> emissions can also result from combustion of fuel for the heaters.

Possible control measures include clean burning fuel and low-NO<sub>x</sub> burners for the heaters, capture and controls for the blue smoke emissions, and catalytic particulate filters to reduce fugitive VOC and PM<sub>10</sub> from the exhaust stream.

#### **2.5.4.3 Further Study Project C: Rules 4402 and 4625 (Sumps, Pits and Wastewater Processing Equipment)**

Oil and gas production operations generate large quantities of wastewater and sand as a waste product of the primary extraction. Many of these facilities use open pits to separate oil, water and sand generated during oil and gas production. Most primary separation is now accomplished in controlled separation tanks, but secondary and final separation can still occur in open pits. The District is updating the emissions inventory of those sumps, including both heavy and light crude oil facilities. The District will also explore feasible control options that could generate additional VOC emission reductions.

#### **2.5.4.4 Further Study Project D: New Rule (Fugitive Emissions – Heavy Oil Stream)**

This category requires an emissions inventory of fugitive volatile organic compounds from leaking components that carry streams of heavy crude oil that are located in crude oil production and processing facilities and crude oil refining facilities. Heavy crude oil components are currently exempt from existing District Rules 4403, 4451, and 4452 as well as new Rules 4409 and 4455 that are currently under development. District Rule 4401 addresses casing gases associated with heavy crude oil production but not components on liquid streams. The District does not currently have information on the number of heavy crude oil components. Estimates of the VOC emissions from leaking components are related to the total number of components and can be calculated using U.S. EPA, CARB or CAPCOA methodologies.

Possible controls include establishing allowable gaseous leak threshold(s), creating an inspection and repair programs with a specific minimum frequency of inspection, stating the maximum repair period for leaking components, and requiring replacement of frequently leaking components with Best Available Control Technology.

**2.5.4.5 Further Study Project E: Rule 4653 (Adhesives)**

Rule 4653 controls VOC emissions resulting from adhesive usage. VOC emissions result from the solvents used to pre-clean materials being bonded, from the adhesive material as it cures, and from solvents used to clean the finished product and application equipment. The existing material VOC content limits and exemptions will be examined to determine if stricter standards can be developed similar to those recently proposed by other air districts.

**2.5.4.6 Further Study Project F: Rule 4607 (Graphic Arts)**

Rule 4607 controls emissions from graphic arts operations by specifying coating material VOC limits, cleaning solvent VOC limits, allowable application equipment, evaporative loss minimization practices, and emission control options. Since this rule was last amended, other air districts have adopted more stringent VOC limits for certain coatings categories. Amendments to this rule could incorporate those new standards and help establish a uniform graphic arts requirement throughout California.

**2.5.4.7 Further Study Project G: Rule 4641 (Cutback Asphalt Application)**

Cutback asphalt is a paving grade of asphalt liquefied with petroleum distillates and generally classified as medium or rapid cure as defined in Rule 4641. Rule 4641 controls VOC emissions by limiting the use of asphaltic materials and allowable application temperature. While the VOC content of asphaltic roof coating material is regulated under Rule 4601, further emission reductions may be possible by extending this rule to include asphalt roofing operations. Such operations heat the asphalt to allow application on large industrial facilities. The asphalt is heated in large kettles that results in fugitive VOC emissions. Possible controls for such kettles includes close-fitting lids, tightly controlled operating temperatures, and afterburners. Lids and operating temperature limits are already used by some operators to reduce smoke and odors. The afterburners, however, are uncommon for this application and may require early retirement of existing kettles.

**2.5.4.8 Further Study Project H: Rule 4692 (Restaurants – Under-fired Charbroilers)**

Rule 4692 currently applies to restaurants using chain-driven charbroilers. At the time the rule was adopted in March 2002, the only feasible control was not applicable to under-fired charbroilers. An under-fired charbroiler is a grill in which food is placed on an iron grate above a heat source. As the food cooks, fats or marinades drip onto heat source producing smoke that provides the characteristic charred flavor. In the late

1990's, studies on charbroiler emission factors found that under-fired charbroiling is the method that produces the largest amount of PM and VOC emissions.

Due to the enclosed nature of a chain-driven charbroiler, it is possible to equip such equipment with an exhaust catalytic converter to control the VOC emissions. Under-fired charbroilers, however, are more open units with significantly lower exhaust temperatures that are not compatible with catalytic converter controls.

