

## **Chapter 4**

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# **Control Strategy**

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## 4 CONTROL STRATEGY

### 4.1 INTRODUCTION

Although the PM<sub>10</sub> levels in the SJVAB have been improving over recent years, EPA still designates the SJVAB as nonattainment for the federal PM<sub>10</sub> air quality standards, consequently, a carefully planned control strategy is needed to attain and maintain the NAAQS by 2010. A “control strategy” is the combination of all actions taken by all agencies with authority to control air pollutant emissions that affect attainment of the PM<sub>10</sub> standards. “Control measures” target individual sources categories, processes, and activities. Control measures are developed into rules, regulations (or groups of rules with a common element), and programs, which include incentive programs and education programs.

As discussed in Chapter 1, regulatory responsibility is multi-layered. The District, ARB, and EPA have adopted and implemented numerous measures to control PM<sub>10</sub> and PM<sub>10</sub> precursors. Modeling using the Community Multi-scale Air Quality (CMAQ) model, coupled with data obtained from the California Regional Particulate Air Quality Study (CRPAQS), indicates that NO<sub>x</sub> is the most significant PM<sub>10</sub> precursor for the SJVAB (see Chapter 5). Consequently, the District’s PM<sub>10</sub> control strategy encompasses NO<sub>x</sub> as well as PM<sub>10</sub>. Anticipated reductions from adopted control measures are included in the emissions inventory<sup>1</sup> and updated as needed. The emissions inventory is adjusted for anticipated reductions from new commitments that have not yet been adopted and then incorporated into the District’s attainment and reasonable further progress (RFP) demonstrations (Chapters 5 through 6).

As a serious nonattainment area for PM<sub>10</sub>, BACM is required for on all significant sources of PM<sub>10</sub> and PM<sub>10</sub> precursors. BACM, best available control measures, are the maximum degree of emissions reductions possible after considering technical and economic feasibility and environmental impacts of the control. These must be implemented independent of attainment requirements. In most cases, the existing level of control meets the BACM definition, but in other cases, changes were identified that were needed to bring the control up to the BACM level.

Another requirement, from Sections 172(c)(9) and 189(c)(1) of the CAA, is that attainment plans must include contingency measures. Contingency measures provide automatic, surplus reductions in the event that control commitments are insufficient for the area to make reasonable further progress (RFP) or to attain the standard on schedule. Contingency measures must take effect without any further action by the District Governing Board, the State, or EPA. Contingency measures provide assurance to EPA and the public that progress toward attainment will continue while the area corrects the deficiencies in the plan and adopts new or revised measures.

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<sup>1</sup> The emissions inventory presented in Chapter 3 reflects control measures adopted by the District through May 2005.

The control strategy in the *2006 PM10 Plan* provides for expeditious attainment of the PM10 NAAQS no later than 2010. The control strategy described in this chapter also meets BACM and contingency measure requirements. No new commitments are in this plan, as compared to the *2003 PM10 Plan* as amended, but control measures have been updated to reflect any changes that have occurred since the *2003 PM10 Plan*. The District has adopted the *2003 PM10 Plan* commitments for which it is responsible for 2005 and earlier.

The District's PM10 strategy emphasizes PM10 and NOx for reductions. The bulk of information presented in this chapter is for PM10 and NOx (Sections 4.2 through 4.8). Section 4.9 provides an update of SOx and VOC emission control measures because the *2003 PM10 Plan* showed that control of these precursors was not needed for attainment of the PM10 NAAQS, and because current modeling reinforces this conclusion. These reductions are handled separately in the *2006 PM10 Plan*.

## **4.2 STATE, FEDERAL AND LOCAL GOVERNMENT CONTROLS**

### **4.2.1 State Control Measures**

In June of 2003, ARB adopted the commitments identified in Tables 4-2 and 4-3 of this section. ARB has already adopted many of the measures identified, while others are being developed for future consideration. The State is not making additional NOx or PM10 reduction commitments in this document. The remainder of this section was taken verbatim from the *2003 PM10 Plan*, as amended in 2005, and reflects ARB's commitments. The District made only minor editorial and formatting changes.

The ARB has adopted numerous regulations affecting sources under their regulatory authority. The Bureau of Automotive Repair (BAR) has responsibility for vehicle inspection and maintenance programs. Adopted ARB and BAR Control Measures are listed in Table 4-1.

This section describes the proposed State commitments to achieve further emission reductions in PM10 and its precursors to help attain the federal PM10 standards in the San Joaquin Valley by 2010. The motor vehicles and equipment under State and federal jurisdiction are responsible for the majority of the SJVAB's air pollution, and these sources are contributing the majority of the emission reductions needed for attainment. Adopted State and federal regulations for cleaner engines and fuels are lowering Valley NOx emissions by over 140 tpd, or nearly 40 percent between 1999 and 2010. Direct PM emissions from these sources will drop by over ten percent, and ROG (reactive organic gases, which are essentially equivalent to VOC) emissions will decrease by well over 40 percent in the same timeframe.

**Table 4-1 Control Measures Already Adopted by ARB and BAR**

<b>Control Measure Adopted by ARB and BAR</b>	<b>Adoption Date</b>
M1: Light-duty vehicle scrappage	1998
M2: Low Emission Vehicle II program	1998
M3: Medium-duty vehicles	1995
M4: Incentives for clean engines (Moyer Program)	1999
M5: California heavy-duty diesel vehicle standards	1998
M8: Heavy-duty gasoline vehicle standards	1995
M9: CA heavy-duty off-road diesel engine standards	2000
M11: CA large off-road gas/LPG engine standards	1998
CP2: Consumer products mid-term measures	1997/1999
CP3: Aerosol paint standards	1995/1998
Enhanced I/M (Smog Check II) BAR administered program	1982/1994
Clean fuels measures	Multiple
Marine pleasurecraft (reductions beyond M16)	1998/2001
Motorcycle Standards	1998
Urban transit buses	2000
Enhanced vapor recovery program	2000
Medium/heavy-duty gasoline standards (beyond M8)	2000
2007 Heavy-duty diesel truck standards (beyond M5 and M6)	2001
Small off-road engine standard revisions	1998

To supplement the existing program, ARB staff has identified a series of new measures that would be developed over the next several years to provide additional NO<sub>x</sub> and PM<sub>10</sub> reductions, consistent with the attainment demonstration needs established in this SIP. These measures are a subset of a larger strategy ARB staff has proposed to cut emissions of ROG, NO<sub>x</sub>, and PM statewide. The proposed State commitment for this plan has two parts: achieving specific emission reductions and developing the defined measures for ARB consideration.

### **State Commitment for Further Emission Reductions**

Table 4-2 shows the proposed State commitment to adopt new measures between 2002-2008 that reduce emissions by an additional 10 tpd NO<sub>x</sub> and 0.5 tpd direct PM<sub>10</sub> in the San Joaquin Valley in 2010. ARB may meet this commitment by adopting one or more of the control measures in Table 4-3, by adopting one or more alternative measures, or by implementing incentive programs, as long as the total new emission reductions are achieved. While the legal commitment is to adopt and implement strategies that achieve the emission reductions by the attainment date, ARB staff is already working on several of the measures for near-term consideration.

The new reductions also include the benefits of planned improvements to the enhanced vehicle inspection and maintenance program, or Smog Check. This implementation may require additional regulatory action by the BAR.

**Table 4-2 Proposed State Commitment for New Emission Reductions  
San Joaquin Valley, 2010**

Pollutant	Total State
NOx	10
Direct PM10	0.5

**Table 4-3 Proposed New State Measures San Joaquin Valley, 2010**

Strategy (Agency)	Name	Expected Reductions, tpd <sup>a</sup>			Action Dates
		ROG	PM10	NOx	
LT/MED-DUTY-1 (ARB)	Replace or Upgrade Emission Control Systems on Existing Passenger Vehicles – Pilot Program	0-2.4	--	0-2.7	2005
LT/MED-DUTY-2 (BAR)	Smog Check Improvements	1.5	--	3	2002-2005
ON-RD HVY-DUTY-3 (ARB)	Pursue Approaches to Clean Up the Existing and New Truck/Bus Fleet – PM In-Use Emission Control, Engine Software Upgrade, On-Board Diagnostics, Manufacturers' In-Use Compliance, Reduced Idling	1.5	0.1	4	2003-2006
OFF-RD CI-1 (ARB)	Pursue Approaches to Clean Up the Existing Heavy-Duty Off-Road Equipment Fleet (Compression Ignition Engines) – Retrofit Controls	1.0	0.4	0	2004-2008
OFF-RD LSI-2 (ARB)	Clean Up Existing Off-Road Gas Equipment Through Retrofit Controls (Spark-Ignition Engines 25 hp and Greater)	0.1	--	0.1	2004
OFF-RD LSI-3 (ARB)	Require Zero Emission Forklifts (Rental and New Purchases) Where Feasible – Lift Capacity ≤8,000 Pounds	0.1	--	0.2	2004
<b>Total Emission Reduction Commitment from New State Measures</b>		0	0.5	10	2002-2008

<sup>a</sup> Expected reductions from individual defined measures are shown for information only. The State is proposing commitments for total new reductions in NOx and PM10 emissions only, consistent with the PM10 attainment demonstration. Commitments for further ROG reductions will be considered in the context of the upcoming Valley Ozone SIP.

### State Commitment to Propose Defined Control Measures

In addition to the enforceable commitment to reduce emissions, the ARB staff also commits to submit to the Board and propose for adoption the ARB control measures set forth in Table 4-3. For LT/MED-DUTY-1, ARB commits to complete the pilot program and propose a control measure if the approach described proves to be feasible and effective.

The specific regulatory proposal for each potential measure will be developed in an extensive public process that considers the technical feasibility, cost-effectiveness, and other impacts of the strategy. The Board shall take action on or before the dates set forth in Table 4-3. Such action by the Board may include any action within its discretion. For informational purposes, Table 4-3 shows the benefits that would be expected from implementation of each defined measure, although the enforceable commitment is for the total new reductions.

The defined State measures are described in detail in ARB's document, 2003 State and Federal Strategy for the California State Implementation Plan, which is publicly available. This document also includes evidence of BAR's commitment to finish implementing the Enhanced Smog Check improvements described in LT/MED-DUTY-2.

### **Process for State Action**

ARB staff has provided this section to the District staff for publication in this document to facilitate public review of the plan by consolidating the local and State control strategy. The State's proposal is not subject to action by the District's Governing Board.

