

**ENVIRONMENTAL PROTECTION  
AGENCY**
**40 CFR Part 52**
**[EPA-R09-OAR-2010-0516; FRL-9229-4]**
**Approval and Promulgation of  
Implementation Plans; State of  
California; 2008 San Joaquin Valley  
State Implementation Plan for Fine  
Particulate Matter; 2007 State Strategy;  
PM<sub>2.5</sub>**
**AGENCY:** Environmental Protection  
Agency (EPA).

**ACTION:** Proposed rule.

**SUMMARY:** EPA is proposing to approve in part and disapprove in part state implementation plan (SIP) revisions submitted by California to provide for attainment of the 1997 annual and 24-hour fine particulate matter (PM<sub>2.5</sub>) national ambient air quality standards (NAAQS) in the San Joaquin Valley (SVJ) nonattainment area. The SIP revisions are the SVJ 2008 PM<sub>2.5</sub> Plan (revised 2010) and portions of the 2007 State Strategy (revised 2009). Specifically, EPA is proposing to approve the emissions inventories as meeting the requirements of the Clean Air Act and EPA's fine particle implementing rule and to approve commitments to implement specific measures and meet specific aggregate emissions reductions by the San Joaquin Valley Air Pollution Control District and the California Air Resource Board. In addition, we are proposing to find that volatile organic compounds are a PM<sub>2.5</sub> attainment plan precursor in the SVJ for which controls should be evaluated. EPA is proposing to disapprove the attainment demonstration. EPA is also proposing to disapprove the reasonably available control measures/reasonably available control technology demonstration, the air quality modeling, the reasonable further progress (RFP) demonstration, the contingency measures, and the attainment and RFP conformity motor vehicle emissions budgets. EPA is also proposing to not grant California's request to extend to April 5, 2015 the deadline for the SVJ nonattainment area to attain the 1997 PM<sub>2.5</sub> NAAQS.

**DATES:** Any comments must arrive by January 31, 2011.

**ADDRESSES:** Submit comments, identified by docket number EPA-R09-OAR-2010-0516, by one of the following methods:

- *Federal eRulemaking Portal:* <http://www.regulations.gov>. Follow the online instructions.

- *E-mail:* [wicher.frances@epa.gov](mailto:wicher.frances@epa.gov).

- *Mail or deliver:* Frances Wicher, Office of Air Planning (AIR-2), U.S. Environmental Protection Agency Region IX, 75 Hawthorne Street, San Francisco, CA 94105.

*Instructions:* All comments will be included in the public docket without change and may be made available online at <http://www.regulations.gov>, including any personal information provided, unless the comment includes Confidential Business Information (CBI) or other information for which disclosure is restricted by statute. Information that you consider CBI or otherwise protected should be clearly identified as such and should not be submitted through <http://www.regulations.gov> or e-mail. The <http://www.regulations.gov> Web site is an "anonymous access" system, and EPA will not know your identity or contact information unless you provide it in the body of your comments. If you send e-mail directly to EPA, your e-mail address will be automatically captured and included as part of the public comment. If EPA cannot read your comments due to technical difficulties and cannot contact you for clarification, EPA may not be able to consider your comments.

*Docket:* The index to the docket for this action is available electronically at <http://www.regulations.gov> and in hard copy at EPA Region IX, 75 Hawthorne Street, San Francisco, California. While all documents in the docket are listed in the index, some may be publicly available only at the hard copy location (e.g., copyrighted material) and some may not be publicly available at either location (e.g., CBI). To inspect the hard copy materials, please schedule an appointment during normal business hours with the contact listed in the **FOR FURTHER INFORMATION CONTACT** section below.

Copies of the SIP materials are also available for inspection at the following locations:

- California Air Resources Board, 2020 L Street, Sacramento, California 95812
- San Joaquin Valley Unified Air Pollution Control District, 1990 E. Gettysburg, California 93726.

The SIP materials are also electronically available at: [http://www.valleyair.org/Air\\_Quality\\_Plans/PM\\_Plans.htm](http://www.valleyair.org/Air_Quality_Plans/PM_Plans.htm) and <http://www.arb.ca.gov/planning/sip/sip.htm>.

**FOR FURTHER INFORMATION CONTACT:** Frances Wicher, Air Planning Office (AIR-2), U.S. Environmental Protection Agency, Region IX, (415) 972-3957, [wicher.frances@epa.gov](mailto:wicher.frances@epa.gov).

**SUPPLEMENTARY INFORMATION:**

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### I. The PM<sub>2.5</sub> NAAQS and the San Joaquin Valley PM<sub>2.5</sub> Nonattainment Area

On July 18, 1997 (62 FR 36852), EPA established new national ambient air quality standards (NAAQS) for PM<sub>2.5</sub>, particulate matter with a diameter of 2.5 microns or less, including annual standards of 15.0 µg/m<sup>3</sup> based on a 3-year average of annual mean PM<sub>2.5</sub> concentrations and 24-hour (daily) standards of 65 µg/m<sup>3</sup> based on a 3-year average of the 98th percentile of 24-hour concentrations. 40 CFR 50.7. EPA established the standards based on substantial evidence from numerous health studies demonstrating that serious health effects are associated with exposures to PM<sub>2.5</sub> concentrations above the levels of these standards.

Epidemiological studies have shown statistically significant correlations between elevated PM<sub>2.5</sub> levels and premature mortality. Other important health effects associated with PM<sub>2.5</sub> exposure include aggravation of respiratory and cardiovascular disease (as indicated by increased hospital admissions, emergency room visits, absences from school or work, and restricted activity days), changes in lung function and increased respiratory symptoms, as well as new evidence for more subtle indicators of cardiovascular health. Individuals particularly sensitive to PM<sub>2.5</sub> exposure include older adults, people with heart and lung disease, and children. See, EPA, *Air Quality Criteria for Particulate Matter*, No. EPA/600/P-99/002aF and EPA/600/P-99/002bF, October 2004.

PM<sub>2.5</sub> can be emitted directly into the atmosphere as a solid or liquid particle (primary PM<sub>2.5</sub> or direct PM<sub>2.5</sub>) or can be formed in the atmosphere as a result of various chemical reactions from precursor emissions of nitrogen oxides, sulfur dioxide, volatile organic compounds, and ammonia (secondary PM<sub>2.5</sub>). See 72 FR 20586, 20589 (April 25, 2007).

Following promulgation of a new or revised NAAQS, EPA is required by

Clean Air Act (CAA) section 107(d) to designate areas throughout the nation as attaining or not attaining the NAAQS. On January 5, 2005, EPA published initial air quality designations for the 1997 PM<sub>2.5</sub> NAAQS, based on air quality monitoring data for the three-year periods of 2001–2003 or 2002–2004. 70 FR 944. These designations became effective on April 5, 2005.<sup>1</sup>

EPA designated the San Joaquin Valley (SJV), in the southern part of California's Central Valley, nonattainment for both the 1997 annual and 24-hour PM<sub>2.5</sub> standards. 40 CFR 81.305. The SJV PM<sub>2.5</sub> nonattainment area is home to 4 million people and is the nation's leading agricultural area. Stretching over 250 miles from north to south and averaging 80 miles wide, it is partially enclosed by the Coast Mountain range to the west, the Tehachapi Mountains to the south, and the Sierra Nevada range to the east. It encompasses over 23,000 square miles and includes all or part of eight counties: San Joaquin, Stanislaus, Merced, Madera, Fresno, Tulare, Kings, and the valley portion of Kern. For a precise description of the geographic boundaries of the San Joaquin Valley PM<sub>2.5</sub> nonattainment area, see 40 CFR § 81.305. The local air district with primary responsibility for developing a plan to attain the PM<sub>2.5</sub> NAAQS in this area is the San Joaquin Valley Air Pollution Control District (SJVAPCD or District).

Ambient annual and 24-hour PM<sub>2.5</sub> levels in the urban Bakersfield area in the southern SJV are the highest recorded in the United States at 22.6 µg/m<sup>3</sup> and 70 µg/m<sup>3</sup>, respectively, for the 2007–2009 period.<sup>2</sup> In the SJV, the levels and composition of ambient PM<sub>2.5</sub> differ by season. 2008 PM<sub>2.5</sub> Plan, Figures H-4 and H-5. Higher PM<sub>2.5</sub>

<sup>1</sup> On October 17, 2006, EPA strengthened the 24-hour PM<sub>2.5</sub> NAAQS by lowering the level to 35 µg/m<sup>3</sup>. At the same time, it retained the level of the annual PM<sub>2.5</sub> standards at 15.0 µg/m<sup>3</sup>. 71 FR 61144. On November 13, 2006, EPA designated areas, including the SJV, with respect to the revised 24-hour NAAQS. 74 FR 58688. California is now required to submit an attainment plan for the 35 µg/m<sup>3</sup> 24-hour standards no later than 3 years after the effective date of the designation, that is, no later than December 14, 2012. In this preamble, all references to the PM<sub>2.5</sub> NAAQS, unless otherwise specified, are to the 1997 24-hour PM<sub>2.5</sub> standards of 65 µg/m<sup>3</sup> and annual standards of 15 µg/m<sup>3</sup> as codified in 40 CFR § 50.7.

<sup>2</sup> See EPA, Air Quality System, Design Value Report, August 9, 2010. These values are the highest design values in the SJV. A design value is an ambient concentration calculated using a specific methodology from monitored air quality data and is used to compare an area's air quality to a NAAQS. The methodologies for calculating design values for the annual and 24-hour PM<sub>2.5</sub> NAAQS are found in 40 CFR part 50 Appendix N Sections 1(c)(1) and (c)(2), respectively.

concentrations occur during the winter, between late November and February, when ambient PM<sub>2.5</sub> is dominated by ammonium nitrate, formed from NO<sub>x</sub> and ammonia emissions, and directly-emitted particulates, such as wood smoke. During the winter, the SJV experiences extended periods of stagnant weather with cold, damp, foggy conditions which are conducive to the formation of secondary ammonium nitrate particulates and encourage wood burning. During the summer, PM<sub>2.5</sub> levels generally remain below 15 µg/m<sup>3</sup>, the level of the annual standards. 2008 PM<sub>2.5</sub> Plan, Figures H-6 and H-7.

### II. California's State Implementation Plan Submittals to Address PM<sub>2.5</sub> Nonattainment in the San Joaquin Valley

#### A. California's SIP Submittals

Designation of an area as nonattainment starts the process for a state to develop and submit to EPA a state implementation plan (SIP) under title 1, part D of the CAA. This SIP must include, among other things, a demonstration of how the NAAQS will be attained in the nonattainment area as expeditiously as practicable but no later than the date required by the CAA. Under CAA section 172(b), a state has up to three years after an area's designation as nonattainment to submit its SIP to EPA. For the 1997 PM<sub>2.5</sub> NAAQS, these SIPs were due no later than April 5, 2008.

California has made several SIP submittals to address the CAA's PM<sub>2.5</sub> attainment planning requirements in the San Joaquin Valley. The two principal ones are the SJVAPCD's 2008 PM<sub>2.5</sub> Plan (2008 PM<sub>2.5</sub> Plan or Plan) and the California Air Resources Board's (CARB) State Strategy for California's 2007 State Implementation Plan (2007 State Strategy).

In addition to these submittals, the District and State have also submitted numerous rules that contribute to improving air quality in the San Joaquin Valley. EPA has approved many of these rules. See Appendices A and B of the technical support document (TSD) for this proposal.

#### 1. SJV 2008 PM<sub>2.5</sub> Plan

The 2008 PM<sub>2.5</sub> Plan was adopted by the District's Governing Board on April 30, 2008 and by CARB on May 22, 2008 and submitted to EPA on June 30, 2008.<sup>3</sup> It includes an attainment

<sup>3</sup> See San Joaquin Valley Unified Air Pollution Control District Governing Board Resolution: In the Matter of Adopting the San Joaquin Valley Unified Air Pollution Control District 2008 PM<sub>2.5</sub> Plan,

demonstration, commitments by the SJVAPCD to adopt control measures to achieve emissions reductions from sources under its jurisdiction (primarily stationary sources), and motor-vehicle emissions budgets used for transportation conformity purposes. The attainment demonstration includes air quality modeling, a reasonable further progress (RFP) plan, an analysis of reasonably available control measures/ reasonably available control technology (RACM/RACT), base year and projected year emissions inventories, and contingency measures. The 2008 PM<sub>2.5</sub> Plan also includes the District's demonstration that attainment of the PM<sub>2.5</sub> standards in the SJV will require significant reductions in NO<sub>x</sub> and PM<sub>2.5</sub> emissions (50 percent and 25 percent from 2005 levels, respectively) and that the most expeditious date for attaining the 1997 PM<sub>2.5</sub> NAAQS in the San Joaquin Valley is April 5, 2015. On September 15, 2010, CARB submitted a minor revision to the 2008 PM<sub>2.5</sub> Plan's control strategy to extend the adoption date for one control measure.<sup>4</sup> Future references to the 2008 PM<sub>2.5</sub> Plan in this proposal will be to the Plan as revised in 2010.

## 2. CARB 2007 State Strategy

To demonstrate attainment, the 2008 PM<sub>2.5</sub> Plan relies in part on measures in CARB's 2007 State Strategy. The 2007 State Strategy was adopted by CARB on September 27, 2007 and submitted to EPA on November 16, 2007.<sup>5</sup> It discusses CARB's overall approach to addressing, in conjunction with local plans, attainment of both the 1997 PM<sub>2.5</sub> and 8-hour ozone NAAQS not only in the San Joaquin Valley but also in California's other nonattainment areas such as the South Coast Air Basin and the Sacramento area. It also includes CARB's commitments to propose 15 defined State measures<sup>6</sup> and to obtain specific amounts of aggregate emissions

reductions of direct PM<sub>2.5</sub>, nitrogen oxides (NO<sub>x</sub>), and volatile organic compounds (VOC) in the SJV from sources under the State's jurisdiction, which are primarily on- and off-road motor vehicles and engines.

On August 12, 2009, CARB submitted the "Status Report on the State Strategy for California's 2007 State Implementation Plan (SIP) and Proposed Revision to the SIP Reflecting Implementation of the 2007 State Strategy," dated March 24, 2009, adopted April 24, 2009 (2009 State Strategy Status Report)<sup>7</sup> which updates the 2007 State Strategy to reflect its implementation during 2007 and 2008.<sup>8</sup>

In today's proposal, we are only evaluating those portions of the 2007 State Strategy as revised in 2009 that are relevant for attainment of the 1997 PM<sub>2.5</sub> standards in the San Joaquin Valley.

### *B. CAA Procedural and Administrative Requirements for SIP Submittals*

CAA sections 110(a)(1) and (2) and 110(l) require a state to provide reasonable public notice and opportunity for public hearing prior to the adoption and submittal of a SIP or SIP revision. To meet this requirement, every SIP submittal should include evidence that adequate public notice was given and a public hearing was held on it consistent with EPA's implementing regulations in 40 CFR 51.102.

Both the SJVAPCD and CARB have satisfied applicable statutory and regulatory requirements for reasonable public notice and hearing prior to adoption and submittal of the 2008 PM<sub>2.5</sub> Plan. The District conducted public workshops, provided public comment periods, and held a public hearing prior to the adoption of the Plan on April 30, 2008. *See* 2008 PM<sub>2.5</sub> Plan, Appendix J and SJVAPCD Governing Board Resolution, p. 3. CARB provided the required public notice and opportunity for public comment prior to its May 22, 2008 public hearing on the Plan. *See* CARB Resolution No. 08–28. The District also provided the required public notice and hearing on the 2010 revision to the Plan. *See* SJVAPCD Governing Board Resolution No. 10–06–18.

<sup>7</sup> *See* CARB Resolution No. 09–34, April 21, 2009, with attachments and letter, James N. Goldstene, Executive Officer, CARB, to Laura Yoshii, Acting Regional Administrator, EPA Region 9, August 12, 2009 with enclosures. Only pages 11–27 of the 2009 State Strategy Status Report are submitted as a SIP revision. The balance is for informational purposes only. *See* Attachment A to the CARB Resolution No. 09–34.

<sup>8</sup> We will also refer to the 2007 State Strategy as revised in 2009 as the revised 2007 State Strategy.

CARB conducted public workshops, provided public comment periods, and held a public hearing prior to the adoption of the 2007 State Strategy on September 27, 2007. *See* CARB Resolution No. 07–28. CARB also provided the required public notice, opportunity for public comment, and a public hearing prior to its April 24, 2009 adoption of the 2009 State Strategy Status Report. *See* CARB Resolution No. 09–34.

The SIP submittals include proof of publication for notices of SJVAPCD and CARB public hearings, as evidence that all hearings were properly noticed. We find, therefore, that each of the four submittals that comprise the SJV PM<sub>2.5</sub> SIP meets the procedural requirements of CAA sections 110(a) and 110(l).

CAA section 110(k)(1)(B) requires EPA to determine whether a SIP submittal is complete within 60 days of receipt. This section also provides that any plan that EPA has not affirmatively determined to be complete or incomplete will become complete six months after the date of submittal by operation of law. EPA's SIP completeness criteria are found in 40 CFR part 51, Appendix V.

The June 30, 2008 submittal of the 2008 PM<sub>2.5</sub> Plan became complete by operation of law on December 30, 2008. We found the 2010 revision to the Plan complete on September 23, 2010.<sup>9</sup> The November 16, 2007 submittal of the 2007 State Strategy and the August 12, 2009 submittal of the 2009 revisions to the Strategy became complete by operation of law on May 16, 2008 and February 12, 2010, respectively.

### **III. CAA and Regulatory Requirements for PM<sub>2.5</sub> Attainment SIPs**

EPA is implementing the 1997 PM<sub>2.5</sub> NAAQS under Title 1, Part D, subpart 1 of the CAA, which includes section 172, "Nonattainment plan provisions." Section 172(a)(2) requires that a PM<sub>2.5</sub> nonattainment area attain the NAAQS as "as expeditiously as practicable" but no later than five years from the date of the area's designation as nonattainment. This section also allows EPA to grant up to a five-year extension of an area's attainment date based on the severity of the area's nonattainment and the availability and feasibility of controls. EPA designated the SJV as nonattainment effective April 5, 2005, and thus the applicable attainment date is no later than April 5, 2010 or, should EPA grant a full five-year extension, no later than April 5, 2015.

<sup>9</sup> Letter, Deborah Jordan, EPA–Region 9 to James Goldstene, CARB, September 23, 2010.

April 30, 2008 (SJVAPCD Governing Board Resolution), CARB Resolution No. 08–28, May 22, 2008; and letter, James N. Goldstene, Executive Officer, CARB to Wayne Nastri, Regional Administrator, EPA Region 9, June 30, 2008, with enclosures.

<sup>4</sup> *See* letter, James N. Goldstene, Executive Officer, CARB to Jared Blumenfeld, Regional Administrator, EPA Region 9, September 15, 2010, with enclosures.

<sup>5</sup> *See* CARB Resolution No. 07–28, September 27, 2007 with attachments and letter, James N. Goldstene, Executive Officer, CARB, to Wayne Nastri, Regional Administrator, EPA Region 9, November 16, 2007 with enclosures.

<sup>6</sup> The 2007 State Strategy also includes measures to be implemented by the California Bureau of Automotive Repair (Smog Check improvements) and the California Department of Pesticide Regulation (VOC reductions from pesticide use). *See* 2007 State Strategy, pp. 64–65 and CARB Resolution 7–28, Attachment B, p. 8.

Section 172(c) contains the general statutory planning requirements applicable to all nonattainment areas, including the requirements for emissions inventories, RACM/RACT, attainment demonstrations, RFP demonstrations, and contingency measures.

On April 25, 2007, EPA issued the Clean Air Fine Particle Implementation Rule for the 1997 PM<sub>2.5</sub> NAAQS. 72 FR 20586, codified at 40 CFR part 51, subpart Z (PM<sub>2.5</sub> implementation rule). The PM<sub>2.5</sub> implementation rule and its preamble address the statutory planning requirements for emissions inventories, RACM/RACT, attainment demonstrations including air quality modeling requirements, RFP demonstrations, and contingency measures. This rule also addresses other matters such as which PM<sub>2.5</sub> precursors must be addressed by the state in its PM<sub>2.5</sub> attainment SIP, applicable attainment dates, and the requirement for mid-course reviews.<sup>10</sup> We will discuss each of these CAA and regulatory requirements for PM<sub>2.5</sub> attainment plans in more detail below.