#### **2.5.4.9 Further Study Project I: Rule 4902 (Residential Water Heaters)**

Residential water heaters are currently regulated by the District under Rule 4902. The rule requires new and replacement heaters to be certified with NO<sub>x</sub> emissions of less than 40 nanograms per Joule (0.093 lb NO<sub>x</sub> per million BTU) of heat output. The SCAQMD Rule 1121 will require residential water heaters to meet a 10 nanograms per Joule NO<sub>x</sub> standard in 2005. That standard is not considered to have been demonstrated as technologically feasible, but may be so demonstrated in the future. If such equipment is manufactured and readily available, the District could achieve a 75 percent NO<sub>x</sub> reduction by adopting a similar standard. That standard would only apply to new or replacement water heaters so units installed prior to the any new standard taking effect would remain for their useful life.

#### **2.5.4.10 Further Study Project J: New Rule (Furnaces)**

Rules 4305 and 4306 regulate boilers, steam generators and process heaters, but specifically excludes furnaces. Furnaces typically use a direct-fired heater where the material being heated directly contacts the exhaust from the burner. This contact can lead to the heater exhaust becoming contaminated with PM<sub>10</sub> and VOC released from the heated products. Significant NO<sub>x</sub> emissions can also result from combustion of fuel for the heaters.

Possible control measures include clean burning fuel and low-NO<sub>x</sub> burners for the heaters and catalytic particulate filters to reduce fugitive VOC and PM<sub>10</sub> from the exhaust stream.

#### **2.5.4.11 Further Study Project K: New Rule (Brandy Production)**

Brandy production is not currently regulated by the District permitting process or addressed by a prohibitory rule. VOC emissions in brandy production are created during distillation, aging, and bottling. Brandy is typically aged for 2 to 10 years in oak barrels and this is considered the largest source of VOC emissions from this process.

Emission controls (other than process refrigeration) are not currently being used during the production of brandy. Reductions of VOC could be achieved by equipping distillation equipment, storage facilities, and processing areas with vapor collection and

control systems, carbon adsorption, water scrubbers, catalytic incineration, condensation, and additional temperature control, as appropriate.

### 2.5.5 FUTURE STUDY MEASURES

The California Clean Air Act requires districts to develop ambient air quality standard attainment plans that consider “the full spectrum of emission sources and focus particular attention on reducing emissions from transportation and area-wide emission sources.” (Health and Safety Code, Section 40910). In particular, districts responsible for air basins designated as having “serious,” “severe,” or “extreme” air pollution, “shall, to the extent necessary to meet the requirements of the plan,...” include in their attainment plans “[m]easures to achieve the use of a significant number of low-emission motor vehicles by operators of motor vehicle fleets.” [Health and Safety Code section 40919(a)(4)]. Although CARB is responsible for setting vehicle emission standards, CARB and districts such as the SJVUAPCD have the authority to ensure that cleaner vehicles are employed.

Several mobile source rules have been adopted or are being developed by CARB. These rules address emissions from refuse haulers, urban transit vehicles, and other heavy duty vehicles; vehicle idling limits; diesel fuel sulfur limits; toxic emissions from transportation refrigeration units; and other similar measures. The District is not currently planning to pursue any enhanced requirements to the mobile source rules that CARB has adopted or is developing.

The District will investigate the feasibility of additional programs that reduce emissions from mobile sources. These measures would address sources commonly outside District jurisdiction, and thus would necessitate teaming with other agencies that have more direct authority over these sources. Several special programs have been suggested that could reduce mobile source emissions, including the following:

- Gross emitters, both passenger and heavy-duty vehicles, can produce ten times the emissions of newer vehicles. An effective program for reducing emissions from this source category would have the following key elements: (1) a remote sensing program that identifies and targets only the gross-emitting vehicles that are used on a regular basis; (2) adequate financial incentives to encourage retirement of the gross-emitting vehicle; and (3) use of a voucher (or similar system) to ensure that incentives can only be used to purchase a vehicle with lower emissions than the one being replaced.
- Emissions from heavy-duty vehicles increase with higher operating speeds, so reductions of NO<sub>x</sub>, VOC, and diesel PM may be possible with stricter enforcement of the existing speed limits on public roads, highways and freeways. The District could work to develop funding sources for special CHP patrols along Highway 99 for increased enforcement of truck speed limits.
- The CARB Heavy-duty Vehicle Inspections program for conducting roadside testing of heavy-duty vehicles primarily focuses on Highway 99 and Interstate 5, and is very limited in scope due to current state budget problems. The District could seek special

funding to revitalize and strengthen this program to increase its geographic coverage and to include anti-smoke inspection; RPM recording; snap-acceleration test; visual inspection of emissions, and fuel testing to ensure use of California diesel. These roadside inspections can identify gross-polluters that may otherwise escape the normal inspection requirements. This area of further study is also of particular interest given the greater potential for foreign-registered trucks to pass through the SJVAB in light of the June 2004 U.S. Supreme Court decision regarding the North American Free Trade Agreement; foreign-registered trucks may have substantially different emissions profiles than U.S. registered trucks.

