

Chapter 4 - Control Strategy



4 CONTROL STRATEGY

4.1 Introduction

Federal law requires the District, as an extreme nonattainment area for the federal 1-hour ozone standard, to include certain provisions in the attainment plan. Specifically, the Federal Clean Air Act (CAA) requires that this plan must

- “provide for the implementation of all reasonably available control measures as expeditiously as practicable”, (Section 172(c)(1))
- make “reasonable further progress.” (Section 172(c)(2)) and
- include “enforceable emission limitations, and such other control measures, means or techniques...” which are needed and appropriate to demonstrate compliance with the federal standards (Section 172(c)(6)).

The California Clean Air Act, as codified in the California Health and Safety Code (CH&SC), also requires the plan to

- include provisions for the use of best available retrofit control technology (BARCT) for existing permitted sources. (CH&SC Section 40919(a)(3)) and
- include “every feasible measure in the plan...” (CH&SC Section 40914(b)(2))

To satisfy these CAA and CH&SC requirements, this section of the Plan includes control measures for stationary sources subject to District regulations (with associated rule development schedules) and control measures for mobile and area sources subject to ARB rules. It also summarizes commitments made by the Valley Regional Transportation Planning Agencies (RTPA) to undertake projects with air quality benefits. Lastly, Chapter 4 includes information about local, state, and federal pollution control incentive programs.

4.2 District Rule Development Schedule

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

The rule development schedule shown in Table 4-1 includes commitments from those plans for NO_x and VOC reductions. The basis for these control measures is federal, state and local requirements or other considerations that are identified in the control measure detail section of this report. These measures do not include *PM10 Plan* commitments that would not impact ozone formation.

EXTREME OZONE ATTAINMENT DEMONSTRATION PLAN

Table 4-1: District Control Measure Schedule (2004 - 2007) ⁵

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

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Table 4-1: District Control Measure Schedule (2004 - 2007) ⁶(cont.)

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

¹ CCOS data is not available. Emissions and reductions based on reductions generated by funding projects with Indirect Source Mitigation fees.

² CCOS data is not available. Emissions and reductions based on preliminary draft staff report.

³ CCOS data is not available. Emissions and reductions based on contracted emissions inventory report.

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

⁵ All data reflect CCOS SIP information using summer daily planning inventories, except as noted.

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4.2.1 District Control Measures

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

To determine what stationary source control measures might be feasible for adoption in the SJVAB, the District considered the California Air Resources Board’s *Identification of Performance Standards for Stationary Sources* (as updated May 16, 2002); control measures committed to or successfully implemented in other regions [including South Coast Air Quality Management District, the Bay Area Air Quality Management District, and the Houston-Galveston (Texas) Area]; and control measures suggested by staff and members of the public at workshops held during the control measure development process. Some of those control measures were eliminated from the *Ozone ROP Plan* and *PM10 Plan* commitments, however, because:

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

The District evaluated the remaining control measures, using baseline inventories, known control technology, potential emission reductions, and the feasibility of implementation by 2008. Based upon this evaluation, the District placed measures into the control measure schedule. From 2004 to 2007, the District’s rule development schedule will include the rules shown in Table 4-1. The schedule includes both new rules and amendments to existing rules that are necessary to satisfy applicable requirements including RACT, BARCT, and reasonable further progress toward attaining the one-hour ozone standard.

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

To prevent conflicts between attainment plans and plan updates, any changes to the control measure schedule, which are approved in subsequently adopted plans or updates, are considered to also apply to this Plan, without the need to modify the tables shown.

EXTREME OZONE ATTAINMENT DEMONSTRATION PLAN

4.2.2 Control Measures Table

Table 4-1 summarizes ozone precursor control measures grouped according to their proposed rule development schedule. In order to demonstrate compliance with the 2010 federal ozone standard, the District must have three years of “clean” air quality data. Therefore, control measures must be adopted as rules and implemented by operators by Spring 2008, in order for the measures to generate air quality benefits that satisfy the ozone attainment deadline. The control measures were scheduled based on a number of factors including the size of the existing emission inventory; the feasibility of control measures for the class and category of source; projected emission reductions which might result; similar controls already required or proposed by other districts; and possible implementation schedules.

Some control measures were considered that will require additional refinement of the emissions inventory and/or further research into feasible emission controls. These measures have been placed in Table 4-2 for further study.

Table 4-1 contains control measures for the rule projects currently scheduled to be developed in 2004 through 2007, as well as their projected adoption dates, emissions inventories for 2008 and 2010, and estimated reductions. These are measures for which the District has an adequate emissions inventory and/or for which reasonable control measures have been established by the District or other agency. The District has already begun rule development on many of the rules that are listed for 2004 and 2005 adoption.

When available, emission inventory data for 2008 and 2010 was taken from the ARB State Implementation Plan (SIP) Emission Projects (Central California Ozone Study (CCOS) Domain), Version 2.11, datasets (http://www.arb.ca.gov/app/emsinv/ccos/fcemssumcat_cc211.php). This data reflects the daily summer average emissions from the various for stationary source categories. The future year inventory was adjusted by ARB for projected growth and controlled for rule requirements that had would apply to the source category prior to the indicated year. No adjustment was made to the baseline for the control measures indicated in Table 4-1 but the results of the proposed control measures are reflected in the "reductions" column.

As noted in Table 4-1, emissions inventory data from several sources was used for the measures such as Composting/Biosolids Operations, for which the CCOS data was not available, or for measures such Commercial Dryers, which will only affect a small subset of a larger industrial emissions category. The emissions inventory information differs from the CCOS data in that it is typically calculated as an annual average rather than a summertime average. If comparable CCOS data were not available, the alternate data was not adjusted for growth. Because some of the emissions categories are not addressed by current rules

Table 4-2: Potential Control Measures Requiring Further Study

Further Study	Rule Number(s)	Description	Pollutant
A	2280	Portable Equipment	NOx
B	New	Asphalt Plant Dryers/Heaters	NOx, VOC
C	4402, 4625	Sumps, Pits, and Wastewater Processing Equipment	VOC
D	New	Fugitive Emissions - Heavy Oil Stream	VOC
E	4653	Adhesives	VOC
F	4607	Graphic Arts	VOC
G	4641	Cutback Asphalt Application	VOC
H	4607	Restaurants, Under-fired Charbroilers	VOC
I	4902	Residential Water Heaters	NOx, VOC
J	New	Furnaces	NOx
K	New	Brandy Production	VOC

and regulations, the emission inventories were also not controlled for the current applicable rules. Sources for this data include the ARB emission inventory data, District-contracted emissions inventory studies, and District staff reports. Footnotes in Table 4-1 describe the specific data sources used.

Due to the necessary assumptions made in compiling the data for the CCOS inventories, the ARB emission inventory, and the contracted study inventories, results of the final rule development calculations may differ from each of these. As a routine step in the rule development process, the District generates specific emission baseline and reduction information. Such information is typically based on detailed information about actual equipment and control levels, and therefore is a more accurate reflection of the true emissions and reduction potentials in the SJVAB. Where appropriate, the more accurate data will be submitted to update the CCOS and ARB inventories. Future planning exercises will reflect the more accurate baseline inventory and emission reduction data as it is developed.

The emission reductions indicated in Table 4-1 are based on percent reductions from the baseline emission inventories. These percentages reflect assumed control technologies, control effectiveness, and rule applicability and penetration rates. The percent reduction represents the District's reduction commitment for the particular control measure. Table 4-1 emission reduction numbers (in tons

per day) reflect the current emission inventory data and reflect the outcome of the percentage commitment, but are subject to revision as the inventories are refined. For example, scientists and engineers are now studying the emission factor for the Concentrated Animal Feeding Operations category to determine if the current factor accurately represents VOC emissions. The outcome of that study will be used to update the emissions inventory and could result in a new estimated emissions reduction. These changes, however, will not necessarily impact the percent reduction that is applied to the category.

Table 4-2 indicates the further study categories that the District will investigate for potential future emission reductions. Assuming controls are feasible and emission reductions are significant, rule development activity for these categories would most likely occur in 2006 or later. These projects would address categories for which adequate emission inventories are not currently available or for which emission control strategies must be further researched and developed. Consequently, the further study measures in Table 4-2 are not District commitments for specific emission reductions or for future rulemaking. Rather, they are areas of further study to determine the potential for future emission reductions. For several of these measures, staff has already begun examining the emissions data and conducting research on potential control measures. The District believes that some of the measures may have small baseline emission inventories that would not generate significant emission reductions. Other control measures may be proposed based on technology-forcing standards proposed by other districts and for which a particular emission standard has not been demonstrated or is not commonly available. Each of the measures in Table 4-2 will be further evaluated, and may be either placed in the rule development schedule or ruled out as potential control measures.

4.2.3 2004 – 2007 Control Measures

This section provides specific information about the control measures, as shown in Table 4-1, that are scheduled for rule development between 2004 and 2007. The District will determine the details of the resulting rules during the rule development process based on applicable federal, state and local requirements, socioeconomic factors, and other information provided by public comments.

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

4.2.3.1 Control Measure A: New Rule 4409 (Oil and Gas Fugitives)

REASON FOR CONTROL MEASURE: New Rule 4409 is a Current Rule commitment in the *PM10 Plan* and was listed in the *Ozone ROP Plan* as an All Feasible Measure suggested by the EPA. It would reduce fugitive VOC emissions from crude oil and gas production operations and natural gas processing plants.

AFFECTED SOURCES: Rule 4409 would apply to sources involved in the production of crude oil, natural gas, and natural gas liquids. There are approximately 200 businesses in the San Joaquin Valley that are potentially subject to Rule 4409. The California Department of Oil, Gas, and Geothermal Resources Report shows approximately 105 oil and/or gas production fields in the San Joaquin Valley. The District's permit database indicates eight permitted natural gas processing plants.

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

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

IMPLEMENTATION SCHEDULE: Rule adoption is scheduled for the third quarter of 2004. Full implementation is scheduled for the first quarter of 2005.

EMISSIONS AND EMISSIONS REDUCTIONS: Total VOC emissions from sources subject to Rule 4409 are estimated to be 10.4 tons per day in 2008. After full implementation of Rule 4409, reductions of 4.7 tons of VOC per day are anticipated.