#### IV. Review of the SJV 2008 PM<sub>2.5</sub> Plan and the SJV Portion of the Revised 2007 State Strategy

##### A. Summary of EPA's Proposed Actions

EPA is proposing to approve in part and disapprove in part the SJV 2008 PM<sub>2.5</sub> Plan and those portions of the 2007 State Strategy as revised in 2009 specific to PM<sub>2.5</sub> attainment in the SJV.

<sup>10</sup> In June 2007, a petition to the EPA Administrator was filed on behalf of several public health and environmental groups requesting reconsideration of four provisions in the PM<sub>2.5</sub> implementation rule. See Earthjustice, Petition for Reconsideration, "In the Matter of Final Clean Air Fine Particle Implementation Rule," June 25, 2007. These provisions are (1) The presumption that compliance with the Clean Air Interstate Rule satisfies the NO<sub>x</sub> and SO<sub>2</sub> RACT requirements for electric generating units; (2) the deferral of the requirement to establish emission limits for condensable particulate matter (CPM) until January 1, 2011; (3) revisions to the criteria for analyzing the economic feasibility of RACT; and (4) the use of out-of-area emissions reductions to demonstrate RFP. These provisions are found in the PM<sub>2.5</sub> implementation rule and preamble at 20623–20628, 40 CFR 51.1002(c), 20619–20620, and 20636, respectively. On May 13, 2010, EPA granted the petition with respect to the fourth issue. Letter, Gina McCarthy, EPA, to David Baron and Paul Cort, Earthjustice, May 13, 2010. EPA is currently considering the other issues raised in the petition.

Neither the District nor the State relied on the first, third, or fourth of these provisions in preparing the 2008 PM<sub>2.5</sub> Plan or the 2007 State Strategy. The District has deferred some, but not all, CPM limits in its rules. EPA does not believe this deferral affects its proposed disapproval actions on the SIP's RACM/RACT or expeditious attainment demonstrations. See section II.D.3 of the TSD for this proposal. We will evaluate any rule adopted or revised by the District after January 1, 2011 to assure that it appropriately addresses CPM.

We are proposing to approve the emissions inventories in these SIP revisions as meeting the applicable requirements of the CAA and PM<sub>2.5</sub> implementation rule. We are also proposing to approve the District's and CARB's commitments to specific measures and specific aggregate emissions reductions in these SIP revisions as strengthening the SIP.

In addition, we are proposing to find that volatile organic compounds (VOC) are a PM<sub>2.5</sub> attainment plan precursor that must be addressed in the RACM/RACT analysis, RFP and attainment demonstrations, and for other PM<sub>2.5</sub> SIP control requirements. The Plan as submitted does not treat VOC as a PM<sub>2.5</sub> attainment plan precursor.

We are proposing to disapprove the air quality modeling analysis on which the 2008 PM<sub>2.5</sub> Plan's attainment, RACM/RACT, and RFP demonstrations and the State's attainment date extension request are based because the Plan does not currently include sufficient documentation and analysis for EPA to determine the modeling's adequacy.

Based on our proposed finding that VOC should be a PM<sub>2.5</sub> attainment plan precursor and our proposed disapproval of the air quality modeling, we are proposing to disapprove the 2008 PM<sub>2.5</sub> Plan's RACM/RACT analysis and the RFP and attainment demonstrations and related contingency measures as not meeting the applicable requirements of the CAA and PM<sub>2.5</sub> implementation rule. We are also proposing to disapprove the transportation conformity motor vehicle emissions budgets for the RFP milestone years of 2009 and 2012 and the attainment year of 2014.<sup>11</sup> We are proposing to disapprove the attainment demonstration for the additional reason that it relies too extensively on commitments to emissions reductions in lieu of fully adopted and submitted rules. Rules that have either not been adopted in final form or have not been submitted to and approved by EPA cannot be credited toward the attainment demonstration. Finally, we are proposing to not grant the State's request to extend the attainment date for the PM<sub>2.5</sub> NAAQS in the SJV to April 5, 2015.

EPA's analysis and findings are summarized below and are described in more detail in the TSD for this proposal which is available online at <http://www.regulations.gov>

<sup>11</sup> While the attainment date for PM<sub>2.5</sub> areas with a full five-year extension would be April 5 2015, reductions must be implemented by 2014 to achieve attainment by that date. See 40 CFR 51.1007(b). We refer, therefore, to 2014 as the attainment year and April 5, 2015 as the attainment date.

[www.regulations.gov](http://www.regulations.gov) in the docket, EPA–R09–OAR–2010–0516, or from the EPA contact listed at the beginning of this notice.

##### B. Emissions Inventories

###### 1. Requirements for Emissions Inventories

CAA section 172(c)(3) requires states to submit a "comprehensive, accurate, current inventory of actual emissions from all sources of the relevant pollutant." The PM<sub>2.5</sub> implementation rule requires a state to include direct PM<sub>2.5</sub> emissions and emissions of all PM<sub>2.5</sub> precursors in this inventory, even if it has determined that control of any of these precursors is not necessary for expeditious attainment. 40 CFR 51.1008(a)(1) and 72 FR 20586 at 20648. Direct PM<sub>2.5</sub> includes condensable particulate matter. 40 CFR 51.1000. PM<sub>2.5</sub> precursors are NO<sub>x</sub>, SO<sub>2</sub>, VOC, and ammonia. *Id.* The inventories should meet the data requirements of EPA's Consolidated Emissions Reporting Rule (codified at 40 CFR part 51 subpart A) and include any additional inventory information needed to support the SIP's attainment demonstration and (where applicable) RFP demonstration. 40 CFR 51.1008(a)(1) and (2).

A baseline emissions inventory is required for the attainment demonstration and for meeting RFP requirements. As determined on the date of designation, the base year for this inventory should be the most recent calendar year for which a complete inventory was required to be submitted to EPA. The baseline emissions inventory for calendar year 2002 or other suitable year should be used for attainment planning and RFP plans for areas initially designated nonattainment for the PM<sub>2.5</sub> NAAQS in 2005. 40 CFR 51.1008(b).

EPA has provided additional guidance for PM<sub>2.5</sub> emissions inventories in "Emissions Inventory Guidance for Implementation of Ozone and Particulate Matter NAAQS and Regional Haze Regulations," November 2005 (EPA–454/R–05–001).

###### 2. Emissions Inventories in the SJV PM<sub>2.5</sub> SIP

The baseline planning inventories for direct PM<sub>2.5</sub> and all PM<sub>2.5</sub> precursors for the SJV PM<sub>2.5</sub> nonattainment area together with additional documentation for the inventories are found in Appendix B of the 2008 PM<sub>2.5</sub> Plan. Both average winter day and average annual day baseline inventories are provided for the year 2005 (the reference year for the air quality

modeling) and each year from 2009 to 2014. These baseline inventories incorporate reductions from federal, State, and District measures adopted prior to 2007. 2008 PM<sub>2.5</sub> Plan, p. B-1 and 2007 State Strategy, Appendix A, p. 1. A winter inventory is provided because the majority of high PM<sub>2.5</sub> days in the SJV occur during the winter months between November and February. 2008 PM<sub>2.5</sub> Plan, Figures H-4 and H-5.

Table 1 is a summary of the average annual day inventories of direct PM<sub>2.5</sub>

and PM<sub>2.5</sub> precursors for the baseline year of 2005 and the projected attainment year of 2014. These inventories provide the basis for the control measure analysis and the RFP and attainment demonstrations in the 2008 PM<sub>2.5</sub> Plan.

As a starting point for the 2008 PM<sub>2.5</sub> Plan's inventories, the District used CARB's 2002 base year inventory. An example of this inventory and CARB's documentation for its inventories can be found in Appendices A and F, respectively, of the 2007 State Strategy.

The 2002 inventory for the SJV was projected to 2005 and future years using CARB's California emissions forecasting system (CEFSv 1.06). 2008 PM<sub>2.5</sub> Plan, p. B-1. Both base year and baseline inventories use the most current version of California's mobile source emissions model approved by EPA for use in SIPs, EMFAC2007, for estimating on-road motor vehicle emissions. 73 FR 3464 (January 18, 2008). Off-road inventories were developed using the CARB off-road model.

TABLE 1—SAN JOAQUIN VALLEY EMISSIONS INVENTORY SUMMARY FOR PM<sub>2.5</sub> AND PM<sub>2.5</sub> PRECURSORS FOR THE 2005 BASE YEAR AND 2014 ATTAINMENT YEAR

[Annual average day emissions in tons per day]

Emissions inventory category	PM <sub>2.5</sub>		NO <sub>x</sub>		SO <sub>2</sub>		VOC		Ammonia	
	2005	2014	2005	2014	2005	2014	2005	2014	2005	2014
Stationary Sources .....	13.3	14.4	80.1	56.5	20.4	22.0	121.5	129.5	19.8	23.0
Area Sources .....	51.5	45.2	13.5	10.7	0.9	0.9	140.7	128.0	355.9	423.1
On-Road Mobile Sources .....	12.1	8.9	327.9	206.7	2.6	0.7	94.8	57.2	6.2	4.8
Off-Road Mobile Sources .....	9.0	6.6	153.9	102.2	2.4	0.8	62.7	48.5	0	0
Total .....	86.0	75.0	575.4	376.2	26.4	24.5	419.8	363.2	382.0	451.0

3. Proposed Action on the Emissions Inventories

We have reviewed the emissions inventories in the 2008 PM<sub>2.5</sub> Plan and the inventory methodologies used by SJVAPCD and CARB for consistency with CAA requirements, the PM<sub>2.5</sub> implementation rule, and EPA's guidance. We find that the base year and projected baseline year inventories are comprehensive, accurate, and current inventories of actual or projected emissions of PM<sub>2.5</sub> and PM<sub>2.5</sub> precursors in the SJV nonattainment area as of the date of their submittal. We propose, therefore, to approve these inventories as meeting the requirements of CAA section 172(c)(3), the PM<sub>2.5</sub> implementation rule and applicable EPA guidance. We provide more detail on our review of the inventories in section II.A. of the TSD.

C. Reasonably Available Control Measures/Reasonably Available Control Technology Demonstration and Adopted Control Strategy

1. Requirements for RACM/RACT

CAA section 172(c)(1) requires that each attainment plan "provide for the implementation of all reasonably available control measures [RACM] as expeditiously as practicable (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 [RACT]), and shall

provide for attainment of the national primary ambient air quality standards." EPA defines RACM as measures that a state finds are both reasonably available and contribute to attainment as expeditiously as practicable in its nonattainment area. Thus, what constitutes RACM/RACT in a PM<sub>2.5</sub> attainment plan is closely tied to that plan's expeditious attainment demonstration. 40 CFR 51.1010; 72 FR 20586 at 20612. States are required to evaluate RACM/RACT for direct PM<sub>2.5</sub> and all of its attainment plan precursors. 40 CFR 51.1002(c).

For PM<sub>2.5</sub> attainment plans, EPA is requiring a combined approach to RACM and RACT under subpart 1 of Part D of the CAA. Subpart 1, unlike subparts 2 and 4, does not identify specific source categories for which EPA must issue control technology documents or guidelines, or identify specific source categories for state and EPA evaluation during attainment plan development. 72 FR 20586 at 20610. Rather, under subpart 1, EPA considers RACT to be part of an area's overall RACM obligation. Because of the variable nature of the PM<sub>2.5</sub> problem in different nonattainment areas which may require states to develop attainment plans that address widely disparate circumstances, EPA determined not only that states should have flexibility with respect to RACT and RACM controls but also that in areas needing significant emission reductions to attain

the standards, RACT/RACM controls on smaller sources may be necessary to reach attainment as expeditiously as practicable. 72 FR 20586 at 20612, 20615. Thus, under the PM<sub>2.5</sub> implementation rule, RACT and RACM are those reasonably available measures that contribute to attainment as expeditiously as practicable in the specific nonattainment area. 40 CFR 51.1010; 72 FR 20586 at 20612.

Specifically, the PM<sub>2.5</sub> implementation rule requires that attainment plans include the list of measures a state considered and information sufficient to show that the state met all requirements for the determination of what constitutes RACM/RACT in a specific nonattainment area. 40 CFR 51.1010(a). In addition, the rule requires that the state, in determining whether a particular emissions reduction measure or set of measures must be adopted as RACM/RACT, consider the cumulative impact of implementing the available measures and to adopt as RACM/RACT any potential measures that are reasonably available considering technological and economic feasibility if, considered collectively, they would advance the attainment date by one year or more. Any measures that are necessary to meet these requirements which are not already either federally promulgated, part of the state's SIP, or otherwise creditable in SIPs must be submitted in enforceable form as part of

a state's attainment plan for the area. 72 FR 20586 at 20614.

A more comprehensive discussion of the RACM/RACT requirement for PM<sub>2.5</sub> attainment plans and EPA's guidance for it can be found in the PM<sub>2.5</sub> implementation rule preamble (72 FR 20586 at 20609–20633) and in section II.D. of the TSD.

2. RACM/RACT Demonstration in the SJV PM<sub>2.5</sub> SIP

The 2008 PM<sub>2.5</sub> Plan and the 2007 State Strategy are the latest in a series of air quality plans that the District and CARB have developed to provide for attainment of the federal air quality standards in the SJV. These planning efforts have resulted in a comprehensive set of rules and programs that address the vast majority of emissions sources in the Valley. Many of these District and State rules are among the most stringent in the nation.

For the 2008 PM<sub>2.5</sub> Plan and the 2007 State Strategy, the District, CARB, and the local agencies (through the SJV's eight metropolitan planning organizations (MPO)) each undertook a process to identify and evaluate potential reasonably available control measures that could contribute to expeditious attainment of the PM<sub>2.5</sub> standards in the SJV. We describe each agency's efforts below.

a. SJVAPCD's RACM/RACT Analysis and Adopted Control Strategy

The District's RACM/RACT analysis, which focuses on stationary and area source controls, is described in Chapter 6 and Appendix I of the 2008 PM<sub>2.5</sub> Plan. To identify potential RACM/RACT, the District reviewed potential measures from a number of sources including EPA's list of potential control measures in the PM<sub>2.5</sub> implementation rule preamble (72 FR 20586 at 20621), measures in other nonattainment areas' plans, and measures suggested by the public during development of the 2008 PM<sub>2.5</sub> Plan. 2008 PM<sub>2.5</sub> Plan, pp. 6–6 to

6–8. The identified potential measures, as well as existing District measures, are described by emissions inventory category in Appendix I. These measures address emissions of direct PM<sub>2.5</sub>, NO<sub>x</sub> and SO<sub>2</sub>. See 2008 PM<sub>2.5</sub> Plan, p. 6–8 and Appendix I. Potential RACM/RACT controls for VOC or ammonia were not specifically identified or evaluated.

From the set of identified potential controls for PM<sub>2.5</sub>, NO<sub>x</sub>, and SO<sub>2</sub>, the District selected measures for adoption and implementation based on the technological feasibility and practicality of emissions controls, the potential magnitude and timing of emissions reductions, cost effectiveness, and other acceptable criteria. 2008 PM<sub>2.5</sub> Plan, p. 6–7.

After completing its RACM/RACT analysis for stationary and area sources under its jurisdiction, the District developed its "Stationary Source Regulatory Implementation Schedule" (2008 PM<sub>2.5</sub> Plan, Table 6–2) which gives the schedule for regulatory adoption and implementation of the selected RACM/RACT measures. The District also identified a number of source categories for which feasibility studies would be undertaken to refine the inventory and evaluate potential controls. These categories and the schedule for studying them are listed in Table 6–4 of the 2008 PM<sub>2.5</sub> Plan.

In the five years prior to the adoption of the 2008 PM<sub>2.5</sub> Plan, the SJVAPCD developed and implemented comprehensive plans to address attainment of the PM<sub>10</sub> standards (2003 PM<sub>10</sub> Plan, approved 69 FR 30005 (May 26, 2004)), the 1-hour ozone standards (2004 Extreme Ozone Attainment Plan, approved 75 FR 10420 (March 8, 2010)), and the 8-hour ozone standards (2007 Ozone Plan, submitted November 16, 2007). These plans for other NAAQS have resulted in the adoption by the District of many new rules and revisions to existing rules for stationary and area sources in the SJV. In general, the

SJVAPCD's current rules are equivalent to or more stringent than those developed by other air districts. In addition to these stationary and area source measures, the District has also adopted an indirect source review rule, Rule 9510, to address increased indirect emissions from new industrial, commercial and residential developments. See SJVAPCD Rule 9510 "Indirect Source Review," adopted December 15, 2005. EPA proposed to approve this rule as a revision to the California SIP on May 21, 2010. 75 FR 28509. The District also operates incentive grant programs including the Carl Moyer program,<sup>12</sup> to accelerate turnover of existing stationary and mobile engines to cleaner units. 2008 PM<sub>2.5</sub> Plan, Section 6.5.

For the 2008 PM<sub>2.5</sub> Plan, the District identified and committed to adopting and implementing 13 new control measures for direct PM<sub>2.5</sub>, NO<sub>x</sub>, and/or SO<sub>2</sub>. In Table 2 below, we list these measures, which mostly involve strengthening existing District rules, along with their anticipated and actual adoption, initial implementation, and final compliance dates. As can be seen from Table 2, the District has met its intended rulemaking schedule and has only two rule actions remaining (S-COM–6 and S-COM–10). On Table 3, we list the expected emissions reductions from each measure. We note, however, that the District's commitment is only to the aggregate emissions reductions of direct PM<sub>2.5</sub>, NO<sub>x</sub>, and SO<sub>2</sub> shown. See 2008 PM<sub>2.5</sub> Plan, p. 6–9 and SJVUAPCD Governing Board Resolution, p. 5. The reductions listed on Table 3 are those anticipated to be achievable from each measure at the time the 2008 PM<sub>2.5</sub> Plan was adopted. Actual reductions from each measure once adopted may be greater or less than those anticipated. Finally, on Table 4 we give the current SIP submittal and approval status of the measures in the Plan.

TABLE 2—SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT 2008 PM<sub>2.5</sub> PLAN SPECIFIC RULE COMMITMENTS

Measure number & description	District rule number	Rule making completion date	Actual adoption date	Compliance date	Actual compliance date	Year reductions start	Actual year reductions start
S-AGR-1 .....	4103—Open Burning .....	2nd Q—2010 .....	April 2010 .....	2010	June 2010 .....	2009	2010
S-COM-1 .....	4320—Advanced Emissions Reductions for Boilers, Steam Generators and Process Heaters (≤ 5 MMBtu/hr).	3rd Q—2008 .....	October 2008 .....	2012	July 2012 to January 2014.	2012	July 2011
S-COM-2 .....	4307—Boilers, Steam Generators and Process Heaters (2 to 5 MMBtu/hr).	3rd Q—2008 .....	October 2008 .....	2012	July 2010 to January 2016.	2012	July 2010

<sup>12</sup>The Carl Moyer Memorial Air Quality Standards Attainment Program provides incentive grants for engines, equipment and other sources of pollution that are cleaner than required by

federal, State, or local rules, providing early or extra emission reductions. Eligible projects include cleaner on-road, off-road, marine, locomotive and stationary agricultural pump engines. The program

achieves near-term reductions in emissions of NO<sub>x</sub>, PM, and VOC.