- Through-truck traffic on Highway 99 can produce significant emissions along the most densely populated portion of the Valley. Re-designation of Highway 99 between Manteca and Wheeler Ridge as a “no through-truck route” and designating Interstate 5 as sole truck route for through-Valley truck traffic would mitigate the impact of the trucks without unduly impacting the interstate commerce. This measure would also reduce congestion for local traffic, decrease intra-valley travel time, and reduce the associated emissions.
- Heavy-duty vehicles may idle at truck stops for hours at a time to run refrigerators and provide power for operator air conditioning during meal breaks and rest stops. Emissions from idling trucks at truck stops can be reduced with alternative power systems such as auxiliary power units, thermal storage systems, and truck stop electrification. Each of these supplies power and other needed amenities to truck stop customers but with a lower emissions burden than idling each truck’s diesel engine.
- CARB’s emission reduction program for mobile sources is highly dependent on fleet turnover. Fleet turnover could be enhanced by adjusting the California vehicle license fee and registration fee such that as vehicles age, they become more expensive to register. New vehicles, which at any given time are the lowest emitters, would be the least expensive to register. Consideration could also be given to giving further fee reductions to zero emission vehicles that are registered and used in the state’s dirtiest air basins.

*Stakeholders have suggested a number of control measure ideas that do not involve the mobile source emission category. Principal among these are ideas for using the vegetation in and around urban areas to help manage air quality with the recognition that such vegetation can function as both a source of ozone precursor emissions as well as a sink for ozone.*

*To promote the implementation of practices that reduce air pollution from a variety of sources, including exempt sources, industry suggested the development of sustainable incentives. The concept of sustainable incentives is based upon existing programs such as the federal farm bill’s “Environmental Quality Incentives Program (EQIP); the State’s Carl Moyer Program; the District’s Heavy-Duty Program, and other programs that offset the implementation cost of pollution reduction measures.*

*As proposed by industry, the concept of sustainable incentives revolves around a market-based approach to pollution reduction. Basic concepts could include local air pollution control/air quality management districts, U.S. EPA, and CARB would assist local municipalities and other public agencies in acquiring additional funding, to implement emission reductions; expand existing incentive programs, and offset mitigation cost needs of the local transportation agencies and communities. These regulatory agencies would consider suggestions for alternative emission reduction programs that generate equivalent emissions reductions to those identified in prohibitory rules, but are less costly to implement.*

### **2.5.6 REASONABLY AVAILABLE CONTROL TECHNOLOGIES (RACT)**

*The Federal Clean Air Act requires non-attainment plans to provide for the implementation of all reasonably available control measures as expeditiously as practical. This includes reductions in emissions from existing sources in the area as may be obtained through the adoption of RACT, and shall provide for attainment of the national primary ambient air quality standards.*

*For areas designated as extreme non-attainment status, RACT control measures would apply to sources with emissions greater than 10 tons per year. As a prior severe non-attainment area, the District already had RACT for sources greater than 25 tons. Therefore, staff only evaluated the existing permitted sources with baseline inventories between 10 and 25 tons per year of NO<sub>x</sub> or VOC. Based upon this evaluation, the District identified the RACT control measures for (1) Dryers and Dehydrators, (2) Flares, (3) Jet Engine Test Cells, and (4) Fumigation – Agricultural Products.*

### **2.5.7 CLEAN FUELS OR ADVANCED CONTROL TECHNOLOGY**

*Section 182(e)(3) of the federal Clean Air Act directs extreme non-attainment areas to require "that each new, modified, and existing electric utility and industrial and commercial boiler which emits more than 25 tons per year of oxides of nitrogen: (1) burn as its primary fuel natural gas, methanol, or ethanol (or comparable low polluting fuel), or (2) use advanced technology (such as catalytic control technology or other comparably effective control methods) for reduction of emissions of nitrogen". District Rules 4305, 4306, and 4352 address NO<sub>x</sub> emission limits for the boilers in this category. Most of the boilers under Rules 4305 and 4306 are fired on natural gas and therefore satisfy the requirement of paragraph (A) above.*

*Liquid-fuel fired boilers are also addressed by SJVUAQMD rules and the applicable NO<sub>x</sub> emission limits satisfy the federal Clean Air Act. Solid-fuel fired boilers are addressed by Rule 4352 and the applicable NO<sub>x</sub> emission limits also satisfy the federal Clean Air Act requirement.*