4.2.3.2 Control Measure B: New Rule 4455 (Refinery & Chemical Fugitives)

REASON FOR CONTROL MEASURE: New Rule 4455 is a Current Rule commitment in the PM10 Plan and was listed in the *Ozone ROP Plan* as an All Feasible Measure suggested by the EPA. Rule 4455 would replace existing Rules 4451 and 4452, and it would reduce fugitive VOC emissions from leaking components in petroleum refining and chemical manufacturing plants by strengthening and expanding the requirements compared to the existing rules.

AFFECTED SOURCES: Rule 4455 would apply to businesses involved in petroleum refining and production of industrial organic chemicals. There are four petroleum refineries and one gas-liquids processing facility that would be subject to Rule 4455. One chemical plant currently operates in the San Joaquin Valley.

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

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

IMPLEMENTATION SCHEDULE: Rule adoption is scheduled for the third quarter of 2004. Full implementation is scheduled for the first quarter of 2005.

EMISSIONS AND EMISSIONS REDUCTIONS: Total VOC emissions from sources subject to Rule 4455 are estimated to be 0.5 tons per day in 2008. Upon full implementation of Rule 4455, reductions of 0.2 tons of VOC per day are anticipated. These figures may be revised during the rule making process due to the announced closure of a major refinery.

4.2.3.3 Control Measure C: New Rule 9310 (Fleet Rule – School Buses)

REASON FOR CONTROL MEASURE: The *PM10 Plan* and *Ozone ROP Plan* identified the need for on-road fleet rules to address mobile source emissions in

the San Joaquin Valley. Rule 9310 is a new rule that would reduce NOx and PM10 emissions from school bus fleets and consequently reduce the public's exposure to toxic air contaminants (TACs) and criteria pollutants. Reductions would be accomplished through the use of new, cleaner vehicles or by retrofitting existing buses with improved engines or emission controls.

AFFECTED SOURCES: Rule 9310 would apply to operators of school bus fleets for elementary and secondary schools. Based on a 2003 survey, there are approximately 2,755 schools buses, operating in public and private contract fleets, in the District. This was the single largest group of public agency fleet vehicles of any one particular fleet class, accounting for 45% of the total number of fleet vehicles in the District.

DESCRIPTION: The new rule is designed to reduce NOx and PM emissions from school buses. This rule is intended to achieve greater and earlier NOx and PM emission reductions than would occur through the normal vehicle replacement process for these buses.

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

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

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

IMPLEMENTATION SCHEDULE: Rule development is in progress with adoption scheduled for the fourth quarter of 2004. Due to the high costs for retrofits and vehicle replacement and the uncertainty of public funding, implementation of this rule would be 2010 for buses being retrofitted and 2015 for buses being replaced.

EMISSIONS AND EMISSIONS REDUCTIONS: Total NOx emissions from sources that will be subject to Rule 9310 are estimated to be 2.5 tons per day in 2008, with 0.1 tons/day of NOx reduced by 2010. Upon full implementation of this rule in 2015, reductions of 1.1 tons of NOx per day is anticipated.

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

REASON FOR CONTROL MEASURE: These rules are Current Rule commitments in the *PM10 Plan* and post-2003 Control Measures in the *Ozone ROP Plan*. Growth in indirect source emissions offsets a substantial portion of the benefit of emission controls on motor vehicles and stationary sources. Indirect source mitigation fees provide an option to reduce emissions off-site when additional on-site emission reductions are not feasible.

AFFECTED SOURCES: The program will be applicable to development projects that generate secondary emissions at a site from mobile sources and other on-site activities not subject to District permitting.

DESCRIPTION: Indirect sources are land use activities, such as housing developments, shopping malls, transportation hubs, and industrial sites, that attract or generate motor vehicle trips. Indirect source emissions are not emitted directly from permitted equipment or activities at the location, as is the case for traditional stationary sources that have permits for boilers, engines or fuel storage tanks. Indirect source emissions are created by portable equipment and motor vehicles at the site, resulting from the land use development. The program is also considering emissions from area sources such as water heaters and landscape maintenance equipment. This control measure will include residential, commercial, industrial, and institutional developments.

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

IMPLEMENTATION SCHEDULE: Rule adoption is scheduled in the second quarter of 2005. Rule implementation will begin in the fourth quarter of 2005.

EMISSIONS AND EMISSIONS REDUCTIONS: The District estimates that 4.0 tons per day of NOx will be reduced from this control measure in 2010. The NOx reductions are projected to come from reducing emissions from off-site mobile

sources, such as heavy-duty trucks, school buses, and off-road equipment. Reductions could also be generated by development measures that reduce vehicle trips or miles traveled, and area source emissions from equipment and products used for building and landscape maintenance. The mitigation program will not be limited to these sources, however, and any cost-effective project that reduces emissions would be considered.

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

REASON FOR CONTROL MEASURE: New Rule 4307 is a New Commitment (ID I) in the *PM10 Plan* and was listed in the *Ozone ROP Plan* as an All Feasible Measure suggested by the EPA. It is intended to reduce NO_x and SO_x emissions and to reduce future increases in carbon monoxide (CO) emissions from boilers, process heaters, and steam generators. The measure would affect any new or existing boiler, steam generator, and/or process heater with a rated heat input capacity greater than 2 million Btu/hour but less than or equal to 5 MMBtu/hr. The *PM10 Plan* identified emissions from these units as a significant category. Since NO_x and SO_x emissions from smaller boilers, steam generators, and process heaters, exceed the de minimus threshold levels, they are subject to federal BACM requirements. The District currently has rules applying to similar equipment rated greater than 5.0 MMBtu/hr.

AFFECTED SOURCES: Facilities with units that are subject to this control measure represent a wide range of industries, including but not limited to medical facilities, educational institutions, office buildings, prisons, military facilities, hotels, and industrial facilities (including agricultural processing facilities). Due to the diversity of affected industries, units in this source category are located throughout the SJVAB. Based on population and job base, there are likely to be more units located in urban and suburban settings. The emissions inventory categories affected include Manufacturing and Industrial Fuel Combustion, and Service and Commercial-Other Fuel Combustion.

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

IMPLEMENTATION SCHEDULE: Rule adoption is scheduled for the fourth quarter of 2004. Full implementation for these controls is projected for the fourth quarter 2008.

EMISSIONS AND EMISSIONS REDUCTIONS: Total NOx emissions from this category are estimated to be 8.8 tons per day in 2008. Upon final implementation of this control measure, 1.0 tons per day of NOx reductions is anticipated.

4.2.3.6 Control Measure F: New Rule 4694 (Wineries – Fermentation and Storage)

REASON FOR CONTROL MEASURE: New Rule 4694 is a New Commitment (ID K) in the *PM10 Plan* and a post-2003 control measure in the *Ozone ROP Plan*. It is intended to reduce VOC emissions from the fermentation of grapes in winery operations. The *Ozone ROP Plan* identified emissions from such operations as exceeding the major source threshold level; consequently, Federal RACT requirements apply to these operations.

AFFECTED SOURCES: According to the California Department of Alcoholic Beverage Control (ABC), there are 109 wineries licensed to operate in the SJVAB. Of these wineries, 43 facilities produce 99% of the emissions; the rule is most likely to affect these facilities.

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

While limited fermentation may be conducted at any time of the year, the primary fermentation season occurs in the fall, during a 90-day period following the grape harvest. Fermentation of a single batch of wine will normally be completed in a three to ten day period, depending in the variety of wine and the chemistry of the particular batch. The process of fermentation produces VOC emissions which offgas to the atmosphere through tank openings.

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

IMPLEMENTATION SCHEDULE: Rule adoption is scheduled for the fourth quarter of 2004. Full implementation is projected for the fourth quarter of 2007.

EMISSIONS AND EMISSIONS REDUCTIONS: Total summer planning VOC emissions from sources subject to the wineries control measure are estimated to be 2.1 tons per day in 2008. Upon final implementation of the wine fermentation control measure, summer planning reductions of 0.7 tons of VOC per day are anticipated.

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

REASON FOR CONTROL MEASURE: Amending Rule 4352 is a New Commitment (ID H) in the *PM10 Plan* and a post-2003 Control Measure in the *Ozone ROP Plan*. NOx emissions from solid fuel fired boilers, steam generators, and process heaters, exceed the major source threshold levels, and therefore are subject to federal RACT requirements. This commitment is intended to address those requirements.

AFFECT SOURCES: There are 14 permitted units in this category within the District, 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 solid fuels including petroleum coke, municipal solid waste, tires or biomass wastes (including wood, vine clippings, leaves, grass, and other by products of the farming and food processing industries).

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

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

IMPLEMENTATION SCHEDULE: Adoption of Rule 4352 is scheduled for the Fourth quarter of 2004, and full implementation is scheduled for the first quarter in 2006.

EMISSIONS AND EMISSIONS REDUCTIONS: Total NO_x emissions from sources subject to this control measure are estimated to be 3.8 tons per day in 2008. Because existing facilities are already compliant with the "all feasible" measure NO_x emission level, no actual reduction is anticipated.

4.2.3.8 Control Measure H: Rule 4702 (Stationary IC Engines)

REASON FOR CONTROL MEASURE: Amending Rule 4702 is a New Commitment (ID N) in the *PM10 Plan* and a post-2003 Control Measure in the *Ozone ROP Plan*. This rule currently controls NO_x emissions from stationary, spark-ignited IC engines. Rule 4702 would be expanded to cover all internal combustion engines rated greater than 50 brake horsepower, including those used in agricultural operations.

AFFECTED SOURCES: It is estimated that there are approximately 4,500 diesel fueled internal combustion engines, rated greater than 50 brake horsepower, used in agricultural irrigation operations in the SJVAB. The number of spark-ignition internal combustion engines, rated greater than 50 brake horsepower and used in agricultural operations is currently estimated at approximately 530 units (engines powering wind machines could significantly increase this number; note that these machines typically do not operate during ozone season, so this omission is not important for this *Extreme OADP*).

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

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

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

existing engines to a cleaner-burning fuel or alternate fuels. The emission limits and compliance schedule for agricultural engines will be developed pursuant to the requirements of CH&SC 40724 and will reflect the most stringent technically and economically feasible of the candidate control options.