The State proposal is summarized here and in Section I, Chapter D of the 2003 State and Federal Strategy for the California State Implementation Plan. Only the emission reduction commitment for the San Joaquin Valley PM10 SIP and the associated measures identified in this portion of the document will be considered by ARB. If the District adopts the SIP, and if ARB approves the SIP and the State commitment, then ARB will submit both of these elements to the U.S. EPA for approval as a revision to the California SIP.

### **4.2.2 Transportation Planning Agency Commitments**

For the federally approved Amended *2003 PM10 Plan*, the Regional Transportation Planning Agencies (RTPAs) conducted an extensive process to identify and implement BACM. The resolutions adopted by the RTPAs and their member jurisdictions to commit to implement local government control measures for PM10 precursors were included in a separate two volume document entitled "Regional Transportation Planning Agency Commitments for Implementation (RTPACI)," (April 2002) which can be viewed at the District's Fresno Office. Each jurisdiction determined which measures were feasible for implementation by that jurisdiction. The commitment documents also contain the measures that these jurisdictions found not to be feasible along with the corresponding justification for their assessment. No update to the RTPACI was needed for this *2006 PM10 Plan*, so the commitments remain as approved in the Amended *2003 PM10 Plan*.

### 4.2.3 Federal Control Measures

The EPA has adopted numerous regulations affecting sources regulated under their jurisdiction. Table 4-4 lists those control measures adopted by the EPA that may affect PM10 levels in the SJVAB.

**Table 4-4 Control Measures Adopted by the EPA**

Control Measure	Adoption Date
M6: National heavy-duty diesel vehicle standards	1998
M10: National heavy-duty off-road diesel engine standards	1998
M12: National large off-road gas/LPG engine standards	2002
M13: Marine vessel standards	1999
M14: Locomotive engine standards	1997
M16: Marine pleasurecraft standards	1996
2007 Heavy-duty diesel truck standards (beyond M5 and M6)	2001

### 4.3 ADOPTED DISTRICT CONTROL MEASURES

The District has adopted numerous rules that reduce emissions of PM10 and the precursors to PM10. While controls of SOx and VOC contribute to the District's attainment strategy, NOx is the most significant precursor involved in the formation of ammonium nitrate, so it is the precursor most central to the District's control strategy (see Section 5.9.1). Table 4-5 below lists the approximately 65 rules that the District has adopted or amended between 1990 and December 2005 to reduce emissions of PM10 and/or PM10 precursors.

<b>Table 4-5 District PM10 and PM10 Precursor Rules Adopted and/or Amended between 1990 - 2005</b>			
Rule Number	Rule Title	Rule Number	Rule Title
4101	Visible Emissions	4102	Nuisance
4103	Open Burning (Phase 1)	4104	Reduction of Animal Matter
4105	Commercial Offsite Multiuser Hazardous Waste and Nonhazardous Waste Disposal Facilities	4106	Prescribed Burning and Hazard Reduction Burning
4201	Particulate Matter Concentration	4202	Particulate Matter Emission Rate
4203	Particulate Matter Emissions from Incineration of Combustible Refuse	4204	Cotton Gins
4306	Boiler, Steam Generators, and Process Heaters (greater than 5 MMBtu/hr)	4307	Boilers, Steam Generators, and Process Heaters (2 to 5 MMBtu/hr)



<b>Table 4-5 District PM10 and PM10 Precursor Rules Adopted and/or Amended between 1990 - 2005 (continued)</b>			
<b>Rule Number</b>	<b>Rule Title</b>	<b>Rule Number</b>	<b>Rule Title</b>
4308	Boilers, Steam Generators, and Process Heaters (0.075 to 2.0 MMBtu/hr)	4309	Commercial Dryers, Dehydrators, and Process Heaters (<2 MMBtu/hr)
4404	Heavy Oil Test Station – Kern County	4405	NOX Emissions from Existing Steam Generators Used in Thermally Enhanced Oil Recovery – Central and Western Kern County Fields
4406	Sulfur Compounds from Oil-Field Steam Generators – Kern County	4407	In-situ Combustion Well Vents
4408	Glycol Dehydration Systems	4409	Components at Light Crude Oil Production Facilities, Natural Gas Production Facilities, and Natural Gas Processing Facilities
4451	Valves, Pressure Relief Valves, Flanges, Threaded Connections and Process Drains at Petroleum Refineries and Chemical Plants	4452	Pump and Compressor Seals at Petroleum Refineries and Chemical Plants
4453	Refinery Vacuum Producing Devices or Systems	4454	Refinery Process Unit Turnaround
4455	Components at Petroleum Refineries, Gas Liquids Processing Facilities, and Chemical Plants	4501	Alternative Compliance for Best Available Retrofit Control Technology (BARCT)
4550	Conservation Management Practices Program	4601	Architectural Coatings
4602	Motor Vehicle and Mobile Equipment Refinishing Operations	4603	Surface Coating of Metal Parts and Products
4604	Can and Coil Coating Operations	4605	Aerospace Assembly and Component Manufacturing Operations
4606	Wood Products Coating Operations	4607	Graphic Arts
4610	Glass Coating Operations	4621	Gasoline Transfer into Stationary Storage Containers, Delivery Vessels, and Bulk Plants
4622	Gasoline Transfer into Stationary Storage Containers, Delivery Vessels, and Bulk Plants	4623	Storage of Organic Liquids
4624	Organic Liquid Loading	4625	Wastewater Separators
4641	Cutback, Slow Cure, and Emulsified Asphalt Paving and Maintenance Operations	4642	Solid Waste Disposal Sites
4651	Volatile Organic Compound Emissions from Decontamination of Soil	4652	Coatings and Ink Manufacturing

<b>Table 4-5 District PM10 and PM10 Precursor Rules Adopted and/or Amended between 1990 - 2005 (continued)</b>			
<b>Rule Number</b>	<b>Rule Title</b>	<b>Rule Number</b>	<b>Rule Title</b>
4653	Adhesives	4661	Organic Solvents
4662	Organic Solvent Degreasing Operations	4663	Organic Solvent Cleaning, Storage and Disposal
4672	Petroleum Solvent Dry Cleaning Operations	4681	Rubber Tire Manufacturing
4682	Polystyrene Foam, Polyethylene and Polypropylene Manufacturing	4684	Polyester Resin Operations
4691	Vegetable Oil Processing Operations	4692	Commercial Charbroiling
4693	Bakery Ovens	4694	Wine Fermentation and Storage Tanks
4701	Internal Combustion Engines - Phase 1	4702	Internal Combustion Engines - Phase 2
4703	Stationary Gas Turbines	4801	Sulfur Compounds
4802	Sulfuric Acid Mist	4901	Wood Burning Fireplaces and Wood Burning Heaters
4902	Residential Water Heaters	4905	Natural Gas-Fired, Fan-Type Residential Central Furnaces
Reg VIII	Fugitive PM10	9510	Indirect Source Review (ISR)

The *2003 PM10 Plan* noted that the two PM10 source categories with the highest growth rates in 1990-2001 were residential wood combustion and paved road dust. Since adoption of the *2003 PM10 Plan*, the District has substantially strengthened its rules to reduce emissions from those categories. In July 2003, the District amended Rule 4901 (Wood Burning Fireplaces and Wood Burning Heaters) to include a mandatory burn prohibition on days when conditions would cause a violation of the PM NAAQS. In August and September 2004, the District amended Regulation VIII (Fugitive PM10 Prohibitions) to address the dust control commitments made in the *2003 PM10 Plan*.

#### **4.4 DISTRICT COMMITMENTS FOR PM10 AND NO<sub>x</sub> CONTROLS**

The District has many control measures that are being actively developed currently or are scheduled for future development. These rules were originally included as part of either the District's PM10 and ozone attainment plans or are otherwise required by federal, state, or local requirements. The District did not develop any new commitments solely for the purpose of meeting Federal CAA requirements in this *2006 PM10 Plan*. Table 4-6 lists *PM10 Plan* commitments for NO<sub>x</sub> and PM10 controls that either are or will shortly be in rule development. The *2003 PM10 Plan* contained District commitments to adopt or amend rules to reduce PM concentrations. Since then, all but two of these measures have been adopted.

The District is committed to adopting the control measure commitments in this plan unless these measures (or a portion thereof) are found infeasible and substitute measures that can achieve equivalent reductions to meet any required milestone. Findings of infeasibility will be made at a regularly scheduled meeting of the District Governing Board with proper public notification. For purposes of SIP commitments, infeasibility means that either the proposed control technology is not reasonably likely to be available by the implementation date in question or achievement of the emission reductions by that date is not cost-effective. The District acknowledges that this commitment is enforceable under Section 304(f) of the CAA.

**Table 4-6 NOx and PM10 Control Measure Commitments <sup>a</sup>**

Location in 2006 PM10 Plan	Rule(s)	Project Description	Adoption/Amendment Date (Quarter/Yr)	Effective Date (Quarter/Yr) <sup>b</sup>	Pollutant(s) <sup>c</sup>
4.4.2	4352	Solid Fuel Fired Boilers	2Q/06	2Q/07	NOx, PM10
4.4.3	9310	School Bus Fleets	3Q/06	post 2010	NOx, PM10

<sup>a</sup> Early drafts of the 2006 PM10 Plan included more control measure commitments. However, these commitments were all adopted and, as such, were incorporated into Table 4-5 of adopted District Rules. For more information on these rules, please see the adopted rule text.

<sup>b</sup> The term "Effective Date" indicates the compliance demonstration date for the first emission reduction requirement.

<sup>c</sup> Pollutants covered by specific control measures may be revised during the rulemaking process.

Two principal reasons for developing these commitments are to meet BACM requirements (section 4.5) or to meet other Federal CAA requirements, including the attainment and reasonable further progress demonstrations. All measures go through additional analysis and public review during rule development to determine their technical and economic feasibility as well as the specific rule provisions ultimately adopted. Emissions reductions for each measure appear later in this chapter.

For the purposes of implementing the *PM10 Plan*, the District is committed to adopt and implement control measures that will achieve, in aggregate, emission reductions specified section 4.7. These measures are not self-implementing; all of the control measures will require rule development. The District is committing to proceed with rule development as rapidly as possible. Rule development will begin in accordance with an ambitious schedule, and no measures will be delayed unnecessarily. Upon adoption of each rule, the rule will immediately be forwarded to ARB for SIP Submittal. Emission reductions achieved in excess of the amount committed to in a given year can be applied to the emission reduction commitments of subsequent years.