TABLE 2—SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT 2008 PM<sub>2.5</sub> PLAN SPECIFIC RULE COMMITMENTS—Continued

Measure number & description	District rule number	Rule making completion date	Actual adoption date	Compliance date	Actual compliance date	Year reductions start	Actual year reductions start
S-COM-3 .....	4308—Boilers, Steam Generators and Process Heaters (0.075 to < 2 MM Btu/hr).	4th Q—2009 .....	December 2009	2011	January 2011 ....	2011	January 2011
S-COM-5 .....	4703—Stationary Gas Turbines ...	3rd Q—2007 .....	September 2007	2012	January 2012 ....	2012	July 2009
S-COM-6 .....	Rule 4702—Reciprocating Internal Combustion Engines.	4th Q—2010 .....	Scheduled for December 2010.	2012	TBD .....	2012	TBD
S-COM-7 .....	4354—Glass Melting Furnaces ....	3rd Q—2008 .....	October 2008 .... Under revision ...	2009	PM <sub>10</sub> & SO <sub>x</sub> — January 2011. NO <sub>x</sub> limits—January 2014–2018.	2009	PM <sub>10</sub> & SO <sub>x</sub> — June 2009 NO <sub>x</sub> limits—January 2011
S-COM-9 .....	4902—Residential Water Heaters	1st Q—2009 .....	March 2009 .....	Attrition	Attrition .....	2011	January 2010
S-COM-10 .....	4905—Natural Gas-Fired, Fan Type Residential Central Furnaces.	4nd Q—2014 .....	TBD .....	Attrition	TBD .....	2015	TBD
S-COM-14 .....	4901—Wood Burning Fireplaces and Wood Burning Heaters.	3rd Q—2009 .....	October 2008 ....	2010	2008 .....	2010	2008
S-IND-9 .....	4692—Commercial Charbroiling ..	2nd Q—2009 .....	September 2009	2011	January 2011 ....	2011	January 2011
S-IND-21 .....	4311—Flares .....	2nd Q—2009 .....	June 2009 .....	2010	July 2011 .....	2010	July 2011
M-TRAN-1 .....	9410—Employer Based Trip Reduction Program.	4th Q—2009 .....	December 2009	2012	January 2012 ....	2012	January 2012

Source: 2008 PM<sub>2.5</sub> Plan, Table 6-2. "Actual" information is taken from the individual rules as adopted or revised.

TABLE 3—SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT ESTIMATED EMISSIONS REDUCTIONS FOR 2008 PM<sub>2.5</sub> PLAN SPECIFIC RULE COMMITMENTS  
(tons per average annual day)

NO <sub>x</sub> Emissions Reductions						
	2009	2010	2011	2012	2013	2014
S-AGR-1	1.21	1.95	2.68	2.67	2.66	2.65
S-COM-1	0	0	0	1.49	1.50	1.52
S-COM-3	0	0	0.12	0.27	0.39	0.55
S-COM-5	0	0	0	2.21	2.21	2.21
S-COM-7	1.22	1.25	1.18	1.60	1.67	1.58
S-COM-9	0	0	0.20	0.25	0.32	0.40
S-COM-14	0	0.04	0.08	0.07	0.07	0.06
Commitment to Total NO <sub>x</sub> Reductions.	2.43	3.24	4.26	8.56	8.82	8.97
PM <sub>2.5</sub> Emissions Reductions						
S-AGR-1	1.60	2.57	3.53	3.52	3.50	3.49
S-COM-1	0	0	0	0.23	0.24	0.24
S-COM-14	0	0.39	0.76	0.73	0.71	0.69
S-IND-9	0	0	2.17	2.21	2.25	2.28
Commitment to Total PM <sub>2.5</sub> Reductions.	1.60	2.96	4.46 <sup>1</sup>	6.69	6.70	6.70
SO <sub>2</sub> Emissions Reductions						
S-AGR-1	0.06	0.10	0.14	0.14	0.14	0.14
S-COM-1	0	0	0	0.76	0.76	0.76
S-COM-14	0	0.01	0.02	0.02	0.02	0.02
M-TRAN-1	TBD	TBD	TBD	TBD	TBD	TBD
Commitment to Total SO <sub>2</sub> Reductions.	0.06	0.11	0.16	0.92	0.92	0.92

This column sums to 6.46 tpd. Because the 4.46 tpd figure is given in Table 6-3b in the 2008 PM<sub>2.5</sub> Plan and used in the attainment demonstration in Table 9-1 in the Plan, we are assuming that it reflects the District's intended emissions reductions commitment.



TABLE 4—SIP SUBMITTAL AND APPROVAL STATUS OF SJVAPCD RULES IN THE 2008 PM<sub>2.5</sub> PLAN

Rule 4103—Open Burning (Phase IV) .....	Not submitted .....	Most current revision of rule approved: May 17, 2007 at 74 FR 57907 (November 10, 2009)
4320—Advanced Emissions Reductions for Boilers, Steam Generators and Process Heaters (> 5 MMBtu/hr).	Submitted .....	Submittal date: March 17, 2009 Submittal found complete: April 20, 2009 New rule
Rule 4307 Boilers, Steam Generators and Process Heaters (2 to 5 MMBtu/hr).	Approved .....	75 FR 1715 (January 13, 2010)
Rule 4308 Boilers, Steam Generators and Process Heaters (0.075 to < 2 MMBtu/hr).	Submitted .....	Submittal date: May 17, 2010 Submittal found complete: June 8, 2010 Most current revision of rule approved: October 20, 2005 at 72 FR 29887 (May 30, 2007)
Rule 4703 Stationary Gas Turbines .....	Approved .....	74 FR 53888 (October 21, 2009)
Rule 4702 Reciprocating Internal Combustion Engines (2010 revisions).	Under development, expected adoption December 2010.	Most current revision of rule approved: January 18, 2007 73 FR 1819 (January 10, 2008)
Rule 4354 Glass Melting Furnaces (2008 revisions) .....	Not Submitted .....	Most current revision of rule approved: August 17, 2006 at 72 FR 41894 (August 1, 2007)
Rule 4902 Residential Water Heaters .....	Approved .....	75 FR 24408 (May 5, 2010)
4905—Natural Gas-Fired, Fan Type Residential Central Furnaces.	Adoption scheduled for 2014.	Most current version of the rule approved: October 20, 2005 at 72 FR 29886 (May 30, 2007)
Rule 4901 Wood Burning Fireplaces and Wood Burning Heaters.	Approved .....	74 FR 57907 (November 10, 2009)
Rule 4692 Commercial Charbroiling .....	Submitted .....	Submittal date: May 17, 2010 Submittal found complete: June 8, 2010 Most current revision of rule approved: March 21, 2002 at 68 FR 33005 (June 3, 2003)
Rule 4311 Flares .....	Submitted .....	Submittal date: January 10, 2010 Submittal found complete: February 4, 2010 Most current revision of rule approved: June 20, 2002 at 68 FR 8835 (February 26, 2003)
Rule 9410 Employer Based Trip Reduction Program .....	Submitted .....	Submittal date: May 17, 2010 Submittal found complete: June 8, 2010 New rule.

#### b. CARB's RACM Analysis and Adopted Control Strategy

Source categories for which CARB has primary responsibility for reducing emissions in California include most new and existing on- and off-road engines and vehicles, motor vehicle fuels, and consumer products. In addition, California has unique authority under CAA section 209 (subject to a waiver by EPA) to adopt and implement new emission standards for many categories of on-road vehicles and engines and new and in-use off-road vehicles and engines.

Given the need for significant emissions reductions from mobile and area sources to meet the NAAQS in California nonattainment areas, the State of California has been a leader in the development of some of the most stringent control measures nationwide for on-road and off-road mobile sources and the fuels that power them. These standards have reduced new car emissions by 99 percent and new truck emissions by 90 percent from uncontrolled levels. 2007 State Strategy, p. 37. The State is also working with EPA on goods movement activities and

is implementing programs to reduce emissions from ship auxiliary engines, locomotives, harbor craft and new cargo handling equipment. In addition, the State has standards for lawn and garden equipment, recreational vehicles and boats, and other off-road sources that require newly manufactured equipment to be 80–98 percent cleaner than their uncontrolled counterparts. *Id.* Finally, the State has adopted many measures that focus on achieving reductions from in-use mobile sources that include more stringent inspection and maintenance requirements in California's Smog Check program, truck and bus idling restrictions, and various incentive programs. Since 1994 alone, the State has taken more than 45 rulemaking actions and achieved most of the emissions reductions needed for attainment in the State's nonattainment areas. See 2007 State Strategy, pp. 36–40. As is noted in the 2007 State Strategy, EPA has approved California's mobile source program as representing best available control measures. See 2007 State Strategy, Appendix G, 69 FR 5412 (February 4, 2004) and 69 FR 30006 (May 26, 2004) (proposed and final approval of SJV 2003 PM<sub>10</sub> Plan).

CARB developed its proposed 2007 State Strategy after an extensive public consultation process to identify potential SIP measures. This process is described in the 2008 PM<sub>2.5</sub> Plan at 7–11.<sup>13</sup> From this process, CARB identified and committed to propose 15 new defined measures. These measures focus on cleaning up the in-use fleet as well as increasing the stringency of emissions standards for a number of engine categories, fuels, and consumer products. Many, if not most, of these measures are being proposed for adoption for the first time anywhere in the nation. They build on CARB's already comprehensive program described above that addresses emissions from all types of mobile sources and consumer products, through both regulations and incentive programs. See Appendix A of the TSD. Table 5 below lists the new defined measures in the 2007 State Strategy, which also include one measure each from the California Bureau of Automotive Repair and the California Department of Pesticide Regulation. As shown in this table, the State has adopted many of the measures.

<sup>13</sup> More information on this public process including presentations from the workshops and

symposium that preceded adoption of the 2007

State Strategy can be found at <http://www.arb.ca.gov/planning/sip/2007sip/2007sip.htm>.

TABLE 5—2007 STATE STRATEGY DEFINED MEASURES SCHEDULED FOR CONSIDERATION AND CURRENT STATUS

Defined state measure	Primary area (SC and/or SJV)	Adoption year	Current status
Smog Check Improvements .....	Both .....	2007–2008 .....	Elements approved 75 FR 38023 (July 1, 2010).
Expanded Vehicle Retirement .....	Both .....	2008–2014 .....	Adopted CARB June 2009; Bureau of Automotive Repair September 2010.
Revisions to Reformulated Gasoline Program.	Both .....	2007 .....	Approved, see 75 FR 26653 (May 2, 2010).
Cleaner In-use Heavy Duty Trucks	Both .....	2008 .....	Adopted 2008, pending revisions.
Auxiliary Ship Cold Ironing and Other Clean Technologies.	SC .....	2007–2008 .....	Adopted December 2007.
Cleaner Main Ship Engines and Fuels.	SC .....	Fuel: 2007 .....	Adopted July 2007.
Port Truck Modernization .....	SC .....	Engines: 2009 .....	
Accelerated Introduction of Cleaner Locomotives.	Both .....	2007–2008 .....	Adopted December 2007 and December 2008.
Clean Up Existing Harbor Crafts ...	SC .....	2007 .....	In progress.
Cleaner In-Use Off-Road Engines	Both .....	2007 .....	Adopted November 2007, revised June 2010.
Cleaner In-Use Agricultural Equipment.	SJV .....	2009 .....	Adopted 2007, pending revisions.
New Emissions Standards for Recreational Boats.	Both .....	2009–2010 .....	On-going through incentive grant programs.
Expanded Off-Road Recreational Vehicle Emissions Standards.	Both .....	By 2010 .....	Partial adoption, 2008; additional regulation in public review.
Enhanced Vapor Recovery for Above Ground Storage Tanks.	Both .....	2007 .....	Adopted November 2008.
Additional Evaporative Emissions Standards.	Both .....	By 2010 .....	Adopted June 2007.
Consumer Products Program (I & II).	Both .....	2008 & 2010–2012.	Partial adoption, 2008.
Department of Pesticide Regulation.	SJV .....	2008 .....	Phase I—Approved 74 FR 57074 (November 4, 2009).
			Adopted 2008, amended 2009.

SC = South Coast Air Basin. Source: 2009 State Strategy Status Report, p. 23 (footnotes in original not included)

Appendix A of the TSD includes a list of all measures adopted by CARB between 1990 and the beginning of 2007. These measures, reductions from which are reflected in the Plan's baseline inventories, fall into two categories: Measures that are subject to a waiver of Federal pre-emption under CAA section 209 (section 209 waiver measures or waiver measures) and those for which the State is not required to obtain a waiver (non-waiver measures). Emissions reductions from waiver measures are fully creditable in attainment and RFP demonstrations and may be used to meet other CAA requirements, such as contingency measures. See EPA's proposed approval of the SJV 1-Hour Ozone Plan at 74 FR 33933, 33938 (July 14, 2009) and final approval at 75 FR 10420 (March 8, 2010). The State's baseline non-waiver

measures have generally all been approved by EPA into the SIP and as such are fully creditable for meeting CAA requirements.

In addition to the State's commitments to propose defined measures, the 2007 State Strategy includes enforceable commitments for direct PM<sub>2.5</sub>, NO<sub>x</sub>, and VOC emissions reductions from mobile source categories that are crucial for attainment of the PM<sub>2.5</sub> NAAQS in the San Joaquin Valley. For the SJV, the 2007 State Strategy includes State commitments to achieve 5 tpd of direct PM<sub>2.5</sub>, 76 tpd of NO<sub>x</sub>, and 23 tpd of VOC reductions. See 2007 State Strategy, p. 63 and CARB Resolution 07–28, Attachment B, p. 6. The 2007 State Strategy indicates that the State expects to achieve these emissions reductions in the San Joaquin Valley by the projected attainment year

of 2014 from the measures listed in Table 5 or other similar measures. In the 2007 State Strategy, CARB provides an estimated emissions reduction for each measure to show that, when considered together, these measures can meet the total commitment. CARB states, however, that its enforceable commitment is to achieve the aggregate emissions reductions for each pollutant by the given dates and not for a specific level of reductions from any specific measure. See 2007 State Strategy, p. 58. A summary of the estimates from the proposed measures is provided in Table 6 below.

As mentioned above, CARB's commitment is also to propose specific new measures that are identified and defined in the 2007 Strategy State. See 2007 State Strategy, pp. 64–65 and 2009 State Strategy revisions, pp. 22–23.

TABLE 6—EXPECTED EMISSIONS REDUCTIONS FROM DEFINED MEASURES IN THE 2007 STATE STRATEGY FOR THE SAN JOAQUIN VALLEY 2014 TONS PER DAY

Measure	PM <sub>2.5</sub>	NO <sub>x</sub>	VOC
Smog Check Improvements (BAR) .....	0.05	3.3	2.9
Expanded Vehicle Retirement .....	0.01	0.5	0.7
Modifications to Reformulated Gasoline Program .....	—	—	2.9
Cleaner In-Use Heavy-Duty Trucks .....	3.6	61.4	6.4

TABLE 6—EXPECTED EMISSIONS REDUCTIONS FROM DEFINED MEASURES IN THE 2007 STATE STRATEGY FOR THE SAN JOAQUIN VALLEY 2014 TONS PER DAY—Continued

Measure	PM <sub>2.5</sub>	NO <sub>x</sub>	VOC
Accelerated Intro. Of Cleaner Line-Haul Locomotives .....	0.2	7.2	0.5
Cleaner In-Use Off-Road Equipment (>25hp) .....	0.8	3.7	0.9
Cleaner In-Use Agricultural Equipment .....	NYQ	NYQ	NYQ
New Emission Standards for Recreational Boats .....	—	0.1	1.3
Expanded Off-Road Recreational Vehicle Emissions Standards .....	—	—	2.2
Consumer Products Program .....	—	—	3.2
Pesticides .....	—	—	2.5
Totals: .....	5	76	23

Source: 2009 State Strategy Status Report, p. 6. Only defined measures with reductions in the SJV are shown here.  
NYQ = Not yet quantified.

### c. The Local Jurisdictions' RACM Analysis

The local jurisdictions' RACM analysis was conducted by the SJV's eight MPOs.<sup>14</sup> This analysis focused on potential NO<sub>x</sub> emissions reductions from transportation control measures (TCM). TCMs are, in general, measures designed to reduce emissions from on-road motor vehicles through reductions in vehicle miles traveled or traffic congestion. The analysis' results are described in Chapter 7 (pp. 7–8 to 7–11) of the 2008 PM<sub>2.5</sub> Plan. It addressed NO<sub>x</sub> but not direct PM<sub>2.5</sub>, SO<sub>2</sub>, or VOC.

For the 2008 PM<sub>2.5</sub> Plan, the SJV MPOs reviewed and updated the RACM analysis they performed for the SJV 2007 [8-hour] Ozone Plan, based on EPA's guidance in the preamble to the PM<sub>2.5</sub> implementation rule. For the 2007 Ozone Plan, they developed a local RACM strategy after an extensive evaluation of potential RACM for advancing the 8-hour ozone standard attainment date. After reviewing the 2007 Ozone Plan's local RACM analysis, EPA's suggested RACM, recently-developed plans from other areas, and the potential emission reductions available from the implementation of TCMs in the SJV, the MPOs determined that there were no additional local RACM for NO<sub>x</sub>, beyond those measures already adopted, that could advance attainment of the PM<sub>2.5</sub> NAAQS in the SJV. 2008 PM<sub>2.5</sub> Plan, p. 7–11.

### 3. Proposed Actions on RACM/RACT Demonstration and Adopted Control Strategy

Under the PM<sub>2.5</sub> implementation rule, RACM/RACT are the set of measures

<sup>14</sup> These eight MPOs represent the eight counties in the San Joaquin Valley nonattainment area: The San Joaquin Council of Governments, the Stanislaus Council of Governments, the Merced County Association of Governments, the Madera County Transportation Commission, the Council of Fresno County Governments, Kings County Association of Governments, the Tulare County Association of Governments and the Kern Council of Governments.

necessary for expeditious attainment. The measures must address emissions of PM<sub>2.5</sub> and all PM<sub>2.5</sub> attainment plan precursors that are necessary for such expeditious attainment. Thus, in order for a PM<sub>2.5</sub> plan to demonstrate that it provides for RACM/RACT, it must also demonstrate that it provides for expeditious attainment. 72 FR 20586 at 20612–20623. As discussed in section IV.D.2. below, we are proposing to disapprove the air quality modeling in the 2008 PM<sub>2.5</sub> plan because there is insufficient documentation for us to determine its adequacy. Air quality modeling establishes the level of emissions reductions needed for attainment in an area. Thus, uncertainties about the adequacy of the air quality modeling result in uncertainties regarding the emissions reductions needed for attainment. Without a reliable estimate of the emission reductions needed for attainment, we are unable to determine if the measures in the 2008 PM<sub>2.5</sub> Plan include all RACM/RACT that will provide for attainment of the PM<sub>2.5</sub> NAAQS in the San Joaquin Valley as expeditiously as practicable.

In addition, as described in section IV.D.3. below, EPA is proposing to determine that VOC is a PM<sub>2.5</sub> attainment plan precursor in the SJV nonattainment area. Under the PM<sub>2.5</sub> implementation rule, States must address all PM<sub>2.5</sub> attainment plan precursors in their RACM/RACT analyses. See 40 CFR 51.1002(c)(3). Neither the District nor the local jurisdictions (through the MPOs) evaluated potential RACM/RACT for VOC emission sources.

For these reasons, EPA is proposing to find that the 2008 PM<sub>2.5</sub> Plan, together with the revised 2007 State Strategy, does not provide for the implementation of RACM/RACT as required by CAA section 172(c)(1) and 40 CFR 51.1010 and to disapprove the SJV PM<sub>2.5</sub> SIP's RACM/RACT demonstration. It appears, however, that the State, District, and

local jurisdictions have identified and otherwise provided for the implementation of a comprehensive set of measures that are among the most stringent in the nation and, should the District and State correct the deficiencies in the attainment demonstration and appropriately address VOC as an attainment plan precursor in its RACM/RACT demonstration, we may be able to approve the SIP's RACM/RACT demonstration.

Because they will strengthen the California SIP, we are proposing to approve the SJVAPCD's commitments to adopt and implement specific control measures on the schedule identified in Table 6–2 (as amended June 15, 2010) in the 2008 PM<sub>2.5</sub> Plan, to the extent that these commitments have not yet been fulfilled, and to achieve specific aggregate emissions reductions of direct PM<sub>2.5</sub>, NO<sub>x</sub> and SO<sub>x</sub> by specific years as given in Table 6–3 of the 2008 PM<sub>2.5</sub> Plan.