IMPLEMENTATION SCHEDULE: CH&SC 40724 mandated the schedule for rule development for such engines. Therefore, on or before July 1, 2005, the District must propose to adopt the final rules at a noticed public hearing, and rule implementation must commence on or before January 1, 2006.

EMISSIONS AND EMISSIONS REDUCTION: The NO_x emissions from internal combustion engines rated greater than 50 brake horsepower and used in agricultural irrigation operations, are estimated to be 21.0 tons per day in 2008. Upon full implementation, it is anticipated those NO_x emissions would be reduced by 8.4 tons per day.

4.2.3.9 Control Measure I: New Rule 4309 (Commercial Dryers)

REASON FOR CONTROL MEASURE: This new rule is New Commitment (ID C) in the PM₁₀ Plan and as a post-2003 Control Measure in the *Ozone ROP Plan*. NO_x and SO_x emissions from industrial and commercial dryers exceed the “de minimus threshold” levels, therefore, are subject to federal BACM requirements.

AFFECTED SOURCES: Dryers are used to remove water from process material by heating which causing evaporation of the water. Most dryers in the SJVAB are used to remove moisture from fruits, nuts, vegetables, cotton, and also from clothing at laundries and dry cleaning plants. Facilities with units that are subject to this control measure represent a wide range of industries, including but not limited to cotton ginning, nut, fruits and vegetable processing, dairy products, laundry cleaning services, and concrete manufacturing. Units in this source category are located throughout the eight county area of the SJVAB.

DESCRIPTION: These units are currently subject to District permitting requirements, but not a specific prohibitory rule. The new rule would establish NO_x and SO_x emission standards for dryers subject to permitting requirements. Differing emission standards may be established based on the heat input capacity of the dryer, and whether the unit is new or existing. Dryers are typically direct-fired, meaning that the exhaust directly contacts the material being heated. To reduce particulate contamination, dryers are predominantly fired on natural gas or propane. Emission controls appropriate for dryers include use of PUC quality natural gas, excess air controllers, low-NO_x burners, and flue gas recirculation (FGR).

IMPLEMENTATION SCHEDULE: Rule adoption is scheduled for the second quarter of 2005. Full BACM implementation for NOx and SOx is projected for the year 2009.

EMISSIONS AND EMISSIONS REDUCTION: Total NOx emissions from sources subject to the Dryer control measure are estimated to be 8.8 tons per day in 2008. Upon final implementation of the dryer control measure, a reduction of 1.0 tons per day of NOx is anticipated.

4.2.3.10 Control Measure J: New Rule 4565 (Composting/Biosolids Operations)

REASON FOR CONTROL MEASURE: This new rule is identified in the *Ozone ROP Plan* as requiring additional emissions inventory development. This rule is designed to reduce VOC emissions created during the composting of biosolids including sewage sludge, agricultural waste, and other greenwaste.

AFFECTED SOURCES: This category would address emissions from new and existing sources involved with composting biosolids or mixtures of biosolids including emissions arising from the beneficial use or disposal of sewage sludge derived from the treatment of municipal wastewater, whether from within the District and imported from outside the District. Beneficial uses include land application, composting, and use as landfill cover, among others. Disposal methods include surface disposal, landfilling, and incineration. Facilities involved with these activities are classified as Biosolids Management (EIC 199-995-0260-0000).

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

- Growing populations in Valley communities increases demands on municipal wastewater treatment as well as generating more landscaping waste material.
- New and expanded confined animal feeding operations generate more livestock waste. The South Coast Air Quality Management District (SCAQMD) is currently working on a rule amendment to have the removal of livestock waste from the South Coast Air Basin as a control option, which may increase the District's inventory for this category.

- Recent changes to the CH&SC will phase out traditional open burning of agricultural waste, increasing pressure to compost.
- State and federal landfill regulations promote composting of green waste and other biodegradable materials to extend landfill capacities.

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

IMPLEMENTATION SCHEDULE: Adoption for this control measure will be phased in during 2005 and 2007 with full implementation projected for the year 2010.

EMISSIONS AND EMISSIONS REDUCTIONS: Total VOC emissions from sources subject to this rule are estimated to be 0.7 tons per day in 2008. Upon full implementation of this rule, a reduction of 0.1 tons of VOC per day is anticipated.

4.2.3.11 Control Measure K: Rule 4602 (Automotive Coating)

REASON FOR CONTROL MEASURE: Amending Rule 4602 was listed in the *Ozone ROP Plan* as an All Feasible Measure suggested by the EPA. This control measure is intended to reduce VOC emissions from coating used in automotive coating operations by incorporating more stringent material limits.

AFFECTED SOURCES: The measure would affect any new or existing operations involved with coating automobile, parts, and accessories.

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

IMPLEMENTATION SCHEDULE: Adoption of Rule 4602 amendments is scheduled for the third quarter of 2005, and full implementation is scheduled for the second quarter in 2007.

EMISSIONS AND EMISSIONS REDUCTIONS: Total VOC emissions from sources subject to Rule 4602 are estimated to be 1.6 tons per day in 2008. Upon full implementation of this rule, a reduction 0.1 tons of VOC per day is anticipated.

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

REASON FOR CONTROL MEASURE: New Rule 4570 is a New Commitment (ID A) in the *PM10 Plan* and as a post-2003 Control Measure in the *Ozone ROP Plan*. It is intended to reduce VOC emissions from Concentrated Animal Feeding Operations (CAFOs). This is also a requirement of CH&SC Section 40724.6.

AFFECTED SOURCES: Rule 4570 would affect operations including dairies, cattle feedlots, poultry ranches, and other agricultural operations involving animal husbandry. The exact number of affected facilities will be determined during the rule development process based on exemption levels derived from the cost-effectiveness of available controls.

DESCRIPTION: Operations involved with the raising of fowls or animals were previously exempted from District permitting pursuant to state law (CH&SC 42310(e)) that was rescinded effective January 1, 2004. VOC emissions may be reduced by controlling emissions from feedlots and from supporting operations such as waste treatment lagoons.

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

IMPLEMENTATION SCHEDULE: CH&SC 40724.6 mandates the schedule for rule development for CAFOs. Therefore, on or before July 1, 2006, the District must propose to adopt the final rules at a noticed public hearing, and rule implementation must commence on or before January 1, 2007.

EMISSIONS AND EMISSIONS REDUCTIONS: Total VOC emissions from sources subject to Rule 4570 are estimated to be 60.9 tons per day in 2008. Upon full implementation of this rule, a reduction of 15.8 tons of VOC per day is anticipated. These emission estimates are based on the currently accepted emission factors. Research in this area is being conducted which may lead to more accurate emission factors. The emissions and emission reductions may be updated in the future to reflect the most accurate information and such information would be incorporated into future plan updates.

4.2.3.13 Control Measure M: Rule 4662 (Organic Solvent Degreasing Operations); Rule 4663 (Organic Solvent Cleaning, Storage, and Disposal); Rule 4602 (Motor Vehicle and Mobile Equipment Coating); Rule 4603 (Surface Coating of Metal Parts and Products); Rule 4604 (Can and Coil Coating Operations); Rule

4605 (Aerospace Assemblies and Component Coating); Rule 4606 (Wood Products Coating); Rule 4607 (Graphic Arts); Rule (Adhesives); and Rule 4684 (Polyester Resin Operations)

REASON FOR CONTROL MEASURE: Amending these rules was identified as an state required "All Feasible Measure". This control measure is intended to reduce VOC emissions from organic solvents used in parts and equipment cleaning by incorporating more stringent VOC content limits.

AFFECTED SOURCES: The measure would affect any new or existing operations involved using organic solvents for parts or equipment cleaning.

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

IMPLEMENTATION SCHEDULE: Amendments of these rule is scheduled for the second quarter of 2006 with full implementation is scheduled for the fourth quarter in 2008.

EMISSIONS AND EMISSIONS REDUCTIONS: The emissions from sources affected by the control measure are estimated at 4.9 tons VOC per day in 2008. Upon final implementation of the proposed control measure, a reduction of 1.3 tons of VOC per day is anticipated.

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

REASON FOR CONTROL MEASURE: This new rule is New Commitment (ID J) in the *PM10 Plan* and as a post-2003 control in the *Ozone ROP Plan*. NO_x emissions from industrial, commercial and institutional water heaters in the SJVAB appear to be large enough to warrant control through new emission control measures.

AFFECTED SOURCES: Facilities with such units represent a wide range of industries, including medical facilities, educational institutions, office buildings,

prisons, military facilities, hotels, and industrial facilities. Due to the diversity of industries, units in this source category are located throughout the District, but primarily in urban and suburban settings. Thus the sources likely to be affected by this rule are not confined to a particular geographic area within the SJVAB nor are they confined to a particular economic sector.

DESCRIPTION: The new rule would likely affect new commercial, industrial, or institutional water heaters with a rated heat input capacity between 75,000 Btu/hr and 2 MMBtu/hr. These heaters typically use fuel combustion to heat water needed for industrial, commercial, or institutional processes. Affected units are similar in principle to residential water heaters, but combust fuel at greater rates and produce greater quantities of hot water. For this particular control measure, NOx prohibitory rules may be coupled with a financial incentive program to accelerate the replacement or retrofit of higher-polluting units. The District does not control these emissions either through the permitting process or through a prohibitory rule, and the District does not anticipate issuing permits for these units in the future.

IMPLEMENTATION SCHEDULE: Rule adoption is scheduled for the third quarter of 2006. Standards will apply to new units commencing in 2007. Full implementation is expected to take 20 to 30 years.

EMISSIONS AND EMISSIONS REDUCTIONS: Total NOx emissions from sources subject to the Water Heaters control measure are estimated to be 1.4 tons per day in 2008. By 2010, through implementation of Control Measure N, the District anticipates a reduction of 0.2 tons per day of NOx from that amount (such that the 1.4 tons/day would be reduced to 1.2 tons/day).

4.2.3.15 Control Measure O: Rule 4401 (Steam-Enhanced Oil Well Vents)

REASON FOR CONTROL MEASURE: Amending Rule 4401 is a New Commitment (ID L) in the *PM10 Plan* and as a post-2003 Control Measure in the *Ozone ROP Plan*. VOC emissions from steam enhanced crude oil production well vents are significant and the rule can be strengthened to generate emission reductions.