Whether or not a rule needs to be developed to meet BACM requirements depends on whether the amount of emissions from a source category exceeds thresholds set to help focus the rule development on the most important sources. These thresholds, or de minimis levels, are described in the next section.

#### 4.4.1 De Minimis Level Determination

After submittal of the *1994 Serious Area Plan*, the District began amending the RACM rules and added several new rules to meet BACM. The EPA will generally presume any source category's contribution to nonattainment to be de minimis if the source category causes an impact in the area of less than  $1 \mu\text{g}/\text{m}^3$  for the annual mean concentration and  $5 \mu\text{g}/\text{m}^3$  for a 24-hour average. BACM is required for any source category above the de minimis level.

The District took a conservative approach for determining de minimis levels. The analysis matched annual average daily emissions with the maximum annual average PM10 measurement for each county and matched the worst-case 24-hour ambient measurement with seasonal quarter emissions for each corresponding pollutant. The worst-case condition for each component of PM10 was examined separately. This approach determines a de minimis level for each contributing component of PM10 based on the potential for a worst-case PM10 day, which is greater than the actually measured highest 24-hour PM10 concentration. The de minimis levels for the SJVAB in tpd of emissions are provided in Table 4-7. Appendix G of the *2003 PM10 Plan* provides a detailed analysis of de minimis calculations.

**Table 4-7 SJVAB De Minimis Levels**

Pollutant	De Minimis Level (tpd)
NOx	1.3
SOx	2.5
VOC	2.8
PM10	0.9

The District analyzed the emissions inventory to identify significant source categories within the District's regulatory authority. The results of this analysis can be found in Table 4-8. Since BACM (including BACT) implementation is required, a discussion of the implementation status is included. While each source category may or may not have emissions for all of the pollutants, only the emissions that are above the de minimis levels are listed. The "status" column in Table 4-8 summarizes the BACM findings.

The following sections provide control measure summaries for each plan commitment. The summaries include the reason for adopting the control measure, affected sources, a description of the potential control technology, the expected emission reductions, and the implementation schedule.

Table 4-8 Significant Source Categories Within the District's Regulatory Authority

Source Category	Rule Number	1999 Emissions of Qualifying Pollutants (TPD)				Status
		VOC	NOx	SOx	PM10	
Agricultural Crop Processing Losses Unspecified			3.1		4.4	The emissions from this source category could not be further broken down to represent source categories that would be regulated under a similar rule or emissions limit and be a significant source category. Therefore, BACM has not been identified at this time. It is expected that this category represents drying and fugitive emissions from processing corn, various grains, rice, various seeds/nuts, soybeans, sugar, wheat, and other misc. crops. Please see the emissions inventory improvement section of Chapter 8, Ongoing Activities.
Agricultural Irrigation IC Engines	4702		17.4		1.2	Rule 4702 amendments for this source category were adopted in June 2005. The District's Heavy-Duty Engine Program is rapidly replacing uncertified diesel engines with new engines certified to the EPA off-road NOx engine standard or better.
Agricultural Products Processing Losses Unspecified			6.2			The emissions from this source category could not be further broken down to represent source categories that would be regulated under a similar rule or emissions limit and be a significant source category. Therefore, BACM has not been identified at this time. It is expected that this category represents drying emissions from processing almonds, candy, corn, cotton, flour, grain feed, milk/dairy, peanuts, potato chips, and other misc. products. Please see the emissions inventory improvement section of Chapter 8, Ongoing Activities.
Agricultural Unpaved Roads	4550, 8081				11.0	New Rule 4550 and Rule 8081 for this source category were adopted in August 2004.
Agricultural Windblown Dust	4550				41.4	New Rule 4550 for this source category was adopted in August 2004.
Architectural Coatings	4601	11.8				The current rule is BACM. Please see BACM Analyses for existing rules in Appendix G of the 2003 PM10 Plan.
Can & Coil Coatings	4604	4.6				Rule 4604 amendments for this source category were adopted in January 2003.
Cattle Feedlot Dust	4550				7.0	New Rule 4550 for this source category was adopted in August 2004.
Charbroiling	4692				1.3	The current rule is BACM. Please see BACM Analyses for existing rules in Appendix G of the 2003 PM10 Plan.

Source Category	Rule Number	1999 Emissions of Qualifying Pollutants (TPD)				Status
		VOC	NOx	SOx	PM10	
Components at Oil and Gas Facilities	4403 4409 4451 4452 4455	10.4				Rule 4403, 4451 and 4452 amendments for this source category were adopted in April 2005. New Rule 4409 and 4455 for this source category were adopted in April 2004.
Cotton Gins	4204				2.7	New Rule 4204 for this source category was adopted in February 2005.
Degreasing	4662	11.3				The current rule is BACM. Please see BACM Analyses for existing rules in Appendix G of the 2003 PM10 Plan.
IC Engines, stationary	4701, 4702		47.0			Rule 4702 was adopted August 21, 2003
Earthmoving	8021				12.9	New Rule 8021 for this source category was adopted in August 2004.
Glass Manufacturing	4354		12.3	4.0		The current rule is BACM for NOx. Please see BACM Analyses for existing rules in Appendix G of the 2003 PM10 Plan.
Harvest Operations	4550				36.8	New Rule 4550 for this source category was adopted in August 2004.
Livestock Wastes	4550	57.1				New Rule 4550 for this source category was adopted in August 2004.
Manufacturing and Industrial Fuel Combustion	4308 4309 4352		24.3	5.2		New Rule 4308 for this source category was adopted in October 2005.
Natural Gas Boilers	4306 4307		3.7			Rule 4306 amendments for this source category were adopted in August 2003 and March 2005. <b>Rule adoption is necessary for smaller units.</b>
Natural Gas Fired Oilfield Steam Generators	4306 4406		6.4	6.9	1.4	Rule 4306 was adopted for BACT NOx control August 18, 2003. A BACT investigation revealed that there are no available controls for PM10. SOx emissions are de minimis.
Oil Drilling and Workover	2280		10.8			Please see BACM Analyses for existing rules in Appendix G of the 2003 PM10 Plan.
Open Areas	8051				3.1	New Rule 8051 for this source category was adopted in August 2004.
Open Burning	4103	10.3	4.6		11.4	The current rule is BACM. Please see BACM Analyses for existing rules in Appendix G of the 2003 PM10 Plan.
Organic Solvents	4661	7.6				The current rule is BACM. Please see BACM Analyses for existing rules in Appendix G of the 2003 PM10 Plan.
Paved & Unpaved Roads	8061				66.8	New Rule 8061 for this source category was adopted in August 2004.
Plastic and Plastic Products Manufacturing	4654				1.5	Emissions for 1999 totaled 1.5 tpd. However, adopted controls reduce emissions for 2000 to 0.1 tpd Therefore, this category is now considered de minimis.

Source Category	Rule Number	1999 Emissions of Qualifying Pollutants (TPD)				Status
		VOC	NOx	SOx	PM10	
Prescribed Burning	4106	16.5			28.9	The current rule is BACM. Please see BACM Analyses for existing rules in Appendix G of the 2003 PM10 Plan.
Residential Space Heating	4905		2.7			New Rule 4905 for this source category was adopted in October 2005.
Residential Water Heaters	4902		1.6			Please see BACM Analyses for existing rules in Appendix G of the 2003 PM10 Plan.
Wood Burning Fireplaces and Wood Burning Heaters	4901	6.0			11.3	See Appendix G of the 2003 PM10 Plan for BACM analysis on Wood Burning Fireplaces and Wood Burning Heaters
Solid-Fueled Boilers, Steam Generators and Process Heaters	4352		3.5			<b>Rule revision is necessary.</b>
Stationary Gas Turbines	4703		10.2			The current rule is BACM. Please see BACM Analyses for existing rules in Appendix G of the 2003 PM10 Plan.
Steam Enhanced Crude Oil Production Well Vents	4401	14.0				<b>Rule revision is necessary.</b>
Storage of Organic Liquids	4623	6.9				The current rule is BACM. Please see BACM Analyses for existing rules in Appendix G of the 2003 PM10 Plan.
Tilling Dust	4550				36.4	New Rule 4550 for this source category was adopted in August 2004.
Windblown Dust from Pasture Lands	4550				6.6	New Rule 4550 for this source category was adopted in August 2004.
Wineries	4694	7.0				New Rule 4694 for this source category was adopted in December 2005.

#### **4.4.2 Solid-Fueled Boilers, Steam Generators and Process Heaters (Rule 4352)**

REASON FOR CONTROL MEASURE: NO<sub>x</sub> emissions from solid fuel fired boilers, steam generators, and process heaters exceed the “de minimis threshold” levels and are therefore subject to federal BACM requirements.

AFFECTED SOURCES: The SJVAB has 14 permitted units in this category, with half of the units located in the District’s Southern Region and the remaining units split between the Central and Northern Regions. Facilities in this category generate utility and industrial power (electricity and heat) by burning petroleum coke, municipal solid waste, or biomass wastes (including wood, vine clippings, leaves, grass, and other by products of the farming and food processing industries).

DESCRIPTION: The District’s permitting process has established limits for both NO<sub>x</sub> and PM<sub>10</sub> emissions, and Rule 4352 (Solid Fuel-Fired Boilers, Steam Generators, and Process Heaters) regulates the NO<sub>x</sub> emissions from these units. BACM emission controls appropriate for solid fuel fired units include low excess air, low NO<sub>x</sub> burners, selective non-catalytic ammonia injection, thermal de-NO<sub>x</sub>, and limestone injection. All units subject to Rule 4352 are currently equipped with BACM; therefore, Rule 4352 will not be amended to strengthen emission limitations.

Rule 4352, however, currently contains the old definition and threshold for major NO<sub>x</sub> source. The rule needs to be amended to include the current major source threshold and ensure that all major sources are subject to this rule.

IMPLEMENTATION SCHEDULE: Rule 4352 will be amended to incorporate the correct definition for major source during the second quarter of 2006.

EMISSIONS AND EMISSIONS REDUCTION: All units are already equipped with BACT controls, so no further emission reductions are expected from this action.

#### **4.4.3 School Bus Fleets (Rule 9310)**

REASON FOR CONTROL MEASURE: The California Clean Air Act requires districts to develop 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)]. Rule 9310, which is currently under development, represents the District’s emerging program for controlling mobile source emissions.



**AFFECTED SOURCES:** The regulation would apply to school bus fleets, including privately owned fleets providing contracted services to schools. Fleet exemptions that could be implemented as part of the rule may include vehicles operated at locations where clean fuels are not readily available.