We are also proposing to approve, as a SIP strengthening measure, CARB's commitments to propose certain defined measures, as given on page 23 of the 2009 State Strategy Status Report, and to achieve aggregate emissions reductions of 5 tpd direct PM<sub>2.5</sub>, 76 tpd NO<sub>x</sub>, and 23 tpd VOC in the San Joaquin Valley by 2014 as given on page 21 of the 2009 State Strategy Status Report.

### D. Attainment Demonstration

#### 1. Requirements for Attainment Demonstrations

CAA section 172 requires a State to submit a plan for each of its nonattainment areas that demonstrates attainment of the applicable ambient air quality standard as expeditiously as practicable but no later than the specified attainment date. Under the PM<sub>2.5</sub> implementation rule, this demonstration should consist of four parts:

(1) Technical analyses that locate, identify, and quantify sources of

emissions that are contributing to violations of the PM<sub>2.5</sub> NAAQS;

(2) Analyses of future year emissions reductions and air quality improvement resulting from already-adopted national, state, and local programs and from potential new state and local measures to meet the RACM/RACT and RFP requirements in the area;

(3) Adopted emissions reduction measures with schedules for implementation; and

(4) Contingency measures required under section 172(c)(9) of the CAA.

See 40 CFR 51.1007; 72 FR 20586 at 20605.

The requirements for the first two parts are described in the sections on emissions inventories and RACM/RACT above (sections IV.B. and IV.C.) and in the sections on air quality modeling, PM<sub>2.5</sub> precursors, extension of the attainment date, and attainment demonstration that follow immediately below. Requirements for the third and fourth parts are described in the sections on the control strategy and contingency measures (sections IV.C. and IV.F.), respectively.

## 2. Air Quality Modeling in the SJV 2008 PM<sub>2.5</sub> Plan

The PM<sub>2.5</sub> implementation rule requires states to submit an attainment demonstration based on modeling results. Specifically, 40 CFR 51.1007(a) states:

For any area designated as nonattainment for the PM<sub>2.5</sub> NAAQS, the State must submit an attainment demonstration showing that the area will attain the annual and 24-hour standards as expeditiously as practicable. The demonstration must meet the requirements of § 51.112 and Appendix W of this part and must include inventory data, modeling results, and emission reduction analyses on which the State has based its projected attainment date. The attainment date justified by the demonstration must be consistent with the requirements of § 51.1004(a). The modeled strategies must be consistent with requirements in § 51.1009 for RFP and in § 51.1010 for RACT and RACM. The attainment demonstration and supporting air quality modeling should be consistent with EPA's PM<sub>2.5</sub> modeling guidance.<sup>15</sup>

See also, 72 FR 20586 at 20665.

Air quality modeling is used to establish emissions attainment targets, the combination of emissions of PM<sub>2.5</sub> and PM<sub>2.5</sub> precursors that the area can accommodate without exceeding the NAAQS, and to assess whether the

proposed control strategy will result in attainment of the NAAQS. Air quality modeling is performed for a base year and compared to air quality monitoring data in order to determine model performance. Once the performance is determined to be acceptable, future year changes to the emissions inventory are simulated to determine the relationship between emissions reductions and changes in ambient air quality throughout the air basin.

The procedures for modeling PM<sub>2.5</sub> as part of an attainment SIP are contained in EPA's "Guidance on the Use of Models and Other Analyses for Demonstrating Attainment of Air Quality Goals for the 8-Hour Ozone and PM<sub>2.5</sub> NAAQS and Regional Haze." A brief description of the modeling in the 2008 PM<sub>2.5</sub> Plan and our concerns regarding it follows. More detailed information about the modeling is available in section II.D. of the TSD.

CARB and the District jointly performed the air quality modeling for the 2008 PM<sub>2.5</sub> Plan. Significant time, money, and effort by CARB, the District, and many others have gone into preparing the air quality modeling to support the attainment demonstration in the 2008 PM<sub>2.5</sub> Plan for the San Joaquin Valley, including support for the multi-million dollar California Regional Particulate Air Quality Study (CRPAQS). CRPAQS is a cooperative effort involving California cities; State and local air pollution control agencies, federal agencies, industry groups, academics, and contractors. Field data for CRPAQS were collected during the 14 months from December 1999 through February 2001 and included short-term, intensive monitoring during the fall and winter. The study's design placed emphasis on collecting sufficient continuous air quality and meteorological data, both at the surface and aloft, to support receptor and photochemical modeling. Data and modeling results based on the CRPAQS study provided solid underpinnings for the 2008 PM<sub>2.5</sub> Plan.

The 2008 PM<sub>2.5</sub> Plan uses multiple modeling analyses to demonstrate attainment of the PM<sub>2.5</sub> NAAQS in the SJV. It mainly relies on several variants of an approach based on receptor modeling for the annual PM<sub>2.5</sub> NAAQS. This approach begins with Chemical Mass Balance (CMB) modeling, which distinguishes the ambient PM<sub>2.5</sub> contributions of several broad emissions source categories based on how they match the chemical species components of PM<sub>2.5</sub> measurements. The CMB results are then refined with emissions inventory data to distinguish additional source categories; an area of influence

analysis to better reflect particular sources affecting a monitor; and information from past photochemical modeling to assess how secondarily-formed PM<sub>2.5</sub> will respond to changes in precursor emissions. Several variants of this approach were used with CMB results from different locations and different base case years. This modeling only addresses the annual PM<sub>2.5</sub> standard.

The receptor modeling approaches are supplemented with an attainment demonstration using photochemical modeling with the Community Multiscale Air Quality (CMAQ) model. This modeling incorporates data collected during CRPAQS. The CMAQ modeling addresses both the annual and 24-hour PM<sub>2.5</sub> standards.

EPA recommends that States prepare modeling/analysis protocols as part of their modeled attainment demonstrations. Guidance, p. 133. The Guidance at pp. 133–134 describes the topics to be addressed in this modeling protocol. A modeling protocol should detail and formalize the procedures for conducting all phases of the modeling analysis, such as describing the background and objectives, creating a schedule and organizational structure, developing the input data, conducting model performance evaluations, interpreting modeling results, describing procedures for using the model to demonstrate whether proposed strategies are sufficient to attain the NAAQS, and producing documentation to be submitted for EPA Regional Office review and approval prior to actual modeling.

The 2008 PM<sub>2.5</sub> Plan's modeling protocol is contained in Appendix F and includes descriptions of both the receptor modeling approaches and the photochemical modeling. Additional description of the photochemical modeling is also covered in Appendix G, and also in the additional appendix entitled "Regional Model Performance Analysis" (RMPA). The protocol covers all of the topics recommended in the Guidance, except that it does not identify how modeling and other analyses will be archived or made available to the public. See Guidance, p. 117.

The 2008 PM<sub>2.5</sub> Plan's air quality model performance is discussed in the RMPA, starting at p. 6. Overall, modeling performance is not sufficiently documented for EPA to fully evaluate it. While substantial effort went into preparing the materials for model evaluation, the 2008 PM<sub>2.5</sub> Plan has relatively little discussion of the evaluation results and no discussion of sensitivity or diagnostic testing, both of

<sup>15</sup> EPA's modeling guidance can be found in "Guideline on Air Quality Models" in 40 CFR part 51, Appendix W and "Guidance on the Use of Models and Other Analyses for Demonstrating Attainment of Air Quality Goals for the 8-Hour Ozone and PM<sub>2.5</sub> NAAQS and Regional Haze", EPA-454/B-07-002, April 2007.

which are necessary for confidence in the model and the performance statistics presented. Without such testing, it cannot be determined if the model is adequately simulating the physical and chemical processes leading to PM<sub>2.5</sub> in the atmosphere and if the model will respond in a scientifically reasonable way to emissions changes. Also insufficiently documented are the Plan's deviations from EPA's guidance on performing the Speciated Modeled Attainment Test (SMAT). Although, the Plan cites several factors as justifying such deviations (e.g., the prevalence of ammonia, the dominance of ammonium nitrate, the effect of substantial controls on fugitive dust and direct carbon emissions (p. G-10 and p. 3-20)), it does not provide sufficiently detailed explanations for EPA to understand exactly what these deviations are or to judge whether these deviations are acceptable. Another example of insufficient documentation is that the Relative Reduction Factors, which are the key results from the model for use in the attainment test, and details of their calculation, are not presented in the 2008 PM<sub>2.5</sub> Plan. Given this lack of documentation, EPA cannot determine at this time whether the attainment tests are adequate and meet EPA guidance.

In addition to a modeled attainment demonstration, which focuses on locations with an air quality monitor, EPA's Guidance requires an unmonitored area analysis. This analysis is intended to ensure that a control strategy leads to reductions in PM<sub>2.5</sub> at other locations that have no monitor but that might have baseline (and future) ambient PM<sub>2.5</sub> levels exceeding the NAAQS. The unmonitored area analysis uses a combination of model output and ambient data to identify areas that might exceed the NAAQS if monitors were located there. The analysis should include, at a minimum, all counties designated nonattainment and the counties surrounding the nonattainment area. In order to examine unmonitored areas in all portions of the modeling domain, EPA recommends use of interpolated spatial fields of ambient data combined with gridded modeled outputs. Guidance, p. 29.

In lieu of an unmonitored area analysis, the 2008 PM<sub>2.5</sub> Plan section entitled "Unmonitored peaks" presents a simple screening analysis. This consists of a filled concentration contour plot (Figure 3 on p. G-20), and the observation that "there are no areas with steep gradients that would result in higher design values than those measured at monitors." 2008 PM<sub>2.5</sub> Plan, p. G-15. This analysis departs

significantly from the procedures recommended in the Guidance and does not adequately substitute for an unmonitored area analysis consistent with the procedures recommended in the Guidance. Without an unmonitored area analysis, EPA cannot determine whether emission reductions in the Plan are sufficient for attainment of the NAAQS at locations without an air quality monitor.

In summary, the 2008 PM<sub>2.5</sub> Plan lacks or fails to adequately document several significant elements of a modeling demonstration including: a provision for access to the underlying modeling data, the sensitivity and diagnostic testing of the air quality model, a discussion of the relative reduction factors, and an unmonitored area analysis. While the modeling appears to be essentially sound, the documentation provided in the 2008 PM<sub>2.5</sub> Plan is not sufficient for EPA to fully evaluate its adequacy. An attainment demonstration must demonstrate, i.e. document with evidence and analyses, that the controls will result in attainment. Without sufficient documentation, the Plan states but does not adequately demonstrate that it provides for attainment of the PM<sub>2.5</sub> standards in the SJV. Although it is not necessary to provide comprehensive documentation on every single facet of a modeling analysis, the level of documentation in the Plan falls significantly short of what is necessary for a reliable attainment demonstration, as described in the EPA's modeling guidance. Given the lack of documentation and the absence of an unmonitored area analysis, EPA cannot at this time propose to approve the Plan's air quality modeling. We also cannot determine at this time that the modeling provides an adequate basis for the RACM/RACT, RFP, and attainment demonstrations in the Plan.

### 3. PM<sub>2.5</sub> Attainment Plan Precursors

EPA recognizes NO<sub>x</sub>, SO<sub>2</sub>, VOCs, and ammonia as the main precursor gases associated with the formation of secondary PM<sub>2.5</sub> in the ambient air. These gas-phase PM<sub>2.5</sub> precursors undergo chemical reactions in the atmosphere to form secondary particulate matter. Formation of secondary PM<sub>2.5</sub> depends on numerous factors including the concentrations of precursors; the concentrations of other gaseous reactive species; atmospheric conditions including solar radiation, temperature, and relative humidity; and the interactions of precursors with preexisting particles and with cloud or fog droplets. 72 FR 20586 at 20589.

As discussed previously, a state must submit emissions inventories for each of the four PM<sub>2.5</sub> precursor pollutants. 72 FR 20586 at 20589 and 40 CFR 51.1008(a)(1). However, the overall contribution of different precursors to PM<sub>2.5</sub> formation and the effectiveness of alternative potential control measures will vary by area. Thus, the precursors that a state should regulate to attain the PM<sub>2.5</sub> NAAQS could also vary to some extent from area to area. 72 FR 20586 at 20589.

In the PM<sub>2.5</sub> implementation rule, EPA did not make a finding that all potential PM<sub>2.5</sub> precursors must be controlled in each specific nonattainment area. See 72 FR 20586 at 20589. Instead, for reasons explained in the rule's preamble, a state must evaluate control measures for sources of SO<sub>2</sub> in addition to sources of direct PM<sub>2.5</sub> in all nonattainment areas. 40 CFR 51.1002(c) and (c)(1). A state must also evaluate control measures for sources of NO<sub>x</sub> unless the state and/or EPA determine that control of NO<sub>x</sub> emissions would not significantly reduce PM<sub>2.5</sub> concentrations in the specific nonattainment area. 40 CFR 51.1002(c)(2). In contrast, EPA has determined in the PM<sub>2.5</sub> implementation rule that a state does not need to address controls for sources of VOC and ammonia unless the state and/or EPA make a technical demonstration that such controls would significantly contribute to reducing PM<sub>2.5</sub> concentrations in the nonattainment area. 40 CFR 51.1002(c)(3) and (4). Such a demonstration is required "if the administrative record related to development of its SIP shows that the presumption is not technically justified for that area." 40 CFR 51.1002(c)(5).

"Significantly contributes" in this context means that a significant reduction in emissions of the precursor from sources in the area would be projected to provide a significant reduction in PM<sub>2.5</sub> concentrations in the area. 72 FR 20586 at 20590. Although EPA did not establish a quantitative test for determining what constitutes a significant change, EPA noted that even relatively small reductions in PM<sub>2.5</sub> levels are estimated to result in worthwhile public health benefits. Id.

EPA further explained that a technical demonstration to reverse the presumption for NO<sub>x</sub>, VOC, or ammonia in any area could consider the emissions inventory, speciation data, modeling information, or other special studies such as monitoring of additional compounds, receptor modeling, or special monitoring studies. 72 FR 20586 at 20596-20597. These factors could indicate that the emissions or ambient

concentration contributions of a precursor, or the sensitivity of ambient concentrations to changes in precursor emissions, differs for a specific nonattainment area from the presumption for that precursor in the PM<sub>2.5</sub> implementation rule.

The SJV 2008 PM<sub>2.5</sub> Plan does not explicitly identify the pollutants that have been selected as PM<sub>2.5</sub> attainment plan precursors as defined in 40 CFR 51.1000. The Plan addresses only NO<sub>x</sub> and SO<sub>2</sub> in the RFP and attainment demonstrations and in the District's RACM/RACT analysis, and thereby implicitly identifies NO<sub>x</sub> and SO<sub>2</sub>, but not VOC or ammonia, as attainment plan precursors. It does include supporting documentation for the inclusion of NO<sub>x</sub> as an attainment plan precursor and for the exclusion of ammonia. However, as discussed below, it does not fully evaluate the impact of controlling VOC as a precursor for PM<sub>2.5</sub> attainment, even though other information in the Plan indicates that controlling VOC, in addition to SO<sub>2</sub> and NO<sub>x</sub>, may contribute significantly to reductions in ambient PM<sub>2.5</sub> levels in the SJV.

As mentioned above, ambient contribution and ambient sensitivity to emissions changes may both be considered in determining whether the presumption for an attainment plan precursor should be reversed. The 2008 PM<sub>2.5</sub> Plan contains numerous qualitative statements that San Joaquin Valley's ambient PM<sub>2.5</sub> levels are dominated by ammonium nitrate, and that NO<sub>x</sub> reductions are more effective at reducing ambient PM<sub>2.5</sub> than reductions in the other precursors. Most of those statements are in Chapter 3 and Appendix F, and are based on excerpts of findings from CRPAQS. Several of the cited CRPAQS documents are available at CARB's "Central California Air Quality Studies" Web site (at <http://www.arb.ca.gov/airways>).

For the 1997 annual and 24-hour PM<sub>2.5</sub> NAAQS, the 2008 PM<sub>2.5</sub> Plan contains some qualitative descriptions of precursor ambient contributions. For example, the 2008 PM<sub>2.5</sub> Plan states on p. 2–8 that annual concentrations are driven by wintertime concentrations and further, that the highest short term concentrations are driven by ammonium nitrate, as found in the CRPAQS study:

For most of the sites within the SJV, 50–75% of the annual average PM<sub>2.5</sub> concentration could be attributed to a high PM<sub>2.5</sub> period occurring from November to January. At non-urban

sites, the elevated PM<sub>2.5</sub> was driven by secondary [ammonium nitrate].<sup>16</sup>

There are also quantitative data in the Plan's Appendix G (p. G–21, Table 2) and, projected to 2014, in the Receptor Modeling Documentation (RMD). Ammonium nitrate for 2000 monitored data ranges from 24–36 percent of total PM<sub>2.5</sub>, and if projected to 2014, ranges from 36–51 percent, confirming the importance of NO<sub>x</sub>, one source of the nitrate in ammonium nitrate, as a precursor that significantly contributes to annual PM<sub>2.5</sub> levels in the SJV.

In addition to composition data, ambient sensitivity to emissions changes can also be a consideration in determining which pollutants should be regulated in the attainment plan for a specific area. For ammonium nitrate PM<sub>2.5</sub>, which is formed from both ammonia and NO<sub>x</sub>, a key issue is whether the control of either or both precursors would be effective at reducing ambient PM<sub>2.5</sub> concentrations. Among the findings cited in the 2008 PM<sub>2.5</sub> Plan that address this issue are that:

Particulate [ammonium nitrate] concentrations are limited by the rate of [nitric acid] formation, rather than by the availability of [ammonia].  
and

Comparisons of ammonia and nitric acid concentrations show that ammonia is far more abundant than nitric acid, which indicates that ammonium nitrate formation is limited by the availability of nitric acid, rather than ammonia \* \* \*. This study's analyses suggest that reductions in NO<sub>x</sub> emissions will be more effective in reducing secondary ammonium nitrate aerosol concentrations than reductions in ammonia emissions. Reductions in VOC emissions will reduce secondary organic aerosol concentrations and may reduce ammonium nitrate. \* \* \* The results indicate ammonium nitrate formation is ultimately controlled by NO<sub>x</sub> emission rates and the other species, including VOCs and background ozone, which control the rate of NO<sub>x</sub> oxidation in winter, rather than by ammonia emissions.<sup>17</sup>

These findings are based on the relative abundance of ammonia relative to nitrate: There is so much ammonia present that significantly reducing its emissions would still leave ample

ammonia to form ammonium nitrate. On the other hand, NO<sub>x</sub> is scarce (relative to ammonia), so reducing it could reduce ammonium nitrate significantly.

Finally, sensitivity results from photochemical modeling were used in conjunction with the CMB results mentioned above. The 2014 RMD section on "Review of control strategy effectiveness supported by CMAQ nitrate particulate evaluation" shows the projected effect of a 50 percent reduction of NO<sub>x</sub> emissions on PM<sub>2.5</sub> concentrations annually and in shorter seasonal episodes. For the annual concentration, the NO<sub>x</sub> reduction resulted in a predicted 5 µg/m<sup>3</sup> PM<sub>2.5</sub> reduction, while for the winter episode the NO<sub>x</sub> reduction resulted in a predicted 28 µg/m<sup>3</sup> PM<sub>2.5</sub> reduction. 2014 RMD, p. 80. A 50 percent reduction in ammonia emissions, on the other hand, predicted PM<sub>2.5</sub> reductions of only 0.1 µg/m<sup>3</sup> on an annual basis and 0.3 µg/m<sup>3</sup> during the winter episode. RMD, p. 81. When compared to the annual and 24-hour NAAQS of 15 and 65 µg/m<sup>3</sup>, respectively, the effect of NO<sub>x</sub> reductions appears to be significant while the effect of ammonia reductions does not. Thus, the data and modeling results presented in the 2008 PM<sub>2.5</sub> Plan, as well as the results of the cited studies, support the identification of NO<sub>x</sub> and the exclusion of ammonia as PM<sub>2.5</sub> attainment plan precursors, consistent with the EPA presumption in the PM<sub>2.5</sub> implementation rule.