AFFECTED SOURCES: This control measure would reduce VOC emissions from steam-enhanced crude oil production wells and associated vapor collection and control systems. 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).

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 record keeping.

IMPLEMENTATION SCHEDULE: Adoption for this control measure is anticipated by the third quarter of 2006 and full implementation is projected for 2008.

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 13.2 tons per day in 2008. Upon full implementation of this rule, a reduction of 1.4 tons of VOC per day is anticipated.

4.2.3.16 Control Measure P: Rule 4651 (Soil Decontamination)

REASON FOR CONTROL MEASURE: Amending Rule 4651 is identified in the *Ozone ROP Plan* as requiring additional emissions inventory development. This rule is designed to reduce VOC emissions created during activities in the remediation of contaminated soils.

AFFECTED SOURCES: This rule applies to projects for remediation of contaminated soils. Soil contamination from organic materials occurs due to leaking storage and handling systems, operating losses, and accidental spills. Remediation projects are normally short-lived, typically ranging from a few hours to a year, depending on the extent of the contamination. Due to the unplanned, unexpected and random nature of spills, it is not possible to quantify a specific number of sources.

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

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

IMPLEMENTATION SCHEDULE: Adoption for this control measure is anticipated in the fourth quarter of 2006 with full implementation for VOC control projected for the year 2008.

EMISSIONS AND EMISSIONS REDUCTIONS: Total VOC emissions from sources subject to this control measure are estimated to be less than 0.05 tons per day in 2008. Upon full implementation of this rule, a reduction of less than

0.05 tons of VOC per day is anticipated. These figures are subject to revision since the current emissions inventory may not have captured all of the contaminated material originating from sources outside of the District.

4.2.3.17 Control Measure Q: Rule 4103 (Open Burning)

REASON FOR CONTROL MEASURE: Amending Rule 4103 is intended to reduce NOx and VOC emissions from the open burning of agricultural waste materials as required by recent amendments to the California Health and Safety Code (CH&SC), which are described below.

AFFECTED SOURCES: Rule 4103 regulates and coordinates the use of open burning while trying to minimize impacts on the public. Affected sources are agricultural operations throughout the Valley which use open burning to dispose of agricultural waste, eliminate pests, and control plant diseases.

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

Open burning is now required be phased out between 2005 and 2010, pursuant to the schedule in CH&SC 41855.5(a). CH&SC 41855.6 allows the District to postpone the commencement date of a burn prohibition, provided several conditions exist, including the lack of economically feasible alternatives to burning. NOx and VOC emissions reduction will be achieved by the new requirement. CH&SC 41855.5(d)(1) requires the District develop a rule to regulate limited open burning for disposal of diseased crops and weed control.

IMPLEMENTATION SCHEDULE: CH&SC 41855.5 mandated the schedule for rule development for these projects. On or before January 1, 2005, the District must propose to adopt the final diseased-crop burning rule at a noticed public hearing, and rule implementation must commence on or before January 1, 2006. Provisions of the open burning restrictions are self-implementing and will begin in June 2005 with full implementation by 2010. The District will adopt rule amendments before the applicable restriction dates which address appropriate provisions for selected materials for which there are no reasonable alternatives to burning.

EMISSIONS AND EMISSIONS REDUCTION: Adoption for this control measure will be phased in during 2005 and 2007 with full implementation projected for the year 2010. Total emissions from sources subject to this control measure are estimated to be 2.3 tons of NO_x and 5.8 tons of VOC per day in 2008. Upon full implementation of this rule, a reduction of 1.1 tons per day of NO_x and 2.9 tons per day of VOC is anticipated in 2010. The exact reductions realized will depend on the extent to which open burning practices can be replaced by cost-effective, technologically feasible alternatives.

4.2.3.18 Control Measure R: Rule 4682 (Polymeric Foam Manufacturing)

REASON FOR CONTROL MEASURE: This category was listed in the *Ozone ROP Plan* as an "All Feasible Measure" suggested by the EPA. Amending Rule 4682 is intended to reduce VOC emissions from manufacturing polymeric foam and foam products by specifying material VOC content limits and emission control devices.

AFFECTED SOURCES: This category is primarily concerned with VOC emissions from the manufacturing of polystyrene, polyethylene, and polypropylene foam products, specifically consumer foam products such as coffee cups, food containers and packing material. There are ten manufacturers of these foam products located within the District.

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

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

Possible controls for this category include switching to an alternative, non-VOC blowing agent or employing capture and control systems for the VOC emissions. All ten manufacturers within the SJVUAPCD are still utilizing primarily VOC blowing agents (either directly or in the form of EPS beads).

IMPLEMENTATION SCHEDULE: Adoption of Rule 4682 amendments is scheduled for the second quarter of 2007, and full implementation is scheduled for the fourth quarter in 2009.

EMISSIONS AND EMISSIONS REDUCTIONS: Total VOC emissions from sources subject to Rule 4602 are estimated to be 0.3 tons per day in 2008. Upon full implementation of this rule, less than 0.1 tons per day of VOC reductions are anticipated.

4.2.3.19 Control Measure S: Rule 4703 (Stationary Gas Turbines)

REASON FOR CONTROL MEASURE: This category is being identified by public comment as warranting additional control measure development. Existing Rule 4703 addresses NOx emission limits for stationary gas turbines. This control measure would specifically examine controls for turbines rated less than 10 MW and used for distributed power generation.

AFFECTED SOURCES: Stationary gas turbines are used for mechanical power, electrical power generation, and steam and heat generation roles in oil production and refining, food processing, petroleum transportation, irrigation district water pumping, and commercial power generation.

DESCRIPTION: Rule 4703 limits NOx emissions from turbines. Existing turbines in the SJVAB generally control NOx emissions through water or steam injection, dry low-NOx combustion technology, selective catalytic reduction, or some combination thereof. Since this rule was last amended in 2002, CARB published emission standards for turbines used in electrical power generation. The CARB standards apply to new or modified turbines but may be attainable by existing turbines depending on the development of new burner technology. The control measure would examine the feasibility of CARB NOx and CO limits for stationary gas turbines, rated <10.0 MW. Turbines rated greater than 10 MW are subject to requirements similar to the CARB limits.

IMPLEMENTATION SCHEDULE: Adoption for this control measure is anticipated in the second quarter of 2007 with full implementation for NOx control projected for the year 2010.

EMISSIONS AND EMISSIONS REDUCTIONS: The emissions from sources affected by the control measure are estimated at 2.5 tons NOx/day. Upon final implementation of the proposed control measure, a reduction of 0.6 tons of NOx per day is anticipated.

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

REASON FOR CONTROL MEASURE: Amending Rules 4621 and 4624 is a Post-2003 Control Measure in the *Ozone ROP Plan*. It is designed to reduce VOC emissions from gasoline terminals and bulk plants which result from transfer equipment and operations.

AFFECTED SOURCES: Rule 4621 applies to bulk plants storing gasoline in large, aboveground tanks, and transferring the gasoline to delivery trucks via loading racks. There are fugitive VOC emissions from the fittings on the tanks, piping (valves and flanges), and from the loading rack operations (displaced vapor space from the delivery trucks).

DESCRIPTION: Rules 4624 and 4621 contains VOC emission control performance limit for tanks and equipment used to store and transfer organic liquid, specifically gasoline. Since the last rule update, the standards for control of VOC fugitive emissions have become more stringent. Strengthening the current rule standards is feasible and would result in additional emission reductions. Possible control enhancements include increased inspection and maintenance frequencies, tank seal repair or replacement, and retrofitting old systems with newer technologies.

IMPLEMENTATION SCHEDULE: Adoption for this control measure is anticipated in the third quarter of 2007 with full implementation for VOC controls projected for the year 2010.

EMISSIONS AND EMISSIONS REDUCTIONS: The emissions from sources affected by the control measure are estimated at 3.3 tons VOC per day in 2008. Upon final implementation of the proposed control measure, a reduction of 0.9 tons of VOC per day is anticipated.

4.2.3.21 Control Measure U: New Rule (Aviation Fuel Transfer, Phase I)

REASON FOR CONTROL MEASURE: This category is a Post-2003 Control Measure in the *Ozone ROP Plan*. The new rule would reduce fugitive VOC emissions created during Phase 1 aircraft refueling operations. Phase 1 operations include filling aviation fuel bulk storage tanks using primary fuel delivery trucks as well as filling an airport's fuel delivery trucks from the bulk storage tanks. It does not include filling an aircraft's on-board fuel tanks.

AFFECTED SOURCES: This measure would affect operations with bulk aviation fuel storage, including military, civilian, and private airports or air fleet services. These tanks typically hold either aviation gasoline or a variety of kerosene-based jet fuel. There are 43 airports in the SJVAB that sell one or both types of these fuels.

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

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

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

IMPLEMENTATION SCHEDULE: Adoption for this control measure is anticipated in 2007 with full implementation for VOC control is projected for the year 2010.

EMISSIONS AND EMISSIONS REDUCTIONS: The emissions from sources affected by the control measure are estimated at 0.2 tons VOC per day in 2008. Upon final implementation of the proposed control measure, a reduction of less than 0.05 tons of VOC per day is anticipated.

4.2.4 Potential Control Measures Requiring Further Study

This section provides information about the possible future control measures, as shown in Table 4-2, which require further study. Exact details of the resulting rules will be determined during the rule development process based on applicable federal, state and local requirements, socioeconomic factors and specific information provided by the public comments. Some of these are control measures with small baseline inventories that would be the least effective in achieving significant emission reductions in an expeditious manner. These control measures will be further evaluated and may be eliminated as potential controls.

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

REASON FOR CONTROL MEASURE: Amending Rule 2280 is a Post -2003 Control Measure in the *Ozone ROP Plan*. This control measure could reduce NOx emissions from fuel combustion by registered portable equipment.

AFFECTED SOURCES: Rule 2280 applies to portable equipment that are operated at various locations in the District and are not registered under the state portable equipment program. Such equipment, primarily portable engines, is used in many industries for a variety of tasks including electrical power generation, pumping, concrete production, abrasive blasting, and providing mechanical power. District emission estimates are calculated by ARB using their Off-Road Model. Current ARB and the District registries for these types of equipment may be incomplete due to units that are not registered with either agency or which could be registered with other districts.