**DESCRIPTION:** Rule 9310 will focus on NO<sub>x</sub> and PM emissions from diesel school buses. This regulation 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 school buses. Emissions could be reduced in a number of ways, including (1) replacing buses before scheduled retirement; (2) replacing engines/power trains of existing sources with cleaner technology; (3) retrofitting emission control technology to existing sources; or (4) switching to cleaner fuels.

Several mobile source rules have been adopted or are being developed by ARB. These rules address emissions from refuse haulers, urban transit vehicles, and heavy duty vehicle; 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 ARB has adopted or is developing.

**IMPLEMENTATION SCHEDULE:** Rule adoption is scheduled for the third quarter of 2006, with implementation starting in the fourth quarter of 2007. Due to the number, the cost of school buses, and limited school district budgets, final rule implementation is expected to occur well after 2010.

**EMISSIONS AND EMISSIONS REDUCTIONS:** The emissions and emissions reductions from sources affected by the control measure are not known at this time. Emission reductions will be determined as the exact control strategies and rule requirements are developed.

#### **4.4.4 Additional Reductions in Bakersfield**

In the *2003 PM<sub>10</sub> Plan*, the District proposed a focused mitigation program for the Bakersfield Metropolitan Area. This area has experienced relatively high levels of geologic PM<sub>10</sub> on mid-winter days compared to other parts of the Valley. This condition occurs on days with very low wind speed, which indicates that local sources such as construction, paved and unpaved road dust, and unpaved parking areas could be a significant problem in the Bakersfield Metropolitan Area. Modeling conducted for the *2003 PM<sub>10</sub> Plan* showed that additional reductions of approximately 1 tpd of PM<sub>10</sub> emissions were needed by 2010 to bring the Bakersfield, Golden State Boulevard monitoring site into attainment. This 1 tpd commitment is beyond the reductions expected from the Valley-wide ISR program, although the reductions are included in the ISR total for 2010.

Much of this 1 tpd requirement in Bakersfield is satisfied by the District's development agreements with the Tejon and Old River Ranches. Through these agreements, the

developers are paying fees to the District to fund emission reduction projects to offset emissions generated by the developments. The District's Governing Board approved the Tejon Ranch agreement on April 20, 2005, and the Old River Ranch agreement was approved by the Governing Board in October 2005.

Since these agreements were made independent from the ISR rule, these emissions reductions can be counted towards the 1 tpd commitment without double counting reductions. One tpd is equivalent to 365 tons per year (tpy) of PM10. Funding diesel engines will achieve PM10 reductions of approximated 55 tpy. The remaining 310 tpy can be converted into NOx with a 1.5 to 1 ratio, which yields 465 tpy of NOx. With the current development agreements, at least 294 tpy of NOx reductions will be achieved. Therefore, the current commitments already satisfy over 60% of the 1 tpd commitment. The original commitment in the *2003 PM10 Plan* is to achieve the 1 tpd of reductions by 2010.

Also related to the 1tpd in Bakersfield requirement, the *Bakersfield Metropolitan Area PM10 Working Group* was formed in July 2004 to establish an action plan that reduces PM10 emissions by 1 tpd by 2010. The working group contracted HydroBio Advanced Remote Sensing (HydroBio) to assess the impact of geologic PM10 on the Metro Bakersfield area. The first phase of the study completed by HydroBio identified areas in Metro Bakersfield that are prone to fugitive dust problems. The study found that fugitive dust entrained by wind events outside of Metro Bakersfield can potentially affect this location. HydroBio also indicated that agriculture-related anthropogenic activities surrounding the Metro Bakersfield area contribute to airborne geologic particulates. Such activities deposit PM10 in roads, where it is later entrained by moving vehicles, leaf blowers, etc. Additionally, HydroBio found that other PM10 emissions sources, such as vacant lots and dairies, to be less significant.

During the first phase of the study developed by HydroBio, a unique approach was used to assess particulate emissions. HydroBio consultants borrowed a technique from hydrology called "catchments." Catchments were scaled from wind rose data for evaluation with a geographic information system (GIS) to determine potential emissions and wind source areas that could transport particulates to the Metro Bakersfield area.

HydroBio has requested funds for a second phase of the study to better understand the relationship between geologic PM10 and PM2.5 from combustion due to transportation. HydroBio consultants have proposed applying the analytic tools developed during the first phase to the second phase of the study. As of the writing of the *2006 PM10 Plan*, the *Bakersfield Metropolitan Area PM10 Working Group* is in the process of reviewing this proposal to determine whether Phase II will provide significant information to develop control measures for PM10 emission reductions.

#### 4.5 BACT/BACM/RACM

The emissions inventory and the chemical speciation of PM<sub>10</sub> samples collected at sites throughout the SJVAB provide the starting point for the BACM/BACT determination. Appendix G of the original *2003 PM<sub>10</sub> Plan*, contains the BACM/BACT Demonstration prepared for the *PM<sub>10</sub> Plan*, which includes an analysis of rules that regulate significant source categories: agricultural conservation management practices (CMP) program, fugitive PM<sub>10</sub> prohibition rules under Regulation VIII, and wood burning fireplaces and wood burning heaters restrictions.

In summary, the RACM analysis indicated that either all significant sources of PM<sub>10</sub> and PM<sub>10</sub> precursors either are regulated to the RACM level, or no RACM was available for that source. The analysis provides a comparison with RACM suggested in the EPA guidance documents, and RACM and BACM adopted in other areas (South Coast Air Quality Management District, Maricopa County, Arizona, and Clark County, Nevada) is provided as a test of feasibility.

When a measure is identified to be more stringent than the current District measure, the analysis provides a reasoned justification for not pursuing that measure. For example, the source category controlled may be very small in the SJVAB or local factors may greatly increase implementation costs. If a measure was approved as BACM in another area, the District used that measure as a standard of comparison for its BACM analysis. When the District's existing rule was reasonably close to measures suggested in the EPA Guidance or to those adopted in other areas, the District concluded that the rule is, at a minimum, RACM.

The District's RACM Analysis used several different approaches to meet its objectives. For the *2003 PM<sub>10</sub> Plan*, the District contracted with Sierra Research to prepare a Technical and Economic Feasibility Study for fugitive dust measures as part of the BACM analysis. This information also provides a basis to demonstrate RACM. The District also contracted with a consultant to help coordinate the BACM and RACM demonstrations. This information remains unchanged from the *2003 PM<sub>10</sub> Plan*. For a substantial number of rules, EPA had already approved the District's existing rules as BACM or RACM. In those cases, no further analysis was required. District staff prepared the analysis of stationary sources, agricultural sources, and wood burning fireplaces and wood burning heaters.

The District's controls on PM are some of the most effective in the state of California. State legislation (SB656 Sher), required all air districts, regardless of PM attainment status, to adopt an implementation schedule of locally selected control measures from a list of existing PM controls developed by ARB's list. Of ARB's list of 103 measures, over one third cited District rules or programs. Of the remaining measures, many of the District rules or programs covering the same source categories have similar limits or programs as the rules cited by ARB. In other cases, the measures proposed by ARB are control measure commitments of the District's 2003 PM<sub>10</sub> Plan (PM<sub>10</sub> Plan) or the District's Extreme Ozone Attainment Demonstration Plan (Ozone Plan). Collectively,

this indicates that the District's rules and programs for PM10 and its precursors are the most effective in the state.

#### **4.6 INCENTIVE PROGRAMS**

The District has operated incentive programs since 1992. The programs have expanded in funding and increased in sophistication over the years. The District is currently operating two incentive programs aimed at reducing precursor emissions: the Heavy-Duty Engine Emission Reduction Incentive Program (Heavy-Duty Program) and the Reduce Motor Vehicle Emissions (REMOVE) Program. As opportunities to achieve cost-effective emission reductions present themselves and funding becomes available, the District has been willing to develop new programs and new components for existing programs.

Current programs use a combination of state and local funds, including ARB's Carl Moyer Program, San Joaquin Valley Emergency Clean Air Attainment Program (VECAP) funds, State Peaker Power Plant Offset (State ERC) funds, District Department of Motor Vehicles Surcharge Fees (DMV Fees) and federal Congestion Mitigation and Air Quality (CMAQ). 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 and will seek funding for cost-effective programs from all potential sources. Emission reductions claimed for this plan are based on funding already committed and estimates of funding for future years. The mix of locally generated funding, state funding, and federal funding will vary. The District has awarded over \$90 million to projects that have resulted in over 38,000 tons of lifetime emission reductions at a cost-effectiveness of approximately \$2,400/ton.

In 2005, the District executed 265 agreements under the Heavy-Duty Program and 50 agreements under the REMOVE program for a total of \$14.7 million. The types of projects funded include diesel agricultural irrigation pump replacements, on- road and off-road vehicle engine replacements, new vehicle purchases, locomotive replacements, vanpools, bicycle path construction and transit pass subsidies. Over the project life, these projects are expected to reduce 16,891 tons of NO<sub>x</sub>, 160 tons of PM and 21 tons of ROG.

##### **4.6.1 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. It provides funding for new purchases (differential cost only), engine repowers, 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/verified retrofit kit on an existing engine. The

District pays a portion of the differential cost of purchasing the lower emitting technology compared to conventional technology up to a cost-effectiveness cap 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 particulate matter reductions.

The first projects that were funded began operating in 1998. Since then, each year additional funds have been allocated to the program and additional projects have become operational. Project life varies from 3 to 20 years depending on the application. The average project life is 7.7 years based on the mix of projects received to date. Note that emission reductions are cumulative since additional projects are completed each year. The *2003 PM<sub>10</sub> Plan* indicated that emission reductions projected to be achieved by completed projects and with then currently committed funding amounted to 6.3 tpd of NO<sub>x</sub> by 2005. The *2003 PM<sub>10</sub> Plan* also indicated that the District expected additional funding would be obtained to allow continued emission reductions in later years.

The most successful component of the program is the replacement of agricultural internal combustion (IC) engines used for water pumping. Approximately 65% of all engines repowered have been agricultural IC engines that have been replaced with new engines meeting current off-road engine standards.