EPA's presumption in the PM<sub>2.5</sub> implementation rule is that VOC need not be an attainment plan precursor. 40 CFR 51.1002(c)(3). As explained in the preamble to the rule, this presumption may not be technically justified for a particular nonattainment area, *i.e.*, this presumption may be incorrect where emissions of VOC significantly contribute to PM<sub>2.5</sub> concentrations in the nonattainment area. 72 FR 20586 at 20590–93, 20596–97. States or EPA may conduct a technical demonstration to reverse the presumptive exclusion of VOC as a PM<sub>2.5</sub> attainment plan precursor based on the weight of evidence of available technical and scientific information. *Id.*

The 2008 PM<sub>2.5</sub> Plan contains substantial information indicating that, for the SJV nonattainment area, VOC should be considered as a potential PM<sub>2.5</sub> attainment plan precursor. On an annual basis, Table 2 in Appendix G (p. G–21.) gives an organic carbon range of 38–49 percent of the total PM<sub>2.5</sub>. This organic PM<sub>2.5</sub> can be further divided into vegetative burning (9–19 percent of total annual PM<sub>2.5</sub>), direct VOC PM<sub>2.5</sub> emissions (also 9–19 percent of total annual PM<sub>2.5</sub>), and secondary organic

<sup>16</sup> Quote from "Initial Data Analysis of Field Program Measurements," DRI Document No. 2497, July 29, 2005; Judith C. Chow, L.W. Antony Chen, Douglas H. Lowenthal, Prakash Doraiswamy, Kihong Park, Steven D. Kohl, Dana L. Trimble, John G. Watson, Desert Research Institute.

<sup>17</sup> Quote from Lurmann, F. *et al.*, 2006, "Processes Influencing Secondary Aerosol Formation in the San Joaquin Valley During Winter," Journal of the Air & Waste Management Association, (56): 1679–1693, cited at 2008 PM<sub>2.5</sub> Plan p. 3–10.

aerosols (SOA) (2–5 percent of total annual PM<sub>2.5</sub>). RMD at 19. This SOA contribution to overall PM<sub>2.5</sub> levels appears to be non-negligible.

The 2008 PM<sub>2.5</sub> Plan states: “Secondary organic aerosols (SOA) contribute to a significant fraction of PM<sub>2.5</sub>. SOA is organic carbon particulate formed in the photochemical oxidation of anthropogenic and biogenic VOC precursor gases. Aromatic compounds are believed to be efficient SOA producers contributing to this secondary particulate.” 2008 PM<sub>2.5</sub> Plan, p.3–8. On a 24-hour episodic basis, the contribution of SOA could be higher than the annual 2–5 percent, though it is likely lower for the winter episodes of most concern in the SJV, due to decreased photochemical activity when fog and clouds (typical for the SJV in the winter) partially block sunlight. The chemistry of SOA is less well understood than the chemistry of other chemical species, so overall these considerations are not enough to overcome the negative presumption for VOC.

But as noted in the preamble to the PM<sub>2.5</sub> implementation rule at pp. 20592–20593, the lightest organic molecules can participate in atmospheric chemistry processes that result in the formation of ozone and certain free radical compounds (such as the hydroxyl radical [OH]) and these in turn participate in oxidation reactions to form secondary organic aerosols, sulfates, and nitrates. That is, VOC may be a PM<sub>2.5</sub> precursor not just via formation of SOA, but also via its participation in the oxidant chemistry that leads to nitrate formation, a necessary step in the formation of ammonium nitrate PM<sub>2.5</sub>. NO<sub>x</sub> emissions must be oxidized to nitric acid before they form particulate ammonium nitrate. Two pathways for this to occur are 1) daytime oxidation by OH, which VOC radicals help create, and 2) nighttime oxidation by ozone.<sup>18</sup>

The discussion in the 2008 PM<sub>2.5</sub> Plan regarding ammonium nitrate (at p. 3–10, quoted above) also refers to VOC, which is identified as one of the controlling factors in NO<sub>x</sub> oxidation (which as noted above is a key process in the formation of nitrate and ammonium nitrate PM<sub>2.5</sub>): “Reductions in VOC emissions will reduce secondary organic aerosol concentrations and may reduce ammonium nitrate.” The Plan also states: “Relatively low non-methane organic compounds/nitrogen oxide ratios indicate the daytime photochemistry is VOC, sunlight, and background-ozone limited in winter.”

*Id.* If nitrate formation is VOC-limited under some circumstances, then VOC emission reductions could lead to ambient PM<sub>2.5</sub> reductions.

Finally, the RMD at page 82 contains sensitivity analyses for VOC, similar to the ones described above for NO<sub>x</sub> and ammonia. According to the sensitivity analysis, a 50 percent reduction in VOC emissions was predicted to reduce PM<sub>2.5</sub> levels by 1.3 µg/m<sup>3</sup> annually and 8.7 µg/m<sup>3</sup> for the winter episode. When compared to the 1997 annual PM<sub>2.5</sub> NAAQS of 15 µg/m<sup>3</sup> and 24-hour NAAQS of 65 µg/m<sup>3</sup>, these projected reductions appear significant. The 2014 RMD concludes: “Finding: VOC reduction is effective for the annual standard and the winter episode for reduction of total carbon secondary particulates.”

In response to comments submitted during the District’s public comment period on the VOC issue, the Plan states that the “modeling has shown that VOC reductions are not as effective in reducing secondary PM<sub>2.5</sub> as NO<sub>x</sub> or SO<sub>2</sub> reductions” and that “[a]ll of the technical evaluations for CRPAQS and prior assessments of regional particulate models have indicated that NO<sub>x</sub> is the dominant factor and VOC and ammonia are not.” 2008 PM<sub>2.5</sub> Plan, pp.J–9 and p.J–19. These statements about VOC may be true, but they state only the relative effectiveness of controlling VOC compared to other precursors, do not cite any supporting modeling or technical evaluations, and do not address the substantial information in the 2008 PM<sub>2.5</sub> Plan indicating that VOC may contribute significantly to ambient PM<sub>2.5</sub> levels in the SJV.

As explained above, although EPA’s presumption in the PM<sub>2.5</sub> implementation rule is that VOC need not be a PM<sub>2.5</sub> attainment plan precursor, this presumption may not be technically justified for certain nonattainment areas. Indeed, technical information in the 2008 PM<sub>2.5</sub> Plan strongly suggests that VOC reductions can significantly reduce ambient PM<sub>2.5</sub> concentrations and contribute to expeditious attainment of the PM<sub>2.5</sub> NAAQS in the SJV.

Other statements in the 2008 PM<sub>2.5</sub> Plan clearly indicate the State did not intend to reverse the presumption for VOC. Nevertheless, the technical information we have identified is part of the administrative record related to development of the SIP provides evidence that the VOC presumption may not be technically justified in the SJV. It also indicates that the State should submit a demonstration to either support or reverse the presumption under the PM<sub>2.5</sub> implementation rule

that VOC is not an attainment plan precursor. 40 CFR 51.1002(c)(5).

In the absence of a technical demonstration by the State, EPA reviewed the results of several modeling and monitoring studies of PM<sub>2.5</sub> in the San Joaquin Valley. Some of these documents are available on the “Central California Air Quality Studies” Web site (at <http://www.arb.ca.gov/airways/>) and/or are cited in the Plan and are reports from contractors involved in CRPAQS. Others are papers from peer-reviewed journals and are analyses using CRPAQS data or data from the earlier 1995 Integrated Monitoring Study (IMS95 study). We found that four monitoring studies and six modeling studies were relevant to the VOC precursor issue.<sup>19</sup> Further information on these studies as well as excerpts from these studies are provided in the TSD.

<sup>19</sup> These studies are:

Kleeman, M.K., Ying, Q., and Kaduwela, A., 2005, “Control strategies for the reduction of airborne particulate nitrate in California’s San Joaquin Valley”, *Atmospheric Environment*, 39: 5325–5341 September 2005.

Livingstone, P.L., et. al., 2009, “Simulating PM Concentrations During a Winter Episode in a Subtropical Valley and Sensitivity Simulations and Evaluation methods”, *Atmospheric Environment*, 43: 5971–5977.

Lurmann, F.W., Brown, S.G., McCarthy, M.C., and Roberts P.T., 2006, “Processes Influencing Secondary Aerosol Formation in the San Joaquin Valley During Winter”, *Journal of the Air & Waste Management Association*, 56: 1679–1693.

McCarthy, M., 2005, “The Role of Nighttime Chemistry in Winter Ammonium Nitrate Formation in the San Joaquin Valley”, presented at the American Association for Aerosol Research (AAAR), Supersites Conference, February 2005, Atlanta, GA.

Pun, B.K. and Seigneur, C., 1998, “Conceptual Model of Particulate Matter Pollution in the California San Joaquin Valley”, prepared by Atmospheric and Environmental Research for Pacific Gas & Electric, Document Number CP045–1–98, 8 September 1998.

Pun, B.K. and Seigneur, C., 2001, “Sensitivity of Particulate Matter Nitrate Formation to Precursor Emissions in the California San Joaquin Valley”, *Environmental Science and Technology*, 35: 2979–2987.

Pun, B., 2004, “CRPAQS Task 2.7 When and Where Does High O<sub>3</sub> Correspond to High PM<sub>2.5</sub>? How Much PM<sub>2.5</sub> Corresponds to Photochemical End Products?”, prepared by Atmospheric and Environmental Research, Inc. for the San Joaquin Valleywide Air Pollution Study Agency.

Pun, B.K., Balmori R.T.F. and Seigneur, C., 2009, “Modeling Wintertime Particulate Matter Formation in Central California”, *Atmospheric Environment*, 43: 402–409.

Stockwell, W.R., Watson, J.G., Robinson, N.F., Steiner, W., and Sylte, W.W., 2000, “The Ammonium Nitrate Particle Equivalent of NO<sub>x</sub> Emissions for Continental Wintertime Conditions”, *Atmospheric Environment*, 34: 4711–4717.

Ying, Q., Lu, J., and Kleeman, M., 2009, “Modeling air quality during the California Regional PM<sub>10</sub>/PM<sub>2.5</sub> Air Quality Study (CPRAQS) using the UCD/CIT source-oriented air quality model—Part III. Regional source apportionment of secondary and total airborne particulate matter”, *Atmospheric Environment*, 43: 419–430, January 2009.

<sup>18</sup> Lurmann, F. et. al., 2006, op cit., p. 1688.

The monitoring studies all contain evidence that the VOC pathway for nitrate creation is important at least some of the time but differ as to how important it is relative to other pathways such as the nighttime ozone pathway, and are not conclusive on the efficacy of VOC controls. Unlike the monitoring studies, most of the modeling studies explicitly assessed the relative effectiveness of precursor controls, simulating the effect of 50 percent reductions in NO<sub>x</sub>, ammonia, and VOC. (One study does not explicitly address the issue, but states that background ozone is the most important oxidant, implying that VOC control would have little effect.) The two earliest modeling studies are based on photochemical box modeling and differ on whether VOC controls would significantly affect PM<sub>2.5</sub>. Three later studies use more sophisticated photochemical grid models and find VOC control to be effective, though generally less so than NO<sub>x</sub> control. One study predicts VOC control to be about two-thirds as effective as NO<sub>x</sub> control. The second study predicted VOC control to be effective, though only by a relatively small amount, at most 10 percent for a 50 percent reduction in VOC emissions, or only on certain days. The third grid modeling study predicts VOC control to give slightly more benefit than NO<sub>x</sub> control. While the models, input data, and results differ between these studies, they provide ample evidence that control of VOC can significantly reduce PM<sub>2.5</sub> concentrations in the SJV. EPA is, therefore, proposing to find that these studies constitute a technical demonstration that VOC is a PM<sub>2.5</sub> attainment plan precursor, necessitating the evaluation of controls for VOC for PM<sub>2.5</sub> attainment in the SJV.

EPA proposes to concur with the evaluation in the 2008 PM<sub>2.5</sub> Plan that, at this time, ammonia does not need to be considered an attainment plan precursor for purposes of attaining the 1997 PM<sub>2.5</sub> NAAQS in the SJV.<sup>20</sup> However, because the Plan and independent scientific studies contain substantial information indicating that

<sup>20</sup> EPA's proposed concurrence on excluding ammonia as an attainment plan precursor is limited to the attainment of the 1997 PM<sub>2.5</sub> NAAQS. EPA revised the 24-hour PM<sub>2.5</sub> standards in 2006 to lower them to 35 µg/m<sup>3</sup> and is currently reviewing both the annual and 24-hour standards to determine if they should be further revised to protect public health. See EPA, Policy Assessment for the Review of the Particulate Matter NAAQS, Second External Review Draft, June 2010. Evaluation of ammonia controls for the attainment of the 2006 standards and any future revised standards may show that such controls would significantly contribute to lower PM<sub>2.5</sub> levels in the Valley.

VOC significantly contributes to PM<sub>2.5</sub> concentrations in the SJV, EPA is proposing to find that VOC is a PM<sub>2.5</sub> attainment plan precursor for the SJV PM<sub>2.5</sub> nonattainment area under 40 CFR 51.1002(c)(3) and thus must be evaluated for emissions reductions measures.<sup>21</sup>

#### 4. Extension of the Attainment Date

CAA section 172(a)(2) provides that an area's attainment date "shall be the date by which attainment can be achieved as expeditiously as practicable, but no later than 5 years from the date such area was designated nonattainment \* \* \*, except that the Administrator may extend the attainment date to the extent the Administrator determines appropriate, for a period no greater than 10 years from the date of designation as nonattainment considering the severity of nonattainment and the availability and feasibility of pollution control measures."

Because the effective date of designations for the 1997 PM<sub>2.5</sub> standards is April 5, 2005 (70 FR 944), the initial attainment date for PM<sub>2.5</sub> nonattainment areas is as expeditiously as practicable but not later than April 5, 2010. For any areas that are granted a full five-year attainment date extension under section 172, the attainment date would be not later than April 5, 2015.

Section 51.1004 of the PM<sub>2.5</sub> implementation rule addresses the attainment date requirement. Section

<sup>21</sup> In its approval of the SJV 2003 PM<sub>10</sub> plan, EPA determined that for the purposes of section 189(b)(1)(B) and (e) and in the absence of final data from CRPAQS, VOC does not contribute significantly to PM<sub>10</sub> levels which exceed the standards in the SJV. See 69 FR 30006, 30011 (May 26, 2004). In that determination, EPA relied on the criteria that VOC control was not shown to be absolutely necessary for PM<sub>10</sub> attainment and that it had a lower effectiveness than NO<sub>x</sub> control in reducing PM<sub>10</sub>. In addition, EPA noted in its 2004 final rule the District's intention to re-examine the VOC issue when CRPAQS results were available. 69 FR 30010.

Since its 2004 finding, EPA promulgated the PM<sub>2.5</sub> implementation rule, which has an explicit criterion for determining which PM<sub>2.5</sub> precursors must be evaluated for controls, namely, that a significant change in emissions of the precursor would be projected to provide a significant change in PM<sub>2.5</sub> concentrations in the nonattainment area. See 72 FR 20586 at 20590 and 40 CFR 51.1000. This is a different criterion than the one relied on in the 2004 determination. Data and analyses from CRPAQS have also become available. These developments since 2004 support a finding different from our 2004 one.

We also note that the 2004 finding was made for the PM<sub>10</sub> standards rather than the PM<sub>2.5</sub> standards. The levels of the 24-hour and annual PM<sub>2.5</sub> NAAQS (65 µg/m<sup>3</sup> and 15 µg/m<sup>3</sup>) are much lower than those for the 24-hour and (revoked) annual PM<sub>10</sub> standards (150 µg/m<sup>3</sup> and 50 µg/m<sup>3</sup>). A given concentration change is therefore likely to be more significant for the PM<sub>2.5</sub> standards than for the PM<sub>10</sub> standards.

51.1004(b) requires a state to submit an attainment demonstration justifying its proposed attainment date and provides that EPA will approve an attainment date when we approve that demonstration. Thus, our approval of an extended attainment date is dependent upon a demonstration showing expeditious attainment and likewise, dependent upon proper evaluation of what constitutes RACM/RACT level controls in the area.

States that request an extension of the attainment date under CAA section 172(a)(2) must provide sufficient information to show that attainment by April 5, 2010 is impracticable due to the severity of the nonattainment problem in the area and the lack of available and feasible control measures to provide for faster attainment. 40 CFR 51.1004(b). States must also demonstrate that all RACM and RACT for the area are being implemented to bring about attainment of the standard by the most expeditious alternative date practicable for the area. 72 FR 20586 at 20601. Thus, the proper evaluation of RACM/RACT controls is an integral part of justifying an extension of the attainment date.

The 2008 PM<sub>2.5</sub> Plan includes a demonstration that the attainment date for the SJV should be April 5, 2015, *i.e.*, that the area qualifies for the full five-year extension of the attainment date allowable under section 172(a)(1). This demonstration is found in Chapter 9 of the 2008 PM<sub>2.5</sub> Plan and is derived from the air quality modeling in the Plan.

SJV's degree of PM<sub>2.5</sub> nonattainment can fairly be characterized as severe. The area typically records the highest ambient PM<sub>2.5</sub> levels in the nation, with 2007–2009 design values for the annual and 24-hour PM<sub>2.5</sub> levels in urban Bakersfield area of 22.6 µg/m<sup>3</sup> and 70 µg/m<sup>3</sup>, respectively. See EPA, Air Quality System, Design Value Report, August 9, 2010. The PM<sub>2.5</sub> problem in the San Joaquin Valley is complex, caused by both direct and secondary PM<sub>2.5</sub> and compounded by the area's topographical and meteorological conditions that are particularly conducive to the formation and concentration of PM<sub>2.5</sub> particles. See 2008 PM<sub>2.5</sub> plan, Chapter 3.

As discussed in section IV.C.2.a. above, the District's strategy for attaining the PM<sub>2.5</sub> standard relies on reductions of direct PM<sub>2.5</sub> as well as the PM<sub>2.5</sub> precursor pollutants NO<sub>x</sub> and SO<sub>2</sub>. The SJV needs significant reductions in PM<sub>2.5</sub> and NO<sub>x</sub> to demonstrate attainment. EPA believes that further reduction of these pollutants is challenging because the State and local air pollution regulations already in place include most of the



readily available PM<sub>2.5</sub> and NO<sub>x</sub>, control measures. Moreover, attainment in the SJV depends upon emissions reductions that offset the emissions increases associated with the projected increases in population and emissions levels for this high-growth area.

Reductions of direct PM<sub>2.5</sub> are achieved primarily from open burning, commercial charbroiling, and residential wood combustion control measures. These types of control measures present special implementation challenges (e.g., the large number of individuals subject to regulation and the difficulty of applying conventional technological control solutions). NO<sub>x</sub> reductions come largely from District rules for fuel combustion sources and from the State's mobile source rules.

Because of the necessity of obtaining additional emissions reductions from these source categories in the SJV and the need to conduct significant public outreach if applicable control approaches are to be effective, EPA agrees with the District and CARB that the 2008 PM<sub>2.5</sub> Plan reflects expeditious implementation of the available control programs during the 2008–2014 time frame. EPA also agrees that the implementation schedule for enhanced stationary source controls is expeditious, taking into account the time necessary for purchase and installation of the required control technologies. Finally, we believe that it is not feasible at this time to accelerate the emission reduction schedule for the State and Federal mobile source requirements which must rely on fleet turnover over the years to ultimately deliver the anticipated emission reductions. The District's control

strategies are discussed in greater detail in Chapter 6 of the 2008 PM<sub>2.5</sub> Plan, and in section IV.C.2.a. above.

In addition, the State has adopted standards for many categories of on-road and off-road vehicles and engines, and gasoline and diesel fuels, and included commitments to develop rules for Smog Check Improvements, Cleaner In-Use Heavy-Duty Trucks, and Cleaner In-Use Off-Road Equipment.

EPA believes that the District and State are implementing these rules and programs as expeditiously as practicable. We anticipate, however, that the District and CARB will reevaluate this conclusion after completion of the mid-course review of the PM<sub>2.5</sub> attainment SIP for this area, due in April 2011. EPA also expects that the District and CARB will continue to investigate opportunities to accelerate progress toward attainment as new control opportunities arise, and that the agencies will promptly adopt and expeditiously implement any new measures found to be feasible in the future.