DESCRIPTION: Portable engines create NOx emissions by burning diesel fuel, gasoline, natural gas, or propane/liquefied petroleum gas. Such units are required to register with either the District or with ARB and are subject to the emission standards of the applicable portable engine registration program. New units are subject to emission standards set by ARB and EPA for the current year of manufacture.

Emissions from older diesel engines can be significantly higher (12 grams NOx/bhp-hr) than currently manufactured diesel engines (5.9 grams NOx/bhp-hr). Starting in 2006, the new engine standard will drop to 3.0 gram (NOx + VOC)/bhp-hr for larger engines, with all new engines meeting that standard by 2008. It is important to note that manufacturers may meet the emission standards on a production-averaged basis and that individual engines or engine types may have higher emissions.

Spark-ignited engines are not expected to generate comparable emission reductions since these engines typically meet or exceed the applicable EPA and ARB standards.

The state portable equipment regulation program is currently under revision to address the health risks associated with emissions of diesel particulate emissions. These emissions can be effectively controlled with either diesel oxidation catalyst, and catalyzed diesel particulate filters. Both catalysts also reduce 50-90% of VOC emissions, used in conjunction with lower-sulfur fuel. The diesel fuel sulfur limit will be lowered to 15 ppmv effective September 1, 2006. Similar catalysts for NOx reduction are under development for off-road engine applications and may be suitable for portable engine applications after further refinement.

It is also feasible to generate NOx reductions through the replacement of existing, older portable engines with newer units according to an advanced retirement schedule.

4.2.4.2 Further Study Project B - New Rule (Asphalt Plant Dryers/Heaters)

REASON FOR CONTROL MEASURE: This category is a Post-2003 Control Measure in the *Ozone ROP Plan*. This new rule could reduce NOx and VOC emissions asphalt production operations. There are currently no District rules specifically addressing asphalt production equipment.

AFFECTED SOURCES: This control measure would apply to asphalt production facilities operating in the District with material heating equipment.

DESCRIPTION: Asphalt is produced using a mixture of mineral and petroleum components. During production, the mineral components, gravel and crushed rocks, is heated to remove excess moisture before mixing with the petroleum-based binding agent. Heat may also be used to heat the petroleum binder during mixing and storage. A direct-fired heater is typically used for the drying/mixing process, so the heater exhaust is contaminated with PM10 and VOC released from the heated products. PM10 and VOC emissions, commonly seen as blue smoke, may also result from the material handling and storage equipment. Significant NOx emissions can also result from combustion of fuel for the heaters.

Possible control measures include clean burning fuel and low-NOx burners for the heaters, capture and controls for the blue smoke emissions, and catalytic particulate filters to reduce fugitive VOC and PM10 from the exhaust stream.

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

REASON FOR CONTROL MEASURE: This category is a Post-2003 Control Measure in the *Ozone ROP Plan*. Amending Rules 4402 and 4625 would reduce VOC emissions from oilfield sumps, pits, and wastewater processing equipment.

AFFECTED SOURCES: Rules 4402 and 4625 apply to oil and gas production sumps, pits and wastewater processing equipment. There approximately 200 businesses in the approximately 105 oil and/or gas production fields in the SJVAB.

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

4.2.4.4 Further Study Project D - New Rule (Fugitive Emissions – Heavy Oil Stream)

REASON FOR CONTROL MEASURE: This category requires additional emissions inventory development. Additional controls could reduce fugitive VOC emissions from equipment used in heavy crude oil production, transport, and refining. Heavy crude oil is defined as oil having an API gravity of less than 30 degrees. The District currently has no rules specifically addressing these heavy crude equipment emissions.

AFFECTED SOURCES: This rule would apply to sources involved with heavy crude oil crude oil production, transport and refining.

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

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

4.2.4.5 Further Study Project E: Rule 4653 (Adhesives)

REASON FOR CONTROL MEASURE: This category was listed in the *Ozone ROP Plan* as an All Feasible Measure suggested by the EPA. Amending Rule

4653 could reduce VOC emissions from use of adhesives by specifying material VOC standards and/or requiring the use of alternate emission control system.

AFFECTED SOURCES: Adhesive materials are used in a wide variety of industries including commercial production facilities, construction activities, and maintenance and repair operations. Rule 4653 exempts users of less than 20 gallons of adhesives per year so most affected sources will be commercial users in the manufacturing or construction fields.

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

4.2.4.6 Further Study Project F: Rule 4607 (Graphic Arts)

REASON FOR CONTROL MEASURE: This category is a Post-2003 Control Measure in the *Ozone ROP Plan*. Amending Rule 4607 would reduce fugitive VOC emissions from graphic arts operations involved in the coating of paper, fabric and film coating and those involved in screen printing.

AFFECTED SOURCES: The measure would affect any new or existing operations involved with graphic arts, paper or fabric coating, and screen printing.

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

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

REASON FOR CONTROL MEASURE: This category is a Post-2003 Control Measure in the *Ozone ROP Plan*. Amending Rule 4641 could reduce VOC emissions from cutback asphalt application.

AFFECTED SOURCES: This control measure would apply to operators involved with the manufacture and use of cutback asphalt, slow cure asphalt and emulsified asphalt. Use of these asphalts includes roadway paving and maintenance operations, parking area construction, and dust control.

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

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

REASON FOR CONTROL MEASURE: This category is a Post-2003 Control Measure in the *Ozone ROP Plan*. Amending Rule 4692 would reduce fugitive VOC emissions from restaurants using charbroiling equipment for food preparation.

AFFECTED SOURCES: This control measure would affect any new or existing operations involved with under-fired charbroilers.

DESCRIPTION: Rule 4692 currently applies to restaurants using chain-driven charbroilers. At the time the rule was adopted in March 2002, the only feasible control was not applicable to under-fired charbroilers. An under-fired charbroiler is a grill in which food is placed on an iron grate above a heat source. As the food cooks, fats or marinades drip onto heat source producing smoke that provides the characteristic charred flavor. In the late 1990's, studies on

charbroiler emission factors found that under-fired charbroiling is the method that produces the largest amount of PM and VOC emissions.

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

4.2.4.9 Further Study Project I: Rule 4902 (Residential Water Heaters)

REASON FOR CONTROL MEASURE: Amending Rule 4902 was identified as under the Significant Source Category in the PM10 Plan and a Post-2003 Control Measure in the *Ozone ROP Plan*.

AFFECTED SOURCES: Residential water heaters are typically fired on natural gas or propane, emitting NOx emissions from the combustion of the fuel. These units are located throughout the District in urban, suburban, and rural settings.

DESCRIPTION: These units are currently regulated by the District under Rule 4902. That rule requires new and replacement heaters to be certified with NOx emissions of less than 40 nanograms per Joule (0.093 lb NOx per million BTU) of heat output. The South Coast AQMD Rule 1121 will require residential water heaters to meet a 10 nanograms per Joule NOx standard in 2005. That standard is not considered to have been demonstrated as technologically feasible, but may be so demonstrated in the future. If such equipment is manufactured and readily available, the District could achieve a 75% NOx reduction by adopting a similar standard. That standard would only apply to new or replacement water heaters so units installed prior to the any new standard taking effect would remain for their useful life.

4.2.4.10 Further Study Project J - New Rule (Furnaces)

REASON FOR CONTROL MEASURE: : This category is a Post-2003 Control Measure in the *Ozone ROP Plan*. It was designated as a control measure to reduce NOx emissions from industrial furnaces.

AFFECTED SOURCES: Industrial furnaces are typically fired on natural gas or propane, emitting NOx emissions from the combustion of the fuel. These units are located throughout the District in a variety of industries which require high temperatures for operations such as smelting, curing materials, heat treating metals, ceramic firing, and cleaning impurities from metal products.

DESCRIPTION: Rule 4305 and 4306 regulate boilers, steam generators and process heaters but specifically excludes furnaces. Furnaces typically use a

direct-fired heater where the material being heated directly contacts the exhaust from the burner. This contact can lead to the heater exhaust becoming contaminated with PM10 and VOC released from the heated products. Significant NOx emissions can also result from combustion of fuel for the heaters.

Possible control measures include clean burning fuel and low-NOx burners for the heaters and catalytic particulate filters to reduce fugitive VOC and PM10 from the exhaust stream.

4.2.4.11 Further Study Project K: New Rule (Brandy Production)

REASON FOR CONTROL MEASURE: Brandy production is a potentially significant source of VOC emissions. New control measures could be designed to reduce VOC emissions created during the production of brandy, including distillation, aging and bottling.

AFFECTED SOURCES: The California Department of Alcoholic Beverage Control (ABC) maintains a database of all facilities permitted to produce alcoholic beverages in California. The database contains facility specific information covering permitted production volumes and licensed operation of alcohol stills.

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

Emission controls (other than process refrigeration) are not currently being used during the production of wines. Reductions of VOC could be achieved by equipping distillation equipment, storage facilities, and processing areas with vapor collection and control systems, carbon adsorption, water scrubbers, catalytic incineration, condensation, and additional temperature control, as appropriate.

4.3 Future Study Measures

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

Appendix F summarizes control measure concepts suggested by stakeholders during or after the first two sets of workshops held for this *Extreme OADP*. Control measures listed in Tables 4-1 and 4-2, as well as the ideas for future measures listed below, capture a number of these concepts. The District will consider these and other ideas for control measures to be used in the development of future ozone attainment demonstration plans.

4.3.1 Mobile Source Measures

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

Stakeholders have identified a number of potential non-traditional mobile source emission control measure ideas for future study. The District will investigate the feasibility of additional programs that reduce emissions from mobile sources. These measures would address sources commonly outside District jurisdiction, and thus would necessitate teaming with other agencies that have more direct authority over these sources. Several special programs have been suggested that could reduce mobile source emissions, including the following:

- Gross emitters, both passenger and heavy-duty vehicles, can produce ten times the emissions of newer vehicles. An effective program for reducing emissions from this source category would have the following key elements: (1) a remote sensing program that identifies and targets only the gross-emitting vehicles that are used on a regular basis; (2) adequate financial incentives to encourage retirement of the gross-emitting vehicle; and (3) use

of a voucher (or similar system) to ensure that incentives can only be used to purchase a vehicle with lower emissions than the one being replaced.