*Therefore, the District already complies with this requirement and there is no need to include additional control measures in the Extreme Ozone Attainment Demonstration Plan to satisfy the federal Clean Air Act.*

### **2.5.8 DISTRICT INCENTIVE PROGRAM**

The District has operated incentive programs since 1992. The programs have expanded in funding and increased in sophistication over the years. Incentive program funding has been derived from several sources. Current programs use a combination of state and local funds including CARB's Carl Moyer Program, San Joaquin Valley Emergency Clean Air Attainment Program (VECAP) funds, State Peaker Power Plant Offset (State ERC) funds, and District Department of Motor Vehicles Surcharge Fees (DMV Fees). Of these funding sources, only DMV fees are under the sole control of the District. The District has achieved significant, cost-effective emission reductions from a variety of grant programs. The District has awarded over \$80 million to projects that have resulted in over 33 tons of lifetime emission reductions at a cost-effectiveness of approximately \$6,500/ton.

The District is currently operating two (2) programs aimed at reducing ozone precursor emissions: the Heavy-Duty Engine Emission Reduction Incentive Program (Heavy-Duty Program) and the Electric Lawnmower Incentives Program. Each of these is discussed below, followed by a discussion of future programs

#### **2.5.8.1 Heavy-Duty Engine Emission Reduction Incentive Program**

The Heavy-Duty Engine Emission Reduction Incentive Program (Heavy-Duty Program) is by far the District's largest and most successful incentive program. The Heavy-Duty Program accepts applications for a wide variety of engines that power vehicles or equipment. Heavy-duty trucks, buses, and heavy off-road engines are significant sources of NO<sub>x</sub> emissions within the Valley. Although the District does not have the authority to regulate vehicle tailpipe emissions, it can provide monetary incentives to reduce emissions from these sources. It provides funding for new purchases, engine re-powering, or retrofits. Emission reductions are obtained when the project applicant purchases vehicles and engines that are cleaner than required by current emission standards or installs an emission certified retrofit kit on an existing engine. The District pays the differential cost of purchasing the lower emitting technology compared to conventional technology up to a cost-effectiveness limit of \$13,600 per ton for NO<sub>x</sub>. The program is primarily aimed at NO<sub>x</sub> reductions, but many projects also achieve fine particulate matter (PM 10) reductions.

The first projects that were funded under the Heavy-Duty Program began operating in 1998. Since then, additional funds have been allocated each year to the program and additional projects have become operational. Project life varies from 7 to 20 years depending on the application. The average project life is 7.7 years based on the mix of projects received to date.

SIP submittals for the SJVAB typically have not included emission reductions from the Heavy-Duty Program. However, the 2003 PM10 Plan (SJVUAPCD, 2003d) did include reductions in the mobile source category from the Heavy Duty Engine incentive program.

This Extreme Ozone Attainment Demonstration Plan uses a similar approach for incentive-based emissions reductions.

### **2.5.8.2 Electric Lawnmower Incentives**

The District held lawnmower exchanges in 2001 and 2002. A total of 2260 electric, rechargeable mowers were distributed at a 50 percent discount to residents in Bakersfield, Fresno, Merced, Modesto, Stockton and Visalia. The events were made possible through support and sponsorship from Black and Decker; CARB; California Integrated Waste Management Board; Fresno, Merced, Stanislaus and Tulare counties; and the cities of Bakersfield, Fresno and Modesto. For 2004, the District funding provided similar incentives in the form of discount coupons for electric and push-type lawn mowers; 327 mowers were sold in 2004 under the coupon program.

### **2.5.8.3 Future Programs**

The Mobile Source Emission Reduction Incentive Program (MSIP) is the most developed of the future programs. Although not yet approved by the Governing Board as of July 2004, MSIP provides incentives for specific projects that will reduce motor vehicle emissions within the District. The purpose of the MSIP is to assist the District in attaining the requirements of the California Clean Air Act. This is accomplished by allocating funds to cost-effective projects that have the greatest motor vehicle emission reductions resulting in long-term impacts on air pollution problems in the San Joaquin Valley. All projects must have a direct air quality benefit to the District. Any portion of a project that does not directly benefit the District within its boundaries will not be allowed for funding or in calculating emission reductions. Principal MSIP components include the Light- and Medium-Duty Vehicle Component, the E-Mobility (Telecommunications) Component, the Bicycle Infrastructure Component, the Public Transportation and Commuter Vanpool Subsidy Component, and the Alternative Fuel Vehicle Mechanic Training Component.