#### **4.6.2 REMOVE II Program**

The Reduce Motor Vehicle Emissions (REMOVE) Program is the District's first incentive program. It began its first phase in 1992. The District has developed a new program (REMOVE II) that was approved by the Governing Board in February 2005. REMOVE II will reduce emissions from light- and medium-duty motor vehicles. This grant program provides incentives for specific projects that will reduce motor vehicle emissions within the District. The purpose of this grant program is to assist the District in attaining the requirements of the NAAQS and California Clean Air Act. This is accomplished by allocating funds to cost-effective projects that have the greatest motor vehicle emission reductions, thereby creating long-term air quality benefits for 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 components are the Light- and Medium-Duty Vehicle Component, the E-Mobility (Telecommunications) Component, the Bicycle Infrastructure Component, the Public Transportation and Commuter Vanpool Subsidy Component, Accelerated Vehicle Retirement Component and the Alternative Fuel Vehicle Mechanic Training Component.

#### **4.6.3 Light and Medium-Duty Vehicle Incentive Program**

In 2002, the District completed a highly successful Light and Medium-Duty Vehicle Incentive Program. The program provided incentives for the purchase of low-emission passenger vehicles, light trucks, small buses, and trucks less than 14,000 pounds gross vehicle weight. The purpose of the program was to encourage the early introduction of

low-emission vehicles in the SJVAB. The program paid between \$1,000 and \$3,000 per vehicle depending on the emission certification level and size of the vehicle. Vehicles must be powered by alternative fuel, electric, or hybrid electric engines/motors. Emission reductions from vehicles purchased under this program were claimed under ARB's Low Emission Vehicle program. These government and non-profit vehicle projects are now funded through the REMOVE II Program.

#### **4.6.4 Electric Lawnmower Incentives**

The District has operated an electric lawnmower exchange incentive program in recent years. The District worked with electric lawnmower manufacturers and local equipment dealers to provide large discounts to people who turned in their gasoline powered mowers in exchange for electric or push-type lawn mowers. For 2004, District funding provided discount coupons for electric and push-type lawn mowers; 327 mowers were sold in 2004 under the coupon program. In 2005, the District sold 595 electric lawn mowers to Valley residents who traded-in their old gas-powered mowers. This Clean Green Yard Machine Program is an example of a new program that will likely be continued in coming years if funding is available.

### **4.7 NO<sub>x</sub> AND PM<sub>10</sub> EMISSIONS REDUCTIONS FROM ALL COMMITMENTS**

Reductions in PM<sub>10</sub> and NO<sub>x</sub> from emissions controls commitments listed in this *PM<sub>10</sub> Plan*, including District control measures and incentive programs as well as state and federal measures, are quantified in the following tables. Several federal, State, and District measures have been adopted, but not fully implemented. The emissions reductions from most adopted measures have already been projected and incorporated into the emissions inventory. Commitments that are not already in the inventory, indicated on the tables, are used to project future year emissions inventories with those controls. All commitments are included in attainment and 5 percent RFP demonstrations in Chapters 5 and 6. Any shortfall from change of implementation dates in Tables 4-9 and 4-11 will be made up from reductions that will be identified in the contingency measures section. Tables 4-10 and 4-12 show seasonal reductions.

**Table 4-9 Estimated Annual Emission Reductions of PM10  
(tpd)**

CM Name <sup>d</sup>	Rule #	PM10 Emission Reduction (tpd) <sup>a</sup>			Final Implementation Date
		2005	2008	2010	
Agriculture Conservation Management Practices	4550	34.4 <sup>e</sup>	34.0	33.8	3Q/04
Cotton Gins	4204	0	0.7	2.1	3Q/08
Fugitive PM10 Prohibitions (excluding unpaved vehicle areas)	Regulation VIII	10.3	16.4	18.8	4Q/05 <sup>b</sup>
Wood Burning Fireplaces and Wood Burning Heaters	4901	2.9	4.4	5.4	1Q/04
<b>Measures not included in CCOS 2.14</b>					
ISR Program	3180, 9510	0.0	2.8	4.7	1Q/06
State and Federal Measures	Various	N/A	N/A	0.5	Varies
Open Burning	4103	0.2	1.0	4.6	2Q/10
Ag Grant Programs	N/A	0.5	0.6	0.5	
2005 CMP Surplus <sup>e</sup>	4550	0.9 <sup>e</sup>	0	0	
PM10 Shortfall	N/A	2.0	0.0	0.0	
Contingency	N/A	-0.9 <sup>e</sup>	-0.6	-4.1	
<b>Total Annual PM10 Emissions Reductions</b>		<b>50.3</b>	<b>59.3</b>	<b>66.3</b>	
<b>Annual PM10 Reductions not included in CCOS 2.14</b>		<b>2.7</b>	<b>3.8</b>	<b>6.2</b>	

<sup>a</sup> Reductions listed are in annual tpd.

<sup>b</sup> All of Regulation VIII has been implemented as of 4Q of 2005, with the exception of an unpaved road measure, which will be phased and fully implemented by 4Q of 2008.

<sup>c</sup> Expressed as tpd of PM10; multiply by 1.5 to convert to NOx (see "Surplus used for PM10" in Table 4-15)

<sup>d</sup> All of the above controls have been adopted.

<sup>e</sup> In January 2006, the District reported that the total emissions reductions achieved by the CMP program in 2005 is 35.3 tpd. However, 34.4 tpd is already included in CCOS 2.14. The CMP surplus of 0.9 tpd is being added to those reductions set aside for contingencies. The District is not updating the 2008 and 2010 emissions reductions for CMPs at this time.

**Table 4-10 Estimated Seasonal Emission Reductions of PM10  
(tpd)**

CM Name <sup>c</sup>	Rule #	PM10 Emission Reduction (tpd) <sup>a</sup>			Final Implementation Date
		2005	2008	2010	
Conservation Management Practices	4550	27.2	26.9	26.7	3Q/04
Cotton Gins	4204	0.0	0.5	0.9	3Q/08
Fugitive PM10 Prohibitions (excluding unpaved vehicle areas)	Regulation VIII	9.9	15.7	17.9	4Q/05 <sup>b</sup>
ISR Program	3180, 9510	0.0	2.6	5.1	1Q/06
Wood Burning Fireplaces and Wood Burning Heaters	4901	18.7	19.7	20.4	1Q/04
State and Federal Measures	Various	N/A	N/A	0.5	Varies
<b>Total Seasonal PM10 Emissions Reductions</b>		<b>55.8</b>	<b>65.4</b>	<b>71.5</b>	

<sup>a</sup> Reductions listed are in winter tpd.

<sup>b</sup> All of Regulation VIII has been implemented as of 4Q of 2005, with the exception of an unpaved road measure, which will be phased and fully implemented by 4Q of 2008.

<sup>c</sup> All of the above control measures have been adopted

**Table 4-11 Estimated Annual Emission Reductions of NOx  
(tpd)**

CM Name <sup>f</sup>	Rule #	NOx Emissions Reduction (tpd)			Final Implementation Date
		2005	2008	2010	
Wood Burning Fireplaces and Wood Burning Heaters	4901	0.2	0.2	0.2	1Q/04
Smog Check II <sup>a</sup>	N/A	6.1	5.7	4.9	1Q/03
<b>Measures not included in CCOS 2.14</b>					
Boilers, Steam Generators & Process Heaters	4306	1.5	7.9	7.9	2Q/07
Dryers, Dehydrators & Ovens	4309	0.0	0.7	0.7	4Q/08
Incentive Programs	None	12.8	8.8	6.9	N/A
ISR Program	3180, 9510	0.0	2.0	3.4	1Q/06
Natural Gas-Fired, Fan Type Residential Central Furnaces	4905	0.0	0.2	0.4	4Q/20
Boilers, Steam Generators & Process Heaters (2 MMBtu/hr to 5 MMBtu/hr)	4307	0.0	0.5	1.0	3Q/09
State and Federal Measures	TBD	N/A	N/A	10.0	Varies
Internal Combustion Engines <sup>c, d</sup>	4702	0.4	1.7	1.7	2015
Boilers, Steam Generators & Process Heaters (0.75 MMBtu/hr to 2 MMBtu/hr)	4308	0.0	0.4	0.6	4Q/20
Open Burning	4103	0.0	0.2	1.1	2Q/10
Stationary Internal Combustion Engines Amendments	4702	0.0	0.0	7.5	2Q/15
Ag Grant Programs		1.8	5.3	0.0	
Surplus Used for PM10		-3.0	0.0	0.0	
Contingency <sup>e</sup>		-2.8	-7.0	-8.4	
<b>Total NOx Emissions Reductions <sup>b, d</sup></b>		<b>17.0</b>	<b>26.6</b>	<b>37.9</b>	
<b>Annual NOx Reductions not included in CCOS 2.14</b>		<b>10.7</b>	<b>20.7</b>	<b>32.8</b>	

<sup>a</sup> Smog Check II not accounted for in emissions inventory, so reductions are accounted for in this table.

<sup>b</sup> Totals may differ slightly due to rounding.

<sup>c</sup> Includes current rule reductions only. Agricultural engine reductions have been moved to contingency reductions.

<sup>d</sup> These totals were reduced by 7.5 tpd to reflect movement of Agricultural IC Engines to contingency reductions.

<sup>e</sup> Does not include ARB NOx contingency shown in Tables 4-26 and 4-27.

<sup>f</sup> All of the above control measures have been adopted



**Table 4-12 Estimated Seasonal Emission Reductions of NOx (tpd)**

CM Name <sup>b</sup>	Rule #	NOx Emissions Reduction (tpd)			Final Implementation Date
		2005	2008	2010	
Boilers, Steam Generators & Process	4306	0.0	7.3	7.3	2Q/07
Dryers	4309	0.0	0.3	0.9	4Q/08
Incentive Programs	None	9.8	6.7	5.3	N/A
ISR Program	3180, 9510	0.0	1.5	2.6	1Q/06
Wood Burning Fireplaces and Wood Burning Heaters	4901	1.8	1.9	1.9	1Q/04
Natural Gas-Fired, Fan Type Residential Central Furnaces	4905	0.0	0.0	0.0	4Q/20
Boilers, Steam Generators & Process Heaters (2 MMBtu/hr to 5 MMBtu/hr)	4307	0.0	0.9	1.2	4Q/08
Smog Check II		6.4	6.0	5.2	
State and Federal Measures	TBD	N/A	N/A	10.0	Varies
Internal Combustion Engines <sup>a</sup>	4702	0.4	1.7	1.9	2Q/15
Water Heaters	4308	0.2	0.5	0.7	4Q/20
<b>Total Seasonal NOx Emissions Reductions</b>		<b>18.4</b>	<b>26.4</b>	<b>36.3</b>	

<sup>a</sup> Includes current rule reductions plus future agricultural engine reductions.