As discussed in section IV.D.2. above, we are proposing to disapprove the air quality modeling in the 2008 PM<sub>2.5</sub> plan because it is insufficiently documented for us to evaluate its adequacy. Without adequate air quality modeling, it is not possible to determine the reductions needed to attain the PM<sub>2.5</sub> NAAQS in the SJV and, in turn, to evaluate, as required by CAA section 172(a)(2), the availability and feasibility of controls needed to attain.

As discussed in section IV.C.3. above, we are also proposing to disapprove the RACM/RACT demonstration in the SJV 2008 PM<sub>2.5</sub> Plan in part because it does not consider RACM/RACT for VOC

sources. As stated in the PM<sub>2.5</sub> implementation rule (72 FR 20586 at 20601), EPA cannot grant an extension of the attainment date beyond the initial five years provided by section 172(a)(2)(A) if the state has not adequately considered and evaluated the implementation of RACM and RACT in the area. By definition, RACM/RACT are those controls that are necessary to demonstrate attainment as expeditiously as practicable and to meet any RFP requirements. 40 CFR 51.1010(a). Without an adequate evaluation of potential RACM/RACT controls for VOC sources, EPA is unable to determine whether the State's requested attainment date is as expeditious as practicable in accordance with CAA 172(a)(2).

For these reasons, EPA is proposing to not grant California's request for an attainment date extension to April 5, 2015 for the San Joaquin Valley. Given the severity of the PM<sub>2.5</sub> nonattainment problem in the SJV, an extension of the attainment date would most likely be appropriate and approvable if it were supported by the necessary analysis and part of an attainment plan that meets the applicable statutory and regulatory requirements including RACM/RACT and an expeditious attainment demonstration.

5. Attainment Demonstration

Table 7 below summarizes the reductions that are relied upon in the 2008 PM<sub>2.5</sub> Plan to demonstrate attainment by April 5, 2015. The attainment target numbers in this table should be considered preliminary because they are derived from the Plan's air quality modeling analysis, which we are proposing to disapprove.

TABLE 7—SUMMARY OF REDUCTIONS NEEDED FOR SJV'S PM<sub>2.5</sub> ATTAINMENT DEMONSTRATION (tons per average annual day)

	PM <sub>2.5</sub>	NO <sub>x</sub>	SO <sub>2</sub>
A. 2005 emissions level .....	86.0	575.4	26.4
B. 2014 attainment target .....	63.3	291.2	24.6
C. Total reductions needed by 2014 (A–B) .....	22.7	284.2	1.8
D. Reductions from baseline (pre-2007) measures .....	11.0	199.2	0.9
Percent of total reductions from baseline measures .....	49.5%	70.8%	50%
E. Reductions needed from new measures (C–D) .....	11.7	85.0	0.9
Percent of total reductions needed from new measures .....	50.5%	29.2%	50%
New District reductions .....	6.7	9.0	0.9
Percent of total reductions needed from new District measures .....	28.5%	3.2%	50%
New State reductions .....	5.0	76.0	0.0
Percent of total reductions needed from new State measures .....	22.0%	26.7%	0%

Source: 2008 PM<sub>2.5</sub> Plan, pp. 8–2 and 9–3.

As shown in this table, the majority of reductions that the State projects are needed for PM<sub>2.5</sub> attainment in the SJV by 2015 come from baseline reductions,

i.e., from adopted measures that have generally been approved by EPA either through the SIP or the CAA section 209 waiver process. See Appendices A and

B of the TSD. The remaining reductions needed for attainment are to be achieved through the District's and CARB's commitments to reduce emissions in the

SJV. Since the submittal of the 2008 PM<sub>2.5</sub> Plan and 2007 State Strategy, SJVAPCD has already adopted measures

(summarized in Table 8 below) that can be credited toward reducing its

aggregate emissions reduction in its enforceable commitments.

TABLE 8—SUMMARY OF ENFORCEABLE COMMITMENTS IN THE 2008 PM<sub>2.5</sub> PLAN AND SJV PORTION OF THE 2007 STATE STRATEGY

(Tons per average annual day)

	PM <sub>2.5</sub>	NO <sub>x</sub>	SO <sub>x</sub>
Total reductions needed for attainment .....	22.7	284.2	1.8
Total State and District commitment .....	11.7	85.0	0.9
Less reductions from currently creditable measures .....	2.3	5.2	0.1
Total remaining commitments .....	9.4	79.8	0.8
Total remaining commitments as a percent of reductions needed for attainment .....	41%	28%	44%

#### a. Enforceable Commitments

As shown above, measures already adopted by the District and CARB (both prior to and as part of the 2008 PM<sub>2.5</sub> Plan) provide the majority of emissions reductions the State projects are needed to demonstrate attainment. The balance of the needed reductions is in the form of enforceable commitments by the District and CARB. This approach is consistent with past practice because the CAA allows approval of enforceable commitments that are limited in scope where circumstances exist that warrant the use of such commitments in place of adopted measures.<sup>22</sup> Once EPA determines that circumstances warrant consideration of an enforceable

commitment, EPA considers three factors in determining whether to approve the CAA requirement that relies on the enforceable commitment: (a) Does the commitment address a limited portion of the CAA-requirement; (b) is the state capable of fulfilling its commitment; and (c) is the commitment for a reasonable and appropriate period of time.<sup>23</sup>

We believe that, with respect to the 2008 PM<sub>2.5</sub> Plan and revised 2007 State Strategy, circumstances warrant the consideration of enforceable commitments as part of the attainment demonstration for this area. As shown in Table 9 above, the majority of emissions reductions that the State currently estimates are needed to demonstrate attainment and RFP in the SJV come from rules and regulations that were adopted prior to 2007, *i.e.*, they come from the baseline measures.

As a result of these already adopted District and State measures, most sources in the San Joaquin Valley nonattainment area were already subject to stringent rules prior to the development of the 2007 State Strategy and the 2008 PM<sub>2.5</sub> Plan, leaving fewer and more technologically challenging opportunities to reduce emissions. In the 2008 PM<sub>2.5</sub> Plan and the 2007 State Strategy, the District and CARB identified potential control measures that could achieve the additional emissions reductions needed for attainment. However, the timeline needed to develop, adopt, and implement these measures went well beyond the April 5, 2008<sup>24</sup> deadline to

submit the PM<sub>2.5</sub> attainment plan. As discussed above and below, since 2007, the District and State have made progress in adopting measures to meet their commitments, but have not completely fulfilled them. Given these circumstances, the 2008 PM<sub>2.5</sub> Plan's and 2007 State Strategy's reliance on enforceable commitments is warranted. We now consider the three factors EPA uses to determine whether the use of enforceable commitments in lieu of adopted measures to meet a CAA planning requirement is approvable.

#### i. The Commitment Must Represent a Limited Portion of Required Reductions

For the first factor, we look to see if the commitment addresses a limited portion of a statutory requirement, such as the amount of emissions reductions needed for attainment in a nonattainment area. As shown in Table 8 above, the remaining portion of the enforceable commitments in the 2008 PM<sub>2.5</sub> Plan and the 2007 State Strategy are 9.4 tpd direct PM<sub>2.5</sub>, 79.8 tpd NO<sub>x</sub> and 0.8 tpd SO<sub>2</sub>. When compared to the State's current estimate of the reductions needed by 2014 for PM<sub>2.5</sub> attainment in the SJV, the remaining portion of the enforceable commitments represents approximately 41 percent of the needed PM<sub>2.5</sub> reductions, 28 percent of the needed NO<sub>x</sub> reductions, and 44 percent of the needed SO<sub>2</sub> reductions. Historically, EPA has approved SIPs with enforceable commitments in the range of 10 percent or less of the total needed reductions for attainment. See, for examples, our approval of the SJV PM<sub>10</sub> Plan at 69 FR 30005 (May 26, 2004), approval of the SJV 1-hour ozone plan at 75 FR 10420 (March 8, 2010), and approval of the Houston-Galveston plan at 66 FR 57160, 57161 (November 14, 2001).

We note that there are significant emissions reductions tied to the Cleaner

<sup>22</sup> Commitments approved by EPA under CAA section 110(k)(3) are enforceable by EPA and citizens under CAA sections 113 and 304, respectively. In the past, EPA has approved enforceable commitments and courts have enforced these actions against states that failed to comply with those commitments. See, e.g., *American Lung Ass'n of N.J. v. Kean*, 670 F. Supp. 1285 (D.N.J. 1987), aff'd, 871 F.2d 319 (3rd Cir. 1989); *NRDC, Inc. v. N.Y. State Dept. of Env. Cons.*, 668 F. Supp. 848 (S.D.N.Y. 1987); *Citizens for a Better Env't v. Deukmejian*, 731 F. Supp. 1448, recon. granted in par, 746 F. Supp. 976 (N.D. Cal. 1990); *Coalition for Clean Air v. South Coast Air Quality Mgt. Dist.*, No. CV 97-6916-HLH, (C.D. Cal. Aug. 27, 1999). Further, if a state fails to meet its commitments, EPA could make a finding of failure to implement the SIP under CAA section 179(a), which starts an 18-month period for the State to correct the non-implementation before mandatory sanctions are imposed.

CAA section 110(a)(2)(A) provides that each SIP "shall include enforceable emission limitations and other control measures, means or techniques \* \* \* as well as schedules and timetables for compliance, as may be necessary or appropriate to meet the applicable requirement of the Act." Section 172(c)(6) of the Act, which applies to nonattainment SIPs, is virtually identical to section 110(a)(2)(A). The language in these sections of the CAA is quite broad, allowing a SIP to contain any "means or techniques" that EPA determines are "necessary or appropriate" to meet CAA requirements, such that the area will attain as expeditiously as practicable, but no later than the designated date. Furthermore, the express allowance for "schedules and timetables" demonstrates that Congress understood that all required controls might not have to be in place before a SIP could be fully approved.

<sup>23</sup> The U.S. Court of Appeals for the Fifth Circuit upheld EPA's interpretation of CAA sections 110(a)(2)(A) and 172(c)(6) and the Agency's use and application of the three factor test in approving enforceable commitments in the 1-hour ozone SIP for Houston-Galveston. *BCCA Appeal Group et al. v. EPA et al.*, 355 F.3d 817 (5th Cir. 2003).

<sup>24</sup> The 2007 State Strategy was developed to address both the 1997 PM<sub>2.5</sub> NAAQS and the 1997 8-hour Ozone NAAQS. The 8-hour ozone SIPs were due in November 2007, and the development and adoption of the State Strategy was timed to

coordinate with this submittal date. 2007 State Strategy, p. 1.

In-Use Heavy-Duty Trucks measure and Cleaner In-Use Off-Road Engines listed in the 2009 State Strategy Status Report, page 6. EPA understands that the State is currently revising these rules for re-adoption in late 2010 and subsequent submittal for EPA approval. It is possible that the reductions from these measures and several outstanding District rules will reduce the percentage of the remaining portion of the enforceable commitments to below 10 percent of the total emissions reductions needed for attainment. However, until these (or other) measures are adopted, submitted, and EPA approved, we believe that the percentages of enforceable commitments for direct PM<sub>2.5</sub>, NO<sub>x</sub>, and SO<sub>2</sub> relied upon in the 2008 PM<sub>2.5</sub> Plan and 2007 State Strategy are too high and do not represent a limited portion of the State's current estimate of total emissions reductions needed to meet the statutory requirement for attainment in the SJV.

ii. The State Must Be Capable of Fulfilling its Commitment

For the second factor, we consider whether the District and State are capable of fulfilling their commitments. As discussed above, following the adoption and submittal of the 2007 State Strategy, CARB adopted and submitted the 2009 State Strategy Status Report which shows the State's progress in achieving its enforceable commitments for the SJV. The 2009 State Strategy Status Report shows that during 2007 and 2008, the State has adopted rules for ten measures identified in the 2007 State Strategy and three rules that were not identified in the Strategy that will contribute to the needed PM<sub>2.5</sub> and NO<sub>x</sub> reductions. The 2009 State Strategy Status Report includes a table with estimates of the reductions that may fulfill the CARB's full commitment. See 2009 State Strategy Status Report, p. 18.

EPA believes that the District has also made good progress in meeting its enforceable commitments as shown in Table 2 above. We also believe that the District's continued efforts in committing to and adopting measures for sources under its jurisdiction will help it meet its commitments. In addition, beyond the rules discussed above, both CARB and the District have well-funded incentive grants programs to reduce emissions from the on- and off-road engine fleets.

While progress has been made by the District and State to achieve their enforceable commitments, there are still significant reductions that must be addressed in order to satisfy the commitments. As discussed above, the remaining portion of the enforceable

commitments is 28 to 44 percent for the relevant pollutants. Given the evidence of the State's and District's efforts to date and their continuing efforts to reduce emissions, we believe that the State and District are capable of meeting their enforceable commitments to achieve total reductions of 11.7 tpd direct PM<sub>2.5</sub>, 85 tpd NO<sub>x</sub>, and 0.9 tpd SO<sub>2</sub> in the San Joaquin Valley by 2014.

iii. The Commitment Must Be for a Reasonable and Appropriate Timeframe

Finally, for the third factor, we consider whether the commitments are for a reasonable and appropriate period of time. In order to meet the commitments by 2014, the 2008 PM<sub>2.5</sub> Plan and 2007 State Strategy include an ambitious rule development, adoption, and implementation schedules. EPA considers these schedules to provide sufficient time to achieve the committed reductions by 2014. As we have noted previously, many of the scheduled measures have been adopted. See Tables 2 and 5 above and the 2009 State Strategy Status Report, pp. 4, 17 and 23. The State and District are continuing to evaluate their adopted measures and the need for additional emissions reductions from new measures in this area. While we believe the State and District have provided reasonable and appropriate schedules for achieving their commitments by 2014, as discussed above, EPA is not proposing to grant the attainment date extension for the San Joaquin Valley. Thus, we cannot currently conclude that the third factor is satisfied.

6. Proposed Action on the Attainment Demonstration

In order to approve a SIP's attainment demonstration, EPA must make several findings and approve the plan's proposed attainment date.

First, we must find that the demonstration's technical bases, including the emissions inventories and air quality modeling, are adequate. As discussed above in sections IV.B. and IV.D.2, we are proposing to approve the emissions inventories but to disapprove the air quality modeling on which the SJV 2008 PM<sub>2.5</sub> Plan's attainment demonstration and other provisions are based.

Second, we must find that the SIP submittal provides for expeditious attainment through the implementation of all RACM and RACT. As discussed above in section IV.C., we are proposing to disapprove the RACM/RACT demonstration in the SJV PM<sub>2.5</sub> SIP.

Third, EPA must find that the emissions reductions that are relied on for attainment are creditable. While EPA

has previously accepted enforceable commitments in lieu of adopted control measures in attainment demonstrations, EPA has done so only when the circumstances warranted it and the commitments met three criteria. We believe that circumstances here warrant the consideration of enforceable commitments. We also believe that both the State and the District have demonstrated the capability to meet their commitments. However, the commitments do not constitute a limited portion of the required emissions reductions needed for attainment and are not for an appropriate timeframe. The State's and District's unfulfilled commitments currently represent 41 percent of the PM<sub>2.5</sub> reductions, 28 percent of the NO<sub>x</sub> reductions, and 44 percent of the SO<sub>2</sub> emissions reductions (30 percent of the combined emissions reductions of all pollutants) currently estimated to be required for attainment of the 1997 PM<sub>2.5</sub> NAAQS in the SJV. These percentages are well above the 10 percent figure generally accepted by EPA to approve an attainment demonstration that relies in part on enforceable commitments.

Finally, for a PM<sub>2.5</sub> nonattainment area that cannot attain within five years of its designation as nonattainment, EPA must grant an extension of the attainment date in order to approve the attainment demonstration for the area. As discussed above in section IV.D.4., while we believe that an extension of the attainment date would be appropriate if supported by the necessary analysis, we are not at this time proposing to grant the State's request to extend the attainment date in the SJV to April 5, 2015.

For the foregoing reasons, we are proposing to disapprove the attainment demonstration in the SJV 2008 PM<sub>2.5</sub> Plan.

*E. Reasonable Further Progress Demonstration*

1. Requirements for RFP

CAA section 172(c)(2) requires that plans for nonattainment areas shall provide for reasonable further progress (RFP). RFP is defined in section 171(1) as "such annual incremental reductions in emissions of the relevant air pollutant as are required by this part or may reasonably be required by the Administrator for the purpose of ensuring attainment of the applicable [NAAQS] by the applicable date."

The PM<sub>2.5</sub> implementation rule requires submittal of an RFP plan at the same time as the attainment demonstration for any area for which a

state requests an extension of the attainment date beyond 2010. For areas for which the state requests an attainment date extension to 2015, such as SJV, the RFP plan must demonstrate that in the applicable milestone years of 2009 and 2012, emissions in the area will be at a level consistent with generally linear progress in reducing emissions between the base year and the attainment year. 40 CFR 51.1009(d). States may demonstrate this by showing that emissions for each milestone year are roughly equivalent to benchmark emissions levels for direct PM<sub>2.5</sub> and each PM<sub>2.5</sub> attainment plan precursor addressed in the plan. The steps for determining the benchmark emissions levels to demonstrate generally linear progress are provided in 40 CFR 51.1009(f).

The RFP plan must describe the control measures that provide for meeting the reasonable further progress

milestones for the area, the timing of implementation of those measures, and the expected reductions in emissions of directly-emitted PM<sub>2.5</sub> and PM<sub>2.5</sub> attainment plan precursors. See 40 CFR 51.1009(c).

2. The RFP Demonstration in the SJV 2008 PM<sub>2.5</sub> Plan

The RFP demonstration is in Chapter 8 of the 2008 PM<sub>2.5</sub> Plan. The demonstration addresses direct PM<sub>2.5</sub>, NO<sub>x</sub>, and SO<sub>2</sub>, uses the 2005 annual average day inventory as the base year inventory, and assumes 2014 as the attainment year. The measures that the 2008 PM<sub>2.5</sub> Plan depends on for RFP and the emissions reductions from each measure in each year are given in Table 6–3 of the 2008 PM<sub>2.5</sub> Plan.

The 2008 PM<sub>2.5</sub> Plan presents the RFP demonstration in terms of cumulative emissions reductions and percent of emissions reductions per year. See

Table 8–4 in the 2008 PM<sub>2.5</sub> Plan. This demonstration reserves 1 percent of the direct PM<sub>2.5</sub> baseline (0.8 tpd) and 3 percent of the NO<sub>x</sub> baseline (12–15 tpd NO<sub>x</sub>) as contingency measures by decreasing the cumulative emissions reductions in each milestone year by these amounts. 2008 PM<sub>2.5</sub> Plan, p. 8–3. The Plan does not include a contingency reserve for SO<sub>2</sub>. We discuss this contingency reserve below in the section on contingency measures. However, for the purposes of our evaluation of the RFP demonstration as presented in Table 9 below, we have not included it. This allows us to evaluate if the 2008 PM<sub>2.5</sub> Plan would demonstrate the required RFP without the contingency reserve. We note that the RFP demonstration presented in Table 9 is based on the State’s current estimate of the emissions levels needed for attainment in the SJV.

TABLE 9—BENCHMARK RFP DEMONSTRATION USING PLAN DATA NO CONTINGENCY MEASURE RESERVE  
(Tons per annual average day)

	PM <sub>2.5</sub>	NO <sub>x</sub>	SO <sub>2</sub>
<b>2009</b>			
Benchmark emissions level .....	75.9	449.1	25.2
Projected emissions level .....	78.2	498.5	22.9
Emissions above benchmark emissions level .....	2.3	49.4	–2.2
Percent above benchmark emissions level .....	3.0	11.0	–8.9
<b>2012</b>			
Benchmark emissions level .....	68.3	354.4	24.2
Projected emissions level .....	70.3	415.8	22.9
Emissions above benchmark emissions level .....	2.0	61.5	–1.3
Percent above benchmark emissions level .....	2.9	17.3	–5.4

3. Proposed Action on the RFP Demonstration

As discussed above, EPA is proposing to disapprove the air quality modeling in the 2008 PM<sub>2.5</sub> Plan because there is insufficient documentation for us to determine its adequacy. Because of this, we are also proposing to disapprove the RFP demonstration in the 2008 PM<sub>2.5</sub> Plan. Air quality modeling establishes the emissions levels needed for attainment in an area. Thus, uncertainties about the adequacy of the air quality modeling result in uncertainties about the emissions levels needed for attainment. These uncertainties also affect the RFP demonstrations because in order to determine what constitutes “generally linear progress” towards attainment in an area, we must first know the target level of emissions that the area needs to attain.