## **2.5.9 PUBLIC EDUCATION**

*Engaging the public in efforts to reduce emissions is a key element of the ozone attainment demonstration strategy. Education increases public support for new and controversial regulations. Helping people understand the complex issues underlying the ozone problem further improves this support. The following sections describe key elements of the District's Public Education program that help reduce emissions.*

### **2.5.9.1 Outreach Program**

*The District's outreach program contains traditional approaches and approaches that are unique to the SJVAB. An overview of the District's program is provided below.*

*Spare the Air - The District's Spare the Air Program is a voluntary program that encourages businesses and residents to avoid pollution-producing activities on days when high ozone levels are expected, primarily during the summer season.*

*Educational Videos – The District is working on development of educational videos for improving air quality.*

*Valleywide Public Service Announcements and Paid Advertising - Public Service Announcements (PSAs) have been created for use on television and radio stations throughout the SJVAB. These short PSAs (30-60 second) remind the public to use public transportation, share rides to work (rideshare), walk to lunch, buy nonvolatile consumer products, etc., as their contribution to improving air quality.*

*Pollutant Standard Index (PSI) Predictions - Daily PSI predictions are faxed directly to local television, radio, and newspaper media to educate the public about air quality and advise them of days with poor air quality so that activities can be modified.*

*Air Quality Symposium - The District holds the Air Quality Symposium about every other year. A wide variety of organizations, businesses and individuals participate. The 2004 Symposium is scheduled for September 29-30, 2004 in Bakersfield, and the theme is exploring unique solutions to the clean air challenges that face us all.*

#### **2.5.9.2 District Publications**

*Information Pamphlets – The District continues to develop new and updated brochures to address air quality issues in the SJVAB.*

*Newsletter – The Valley Air News is a monthly publication of the District widely distributed throughout the SJVAB. The newsletter highlights current activities of the District, summarizes Governing Board actions, highlights commendable efforts by Valley businesses in reducing air pollution beyond what is required, and discusses other relevant air quality issues.*

#### **2.5.9.3 Youth Education**

*As part of the youth education program, schools are able to contact the District office to request classroom presentations on a variety of topics. Children of the SJVAB also have the opportunity to become a member of the Clean Air Kids Club and have newsletters and other information sent directly to their homes regarding air pollution and what they can do to help prevent it.*

**2.5.9.4 Events/Activities**

*The District works with local groups such as the American Lung Association and rideshare agencies to promote annual events that reinforce clean air activities, such as the following:*

<u>Event</u>	<u>Lead Organization</u>	<u>Time of Year</u>
<i>Earth Day</i>	<i>Local Earth Day Sponsors</i>	<i>April</i>
<i>Clean Air Month</i>	<i>American Lung Association</i>	<i>May</i>
<i>Rideshare Week</i>	<i>Local Rideshare Committee</i>	<i>October</i>
<i>Car Care Month</i>	<i>Calif. State Automobile Assn. and American Lung Association</i>	<i>October</i>

**2.5.10 REGIONAL TRANSPORTATION MEASURES**

The San Joaquin Valley is a single air quality nonattainment area containing eight Metropolitan Planning Organizations (MPOs), which are also regional transportation planning agencies (RTPAs or TPAs) within the Valley. The Valley is home to many diverse communities containing predominantly rural, as well as, predominantly urban areas populated by individuals from many different parts of the world. Each RTPA covers a county with numerous cities, public interest groups, transit agencies, and a ridesharing agency in some cases. Collectively, the Valley RTPAs are committed to conducting a thorough Reasonably Available Control Measure (RACM) process that addresses the entire San Joaquin Valley.

The Valleywide committee is composed of each RTPA, the Air District, Caltrans, the CARB, the U.S. EPA, and the FHWA. This committee provides regular opportunity for the eight Valley RTPAs to obtain input from each other and the other agencies involved in development of the *Extreme Ozone Attainment Demonstration Plan* for the Valley. The RTPA role in this RACM process is to lead local agencies in (1) the identification and implementation process for measures that may reduce ozone precursor emissions associated with local transportation activity that may be implemented at the local level; and (2) documenting reasons for not implementing measures that are not economically or technically feasible.

Since the Valley RTPAs are all part of one nonattainment area they have coordinated their process together in order to share ideas offered by the public and jurisdictions to provide consistency for the entire process including approaches to documentation.

Collectively, a broad range of commitments to implement control measures were adopted by the local governments. These extensive commitments demonstrate the level of effort that is being made to improve air quality. It is important to note that specific emissions reduction ~~credits~~ *targets for each of the measures* have not been included in the Extreme ~~Area~~ *Area* Ozone Attainment Demonstration Plan. However, in many cases these commitments would produce emission reductions above and beyond what has been quantified in the Extreme ~~Area~~ *Area* Ozone Attainment Demonstration Plan. These adopted

control measures represent additional efforts by the local jurisdictions to reduce emissions and improve air quality.