<sup>b</sup> All of the above control measures have been adopted

#### 4.8 CONTINGENCY MEASURES

Given the possibility that rule commitments may not provide all of the reductions anticipated, contingency reductions may be needed for these measures. Sections 172(c)(9) and 189(c)(1) of the CAA require attainment plans to provide specific measures to be implemented if an area fails to make reasonable further progress (RFP) or to attain the NAAQS on schedule. Contingency measures must take effect without any further action by the District Governing Board, the State, or EPA. The Addendum to the General Preamble Section VII(B)(4) states that EPA will require the submittal of a plan revision within nine months after failure to achieve a milestone that assures that the area will achieve the next milestone. That action would also necessitate the implementation of contingency measures. Contingency measures provide assurance to the EPA and the public that progress toward attainment will continue while the area corrects the deficiencies in the plan and adopts new or revised measures.

The triggering of contingency reductions for failure to meet an RFP milestone is determined by an analysis of the emission reductions achieved by the milestone date versus the minimum required by the CAA. The triggering of contingency reductions for failure to attain is based on the actual air quality in the attainment year, in this case 2010. That assessment is made at the end of the year, since the annual average standard is year round, and the contingency reductions are due subsequently.

As shown in Chapter 6, the District has met the RFP and milestone requirements for 2005. Furthermore, Chapter 5 shows that the District is projected to attain the PM10 NAAQS no later than 2010. Therefore, the District does not need to activate any contingency measures at this time.

#### 4.8.1 State Contingency Reductions

ARB proposes contingency reductions for both RFP and for attainment of the PM10 standard in the attainment year. ARB will provide contingency reductions up to the amounts shown in Table 4-13. ARB anticipates achieving these contingency reductions through the secured state portion of funding for the Carl Moyer Program either in total or in aggregate with other control programs.

California's ongoing motor vehicle program creates a unique situation that allows ARB to provide contingency reductions for attainment based on the increasing benefits of measures that are already being implemented. These adopted measures have multi-pollutant benefits that will contribute to ongoing reductions in NOx emissions. ARB is providing a portion of the additional reductions achieved through an additional year of ARB's mobile source program as contingency for attainment.

The contingency reductions for attainment are triggered if EPA determines the area did not attain the standard on time. This determination for the annual PM10 standard would occur in early 2011.<sup>2</sup> ARB has quantified the net benefits accrued between 2010 and 2011 of the mobile source program and will provide up to 10 tpd of NOx reductions for attainment contingency.

**Table 4-13 2010 ARB Contingency Reductions NOx**  
(tons/day)

Purpose	Reductions
Attainment	10 <sup>a</sup>

<sup>a</sup> These contingency reductions are not linked to State commitments listed in Table 4-2

#### 4.8.2 District Contingency Reductions

The District's contingency measure strategy contains several different elements. The base contingency measures rely on adopted programs that achieve reductions in excess of those relied upon in the *2003 PM10 Plan*. These are intended to fulfill the immediate contingency measure requirement. Measures adopted in 2005 will be available as contingency measures later, in 2005 through 2010.

The District has included all measures currently known to be feasible in the *PM10 Plan* to obtain the reductions needed to attain the NAAQS at the earliest practicable date. Some of the proposed contingency measures have substantial uncertainties in their emissions inventory and control technology and were therefore not suitable for inclusion

<sup>2</sup> On December 20, 2005, EPA proposed its intent to revoke the PM10 NAAQS, revise the PM2.5 NAAQS, and establish a new 24-hour PM2.5-10 NAAQS for urban areas.

as a regular control measure; however, staff continues the process of researching additional information to establish a viable control measure. In some cases, the contingency measures have not undergone the review afforded to the primary control measures.

The District continually tracks new technologies and control strategies to identify potential measures suitable for this region. The measures may be modified at a later date to account for cost effectiveness and technical feasibility considerations prior to rule adoption. The listed measures may be replaced with new, more effective contingency measures as needed.

#### 4.8.2.1 Surplus Reductions to Fulfill Contingency Requirement

Rule 4103, Open Burning, and Rule 4702, Internal Combustion Engines, were included in the *2003 PM10 Plan* as contingency measures that needed rule development and Governing Board approval to function as contingency measures. These rules have since been adopted, and their emissions reductions are included in the total estimated emissions reductions (Tables 4-9 through 4-13).

A portion of the total annual emissions reductions have been subtracted from the totals in Table 4-9 and Table 4-11, which include control measures and incentive program reductions, to serve as contingency reductions. Since these reductions are in excess of what was used in attainment modeling and RFP calculations, these are surplus reductions and appropriate as contingencies. These surplus reductions are summarized in Table 4-14.

**Table 4-14 Surplus Reductions for Contingencies**

	2005	2008	2010
PM10	0.9	0.6	4.1
NOx	2.8	7.0	8.4

#### 4.8.2.2 Contingency Measures Requiring Rule Amendments

The following measures were included in the *2003 PM10 Plan* as contingency measures but need rule development and Governing Board approval to function as contingency measures. The measures, summarized in Table 4-15, will undergo additional review, as needed, to determine the appropriate content based on recent experience with the rules and regulations that they would modify.

**Table 4-15 Contingency Measures Requiring Rule Amendments**

Rule(s)	Pollutant(s)	Project Description	Adoption or Amendment Date (Quarter/Yr)	Effective Date (Quarter/Yr)
Reg VIII	PM10	Reg VIII New Amendments	TBD <sup>a</sup>	TBD
4550	PM10	Conservation Management Practices New Amendments	TBD <sup>a</sup>	TBD

<sup>a</sup> Only when a contingency need is identified will amendments dates for Reg VIII or CMP amendments be determined.

### Regulation VIII Amendments

Appendix G of the 2003 *PM10 Plan*, the BACM analysis for Regulation VIII, contains a table entitled "Identification and Justification of BACM Selected," that provides a comprehensive listing of control measures, what the control measure proposes, technological feasibility, cost effectiveness, and discussion/justification of control measures. Of the measures that were not selected for BACM, several measures were identified as contingency measures for varying reasons. The final contingency measures are subject to change based on input received from stakeholders and the public and from the socioeconomic impact analysis. Below is a description of the potential amendments to the rules under Regulation VIII that the District would implement if in the event that emission milestones are not achieved. As noted earlier, these measures would provide only minimal additional reductions above those achieved by the 2004 amendments to Regulation VIII and would be accomplished on at a very high cost per ton reduced (ranging from approximately \$60,000 to \$650,000 per ton).

#### Rule 8021

- Prohibit demolition activities when wind speeds exceed 25 mph
- Require a designated person to monitor and if necessary to manage/optimize dust control activities on-site for constructions projects with 50 or more acres of disturbed surface
- Require minimum soil moisture content of 12% for earthmoving

#### Rule 8031

- Cease material handling activities when a dust plume crosses property line(s) during a wind event
- Require application of water to storage piles at least once per hour or cover piles with tarps or similar coverings during a wind event

#### Rule 8071

- Eliminate the use of water as a control option for unpaved parking areas with activity levels of 75 or more vehicle trips/day to prevent VDE more than 25 days per year. The use of water shall remain an optional control technique for vehicles that operate exclusively within the site

- Eliminate the use of water as a control option for unpaved parking areas with 25 or more vehicle trips/day for more than 25 days per year with three or more axles to prevent VDE and to provide a stabilized surface

**Rule 8081**

- Eliminate the use of water as a control option for unpaved parking areas with activity levels of 75 or more vehicle trips/day to prevent VDE as specified in Rule 8071. The use of water shall remain an optional control technique for vehicles that operate exclusively within the site
- Eliminate the use of water as a control option for unpaved parking areas with 25 or more vehicle trips/day more than 25 days per year with three or more axles to prevent VDE and to provide a stabilized surface as specified in Rule 8071
- Cease material handling activities when a dust plume crosses property line(s) during a wind event
- Require application of water to storage piles at least once per hour or cover piles with tarps or similar coverings during a wind event

**Conservation Management Practices (CMP) Program (Rule 4550)**

The Conservation Management Practices (CMP) Program (Rule 4550) contains a backstop provision that would require the District to increase the number of measures required, change the acreage exemption level, or make other changes to be determined if the CMP fails to achieve its emission reduction goals. The program currently is envisioned to require one measure from each of five source categories – unpaved roads, unpaved parking and equipment storage areas, land preparation, harvest, and other. Depending on the reductions needed, the requirement could be increased by one or more measures. The grower would choose the source category to which the additional measure would apply. The District would implement the change in the year following the shortfall identification.

Rule 4550 has achieved the first year goal for the acreage covered by CMP Plans. The District has compiling data (e.g., number of farms, crop types affected, types of CMP utilized, and other data) to substantiate the progress achieved during the first year of the CMP Program and to determine the actual emission reductions being achieved by the practices selected by the growers. Contingency Implementation before the analysis of the effectiveness of the existing rule could be counter productive to the evolving relationship between farmers, the Natural Resources Conservation Service (NRCS), and the District. CMP reductions for 2010 are shown in Table 4-16.

**Table 4-16 PM10 Emissions and Potential Emissions Reductions San Joaquin Valley Agricultural CMP Program**

CMP Category	2010 Emissions (tpd)	2010 Emissions Reductions (tpd)	%
Unpaved Roads (Ag) <sup>a</sup>	10.6	2.3	21.7
Unpaved Traffic Areas (Ag) <sup>a</sup>	6.3	0.6	9.5
Harvest	35.6	13.2	37.1
Land Prep	35.2	9.2	26.1
Windblown Dust	40.1	7.9	19.7
Ag Burning	9.5	0.5	5.3
CAF PM10 <sup>b</sup>	7.0	0.1	1.4
<b>TOTAL PM10</b>	<b>144.3</b>	<b>33.8</b>	<b>23.4%</b>

<sup>a</sup> The emissions attributed to Ag Unpaved Roads and Ag Unpaved Traffic Areas will be controlled by Regulation VIII, and the Proposed ISR Fee, in addition to the Proposed Ag CMP Program. The % reduction listed is only for the Proposed Ag CMP Program compared to the entire category

<sup>b</sup> CAF PM10 only includes PM10 from feedlots and dairies.

District analyses of estimated emissions reductions from Regulation VIII and CMPs that were conducted through September 2005 support the emissions reductions estimates in the *2003 PM10 Plan* for these rules.