- Emissions from heavy-duty vehicles increase with higher operating speeds, so reductions of NO_x, VOC, and diesel PM may be possible with stricter enforcement of the existing speed limits on public roads, highways and freeways. The District could work to develop funding sources for special CHP patrols along Highway 99 for increased enforcement of truck speed limits.
- The ARB Heavy-duty Vehicle Inspections program for conducting roadside testing of heavy-duty vehicles primarily focuses on Highway 99 and Interstate 5, and is very limited in scope due to current state budget problems. The District could seek special funding to revitalize and strengthen this program to increase its geographic coverage and to include anti-smoke inspection; RPM recording; snap-acceleration test; visual inspection of emissions, and fuel testing to ensure use of California diesel. These roadside inspections can identify gross-polluters that may otherwise escape the normal inspection requirements. This area of further study is also of particular interest given the greater potential for foreign-registered trucks to pass through the SJVAB in light of the June 2004 U.S. Supreme Court decision regarding the North American Free Trade Agreement; foreign-registered trucks may have substantially different emissions profiles than U.S. registered trucks.
- Through-truck traffic on Highway 99 can produce significant emissions along the most densely populated portion of the Valley. Re-designation of Highway 99 between Manteca and Wheeler Ridge as a "no through-truck route" and designating Interstate 5 as sole truck route for through-Valley truck traffic would mitigate the impact of the trucks without unduly impacting the interstate commerce. This measure would also reduce congestion for local traffic, decrease intra-valley travel time, and reduce the associated emissions.
- Heavy-duty vehicles may idle at truck stops for hours at a time to run refrigerators and provide power for operator air conditioning during meal breaks and rest stops. Emissions from idling trucks at truck stops can be reduced with alternative power systems such as auxiliary power units, thermal storage systems, and truck stop electrification. Each of these supplies power and other needed amenities to truck stop customers but with a lower emissions burden than idling each truck's diesel engine.
- ARB's emission reduction program for mobile sources is highly dependent on fleet turnover. Fleet turnover could be enhanced by adjusting the California vehicle license fee and registration fee such that as vehicles age, they become more expensive to register. New vehicles, which at any given time are the lowest emitters, would be the least expensive to register. Consideration could also be given to giving further fee reductions to vehicles with emissions ratings of ATPZEV or better that are registered and used in the state's dirtiest air basins.

4.3.2 Sustainable Incentives

In an effort to bring about early air quality improvements for all pollutants of concern in the Valley, the District is considering a variety of new concepts. One program concept that would promote the implementation of air pollution reducing practices is to enable sources, including exempt sources, to use *sustainable incentives*. *Sustainable incentives* are financial measures, programs, and/or prohibitory rule alternative compliance plans that provide an economic mechanism to fund pollution reduction measures. *Sustainable incentives* may be in the form of private industry and/or foundation programs, federal and/or state government grants, tax credits, prohibitory rule incentives, and other programs.

Sustainable incentives are based in part upon the highly successful initiatives implemented by the United States Department of Agriculture, Natural Resource Conservation Service, through the federal farm bill's "Environmental Quality Incentives Program (EQIP), the State's highly successful Carl Moyer Program, the District's Heavy-Duty Program (see next section), and other economic incentive and alternative compliance plan programs that offset the implementation cost for pollution reduction measures. This is accomplished within the framework of a private industry/public/agency partnership. The concept of *sustainable incentives* revolves around a market based approach to pollution reduction using measures that are economically sound and backed up by scientific research.

Sustainable incentives are market based concepts that require (1) local Districts, the Air Resource Board and EPA to assist local municipalities and public agencies in acquiring federal funding for the implementation of emission reduction measures (as opposed to only mandating requirements); (2) the acceptance of proposals from private industry that generate equivalent emissions reductions identified in prohibitory rules, but are less costly, and (3) promote the acquisition of federal, State, and/or other funding to continue and expand incentive programs such as EQIP, Carl Moyer, and acquire additional funds for the local transportation agencies and local communities, to offset mitigation cost needs. *Sustainable incentives* could obtain ozone precursor emission reductions either through contributing to programs such as the federal farm bill's Environmental Quality Incentives Program, on-site reductions, or reductions generated within the geographic region of the local District.

4.4 District Incentive Programs

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

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

4.4.1 Heavy-Duty Engine Emission Reduction Incentive Program

The Heavy-Duty Engine Emission Reduction Incentive Program (Heavy-Duty Program) is by far the District's largest and most successful incentive program. The Heavy-Duty Program accepts applications for a wide variety of engines that power vehicles or equipment. Heavy-duty trucks, buses, and heavy off-road engines are significant sources of nitrogen oxides (NO_x) emissions within the Valley. Although the District does not have the authority to regulate vehicle tailpipe emissions, it can provide monetary incentives to reduce emission from these sources. It provides funding for new purchases, engine re-powering, or retrofits. Emission reductions are obtained when the project applicant purchases vehicles and engines that are cleaner than required by current emission standards or installs an emission certified retrofit kit on an existing engine. The District pays the differential cost of purchasing the lower emitting technology compared to conventional technology up to a cost-effectiveness cap of \$13,600 per ton for NO_x. The program is primarily aimed at NO_x reductions, but many projects also achieve fine particulate matter (PM 10) reductions.

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

SIP submittals for the SJVAB typically have not included emission reductions from the Heavy-Duty Program. However, the 2003 *PM10 Plan* did include reductions in the mobile source category from the Heavy Duty Engine incentive program. This *Extreme OADP* uses a similar approach for incentive-based emissions reductions.

4.4.2 Electric Lawnmower Incentives

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

4.4.3 Future Programs

The Mobile Source Emission Reduction Incentive Program (MSIP) is the most developed of the future programs. Although not yet approved by the Governing Board as of July 2004, MSIP provides incentives for specific projects that will reduce motor vehicle emissions within the District. The purpose of the MSIP is to assist the District in attaining the requirements of the California Clean Air Act. This is accomplished by allocating funds to cost-effective projects that have the greatest motor vehicle emission reductions, 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 MSIP components that are envisioned at this time include the Light- and Medium-Duty Vehicle Component, the E-Mobility (Telecommunications) Component, the Bicycle Infrastructure Component, the Public Transportation and Commuter Vanpool Subsidy Component, and the Alternative Fuel Vehicle Mechanic Training Component.

4.5 OVERVIEW OF REGIONAL TPA RACM

4.5.1 Introduction

The San Joaquin Valley is a single air quality nonattainment area containing eight Metropolitan Planning Organizations (MPOs), which are also regional transportation planning agencies (RTPAs or TPAs) within the Valley. The Valley is home to many diverse communities containing predominantly rural as well as predominantly urban areas peopled by individuals from many different parts of the world. This overview describes the process led by the Valley RTPAs to identify and implement potentially reasonably available control measures (RACM) affecting local transportation activity.

Each RTPA covers a county with numerous cities, public interest groups, transit agencies, and a ridesharing agency in some cases. Collectively, the Valley RTPAs are committed to conducting a thorough RACM process that addresses the entire San Joaquin Valley. In order to ensure thoroughness, the RTPAs are coordinating with each other through a Valleywide committee that meets biweekly/monthly to discuss their individual progress on RACM, obtain input and feedback from the other agencies on the committee, and share other relevant information. They also provide documentation regarding the local government control measures and meetings held at the county level to the group through a RACM website. Another feature of the coordination is development of a common format for providing documentation on the RACM process. The Valleywide committee is composed of each RTPA, the Air District, Caltrans, the ARB, the EPA, and the FHWA. This committee provides regular opportunity for the eight Valley RTPAs to obtain input from each other and the other agencies involved in development of the Ozone Attainment Demonstration Plan for the Valley.

The Valley RTPAs have limited legal authority to implement emission reduction measures. However, their status as regional transportation planning agencies places them in a position to help coordinate and facilitate consensus among their member jurisdictions, which do have authority to implement some measures. Therefore, the RTPAs led a process to identify and evaluate potential measures affecting local transportation activity. The Valley RTPAs recognize the importance of clean air for their communities and are doing their part in helping to find ways to improve the air. The RTPA role in this RACM process is to lead local agencies in (1) the identification and implementation process for measures that may reduce ozone precursor emissions associated with local transportation activity that may be implemented at the local level; and (2) documenting reasons for not implementing measures that are not economically or technically feasible. The individual jurisdictions within each county have primary control of funding and implementation for local government control measures associated with transportation. However, since the Valley RTPAs are all part of one nonattainment area they have coordinated their process together in order to share ideas offered by

the public and jurisdictions to provide consistency for the entire process including approaches to documentation. Figure 4-1 gives an overview of the local government control measure process used for this plan.

4.5.2 Overview of Existing Measures

The Valley RTPAs and their member agencies have long been involved in examining ways to contribute to improvements in air quality through implementation of local measures as well as provision of funding for measures being implemented by the Air District. In general, the existing control measures include transit improvements, ridesharing and ride-matching programs, telecommuting, compressed workweeks, bicycle programs, pedestrian programs (such as street design to encourage walking), traffic flow improvements, and numerous land-use programs. In addition, Valley RTPAs have a history of supporting mobile source reduction incentives. Nearly all counties in the Valley have also allocated funding to alternative fuel projects. Money has been allocated to local school agencies for clean fuels infrastructure, as well as to the Air District's Heavy-Duty Motor Vehicle Emission Reduction Program for clean fuels municipal or public fleet purchases.

In addition, since 1992 the Valley RTPAs have maintained a Work Program agreement with the Air District that includes elements related to exploration of local government control measures and ongoing collaboration on air quality planning activities. The Valley RTPAs are legal entities that allocate CMAQ monies. Air quality and emissions benefits play a key role in the ranking process of each RTPA's selection of CMAQ projects.

It is important to note that the Valley RTPAs and member jurisdictions completed a process to identify and implement Reasonably Available Control Measures (RACM) for the Severe Area Ozone Plan in April 2002. Although this Plan was never finalized, the control measures were incorporated in the Amended 2002 and 2005 Rate of Progress Plan for San Joaquin Valley Ozone. The control measures evaluated focused on the specific transportation control measures listed in Section 108(f) of the Clean Air Act. Collectively, a broad range of commitments to implement control measures were adopted by the local governments. These extensive commitments demonstrate the level of effort that is being made by the local jurisdictions to reduce emissions and to improve air quality.