### **2.5.11 STATE EMISSION REDUCTIONS**

Motor vehicles and equipment under State and federal jurisdiction, while responsible for about 55 percent of ozone-forming gases in the SJVAB in 2004, are also contributing the majority of the emission reductions needed for attainment. Adopted State and federal regulations for cleaner engines and fuels are driving down Valley emissions of ozone precursors – VOC and NOx – by over 225 tons per day (tpd), or over 35 percent, between 2000 and 2010.

To provide additional statewide emission reductions needed to achieve the federal health-based air quality standards, CARB adopted the 2003 State and Federal Strategy for the California SIP (Statewide Strategy) on October 23, 2003. CARB submitted the Statewide Strategy to U.S. EPA for approval as a revision to the California SIP on January 4, 2004.

The Statewide Strategy identifies the Board’s near-term regulatory agenda to reduce ozone and particulate matter by developing and adopting defined new measures from 2002 through 2009, with implementation prior to the 2010 ozone season. It includes commitments for the Board to consider 19 specific statewide measures, plus the Bureau of Automotive Repair’s planned improvements to the Smog Check program and the continuation of the Department of Pesticide Regulation’s approved SIP obligation<sup>8</sup> to reduce volatile emissions from pesticides. The Statewide Strategy includes a process to identify longer-term solutions to achieve additional reductions from sources under State, federal, and local control.

The defined control measures in the Statewide Strategy cover on-road vehicles, off-road equipment, ports and harbor-craft, fuels and refueling, and consumer products. Measures to clean up the existing fleet of mobile sources complement lower emission standards for new engines and consumer products. Other measures would reduce vapor emissions from gasoline storage and refueling. These defined measures are listed in Table 2.5-3. The Statewide Strategy, which includes detailed descriptions of each of the measures, is available at <http://www.arb.ca.gov/planning/sip/stfed03/stfed03.htm>.

When adopting the Statewide Strategy, the Board delegated to the CARB Executive Officer the responsibility to quantify the appropriate benefits from the near-term measures for other areas that need further reductions in the 2010 timeframe and to reflect these benefits in the regional SIPs. CARB staff estimates that the near-term measures in the Statewide Strategy will provide 15 tpd ROG and 20 tpd NOx in the San Joaquin Valley in 2010. CARB previously committed to achieve 10 tpd of new NOx reductions as part of the Valley PM10 SIP, which is a subset of the 20 tpd NOx discussed here.

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<sup>8</sup> 40 CFR Part 52, Federal Register, January 8, 1997, pages 1150-1187.

**TABLE 2.5-3  
Defined State Measures from the 2003 Statewide Strategy**

<b>Strategy (Agency)</b>	<b>Name</b>
LT/MED-DUTY-1 (CARB)	Replace or Upgrade Emission Control Systems on Existing Passenger Vehicles
LT/MED-DUTY-2 (BAR)	Improve Smog Check to Reduce Emissions from Existing Passenger & Cargo Vehicles
ON-RD HVY DUTY-1 (CARB)	Augment Truck and Bus Highway Inspections with Community-Based Inspections
ON-RD HVY DUTY-2 (CARB)	Capture and Control Vapors from Gasoline Cargo Tankers
ON-RD HVY DUTY-3 (CARB)	Pursue Approaches to Clean Up the Existing and New Truck/Bus Fleet
OFF-RD CL-1 (CARB)	Pursue Approaches to Clean Up the Existing Heavy-Duty Off-Road Equipment Fleet (Compression Ignition Engines)
OFF-RD CL-2 (CARB)	Implement Registration and Inspection Program for Existing Off-Road Equipment to Detect Excess Emissions (Compression Ignition Engines)
OFF-RD LSI-1 (CARB)	Set Lower Emission Standards for New Off-Road Gas Engines (Spark Ignited Engines 25 hp and Greater)
OFF-RD LSI-2 (CARB)	Clean Up Existing Off-Road Gas Equipment Through Retrofit Controls and New Emission Standards (Spark-Ignition Engines 25 hp and Greater)
SMALL OFF-RD-1 (CARB)	Set Lower Emission Standards for New Handheld Small Engines and Equipment (Spark Ignited Engines Under 25 hp such as Weed Trimmers, Leaf Blowers, and Chainsaws)
SMALL OFF-ED-2 (CARB)	Set Lower Emission Standards for New Non-Handheld Small Engines and Equipment (Spark Ignited Engines Under 25 hp such as Lawnmowers)
MARINE-1 (CARB)	Pursue Approaches to Clean Up the Existing Harbor Craft Fleet – Cleaner Engines and Fuels
MARINE-2 (CARB)	Pursue Approaches to Reduce Land-Based Port Emissions – Alternative Fuels, Cleaner Engines, Retrofit Controls, Electrification, Education Programs, Operational Controls
FUEL-1 (CARB)	Set Additives Standards for Diesel Fuel to Control Engine Deposits
FUEL-2 (CARB)	Set Low-Sulfur Standards for Diesel Fuel for Trucks/Buses, Off-Road Equipment, and Stationary Engines
CONS-1 (CARB)	Set New Consumer Products Limits for 2006