#### 4.8.3 Additional Local Commitments

The third contingency measure is to obtain additional commitments from local jurisdictions if a shortfall arises under Regulation VIII. The District is collecting data from the local jurisdictions in support of the *2006 PM10 Plan* that will be used to determine if Regulation VIII requirements have been met.

If there is a failure to achieve RFP, the State, District, and local agencies will be requested to identify additional control measures under their jurisdiction that will reduce emissions prior to the next RFP milestone date.

## 4.9 SUPPORT FROM OTHER DISTRICT ACTIVITIES

### 4.9.1 Controls for Other Precursors

The updated photochemical modeling done for this Plan using CRPAQS information indicates that NOx is the most significant precursor to secondary PM10 in the SJVAB. VOCs make smaller contributions, and SOx has been found to be de minimis. The adopted measures and remaining commitment shown in Table 4-17 were presented as commitments for VOC controls in the *2003 PM10 Plan*. These measures have begun to improve SJVAB PM10 levels. Sections 4.9.1.1 describes the remaining commitment. Tables 4-18 and 4-19 summarize total VOC reductions from adopted measures and from commitments.

**Table 4-17 VOC Commitments from Previous PM10 Plans**

Rule number	Project Description	Adoption or Amendment Date (Quarter/Yr)	Effective Date (Quarter/Yr)
<b>Adopted Measures</b>			
4403 & 4455	Fugitive VOC from Oil and Gas Facilities.	2Q/05	2Q/06
4604	Can & Coil Coating	1Q/04	1Q/05
4610	Glass Coating Operations	2Q/03	3Q/04
4694	Wine Fermentation and Storage Tanks	4Q/05	3Q/07
<b>Control Measure Commitments</b>			
4401	Steam-Enhanced Oil Well Vent	4Q/06	2010

**Table 4-18 Estimated Annual Emission Reductions of VOC**

CM Name	Rule #	VOC Emissions Reduction (tpd)			Final Implementation Date
		2005	2008	2010	
Can & Coil Coatings	4604	0.3	0.4	0.4	4Q/04
Glass Coating Operations	4610	0.2	0.2	0.2	1Q/04
Glycol Dehydration Systems	4408	1.6	1.7	1.8	4Q/03
Fugitives from Oil and Gas Facilities	4403	4.8	4.8	4.7	1Q/05
Fugitives from Chemical and Refinery Plants	4455	0.2	0.2	0.2	1Q/05
Wood Burning Fireplaces and Wood Burning Heaters	4901	1.3	1.9	2.3	1Q/04
<b>Measures not included in CCOS 2.14</b>					
Steam Enhanced Crude Oil Production Well Vents <sup>a</sup>	4401 <sup>a</sup>	0.0	1.5	1.4	4Q/06
Wineries	4694	0.0	0.7	0.7	4Q/06
State and Federal Measures	TBD	N/A	N/A	7.2 <sup>b</sup>	Varies
<b>Total Annual VOC Emissions Reductions</b>		<b>9.1</b>	<b>11.4</b>	<b>18.9</b>	
<b>Annual VOC reductions not included in CCOS 2.14</b>		<b>0.0</b>	<b>2.2</b>	<b>9.3</b>	

<sup>a</sup> This rule has not yet been adopted; all of the remaining control measures listed above have been adopted.

<sup>b</sup> The State SIP commitment is for total reductions. Expected reductions from state and federal measures are shown for information only. Specific reductions are to be identified later.

**Table 4-19 Estimated Seasonal Emission Reductions of VOC**

CM Name	Rule #	VOC Emissions Reduction (tpd)			Final Implementation Date
		2005	2008	2010	
Can & Coil Coatings	4604	0.3	0.4	0.4	4Q/04
Glass Coating Operations	4610	0.1	0.2	0.2	1Q/04
Glycol Dehydration Systems	4408	1.6	1.7	1.8	4Q/03
Fugitives from Oil and Gas Facilities	4403	4.8	4.8	4.7	1Q/05
Fugitives from Chemical and Refinery Plants	4455	0.2	0.2	0.2	1Q/05
Wood Burning Fireplaces and Wood Burning Heaters	4901	9.7	10.1	10.4	1Q/04
Steam Enhanced Crude Oil Production Well Vents	4401	0.0	1.5	1.4	1Q/06
Wineries	4694	0.7	2.3	2.3	4Q/06
State and Federal Measures	TBD	N/A	N/A	7.2 <sup>a</sup>	Varies
<b>Total VOC Emissions Reductions</b>		<b>17.4</b>	<b>21.1</b>	<b>28.6</b>	

<sup>a</sup> The State SIP commitment is for total reductions. Expected reductions from state and federal measures are shown for information only. Specific reductions are to be identified later.

#### 4.9.1.1 Steam-Enhanced Crude Oil Production Well Vents (Rule 4401)

REASON FOR CONTROL MEASURE: VOC emissions from steam enhanced crude oil production well vents exceed the “de minimis threshold” level, therefore, are subject to federal BACM requirements.

AFFECTED SOURCES: This control measure would reduce VOC emissions from steam-enhanced crude oil production wells and any associated vapor collection and control systems. In 1998, there were approximately 23,000 active steam enhanced crude oil production wells in the SJVAB. Most of the steam enhanced crude oil production wells are located in Kern County. As the wells operate throughout the year, emissions occur uniformly during the year. Rule 4401 prohibits the operation of steam enhanced crude oil production wells unless the VOC emissions from oil production well vents are reduced by at least 99 percent by weight. This level of control can be achieved through the operation of a vapor collection and control system. The rule also requires that well vent vapor collection and control systems be maintained in good repair, with standards for specified allowable number of leaks depending upon the number of wells connected to the systems. Limited numbers of cyclic wells that meet specified conditions are currently exempted from the rule. Sources are also subject to Rule 4002 (National Emissions Standards for Hazardous Air Pollutants) and Rule 4102 (Nuisance).

DESCRIPTION: 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 keeping of records.



**IMPLEMENTATION SCHEDULE:** Adoption for this control measure is anticipated by the fourth quarter of 2006, and full BACM implementation for VOC control is projected for the year 2010.

**EMISSIONS AND EMISSIONS REDUCTIONS:** Total VOC emissions from sources subject to the Steam-Enhanced Crude Oil Production Well Vents control measure are estimated to be 14.7 tpd in 2006. Upon final implementation of the proposed Steam-Enhanced Crude Oil Production Well Vents control measure, 1.5 tpd of VOC reductions is anticipated.

#### **4.9.2 COMPLIANCE/ENFORCEMENT**

The District operates a highly efficient and effective compliance program. The Compliance Division's staff of 75 personnel maintains a strong presence in each of the District's three regional service areas. The Compliance Division has a critical role in ensuring that rules and regulations relied upon to attain the PM10 NAAQS are fully enforced.

The District uses several methods to increase compliance while maintaining a streamlined process. The first method to assure compliance is education and outreach. Educational approaches include an extensive array of compliance assistance bulletins, and a compliance school for those who have received a notice of violation. A second method is the increased use of information technology. The District's website, along with printed information, helps to ensure that the regulated community has full access to the applicable regulations and instructions. The District is automating its permitting system to enable applicants to take advantage of streamlined applications for permits such as those required for agricultural burns. By making the process easier, compliance rates will be higher. The third method is the traditional field enforcement activities that include rigorous source tests, inspections, and response to complaints. The District has toll free complaint hot lines that enable the public to contact an on-call inspector at any time. The final approach falls into the District's legal and Mutual Settlement area. District legal staff has the authority to issue large penalties as one of the strongest compliance incentives.

Until recently, the District's Regulation VIII fugitive dust rules were enforced almost entirely on a complaint basis. The District recognized that compliance rates for activities subject to Regulation VIII could be improved. The District is committed to increasing its reliance on field inspections through increases in total compliance staff and by redirecting resources to Regulation VIII compliance. In addition, one of the proposed upgrades to Regulation VIII is to increase the number of construction sites that will be required to file a dust control plan. This will enable Compliance staff to quickly identify active construction sites and to better focus their efforts on dust control. The District's proposed budget includes additional staff assigned to compliance activities.

“Compliance School” is offered as a voluntary educational training session to individuals and companies who have received a “Notice of Violation Settlement Letter” from the District. A person having the authority and responsibility to control the event that led to the violation of a District rule may qualify for a one-time penalty reduction by attending this two-hour training session. The first hour presents an overview of the air quality problems within the SJVAB. The second hour discusses rule requirements and provides recommendations regarding rule compliance.

### **Compliance Assistance Bulletins and Publications**

The following Compliance Assistance Bulletins are available on the District’s website:

- Continuous Emission Monitoring (CEM) Reporting Requirements
- Dealing with Excessive Liquid in Vapor Return Hoses Equipped with Liquid Removal Devices
- Equipment Tuning Procedures for Boilers, Steam Generators and Process Heaters
- Portable Equipment Recordkeeping
- Rescue Requirements for Floating Roof Tank Inspections
- Rule 4692 – Chain-driven Charbroiling Equipment
- Source Testing Requirements for Alternative Monitoring Schemes for Boilers, Steam Generators, and Process Heaters
- Title V Reporting Requirements
- Vineyard Removal Update
- Vegetable Crop Residue Burning
- Rule 4306 – Boilers, Steam Generators, and Process Heaters
- Rule 4702 – Spark-Ignited Internal Combustion Engines
- Regulation VIII – Fugitive Dust Control at Construction Sites
- Rule 4604 – Wood Products Coating Operations
- Source Test Scheduling
- Restrictions of Agricultural Burning – June 1, 2005
- Criteria Source Test Contractors Reminder to Renew Certification

Other informational documents or web pages include the following:

- Fugitive Dust Control at Agricultural Sources
- Asbestos Requirements for Demolitions and Renovations
- Abrasive Blasting Operations
- Degreasing Operations
- Industry Self Inspection Program

### **4.9.3 Education/Public Awareness and Information**

Engaging the public in efforts to reduce emissions is a key element of the PM10 attainment strategy. Education increases public support for new and controversial regulations. Helping people understand the complex issues underlying the PM10 problem further improves this support. There are many actions that individuals can undertake to reduce PM10 emissions. When members of the public are aware that they

can make a difference and are convinced that the problem is real, many people will change their behavior in a positive way.

The District's education and information program has expanded and evolved over the years. It uses a variety of media, strategies, and techniques to ensure the widest possible dissemination of air quality information. It uses direct marketing approaches with traditional media, including television, radio, and print. It also utilizes new technologies, such as the District's website and list serves, and takes advantage of non-traditional methods such as word-of-mouth marketing. The District networks with other agencies, educational institutions, organizations, industry groups, and the news media in educational efforts. It produces educational materials, such as videos, brochures, and fact sheets that provide focused information to targeted audiences.