The resolutions adopted by the respective entities to commit to implement local government control measures are included in the Regional Transportation Planning Agency Commitments for Implementation Document, April 2002. The document is available for public review at the central San Joaquin Valley Unified APCD office located in Fresno and was included in the *Amended 2002 and 2005 Rate of Progress Plan for San Joaquin Valley Ozone*.

Figure 4-1
OVERVIEW OF LOCAL GOVERNMENT CONTROL MEASURE PROCESS
FOR THE *EXTREME OZONE ATTAINMENT DEMONSTRATION PLAN*

STEP 1:

RTPAs request member jurisdictions to adopt RACM resolutions in November 2003. Transmit model resolution package, including existing RACM commitments to all local jurisdictions.

STEP 2:

RTPAs and member jurisdictions adopt resolutions in accordance with the model resolution package and submit to RTPAs for compilation.

Each implementing agency passes resolution describing the measures to be implemented

- Measure description
- Legal Authority for implementation
- Funding for measures
- Enforcement

Each implementing agency also describes reasons for rejecting any measures

- Technologically or economically infeasible
- Otherwise unreasonable

STEP 3:

Air Quality Consultant prepares Commitment document and submits to the Air District.

4.5.3 Suggested measures

In order to maximize input from individual cities and other jurisdictions, as well as the public, the RTPA-level RACM process has been conducted on an individual county level, with Valley-wide coordination provided through a consultant. Each RTPA conducted the RACM process in 2003/2004 in a manner consistent with their individual committee structures and public processes.

This RACM process used the previous RACM process (dated April 2002) to the extent possible. The Suggested Measures that were considered at that time included existing local government control measures in the SJVAB and example control measures in other ozone nonattainment areas. The list was organized by category using the specific transportation control measures listed in Section 108(f) of the Clean Air Act.

It is important to note that the only other Extreme Ozone Nonattainment Area in the country is the South Coast Air Basin (SCAB) in California. RTPA staff and consultants reviewed the transportation control measures included in the SCAB *2003 Air Quality Management Plan* to see if the South Coast Air Quality Management District adopted any new measures not previously considered in the SJVAB. Inspection of the SCAB *2003 Air Quality Management Plan* determined that the list of control measures for consideration was taken from the *Regional Transportation Planning Agency Commitments for Implementation Document*, April 2002 (this is the description of commitments developed for the *Amended 2002 and 2005 Rate of Progress Plan for San Joaquin Valley Ozone*). Staff determined that the South Coast Air Quality Management District added no new measures to this list for consideration. Therefore, no new measures were available to the San Joaquin Valley for consideration in the Extreme Ozone Attainment Demonstration Plan RACM process.

The summary of commitments and submitted resolutions (with existing commitments and reasoned justification) were transmitted to each jurisdiction to be used as the starting point. Each measure listed on the Summary of Commitments should either have a commitment or reasoned justification for each implementing entity.

In general, RTPA staff and consultants reviewed the adopted resolution package to determine if existing commitments could be strengthened. Examples of strengthening included extending the implementation schedule for the measure through 2010 or including additional financial resources. If the existing commitment is not ongoing (e.g., implementation expires in 2005) and/or cannot be strengthened, then reasoned justification should have been developed.

In addition, RTPA staff and consultants reviewed the adopted resolution package to determine if any measures that were previously found not feasible are now feasible for implementation. If so, a new commitment for implementation should have been developed. If not, the reasoned justification should have been updated accordingly.

4.5.4 Adopted measures

Each RTPA member jurisdiction has identified measures that are technologically and economically feasible for implementation by that entity. The appropriate governing body has adopted formal resolutions to commit to implement control measures. If a jurisdiction decided that a measure was not feasible for implementation, the jurisdiction documented the “reasoned justification” for non-implementation, as required by EPA for the RACM process. This justification is based on technological or economic infeasibility.

The resolutions adopted by the respective entities to commit to implement local government control measures are included in the corresponding *Regional Transportation Planning Agency Commitments for Implementation Document* (March 2004) [Appendix C (uncirculated) to this Plan]. The document is available for public review at the District’s office in Fresno, the ARB’s office in Sacramento, and EPA’s Region 9 office in San Francisco.

Collectively, a broad range of commitments to implement control measures were adopted by the local governments. These extensive commitments demonstrate the level of effort that is being made to improve air quality. It is important to note that specific emissions reduction targets for each of the measures have not been included in this *Extreme OADP*. However, in many cases these commitments will produce emission reductions above and beyond what has been quantified in the *Extreme OADP*. These adopted control measures represent additional efforts by the local jurisdictions to reduce emissions and improve air quality.

4.5.5 Public Participation

The 1992 Transportation & Air Quality Planning Guidelines, which address public participation, are issued jointly by the U.S. Environmental Protection Agency and the U.S. Department of Transportation. These guidelines are designed to encourage an effective public participation program for the development and implementation of the State Implementation Plan (SIP). According to the guidelines, the objectives of the public participation program should be to:

1. Promote public awareness of the air pollution problem, the SIP revision process, and the effects of various transportation control measures;
2. Encourage active participation from a variety of interest groups in the plan preparation process;
3. Promote public understanding and agreement on the transportation control measures necessary to improve air quality;
4. Provide for the identification of both interested and affected constituencies;
5. Ensure that the agencies and elected officials are responsive to these constituencies; and
6. Encourage a spirit of openness and trust among elected officials, agencies, and the public.

Public Involvement Process for Transportation and Air Quality

Passage of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) expanded emphasis on public involvement in the metropolitan planning process. The intent of the public involvement provisions in ISTEA is to increase public awareness and involvement in transportation planning and programming. ISTEA requires that the metropolitan planning organization provide citizens, affected public agencies, representatives of transportation agencies, private providers of transportation and other interested parties a reasonable opportunity to comment on proposed transportation plans and programs. These provisions have been continued under the Transportation Equity Act for the 21st Century (TEA-21).

Title VI Considerations

Title VI of the Civil Rights Act of 1964 prohibits discrimination on the basis of race, color and national origin by recipients and sub-recipients of federal funds and prohibits exclusion from participation, denial of benefits, or being subjected to discrimination under any program or activity receiving federal financial assistance. Additional federal and state laws and directives prohibit discrimination on the basis of age, gender, handicap or disability. The Executive Order of 1994 on Environmental Justice encourages consideration of environmental justice concerns, especially the impact of programs and activities on low-income and minority populations. The Act and its related laws and directives hereinafter are called, collectively, Title VI.

Decision Making Structure and Public Participation

The San Joaquin Valley contains eight counties. The transportation planning process in each county is conducted by an MPO or RTPA. Each transportation planning agency performs planning functions in accordance with applicable transportation and air quality planning guidelines and Title VI considerations. These eight agencies are leading the process to identify, evaluate and implement potential RACM measures pertaining to the transportation sector that may be implemented on a local level.

Workshops

The San Joaquin Valley Air Pollution Control District conducted public workshops on developing an Ozone Attainment Demonstration Plan on July 23, 2003 and on January 6 and 7, 2004. The July 2003 workshop presented an overview of the air quality plan development process. One public comment addressed the RACM process, and asked if RTPAs would revisit prior RACM commitments for the *Extreme OADP*. The January 2004 Workshop include a presentation addressing the status of the TPA RACM process. No public comments were received on the RTPA RACM process from the January workshops.

The SJVAB RTPAs have developed a website (located at <http://www.fresnocog.org>) to serve as a resource for each county, as well as to provide the public with detailed information on the RACM process. This page contains relevant RACM guidance documents, agendas, and minutes for the biweekly/monthly RTPA meetings coordinating the RACM process.

4.6 State Emission Reductions for the SJVAB¹

4.6.1 Introduction

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

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

The Statewide Strategy identifies the Board's near-term regulatory agenda to reduce ozone and particulate matter by developing and adopting defined new measures from 2002 through 2009, with implementation prior to the 2010 ozone season. It includes commitments for the Board to consider 19 specific statewide measures, plus the Bureau of Automotive Repair's planned improvements to the Smog Check program and the continuation of the Department of Pesticide Regulation's approved SIP obligation² to reduce volatile emissions from pesticides. The Statewide Strategy includes a process to identify longer-term solutions to achieve additional reductions from sources under State, federal, and local control.

The defined control measures in the Statewide Strategy cover on-road vehicles, off-road equipment, ports and harbor-craft, fuels and refueling, and consumer products. Measures to clean up the existing fleet of mobile sources complement lower emission standards for new engines and consumer products. Other measures would reduce vapor emissions from gasoline storage and refueling.

¹ ARB staff prepared this section, and the District did not change the text other than to format it for consistency with the remainder of the *Extreme OADP* and to conduct minor editing.

² 40 CFR Part 52, Federal Register, January 8, 1997, pages 1150-1187.

These defined measures are listed in Table 4-3. The Statewide Strategy, which includes detailed descriptions of each of the measures, is available at <http://www.arb.ca.gov/planning/sip/stfed03/stfed03.htm>.

The Statewide Strategy discusses the need to obtain continued funding for the Carl Moyer incentive program to supplement regulatory actions requiring clean up of the existing fleet of diesel vehicles and equipment. New State funding for the Moyer program would enable additional clean engine projects and provide emission reductions to be credited towards the State's obligation.

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

4.6.2 Current Implementation Status

ARB has already started to implement the Statewide Strategy. Several of the measures in the Strategy are comprehensive approaches for the source category, encompassing multiple rulemakings or other actions that will contribute to the total reductions expected. As of July 1, 2004, ARB has taken action on the following measures:

- The low sulfur diesel fuel regulation adopted in July 2003 fulfills SIP measure FUEL-2.
- The small off-road engine emission standards adopted in September 2003 fulfill SIP measures SMALL OFF-RD-1 and SMALL OFF-RD-2.
- The particulate matter control measure for diesel-powered solid waste collection vehicles adopted September 2003 fulfills part of SIP measure ON-RD HVY DUTY-3.