**TABLE 2.5-3 (concluded)  
Defined State Measures from the 2003 Statewide Strategy (concluded)**

<b>Strategy (Agency)</b>	<b>Name</b>
CONS-2 (CARB)	Set New Consumer Products Limits for 2008-2010
FVR-1 (CARB)	Increase Recovery of Fuel Vapors from Aboveground Storage Tanks
FVR-2 (CARB)	Recover Fuel Vapors from Gasoline Dispensing at Marinas
FVR-3 (CARB)	Reduce Fuel Permeation Through Gasoline Dispenser Hoses
PEST-1 (DPR)	Implement Existing Pesticide Strategy

### 2.5.12 CONTINGENCY MEASURES

In general, contingency measures are control measures that go into effect, without further action by the State or the U.S. EPA Administrator, if planned emission controls fail to reach desired goals and targets.

For the SJVAB, the concept of contingency measures is almost a moot point, for several reasons. First, areas such as the SJVAB that have been aggressively developing and implementing emission control measures over the past twenty years have already achieved most of the emissions reductions that are within the authority of the District to control and that are technically and economically feasible. The likelihood of identifying new source categories under District authority to control, with attendant large emission reductions, is very small; any control measures beyond what has been identified in this Plan and within the District’s authority to implement are likely to have relatively small emissions reductions<sup>9</sup>, and thus would be of minimal value as contingency measures. However, future state measures not included in this plan could provide emission reductions that represent contingency measures. For example, the Department of Pesticide Regulation (DPR) may consider changes in pesticide use regulations that reduce VOC emissions in the SJVAB in the time frame covered by this Extreme Ozone Attainment Demonstration Plan.<sup>10</sup>

Second, prior to the next ROP milestone year for one-hour ozone, the District will be developing three major air quality plans as SIP submittals that will control ozone precursor emissions: the 2006 PM10 Plan, the 2007 8-hour Ozone Attainment Demonstration Plan, and the 2008 PM2.5/Regional Haze Plan. The PM10 Plan is required in the final rule approving the 2003 PM10 Plan (69 FR 30035), and the dates for

<sup>9</sup> Note that 14 of the 21 new District control measures listed in Table 2.5-1 of this Plan achieve reductions in ozone precursor emissions of 1.0 tons/day or less each for 2010; the total 2010 reductions estimated from these 14 measures are about 5.8 tons/day compared to a total SJVAB 2010 inventory of over 760 tons/day VOC and NOx combined.

<sup>10</sup> In conjunction with the 1994 SIP, DPR planned to reduce 1990 VOC emissions from pesticide use by 20 percent by 2005. DPR has acknowledged CARB’s statement of additional reductions in ozone precursor emissions needed for attainment in the SJVAB.

submittal of the 8-hour Ozone Plan and the PM<sub>2.5</sub>/Regional Haze Plan are driven by U.S. EPA final rule language stating that plans are due three years after the effective date of designations (final rules not yet published). Each of these plans will develop additional control measures for ozone precursor emissions independent of this Extreme Ozone Attainment Demonstration Plan, and thus will help in meeting ROP milestones and/or attainment goals if needed. The magnitude of reductions from control measures outside of the Extreme Ozone Attainment Demonstration Plan is likely to exceed what is needed for the Extreme Ozone Attainment Demonstration Plan for contingency measures. Therefore, control measures developed for these other plans serve the same function as contingency measures developed exclusively for the Extreme Ozone Attainment Demonstration Plan.

Third, U.S. EPA plans to revoke the federal one-hour ozone standard before the next one-hour ROP milestone year for the SJVAB (2008), so the concept of contingency measures for federal one-hour ozone standard requirements has diminished importance for the SJVAB (i.e., once the standard is revoked on June 15, 2005, U.S. EPA is not obligated to determine if an area has met the one-hour standard by the area's attainment date [40CFR51.905(e)]).