#### **4.9.3.1 Public Information Program**

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

Agricultural Outreach - The agriculture outreach component reflects the importance of this economic sector to the SJVAB's economy and to the PM10 attainment strategy. The District works closely with the Valley's agricultural industry leaders. This cooperative effort has led to perhaps the most intensive research into agriculture related emissions and conservation practices anywhere in the country. The \$27 million California Regional Particulate Air Quality Study (CRPAQS), now nearing completion, was a direct result of this cooperation. A landmark Memorandum of Understanding (MOU) is in place with the NRCS, the California Department of Food and Agriculture (CDFA) and the District. The MOU solidifies the agencies' commitment to work together to assist the agricultural community in the development and implementation of methods of reducing PM10 from agricultural practices.

Outreach is a critical component of the Agricultural Conservation Management Practice (CMP) Program proposed in this Plan. The contacts, developed with agriculture industry leaders and agencies that assist growers such as the NRCS and the Farm Bureaus, have helped to get the word out to the thousands of growers participating in the program.

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 pollution levels are expected. Although primarily aimed at reducing ozone precursor emissions during the summer ozone season, these same precursor emissions also contribute to secondary PM10 formation and affect the SJVAB's compliance with the annual PM10 standard. In addition to extensive multi-media English, Spanish, and Hmong language campaigns, information regarding the program is communicated to employers through comprehensive employer packets (bilingual), and Spare the Air fairs throughout the Valley. The District notifies participating

employers and the public, via email, faxes, news broadcasts, and radio announcements, when it is predicted that the ozone standard will be exceeded the following day. The public is asked to postpone or avoid such activities as using oil-based paints, solvents, aerosol spray cans, and gasoline-powered lawn equipment, and avoid making unnecessary vehicle trips.

Check Before You Burn – The District’s Check Before You Burn Program is an educational program that supports wood burning curtailment rule – Rule 4901. The program’s intent is to inform the public as to the wood burning status for their county; either “allowed,” “discouraged,” or “prohibited”. The program communicates the air quality levels from November to February to the public via a wide variety of media. In addition to a comprehensive English, Spanish and Hmong media campaign utilizing TV, radio and billboards, the program promotes use of a 1-800 number and a website for residents to check the burn status for their particular area at any given time. Incentive items and promotional brochures are distributed at events and fairs throughout the year.

Educational Videos – A wide variety of educational videos are used to promote behavior change and to educate the public on air quality issues. Recently, the Public Information Program completed a Spare the Air video which outlines ten steps the public can take to reduce their contributions to summer-time pollution.

Valley-wide 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 in improving air quality. PSAs for Rules 4901 (Wood Burning Fireplaces and Wood Burning Heaters) have been airing on local newscasts since 1994. Also, through enhanced public outreach, the District has strengthened its Smoking Vehicle Program, which encourages the public to report vehicles with excessive visible emissions. An extensive public outreach campaign also informs SJVAB residents about the Spare the Air program.

Pollutant Standard Index (PSI) Forecasts - Daily PSI (also know as the Air Quality Index) forecasts are faxed & emailed 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. Since the adoption of Rule 4901, regulating the mandatory curtailment of residential wood burning during days expected to have high PSI readings, the widest possible distribution of no burn day information has been critical to obtaining our high level of compliance. The District has staff meteorologists to provide highly accurate air quality predictions for the SJVAB. Forecasts now use more detailed information specific to the local daily conditions in the SJVAB.

Air Quality Symposium - The District holds the Air Quality Symposium every other year. A wide variety of organizations, businesses and individuals participate. More than 200 representatives of business and industry, along with civic leaders, air quality experts, health officials, and community activists, came together to discuss the Valley’s healthy-

air challenges at the District's 2004 Air Quality Symposium September 29-30 in Bakersfield. "Unique Valley, Unique Solutions: Working Together for Clean Air in the San Joaquin Valley" featured panel discussions exploring innovative solutions to cleaning the air in the Valley. The events also included keynote speakers, general sessions, breakout sessions on topics of special interest, and air quality exhibits.

#### **4.9.3.2 District Publications**

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

- Guide to the District's Regulation VIII Fugitive Dust Prohibitions
- Spare the Air Program
- Emission Incentives Programs
- Air District Fact Sheet
- AQI Flag Brochure
- Air District Status Report
- Residential Wood burning
- Automotive Checkbook (vehicle maintenance record book)
- The Smoking Vehicle Program
- Air Pollution Health Effects
- Air Quality NEAP Episodes

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.

#### **4.9.3.3 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.

Furthermore, the District offers elementary, middle and high schools air quality curriculum materials to all teachers in the San Joaquin Valley. The elementary school curriculum is accompanied by class material and incentive items and focuses on general air quality issues. The middle and high school curriculum focuses on mobile source emissions and is a science-based laboratory series.

Finally, the District has partnered with local organizations to distribute our Air Quality Notification Flag Program and materials in all schools in the valley over the next few years. The multi-colored flags are flown each day to indicate the forecasted air quality. The program has accompanying materials that provide indoor activities for students on days when air quality is expected to be poor. Furthermore, the materials outline behavior modifications children and adult can take to help improve air quality.

#### 4.9.3.4 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. The following are local and nationally established, annual events held throughout the year in which the District participates:

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

A wide variety of local activities are conducted by organizations and agencies throughout the Valley. Such activities include the annual Clean Air Rally sponsored by Project Clean Air and the annual Conservation Fair by the County of San Joaquin. The District participates these events (and many others) and encourages activities that increase public awareness of air pollution and public participation in programs or activities to reduce air pollution. In addition, many of the District activities can be found on its web site at [www.valleyair.org](http://www.valleyair.org).

#### 4.9.3.5 Agriculture Improving Resources (A.I.R.)

Agriculture Improving Resources (A.I.R.) is a partnership formed to aid agriculture in promoting voluntary improvement of air quality through scientifically proven and cost effective measures. Partners in A.I.R. include the California Cotton Ginners and Growers Associations, Nisei Farmers League, California Citrus Mutual, California Grape and Tree Fruit League, Raisin Bargaining Association, California Apple Commission, California Plant Health Association, Kern County Farm Bureau, Kings County Farm Bureau, Fresno County Farm Bureau, Tulare County Farm Bureau, Madera County Farm Bureau, Merced County Farm Bureau, Stanislaus County Farm Bureau, USDA Natural Resources Conservation Service, the San Joaquin Valley Unified Air Pollution Control District, and the California Air Resources Board.

Recent A.I.R. outreach efforts include outreach to promote alternatives to open field burning, PM10 dust control practices in orchard management, and EQIP cost sharing for fugitive PM10 control through the use of dust suppressants. This partnership will play an increasingly important role in providing information to growers on a wide variety of air quality programs.

#### 4.9.4 Environmental Review

The District reviews California Environmental Quality Act (CEQA) and development proposals received from cities, counties, and other agencies. Whenever development is planned or occurs, the District focuses on potential sources of emissions. Among the areas examined are agriculturally productive lands as they convert to non-agricultural uses, construction and demolition activities, traffic generating sources, and potential for facilities that may generate hazardous materials. The District developed two documents as resources for agencies to use when evaluating potential air quality impacts, the Air Quality Guidelines for General Plans (AQGGP)<sup>3</sup> which encourages cities and counties to include air quality elements or air quality goals and policies in general plans in order to reduce mobile and area source emissions and help attain state and federal air quality standards; and the Guide for Assessing and Mitigating Air Quality Impacts (GAMAQI) which is an advisory document that provides lead agencies, consultants, and project applicants with uniform procedures for addressing air quality in environmental documents.

#### 4.9.5 Further Study Control Measures

Some source categories appear to have the potential for emissions reductions but have highly uncertain emission inventories or control measure effectiveness estimates. For these categories, the District proposes further study to enable informed decisions on whether to pursue a control measure and realistic estimates of emissions reductions. The *2003 PM10 Plan* included three further study control measures: confined animal feeding (CAF) operations, soil decontamination, and leaf blowers.

A CAF rule is now under development in response to deadlines contained the California Health and Safety Code as modified by SB 700<sup>4</sup> for these sources. Therefore, CAF rules are no longer further study measures. The District's CMP Program includes CAF PM10 management practices, and the District's *Extreme Ozone Attainment Demonstration Plan* includes a control measure for CAF VOC controls. Soil decontamination is also included as a VOC control in the District's *Extreme Ozone Attainment Demonstration Plan*. This source category is currently covered under prohibitory Rule 4651 and permits are issued for in-situ soil decontamination.

Leaf blowers were not included in the District's *Extreme Ozone Attainment Demonstration Plan*, however. The current emissions inventory does not adequately reflect all emissions from the operation of leaf blowers. The current inventory only accounts for NOx and VOC emission related to fuel losses and engine operation. Fugitive PM10 entrained from leaf blowing and general landscape maintenance activities is not accounted for in the inventory. ARB is the responsible agency for the emissions inventory for the lawn and garden equipment source category, but has not yet determined SJVAB emissions. District staff conducted research to identify if other

<sup>3</sup> Updates to the AQGGP were adopted in September 2005.

<sup>4</sup> SB 700 amended Section 42310 of the California Health and Safety Code and added Sections 39011.5, 39023.3, 40724, 40724.5, 40724.6, 40724.7, 40731, 42301.16, 42301.17, 42301.18, and 44559.9

air districts have adopted leaf blower regulations. No leaf blower regulations aimed at fugitive PM10 emissions were identified, but several cities have adopted leaf blower bans and time of day restrictions based primarily on noise concerns.

A District-funded study that evaluated particulate matter emissions from leaf blower usage in the SJVAB shows that the PM10 lifted by the gale-force wind currents from these devices amounts to 0.52 tons per day. This is below *de minimis*, so BACM is not required. As such, the District is not pursuing a leaf blower control measure as part of the 2006 PM10 Plan. Although leaf blower usage will not be subject to a District rule, emissions reductions from this source category may still be possible under the umbrella of an EPA-approved voluntary program, which may be included in future ozone or PM plans.

### **References**

ARB (2003). "2003 State and Federal Strategy for the California State Implementation Plan." Board Resolution 03-22. Adopted on 10-23-03. Sacramento, CA.

Regional Transportation Planning Agency Commitments for Implementation (RTPACI). (April 2002)