Table 4-3. Defined State Measures from the 2003 Statewide Strategy

Strategy (Agency)	Name
LT/MED-DUTY-1 (ARB)	Replace or Upgrade Emission Control Systems on Existing Passenger Vehicles
LT/MED-DUTY-2 (BAR)	Improve Smog Check to Reduce Emissions from Existing Passenger & Cargo Vehicles
ON-RD HVY DUTY-1 (ARB)	Augment Truck and Bus Highway Inspections with Community-Based Inspections
ON-RD HVY DUTY-2 (ARB)	Capture and Control Vapors from Gasoline Cargo Tankers
ON-RD HVY DUTY-3 (ARB)	Pursue Approaches to Clean Up the Existing and New Truck/Bus Fleet
OFF-RD CI-1 (ARB)	Pursue Approaches to Clean Up the Existing Heavy-Duty Off-Road Equipment Fleet (Compression Ignition Engines)
OFF-RD CI-2 (ARB)	Implement Registration and Inspection Program for Existing Off-Road Equipment to Detect Excess Emissions (Compression Ignition Engines)
OFF-RD LSI-1 (ARB)	Set Lower Emission Standards for New Off-Road Gas Engines (Spark Ignited Engines 25 hp and Greater)
OFF-RD LSI-2 (ARB)	Clean Up Existing Off-Road Gas Equipment Through Retrofit Controls and New Emission Standards (Spark-Ignition Engines 25 hp and Greater)
SMALL OFF-RD-1 (ARB)	Set Lower Emission Standards for New Handheld Small Engines and Equipment (Spark Ignited Engines Under 25 hp such as Weed Trimmers, Leaf Blowers, and Chainsaws)
SMALL OFF-RD-2 (ARB)	Set Lower Emission Standards for New Non-Handheld Small Engines and Equipment (Spark Ignited Engines Under 25 hp such as Lawnmowers)
MARINE-1 (ARB)	Pursue Approaches to Clean Up the Existing Harbor Craft Fleet – Cleaner Engines and Fuels
MARINE-2 (ARB)	Pursue Approaches to Reduce Land-Based Port Emissions – Alternative Fuels, Cleaner Engines, Retrofit Controls, Electrification, Education Programs, Operational Controls
FUEL-1 (ARB)	Set Additives Standards for Diesel Fuel to Control Engine Deposits
FUEL-2 (ARB)	Set Low-Sulfur Standards for Diesel Fuel for Trucks/Buses, Off-Road Equipment, and Stationary Engines
CONS-1 (ARB)	Set New Consumer Products Limits for 2006
CONS-2 (ARB)	Set New Consumer Products Limits for 2008-2010
FVR-1 (ARB)	Increase Recovery of Fuel Vapors from Aboveground Storage Tanks
FVR-2 (ARB)	Recover Fuel Vapors from Gasoline Dispensing at Marinas
FVR-3 (ARB)	Reduce Fuel Permeation Through Gasoline Dispenser Hoses
PEST-1 (DPR)	Implement Existing Pesticide Strategy

- The voluntary emission control software upgrade program for diesel trucks approved in March 2004 fulfills part of SIP measure ON-RD HVY DUTY-3. This voluntary measure includes a regulatory backstop to ensure that the anticipated emission reductions occur by 2010.
- The engine manufacturer diagnostics requirements for new diesel trucks adopted in May 2004 fulfill part of SIP measure ON-RD HVY DUTY-3.
- The consumer products regulation adopted in June 2004 fulfill SIP measure CONS-1.
- By 2004, ARB had begun implementing an expanded community-based inspection program for diesel trucks and buses, fulfilling SIP measure ON-RD HVY DUTY-1.

In addition to these defined SIP measures, ARB adopted three controls for diesel stationary engines, portable engines, and transportation refrigeration units in February 2004 that will contribute to meeting the State's obligations.

4.6.3 ARB Commitments for *Extreme OADP* for SJVAB

ARB commits to adopt and implement measures to achieve, at a minimum, 15 tpd ROG and 20 tpd NO_x emission reductions in the San Joaquin Valley Air Basin by the 2010 ozone season. ARB will adopt measures to achieve these reductions between 2002—2009. ARB may meet this commitment by adopting one or more of the control measures in Table 4-3, by adopting one or more alternative control measures, or by implementing incentive program(s), so long as the aggregate emission reduction commitment is achieved.

4.7 Contingency Measures

In general, contingency measures are control measures that go into effect, without further action by the State or the EPA Administrator, if planned emission controls fail to reach desired goals and targets. The FCAA defines two types of contingencies: (1) "specific measures to be undertaken if the area fails to make reasonable further progress, or to attain the national primary ambient air quality standard by the attainment date applicable under this part" [Title I, Part D, Section 179 (c)(9)] and (2) "specific measures to be undertaken if the area fails to meet any applicable milestone" [Title I, Part D, Section 182(c)(9)].

For the SJVAB, the concept of contingency measures is almost a moot point, for several reasons. First, areas such as the SJVAB that have been aggressively developing and implementing emission control measures over the past twenty years have already achieved most of the emissions reductions that are within the authority of the District to control and that are technically and economically feasible. In essence, the “low-hanging fruit” has already been picked. The likelihood of identifying new source categories under District authority to control, with attendant large emission reductions, is very small; any control measures beyond what have been identified in this Plan and within the District’s authority to implement are likely to have relatively small emissions reductions³, and thus would be of minimal value as contingency measures.

Second, prior to the next ROP milestone year for 1-hour ozone, the District will be developing three major air quality plans as SIP submittals that will control ozone precursor emissions: the 2006 *PM10 Plan*, the 2007 *8-hour Ozone Attainment Demonstration Plan*, and the 2008 *PM2.5/Regional Haze Plan*. The *PM10 Plan* is required in the final rule approving the 2003 *PM10 Plan* (69 FR 30035), and the dates for submittal of the *8-hour Ozone Plan* and the *PM2.5/Regional Haze Plan* are driven by EPA final rule language stating that plans are due three years after the effective date of designations (final rules not yet published). Each of these plans will develop additional control measures for ozone precursor emissions independent of this *Extreme OADP*, and thus will help in meeting ROP milestones and/or attainment goals for the federal 1-hour ozone standard if needed. The magnitude of reductions from control measures outside of the *Extreme OADP* is likely to exceed what is needed for the *Extreme OADP* for contingency measures.⁴ Therefore, control measures developed for these other plans serve the same function as contingency measures developed exclusively for the *Extreme OADP*.

Third, EPA plans to revoke the federal 1-hour ozone standard before the next 1-hour ROP milestone year for the SJVAB (2008), so the concept of contingency measures for federal 1-hour ozone standard requirements has diminished importance for the SJVAB (i.e., once the standard is revoked on June 15, 2005, EPA is not obligated to determine if an area has met the 1-hour standard by the area’s attainment date [40 CFR 51.905(e)]).

Fourth, because the District is using “long-term measures” as part of its control strategy (see Section 4.8), it is required by the federal Clean Air Act to identify

³ Note that 14 of the 21 new District control measures listed in Table 4-1 of this Plan achieve reductions in ozone precursor emissions of 1.0 tons/day or less each for 2010; the total 2010 reductions estimated from these 14 measures are about 5.8 tons/day compared to a total SJVAB 2010 inventory of over 760 tons/day VOC and NOx combined.

⁴ For example, Reynolds, Blanchard and Ziman identify, through photochemical grid modeling, that NOx emissions must be reduced to about 10% of 1999 base case values to attain the 8-hour ozone standard in the SJVAB (“Understanding the Effectiveness of Precursor Reductions in Lowering 8-hr Ozone Concentrations, *J. Air & Waste Man.*, 53: 195-205, February 2003).

the contingency measures with reductions equal to those achieved by long-term measures no later than three years before implementation of proposed plan provisions [Section 182(e)(5) of the federal Clean Air Act]. For the District, this would involve not only identifying the long-term measures, but also redoing this *Extreme OADP* with whatever new information and tools are available related to the formation of ozone in the SJVAB. Thus, an additional planning requirement related to long-term measures provides another level of contingency in that the District will reevaluate the SJVAB 1-hour ozone attainment control strategy in 2007⁵, well in advance of the next ROP milestone year (2008) or the attainment year (2010), and will add new measures as warranted by the updated assessment of ozone air quality at that time. This represents the functional equivalent of contingency measures as defined in the federal Clean Air Act.

4.8 Long-Term Measures

Section 182(e)(5) of the Federal Clean Air Act allows EPA to approve provisions of an implementation plan for an Extreme Area that anticipate the development of new control techniques or improvement of existing control technologies, and an attainment demonstration based on such provisions. This provision of the federal Clean Air Act is dependent upon the state demonstrating that such provisions are not needed for incremental emissions reductions in the 1990-2000 time frame, and that the state has submitted enforceable commitments to develop and adopt contingency measures to be implemented if the anticipated future technologies do not achieve planned emission reductions. The state must submit these contingency measures to EPA no later than three years before proposed implementation of the plan provisions and approved or disapproved by EPA in accordance with Section 110 of the federal Clean Air Act. The contingency measures must be sufficient to achieve the emissions reductions needed for ROP or attainment demonstration purposes. For this *Extreme OADP*, ozone precursor emission reductions must be implemented no later than Spring 2010 to affect ozone levels in the attainment year of 2010. Thus the District would need to identify the Section 182(e)(5) contingency measures no later than spring of 2007.

Because of other ongoing and planned major SIP submittals, the District will fulfill the intent of the Section 182(e)(5) contingency measure requirements by identifying and implementing control measures above and beyond the *Extreme OADP* that will help attain the federal 1-hour ozone standards. The District has a legally enforceable commitment to revise the *PM10 Plan* and submit it to EPA by March 31, 2006 (69 *FR* 5431), and a regulatory requirement to submit an *8-hour OADP* by June 15, 2007. Each of these would create ozone precursor emission reductions that are beyond the scope of this *Extreme OADP* by Spring 2007, and

⁵ If EPA revokes the 1-hour standard as planned, then the District would not update the 1-hour *Extreme OADP* in 2007, but instead would develop the *8-hour OADP* for submittal in June 2007.

would thus meet the intent of contingency measures for Section 182(e)(5). For this *Extreme OADP*, the magnitude of the long-term measures is fairly small (a few tons/day each of VOC and NO_x), and represents a small percent of the 2010 inventory (see Section 5.6). Consequently, the control measures developed for the other plans mentioned above would easily cover the magnitude of reductions required for the long-term measures.