Assuming that the State’s current estimates of the emissions levels needed for attainment are correct and that EPA will ultimately be able to grant an extension of the SJV’s attainment date to April 5, 2015, Table 9 shows that the SJV area is projected to be only slightly above its benchmark emissions levels for direct PM<sub>2.5</sub> in both 2009 and 2012 and well below the benchmark emissions levels for SO<sub>2</sub> in both years. However, for NO<sub>x</sub>, the gap between the projected emissions and benchmark levels is over 10 percent in 2009 and grows to more than 17 percent in 2012.

The shortfall in RFP for NO<sub>x</sub> is especially problematic given the nature of the PM<sub>2.5</sub> nonattainment problem in the SJV. Ammonium nitrate contributes 40 percent of the Valley’s annual PM<sub>2.5</sub> levels. 2008 PM<sub>2.5</sub> Plan, p. H–12. Available information indicates that NO<sub>x</sub> is one of the limiting compounds in the reaction that forms ammonium nitrate, making NO<sub>x</sub> control an effective

approach to reducing ambient PM<sub>2.5</sub> levels in the SJV. 2008 PM<sub>2.5</sub> Plan, p. 9–1. Hence, the shortfalls in NO<sub>x</sub> emissions reductions in the RFP demonstration are likely to adversely affect progress in reducing ambient PM<sub>2.5</sub> levels in the SJV, an effect that will likely not be compensated for by excess reductions of SO<sub>2</sub>.

As discussed above, we are proposing to find that VOC is a PM<sub>2.5</sub> attainment plan precursor for which the state must evaluate RFP, among other things. The 2008 PM<sub>2.5</sub> Plan does not currently include an RFP demonstration for VOC.

Based on our proposed disapproval of the air quality modeling analysis and attainment demonstration, we are proposing to disapprove the RFP demonstration in the 2008 PM<sub>2.5</sub> Plan for failure to meet the requirements of CAA section 172(c)(2) and 40 CFR 51.1009. We also note the lack of generally linear progress in NO<sub>x</sub> emissions reductions, especially in

2012, and the lack of an RFP demonstration for VOC. The District and State should address both these issues in any revision to the SJV PM<sub>2.5</sub> Plan's RFP demonstration.

#### F. Contingency Measures

##### 1. Requirements for Contingency Measures

Under CAA section 172(c)(9), all PM<sub>2.5</sub> attainment plans must include contingency measures to be implemented if an area fails to meet RFP (RFP contingency measures) and contingency measures to be implemented if an area fails to attain the PM<sub>2.5</sub> NAAQS by the applicable attainment date (attainment contingency measures). These contingency measures must be fully adopted rules or control measures that are ready to be implemented quickly without significant additional action by the state. 40 CFR 51.1012. They must also be measures not relied on in the plan to demonstrate RFP or attainment and should provide SIP-creditable emissions reductions equivalent to approximately one year of the emissions reductions needed for RFP. 72 FR 20586 at 20642–43. Finally, the SIP should contain trigger mechanisms for the contingency measures and specify a schedule for their implementation. *Id.*

Contingency measures can include Federal, State and local measures already scheduled for implementation that provide emissions reductions in excess of those reductions needed to provide for RFP or expeditious attainment. EPA has approved numerous SIPs under this interpretation. *See*, for example, 62 FR 15844 (April 3, 1997) direct final rule approving Indiana ozone SIP revision; 62 FR 66279 (December 18, 1997), final rule approving Illinois ozone SIP revision; 66 FR 30811 (June 8, 2001), direct final rule approving Rhode Island ozone SIP revision; 66 FR 586 (January 3, 2001), final rule approving District of Columbia, Maryland, and Virginia ozone SIP revisions; and 66 FR 634 (January 3, 2001), final rule approving Connecticut ozone SIP revision.

##### 2. Contingency Measures in the SJV 2008 PM<sub>2.5</sub> Plan

Contingency measures are described in Section 9.2. of the 2008 PM<sub>2.5</sub> Plan (pp. 9–5 to 9–9) and are composed of a new commitment by the SJVAPCD to request that CARB accelerate adoption and implementation of its measures and surplus reductions from State and District measures. In late 2008, the SJVAPCD adopted a further contingency measure as part of its wood burning

rule, Rule 4901. CARB identified two additional contingency measures for the SJV 2008 PM<sub>2.5</sub> Plan during its public hearing on the Plan. We discuss each of these contingency measures below.

The Plan does not calculate the emissions reductions that are equivalent to one year's worth of RFP. We have, however, calculated one year's worth of RFP to be 2.5 tpd PM<sub>2.5</sub>, 31.6 tpd NO<sub>x</sub>, and 0.3 tpd SO<sub>2</sub> using information in the Plan. *See* section II.I. of the TSD. This calculation is based on the State's current estimate of the emissions reductions needed for attainment by 2015.

*Request CARB To Accelerate State Measure Implementation*—This proposed contingency measure (which could function as both a RFP and attainment contingency measure), requires the District's Governing Board to adopt a resolution requesting CARB to accelerate the adoption and/or implementation of any remaining CARB control measures that have not yet been adopted or fully implemented. 2008 PM<sub>2.5</sub> Plan, p. 9–7. Under CAA section 172(c)(9) and EPA's long-standing policies<sup>25</sup> interpreting this section, contingency measures must require minimal additional rulemaking by the State and take effect within a few months of a failure to make RFP or to attain. This proposed contingency measure would require additional rulemaking at the District level and potentially substantial and lengthy additional rulemaking at the State level to be implemented. For these reasons, this proposed measure does not meet CAA requirements for contingency measures.

*Surplus Emissions Reductions from the Ozone Nonattainment Area Fee*—This proposed contingency measure (which could function as an RFP contingency measure for the 2012 milestone and as an attainment contingency measure) would use fees generated from the District Rule 3170, Ozone Nonattainment Area Fee, to achieve emissions reductions. The implementation of Rule 3170 is triggered solely by a failure of the SJV to attain the 1-hour ozone standard by its applicable attainment date (which can occur no earlier than November 15, 2010, *see* CAA section 181(a)(1)) and not by any failures to meet PM<sub>2.5</sub> RFP targets or to attain the 1997 PM<sub>2.5</sub> NAAQS, a minimum requirement for contingency measures for PM<sub>2.5</sub> SIPs. For this reason, this proposed measure

does not meet CAA requirements for contingency measures.<sup>26</sup>

*Surplus Emissions Reductions from Incentive Funds*—As noted previously, the District has several incentive grant programs that have the potential to generate considerable emissions reductions. The 2008 PM<sub>2.5</sub> Plan suggests the use of these reductions as contingency measures for failure either to meet RFP or to attain. While neither the CAA nor EPA policy bar the use of emissions reductions from incentive programs to meet all or part of an area's contingency measure obligation, the incentive programs must assure that the reductions are surplus, quantifiable, enforceable, and permanent as required by EPA guidance. *See* "Improving Air Quality with Economic Incentive Programs," EPA-452/R-01-001 (January 2001).

The 2008 PM<sub>2.5</sub> Plan does not identify the incentive grant programs expected to generate the emissions reductions programs, nor the quantity of the emissions reductions, that the District intends to use to meet the contingency measure requirement. Therefore, we are unable to determine if they are SIP creditable, surplus to attainment and/or RFP needs, or sufficient to provide the one-year's worth of RFP needed. For these reasons, this proposed measure does not currently meet the CAA requirements for contingency measures.

*Excess Reductions in the RFP Demonstration*—The RFP demonstration in the 2008 PM<sub>2.5</sub> Plan reserves for RFP contingency measure purposes about 1 tpd of direct PM<sub>2.5</sub> and 17 tpd of NO<sub>x</sub> reductions from the total reductions expected from the District and State measures. No reserve is needed for SO<sub>2</sub> because SO<sub>2</sub> emissions levels were projected to be below the applicable benchmarks. *See* 2008 PM<sub>2.5</sub> Plan, p. 8–3.

As discussed above in section IV.E., we have proposed to disapprove the RFP demonstration in part because we are unable to determine if the 2008 PM<sub>2.5</sub> Plan provides for RFP. We have also identified concerns with the lack of an RFP demonstration for VOC and the shortfall in NO<sub>x</sub> emissions reductions needed to show generally linear progress toward attainment. Because of these issues, we cannot determine, at this time, if there are any excess

<sup>25</sup> *See* "State Implementation Plans; General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990," 57 FR 13498 at 13510 (April 16, 1992).

<sup>26</sup> Should the rule's requirements be triggered and the collected fees used in an incentive program to reduce emissions of direct PM<sub>2.5</sub>, NO<sub>x</sub>, VOC, and/or SO<sub>2</sub>, then the District may rely on those reductions to fulfill the contingency measure requirement for the PM<sub>2.5</sub> plan to the extent that the reductions meet SIP creditability requirements and are not otherwise needed for expeditious attainment or RFP for the PM<sub>2.5</sub> NAAQS.

reductions of direct PM<sub>2.5</sub> and NO<sub>x</sub> in the RFP demonstration that can be used for RFP contingency measures.

*Post-Attainment Year Emissions Reductions*—Additional emissions reductions resulting from turnover in the on- and off-road mobile source fleet in 2015, the year after the attainment year of 2014, may be used to meet the attainment contingency measure requirement. No estimates of the additional emissions reductions are given in the 2008 PM<sub>2.5</sub> Plan. CARB estimates the NO<sub>x</sub> reductions in 2015 from its existing (baseline) mobile source program are 21 tpd (CARB Staff Report, Analysis of the San Joaquin Valley 2008 PM<sub>2.5</sub> Plan, p. 29), and we have estimated an 0.7 tpd PM<sub>2.5</sub> reduction using information in the 2007 State Strategy, Appendix A, p. 100, although this figure is in a tons per summer planning day metric and not the average annual day metric that is used in the Plan's RFP demonstration. These emissions reductions are from already implemented, fully creditable measures and no further actions are required by the State to implement them. They are not relied on to demonstrate either attainment or RFP. For these reasons, these post-2014 emissions reductions may be used to fulfill the attainment contingency measure requirement, although based on existing estimates of the reductions needed to show one year's worth of RFP, they are insufficient by themselves to fully meet the requirement.

*Contingency Provision in Rule 4901 "Wood Burning Fireplace and Wood Burning Heaters"*—In October, 2008, the SJVAPCD revised Rule 4901 to incorporate a contingency provision in section 5.6.5. This provision requires that 60 days after EPA finds the SJV nonattainment area has failed to attain the 1997 PM<sub>2.5</sub> NAAQS, the District will lower the level at which mandatory curtailment of residential wood burning is required from a predicted level of 30 µg/m<sup>3</sup> to 20 µg/m<sup>3</sup>. EPA approved this rule, including the contingency provision, on November 10, 2009. 74 FR 57907.

This attainment contingency provision in Rule 4901 meets the statutory and regulatory requirements for attainment contingency measures: It is triggered by a failure to attain, requires no additional rulemaking by the District, will be fully implemented within 60 days of being triggered, and is SIP approved. The District has preliminarily quantified the emissions reductions expected from this

contingency provision at 1.6 tons of PM<sub>2.5</sub> per winter average day.<sup>27</sup>

#### *Control Strategy Reductions Not Included in the RFP and/or Attainment Demonstrations*

In its resolution approving the SJV PM<sub>2.5</sub> Plan, CARB requested that the District adopt two additional contingency measures. See CARB Resolution No. 08–28, Attachment A. These measures are revisions to SJVAPCD's Rule 4307 (Boilers, 2 to 5 MMBtu) and Rule 4702 (Internal Combustion Engines). While the District had already included these rule revisions as Measures S–COM–2 and S–COM–6 in the Plan's control strategy, it had not estimated or included the NO<sub>x</sub> emissions reductions from the measures in either the Plan's RFP or attainment demonstration. The District adopted revisions to Rule 4307 in October 2008 and is scheduled to adopt revisions to Rule 4702 in December 2010.

As discussed above, EPA is proposing to disapprove both the RFP and attainment demonstrations in the 2008 PM<sub>2.5</sub> Plan in part because we are unable at this time to determine if the Plan provides sufficient emissions reductions to meet these requirements. Until it can be shown that the reductions from these two measures are not needed to demonstrate either RFP or attainment, EPA cannot approve them as contingency measures.

#### 3. Proposed Action on the Contingency Measures

The 2008 PM<sub>2.5</sub> Plan includes suggestions for several potentially approvable contingency measures as well as several measures that do not currently meet the CAA's minimum requirements (e.g., no additional rulemaking, surplus to attainment and RFP needs). The Plan does not, however, provide sufficient information for us to determine if the emissions reductions from some of the potentially approvable measures are SIP creditable (e.g., those from incentive grant programs) or does not quantify the expected emissions reductions so we can gauge if they provide reductions equivalent to the current estimate of one year's worth of RFP. Therefore, we are proposing to disapprove the RFP and attainment contingency measure provisions in the 2008 PM<sub>2.5</sub> Plan.

#### *G. Motor Vehicle Emissions Budgets for Transportation Conformity*

##### 1. Requirements for Motor Vehicle Emissions Budgets

CAA section 176(c) requires Federal actions in nonattainment and maintenance areas to conform to the goals of SIPs. This means that such actions will not: (1) Cause or contribute to violations of a NAAQS, (2) worsen the severity of an existing violation, or (3) delay timely attainment of any NAAQS or any interim milestone.

Actions involving Federal Highway Administration (FHWA) or Federal Transit Administration (FTA) funding or approval are subject to the EPA's transportation conformity rule, codified at 40 CFR part 93, subpart A. Under this rule, MPOs in nonattainment and maintenance areas coordinate with State and local air quality and transportation agencies, EPA, FHWA, and FTA to demonstrate that an area's regional transportation plans (RTP) and transportation improvement programs (TIP) conform to the applicable SIPs. This is typically determined by showing that estimated emissions from existing and planned highway and transit systems are less than or equal to the motor vehicle emissions budgets (budgets) contained in the SIP. An attainment or RFP SIP should include budgets for the attainment year and each required RFP year, as applicable.

Before an MPO may use budgets in a submitted SIP, EPA must first determine that the budgets are adequate. In order for us to find a budget adequate and, eventually approvable, the submittal must meet the conformity adequacy requirements of 40 CFR § 93.118(e)(4) and (5) and be approvable under all pertinent SIP requirements. The budget must reflect all of the motor vehicle control measures contained in the attainment and RFP demonstrations. See 40 CFR 93.118(e)(4)(v).

PM<sub>2.5</sub> attainment and RFP plans should identify budgets for direct PM<sub>2.5</sub> and PM<sub>2.5</sub> attainment plan precursors. All direct PM<sub>2.5</sub> SIP budgets should include direct PM<sub>2.5</sub> motor vehicle emissions from tailpipe, brake wear, and tire wear. States must also consider whether re-entrained paved and unpaved road dust or highway and transit construction dust are significant contributors and should be included in the direct PM<sub>2.5</sub> budget. See 40 CFR 93.102(b) and § 93.122(f) and the conformity rule preamble at 69 FR 40004, 40031–40036 (July 1, 2004). In determining whether the on-road mobile source emissions of a PM<sub>2.5</sub> attainment plan precursor are significant, state and local agencies should use the criteria for

<sup>27</sup> Personal communications, Jessica Ferrio, SJVAPCD to Frances Wicher, EPA, August 27, 2010.

insignificance findings provided in 40 CFR 93.109(k). *See also* 70 FR 24280, 24282–24287 (May 6, 2005).

## 2. Motor Vehicle Emissions Budgets in the SJV 2008 PM<sub>2.5</sub> Plan

The 2008 PM<sub>2.5</sub> Plan includes budgets for direct PM<sub>2.5</sub> and NO<sub>x</sub> for the attainment year of 2014 and the RFP years of 2009 and 2012. *See* 2008 PM<sub>2.5</sub> Plan, Section 7.2.2 and Appendix C. The direct PM<sub>2.5</sub> budgets includes tailpipe, brake wear, and tire wear emissions but do not include paved road, unpaved road, and road and transit construction dust because these are considered to be insignificant contributors to PM<sub>2.5</sub> levels in the Valley. No budgets for SO<sub>2</sub> are included because on-road emissions of SO<sub>2</sub> are also considered insignificant. *Id.*

There are no budgets for ammonia or VOC in the Plan.

## 3. April 23, 2010 Budget Adequacy/Inadequacy Finding

On April 23, 2010, we notified CARB that we had found the budgets in the 2008 PM<sub>2.5</sub> Plan for the RFP milestone years 2009 and 2012 adequate and for the attainment year of 2014 inadequate for transportation conformity purposes. EPA determined that the attainment year budgets are inadequate because they lack specificity and are not fully enforceable and, therefore, do not meet the criteria for adequacy in 40 CFR 93.118(e)(4).<sup>28</sup> We published a notice of our findings at 75 FR 26749 (May 12, 2010).

## 4. Proposed Action on the Budgets

Our finding that the 2009 and 2012 year RFP budgets are adequate for transportation conformity purposes was based on our preliminary review of the RFP demonstrations in the 2008 PM<sub>2.5</sub> Plan. After a more in-depth review of these demonstrations and the Plan as a whole, we are proposing to disapprove the Plan's RFP demonstration for the reasons discussed above in section IV.E. Based on this proposed disapproval, we are now proposing to disapprove the 2009 and 2012 year RFP budgets because they are not consistent with requirements for RFP as required by 40 CFR 93.118(e)(4)(iv). We are also proposing to disapprove the budgets for the attainment year of 2014, which we have already found to be inadequate, based on our proposed disapproval of

the SJV 2008 PM<sub>2.5</sub> Plan's attainment demonstration. *See* section IV.D. above.

As discussed above, EPA is proposing to find that VOC is a PM<sub>2.5</sub> attainment plan precursor in the San Joaquin Valley. Should we finalize this determination, the State should include budgets for VOC as well as for direct PM<sub>2.5</sub> and other attainment plan precursors as applicable in future revisions to the Plan.

## H. Mid-Course Review

Any State that submits to EPA an attainment plan for a PM<sub>2.5</sub> nonattainment area with an attainment date of 2014 or 2015 must also submit to EPA a mid-course review (MCR) by April 2011. 40 CFR 51.1011. The MCR for an area should include: (1) A review of emissions reductions and progress made in implementing control measures to reduce emissions of direct PM<sub>2.5</sub> and PM<sub>2.5</sub> attainment plan precursors contributing to PM<sub>2.5</sub> concentrations in the area; (2) an analysis of changes in ambient air quality data for the area; (3) a revised air quality modeling analysis to demonstrate attainment; and (4) any new or revised control measures adopted by the State, as necessary to ensure attainment by the attainment date in the EPA-approved SIP for the nonattainment area. 40 CFR 51.1011(b).

In its resolution adopting the 2008 PM<sub>2.5</sub> Plan, the SJVAPCD's Governing Board acknowledges the requirement to prepare a mid-course review consistent with 40 CFR 51.1011 by April 2011. *See* SJVAPCD Governing Board Resolution, page 4. In its resolution adopting the 2008 PM<sub>2.5</sub> Plan, CARB commits to submitting a MCR in 2011. *See* CARB Resolution 08–28, May 22, 2008, p. 4.

SJVAPCD is already taking the initial steps necessary to prepare its PM<sub>2.5</sub> MCR. EPA will work closely with the District, CARB, and other interested parties to assure that the MCR addresses the elements required by the PM<sub>2.5</sub> implementation rule. We encourage both agencies to use the opportunity afforded by the MCR to address the proposed disapprovals of the 2008 PM<sub>2.5</sub> Plan and SJV portions of the revised 2007 State Strategy.