Fourth, because the District is using "long-term measures" as part of its control strategy, it is required by the Federal Clean Air Act to identify the contingency measures with reductions equal to those achieved by long-term measures no later than three years before implementation of proposed plan provisions [Section 182(e)(5) of the Federal Clean Air Act]. For the District, this would involve not only identifying the long-term measures, but also redoing this Extreme Ozone Attainment Demonstration Plan with whatever new information and tools are available related to the formation of ozone in the SJVAB. Thus, an additional planning requirement related to long-term measures provides another level of contingency in that the District will reevaluate the SJVAB one-hour ozone attainment control strategy in 2007<sup>11</sup>, well in advance of the next ROP milestone year (2008) or the attainment year (2010), and will add new measures as warranted by the updated assessment of ozone air quality at that time. This represents the functional equivalent of contingency measures as defined in the Federal Clean Air Act.

### **2.5.13 LONG-TERM CONTROL MEASURES**

Section 182(e)(5) of the Federal Clean Air Act allows U.S. EPA to approve provisions of an implementation plan for an Extreme Area that anticipate the development of new control techniques, or improvement of existing control technologies, and an attainment demonstration based on such provisions. This provision of the Federal Clean Air Act is dependent upon the state demonstrating that such provisions are not needed for incremental emissions reductions in the 1990-2000 time frame, and that the state has submitted enforceable commitments to develop and adopt contingency measures to be

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<sup>11</sup> If U.S. EPA revokes the one-hour standard as planned, then the District would not update the one-hour Extreme Ozone Attainment Demonstration Plan in 2007, but instead would develop the 8-hour Ozone Attainment Demonstration Plan for submittal in June 2007.

implemented if the anticipated future technologies do not achieve planned emission reductions. The state must submit these contingency measures to U.S. EPA no later than three years before proposed implementation of the plan provisions, and, approved or disapproved by U.S. EPA in accordance with Section 110 of the Federal Clean Air Act.

Because of other ongoing and planned major SIP submittals, the District will fulfill the intent of contingency measure requirements by identifying and implementing control measures above and beyond the Extreme Ozone Attainment Demonstration Plan which will help attain the federal one-hour ozone standard. The District has a legally enforceable commitment to revise the PM10 Plan in 2006, and a regulatory requirement to submit an eight-hour Ozone Attainment Demonstration Plan by June 15, 2007. Each of these will create reductions in emissions of ozone precursors that are beyond the scope of this plan, and thus meet the intent of contingency measures. In addition, the emission reductions needed from long-term measures are only a few percent of the inventory (five tons per day of VOC, and five tons per day of NO<sub>x</sub>), and the magnitude of reductions needed from contingency measures will also be small.

## **2.6 FEDERAL RATE OF PROGRESS AND CALIFORNIA CLEAN AIR ACT REQUIREMENTS**

*The Extreme Ozone Attainment Demonstration Plan, in addition to demonstrating attainment of the federal 1-hour ozone standards by November 15, 2010, also fulfills federal requirements for demonstrating rate of progress for reducing emissions of ozone precursors for the years 2008 and 2010, and fulfills State of California requirements for triennial updates regarding progress towards attainment of the State of California 1-hour ozone standard.*

### **2.6.1 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 VOC emissions reductions, supplemented with some NO<sub>x</sub> emissions reductions. EPA guidance allows NO<sub>x</sub> substitution for demonstrating rate of progress if certain conditions are met, including the availability of grid based photochemical modeling results showing the effectiveness of NO<sub>x</sub> 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 NO<sub>x</sub> substitution.*

### **2.6.2 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 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.*

### **2.6.3 SUMMARY**

*The federal rate of progress and California triennial update requirements each use a subset of the control measures described earlier in this chapter to meet specific federal and state requirements, and do not trigger any other measures. Since control measures are the principal causative agents leading to the potential environmental impacts that are evaluated in this document, and since fulfilling the federal rate of progress requirements and the State of California triennial update requirements uses a subset of the control measures needed for the attainment demonstration, any potential environmental impacts from meeting the federal rate of progress and State of California requirements would be less than those that would arise from meeting the attainment demonstration requirements. For these reasons, the federal rate of progress requirements and the State of California triennial update requirements are not addressed further in this EIR.*

## **2.7 ATTAINMENT DEMONSTRATION**

Based on the air quality modeling analyses, the SJVAB can demonstrate attainment of the federal one-hour ozone standard by 2010 with additional control measures implemented by the District and State. For further details on air quality modeling and attainment demonstration, see Chapter 3, Section 3.2.2.4.5, of this EIR.