## I. Inter-Pollutant Trading for PM<sub>2.5</sub> Offsets

EPA has issued an implementation rule establishing the requirements for New Source Review (NSR) programs in PM<sub>2.5</sub> nonattainment areas. *See* 73 FR 28321 (May 16, 2008) (PM<sub>2.5</sub> NSR rule). Under the PM<sub>2.5</sub> NSR rule, during the interim period after designation of an area as nonattainment but before a state has amended its NSR SIP to address PM<sub>2.5</sub>, the NSR permitting requirements

of 40 CFR part 51, Appendix S apply for PM<sub>2.5</sub> purposes.<sup>29</sup> 40 CFR 52.24(k); 73 FR 28321 at 28342. These Appendix S requirements currently apply in the SJV area.

The NSR program requires, among other things, that new or modifying major stationary sources offset significant net emission increases with creditable emissions reductions. 40 CFR part 51, Appendix S, section IV.A.3. Under Appendix S, section IV.G.5, these offset requirements may currently be satisfied by offsetting reductions of direct PM<sub>2.5</sub> emissions. They may also currently be satisfied by offsetting reductions of emissions of a PM<sub>2.5</sub> precursor (*i.e.*, by an interpollutant trade) but only if such offsets comply with an interprecursor trading hierarchy and ratio approved by the Administrator. That is, a new PM<sub>2.5</sub> emission source is allowed to offset its direct PM<sub>2.5</sub> and/or PM<sub>2.5</sub> precursor emission increases with reductions in other PM<sub>2.5</sub> precursor emissions only in accordance with a trading ratio approved by EPA.<sup>30</sup>

The PM<sub>2.5</sub> NSR rule preamble states that precursors that are significant contributors to PM<sub>2.5</sub> concentrations should be considered regulated NSR pollutants. 73 FR 28321 at 28326. It then describes "significant contribution" in the same terms as are used in the PM<sub>2.5</sub> implementation rule, namely that emissions reductions of the precursor would be projected to provide a significant change in PM<sub>2.5</sub> concentrations in the area. *See* 72 FR 20586 at 20590 and 73 FR 28321 at 28326. The two rules also have the same presumption, for essentially the same reasons, that SO<sub>2</sub> and NO<sub>x</sub> should be considered precursors, whereas ammonia and VOC should not. *See* 72 FR 20586 at 20590–20596 and 73 FR 28321 at 28326–28331.

In order for precursors to be eligible for NSR interpollutant offset trading in a PM<sub>2.5</sub> nonattainment area, the area's PM<sub>2.5</sub> SIP must state which combinations of pollutants are eligible for interpollutant trading and define and provide the basis for the trading ratios between them that will be used for interpollutant offsets. In the 73 FR 28321 at 28339, EPA stated that:

<sup>29</sup> A state with a PM<sub>2.5</sub> nonattainment area is required to submit NSR SIP revisions in accordance with the requirements of the PM<sub>2.5</sub> NSR rule by May 16, 2011. 73 FR 28321 at 28342.

<sup>30</sup> Note that several provisions of the PM<sub>2.5</sub> NSR rule are currently under reconsideration, including EPA's preferred interpollutant trading ratios. *See* Letter, from Lisa P. Jackson, Administrator, EPA, to Paul R. Cort, Earthjustice, April 24, 2009; 74 FR 26098 (June 1, 2009); 74 FR 36427 (July 23, 2009); 74 FR 48153 (September 22, 2009); and 75 FR 6827 (February 11, 2010).

<sup>28</sup> *See* letter, Deborah Jordan, Air Division Director, EPA Region 9, to James M. Goldstene, Executive Officer, CARB, "RE: Adequacy Status of San Joaquin Valley PM<sub>2.5</sub> Reasonable Further Progress and Attainment Plan Motor Vehicle Emissions Budgets," dated April 23, 2010.

[T]he final rules allow interpollutant trading [for offset purposes] only based on a trading ratio established in the SIP as part of the attainment demonstration approved for a specific nonattainment area \* \* \*. [T]he final rules do not allow interpollutant trading on a case-by-case basis as part of an individual [nonattainment area] NSR permitting process. \* \* \* If States choose to develop their own hierarchies/trading ratios, they will have to substantiate by modeling and/or other technical demonstrations of the net air quality benefit for PM<sub>2.5</sub> ambient concentrations, and such a trading program will have to be approved by EPA.

“Hierarchy” refers to an identification of which combinations of pollutants are eligible for trading, e.g., SO<sub>2</sub> for primary PM<sub>2.5</sub>, SO<sub>2</sub> for NO<sub>x</sub>, etc.

EPA completed a technical assessment to develop preferred interpollutant trading ratios that may be used for the purposes of PM<sub>2.5</sub> offsets, where appropriate.<sup>31</sup> Based on this assessment, EPA disallowed trading directly between NO<sub>x</sub> and SO<sub>2</sub> and set preferred trading ratios at 100:1 for NO<sub>x</sub> to primary PM<sub>2.5</sub> trades and 40:1 for SO<sub>2</sub> to primary PM<sub>2.5</sub> trades. See 73 FR 28321 at 28339. The PM<sub>2.5</sub> NSR rule preamble also states at 28340 that:

th[e] rule allows interpollutant and interprecursor trading of offsets according to a SIP-approved trading program. To be approved, the trading program must either adopt EPA’s recommended trading ratios or be supported by regional-scale modeling that demonstrates a net air quality benefit using appropriate overall offset ratios for such trades for a specified nonattainment area, State, or multi-State region.

The PM<sub>2.5</sub> NSR rule preamble at 28339 describes factors that should be considered by a State in developing area-specific ratios. Additional considerations for developing such ratios for the SJV are discussed in section II.K. of the TSD.

In summary, interpollutant trades for purposes of meeting the NSR offset requirement for PM<sub>2.5</sub> emissions are permissible only in accordance with trading ratios established in the SIP as part of the attainment demonstration approved for the nonattainment area. The SIP must explicitly identify which precursors are “regulated NSR pollutants”, which combinations are eligible for interpollutant trading, and the trading ratios between the pollutants. A state may either adopt EPA’s recommended trading ratios (73 FR 28321 at 28339) or seek to establish alternative ratios, using modeling and/

or other technical demonstrations showing that the trading ratios provide a net air quality benefit, which must be approved by EPA. A state must establish these ratios as part of an approved attainment demonstration for its area; EPA will not allow case-by-case demonstrations on an individual source permit basis.

The SJV 2008 PM<sub>2.5</sub> Plan does not explicitly identify PM<sub>2.5</sub> precursors that are subject to NSR permitting. The Plan states, however, that:

[SJVAPCD] Rule 2201 [New and Modified Stationary Source Review] allows the use of interpollutant trading amongst criteria pollutants and their precursors upon the appropriate scientific demonstration of an adequate trading ratio. These caps [on the use of pre-baseline credits] also apply to the use of VOC, NO<sub>x</sub>, and SO<sub>x</sub> [emission reduction credits] in their application as offsets for direct emissions and in their use as PM<sub>2.5</sub> precursor interpollutant offsets.

See 2008 PM<sub>2.5</sub> Plan, Appendix D, p. D-4.

It appears from this discussion that the District considers VOC, NO<sub>x</sub>, and SO<sub>2</sub> to be “regulated NSR pollutants” for PM<sub>2.5</sub> NSR purposes and that the District intends to allow for interpollutant trading to satisfy PM<sub>2.5</sub> permit requirements.<sup>32</sup> The SJV PM<sub>2.5</sub> Plan does not, however, provide a technical demonstration to support any conclusion as to the precursor combinations that should be eligible for interpollutant trading or the appropriate trading ratio for use in NSR permitting for PM<sub>2.5</sub>. It also appears from the Plan (at Appendix D, p. D-4) that the District intends to allow for interpollutant trades to satisfy PM<sub>2.5</sub> offset requirements on a case-by-case basis, which is not permissible under the PM<sub>2.5</sub> NSR rule. If the District intends to seek EPA approval of alternative interpollutant offset ratios for purposes of meeting PM<sub>2.5</sub> NSR offset requirements, it must submit an adequate technical demonstration to support its proposed ratios, together with an approvable attainment demonstration, consistent with EPA regulatory requirements.

## V. EPA’s Proposed Actions and Potential Consequences

### A. EPA’s Proposed Approvals and Disapprovals

For the reasons discussed above, EPA is proposing to approve in part and

disapprove in part California’s attainment SIP for the San Joaquin Valley nonattainment area for the 1997 PM<sub>2.5</sub> NAAQS. This SIP is comprised of the SJVAPCD’s 2008 PM<sub>2.5</sub> Plan and the portions of CARB’s revised 2007 State Strategy that address CAA and EPA regulations for attainment of the 1997 PM<sub>2.5</sub> NAAQS in the SJV nonattainment area.

EPA is proposing to approve under CAA section 110(k)(3) the following elements of the SJV PM<sub>2.5</sub> attainment SIP:

1. The SIP’s base year and baseline emissions inventories as meeting the requirements of CAA section 172(c)(3) and 40 CFR 51.1008.

2. SJVAPCD’s commitments to the adoption and implementation schedule for specific control measures listed in Table 6–2 (amended June 15, 2010) of the 2008 PM<sub>2.5</sub> Plan to the extent that these commitments have not yet been fulfilled and to achieve specific aggregate emissions reductions of direct PM<sub>2.5</sub>, NO<sub>x</sub> and SO<sub>2</sub> by year, as listed in Table 6–3 of the PM<sub>2.5</sub> Plan, as a SIP strengthening; and

3. CARB’s commitments to propose certain defined measures, as listed on page 23 of the 2009 State Strategy Status Report and to achieve aggregate emissions reductions of 5 tpd direct PM<sub>2.5</sub>, 76 tpd NO<sub>x</sub>, and 23 tpd VOC in the San Joaquin Valley by 2014, as listed in the 2009 State Strategy Status Report, p. 21, as a SIP strengthening; and to submit a mid-course review on the SJV PM<sub>2.5</sub> Plan as stated in the CARB Resolution 08–28, p. 4.

EPA is also proposing to find pursuant to 40 CFR 51.1002(c), that VOC is a PM<sub>2.5</sub> attainment plan precursor for the SJV and, therefore, controls on sources of VOC must be evaluated as part of the control strategy in the SJV PM<sub>2.5</sub> attainment SIP.

EPA is proposing to disapprove under CAA section 110(k)(3) the following elements of the SJV PM<sub>2.5</sub> attainment SIP:

1. The reasonably available control measures/reasonably available control technology demonstration as failing to meet the requirements of CAA section 172(c)(1) and 40 CFR 51.1010;

2. The reasonable further progress demonstrations for failing to meet the requirements of CAA section 172(c)(2) and 40 CFR 51.1009;

3. The attainment demonstration for failing to meet the requirements of CAA sections 172(c)(1) and (6) and 40 CFR 51.1007;

4. The contingency measures for failing to meet the requirements of CAA section 172(c)(9) and 40 CFR 51.1012; and

<sup>31</sup> These factors are in addition to the overall goal of the NSR permitting to show net air quality benefit and the underlying rationale for offsets to provide progress toward NAAQS attainment while allowing new sources to be constructed and existing sources to expand.

<sup>32</sup> This identification of VOC as a regulated NSR pollutant for PM<sub>2.5</sub> is contrary to the District’s assertions in the Plan that controls on VOC sources are not important for PM<sub>2.5</sub> attainment but supports EPA’s proposal to determine that VOC should be considered a PM<sub>2.5</sub> attainment plan precursor in addition to NO<sub>x</sub> and SO<sub>2</sub>. See section IV.C. above.



5. The RFP and attainment years motor vehicle emissions budgets because they are derived from unapprovable RFP and attainment demonstrations.

Finally, we are proposing to not grant, pursuant to CAA section 172(a)(2)(A) and 40 CFR 51.1004(a), California's request to extend the attainment date for the San Joaquin Valley PM<sub>2.5</sub> nonattainment area to April 5, 2015.

#### *B. CAA Consequences of a Final Disapproval*

EPA is committed to working with the SJVAPCD, CARB and the SJV MPOs to resolve the problems that make the current PM<sub>2.5</sub> attainment SIP for the SJV not fully approvable under the CAA and the PM<sub>2.5</sub> implementation rule. We firmly believe that such solutions are available and that expeditious attainment of the 1997 PM<sub>2.5</sub> standards in the San Joaquin Valley is achievable.

However, should we finalize the disapprovals as proposed here, a conformity freeze will take effect once the action becomes effective (usually 30 days after publication of the final action in the **Federal Register**). A conformity freeze means that only projects in the first four years of the most recent conforming RTP and TIP can proceed. During a freeze, no new RTPs, TIPs or RTP/TIP amendments can be found to conform. See 40 CFR 93.120.

Should we finalize the disapprovals proposed here, in addition to the effect on conformity, the offset sanction in CAA section 179(b)(2) would apply in the SJV PM<sub>2.5</sub> nonattainment area 18 months after the effective date of a final disapproval. The highway funding sanctions in CAA section 179(b)(1) would apply in the area six months after the offset sanction is imposed. Neither sanction will be imposed under the CAA if California submits and we approve prior to the implementation of the sanctions, SIP revisions that correct any and all disapproval issues with the 2008 PM<sub>2.5</sub> Plan and applicable portions of the revised 2007 State Strategy that we identify in our final action.

In addition to the sanctions, CAA section 110(c)(1) provides that EPA must promulgate a federal implementation plan addressing the deficient elements in the PM<sub>2.5</sub> SIP for the SJV nonattainment area, two years after the effective date of any disapproval should we not approve a SIP revision correcting the deficiencies within the two years.

#### **VI. Statutory and Executive Order Reviews**

Under the CAA, the Administrator is required to approve a SIP submittal that

complies with the provisions of the Act and applicable Federal regulations. 42 U.S.C. 7410(k); 40 CFR 52.02(a). Thus, in reviewing SIP submittals, EPA's role is to approve State choices, provided that they meet the criteria of the CAA. Accordingly, this action merely proposes to partially approve and partially disapprove State law as meeting Federal requirements and does not impose additional requirements beyond those imposed by State law.

#### *A. Executive Order 12866, Regulatory Planning and Review*

This action is not a "significant regulatory action" under the terms of Executive Order (EO) 12866 (58 FR 51735, October 4, 1993) and is therefore not subject to review under the EO.

#### *B. Paperwork Reduction Act*

This action does not impose an information collection burden under the provisions of the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.*, because this proposed SIP partial approval and partial disapproval under CAA section 110 and subchapter I, part D will not in-and-of itself create any new information collection burdens but simply disapproves certain State requirements for inclusion into the SIP. Burden is defined at 5 CFR 1320.3(b).

#### *C. Regulatory Flexibility Act*

The Regulatory Flexibility Act (RFA) generally requires an agency to conduct a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. Small entities include small businesses, small not-for-profit enterprises, and small governmental jurisdictions. For purposes of assessing the impacts of today's rule on small entities, small entity is defined as: (1) A small business as defined by the Small Business Administration's (SBA) regulations at 13 CFR 121.201; (2) a small governmental jurisdiction that is a government of a city, county, town, school district or special district with a population of less than 50,000; and (3) a small organization that is any not-for-profit enterprise which is independently owned and operated and is not dominant in its field.

After considering the economic impacts of today's proposed rule on small entities, I certify that this action will not have a significant impact on a substantial number of small entities. This rule does not impose any requirements or create impacts on small entities. This proposed partial approval

and partial disapproval of the SIP under CAA section 110 and subchapter I, part D will not in-and-of itself create any new requirements but simply disapproves certain State requirements for inclusion into the SIP. Accordingly, it affords no opportunity for EPA to fashion for small entities less burdensome compliance or reporting requirements or timetables or exemptions from all or part of the rule. The fact that the CAA prescribes that various consequences (*e.g.*, higher offset requirements) may or will flow from a final disapproval does not mean that EPA either can or must conduct a regulatory flexibility analysis for this action. Therefore, this action will not have a significant economic impact on a substantial number of small entities.

We continue to be interested in the potential impacts of this proposed rule on small entities and welcome comments on issues related to such impacts.

#### *D. Unfunded Mandates Reform Act*

This action contains no Federal mandates under the provisions of Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), 2 U.S.C. 1531–1538 for State, local, or tribal governments or the private sector." EPA has determined that the proposed partial approval and partial disapproval action does not include a Federal mandate that may result in estimated costs of \$100 million or more to either State, local, or tribal governments in the aggregate, or to the private sector. This action proposes to partially approve and partially disapprove pre-existing requirements under State or local law, and imposes no new requirements. Accordingly, no additional costs to State, local, or tribal governments, or to the private sector, result from this action.

#### *E. Executive Order 13132, Federalism*

Executive Order 13132, entitled "Federalism" (64 FR 43255, August 10, 1999), requires EPA to develop an accountable process to ensure "meaningful and timely input by State and local officials in the development of regulatory policies that have federalism implications." "Policies that have federalism implications" is defined in the Executive Order to include regulations that have "substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government."

This action does not have federalism implications. It will not have substantial direct effects on the States, on the

relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132, because it merely partially approves and partially disapproves certain State requirements for inclusion into the SIP and does not alter the relationship or the distribution of power and responsibilities established in the CAA. Thus, Executive Order 13132 does not apply to this action.

*F. Executive Order 13175, Coordination With Indian Tribal Governments*

This action does not have tribal implications, as specified in Executive Order 13175 (65 FR 67249, November 9, 2000), because the SIP EPA is proposing to partially approve and partially disapprove would not apply in Indian country located in the State, and EPA notes that it will not impose substantial direct costs on tribal governments or preempt tribal law. Thus, Executive Order 13175 does not apply to this action.

*G. Executive Order 13045, Protection of Children From Environmental Health Risks and Safety Risks*

EPA interprets EO 13045 (62 FR 19885, April 23, 1997) as applying only to those regulatory actions that concern health or safety risks, such that the analysis required under section 5–501 of the EO has the potential to influence the regulation. This action is not subject to EO 13045 because it is not an economically significant regulatory action based on health or safety risks subject to Executive Order 13045 (62 FR 19885, April 23, 1997). This proposed partial approval and partial disapproval of the SIP under CAA section 110 and

subchapter I, part D will not in-and-of itself create any new regulations but simply disapproves certain State requirements for inclusion into the SIP.

*H. Executive Order 13211, Actions That Significantly Affect Energy Supply, Distribution, or Use*

This proposed rule is not subject to Executive Order 13211 (66 FR 28355, May 22, 2001) because it is not a significant regulatory action under Executive Order 12866.

*I. National Technology Transfer and Advancement Act*

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (NTTAA), Public Law 104–113, 12(d) (15 U.S.C. 272 note) directs EPA to use voluntary consensus standards in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (*e.g.*, materials specifications, test methods, sampling procedures, and business practices) that are developed or adopted by voluntary consensus standards bodies. NTTAA directs EPA to provide Congress, through OMB, explanations when the Agency decides not to use available and applicable voluntary consensus standards.

The EPA believes that this action is not subject to requirements of Section 12(d) of NTTAA because application of those requirements would be inconsistent with the CAA.

*J. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations*

Executive Order (EO) 12898 (59 FR 7629 (Feb. 16, 1994)) establishes federal

executive policy on environmental justice. Its main provision directs federal agencies, to the greatest extent practicable and permitted by law, to make environmental justice part of their mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations and low-income populations in the United States.

EPA lacks the discretionary authority to address environmental justice in this proposed action. In reviewing SIP submittals, EPA's role is to approve or disapprove State choices, based on the criteria of the CAA. Accordingly, this action merely proposes to partially approve and partially disapprove certain State requirements for inclusion into the SIP under CAA section 110 and subchapter I, part D and will not in-and-of itself create any new requirements. Accordingly, it does not provide EPA with the discretionary authority to address, as appropriate, disproportionate human health or environmental effects, using practicable and legally permissible methods, under Executive Order 12898.

**List of Subjects in 40 CFR Part 52**

Environmental protection, Air pollution control, Nitrogen dioxide, Particulate matter, Reporting and recordkeeping requirements, Sulfur oxides, Volatile organic compounds.

**Authority:** 42 U.S.C. 7401 *et seq.*

Dated: November 8, 2010.

**Jared Blumenfeld,**

*Regional Administrator, EPA Region IX.*

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