6560-50-P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 52

[EPA-R09-OAR-2015-0048; FRL-9940-95-Region 9]

Clean Air Plans; 1-Hour and 1997 8-Hour Ozone Nonattainment Area Requirements; San Joaquin Valley, California

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule.

SUMMARY: The Environmental Protection Agency (EPA) is proposing to approve a state implementation plan (SIP) revision submitted by the State of California to provide for attainment of the 1-hour ozone national ambient air quality standard in the San Joaquin Valley, California ozone nonattainment area and to meet other Clean Air Act requirements. Specifically, with respect to the 1-hour ozone standard, the EPA is proposing to find the emissions inventories to be acceptable and to approve the reasonably available control measures demonstration, the rate of progress demonstrations, the attainment demonstration, contingency measures for failure to meet rate of progress milestones, the provisions for advanced technology/clean fuels for boilers, and the demonstration that the plan provides sufficient transportation control strategies and measures to offset emissions increases due to increases in motor vehicle activity. For the 1997 8-hour ozone standard, the EPA is proposing to approve the demonstration that the plan provides sufficient transportation control strategies and measures to offset emissions increases due to increases in motor vehicle activity.

DATES: Any comments must arrive by **[INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

ADDRESSES: Submit your comments, identified by Docket ID Number EPA-R09-OAR-2015-0048, by one of the following methods:

1. http://www.regulations.gov: Follow the on-line instructions for submitting comments.
2. Email: ungvarsky.john@epa.gov
3. Mail or deliver: John Ungvarsky (AIR-2), U.S. Environmental Protection Agency, Region IX, 75 Hawthorne Street, San Francisco, CA 94105-3901. Deliveries are only accepted during the Regional Office's normal hours of operation.

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 whose 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 email. http://www.regulations.gov is an anonymous access system, and the EPA will not know your identity or contact information unless you provide it in the body of your comment. If you send an email directly to the EPA, your email address will be automatically captured and included as part of the public comment. If the EPA cannot read your comment due to technical difficulties and cannot contact you for clarification, the EPA may not be able to consider your comment.

Docket: The index to the docket and documents in the docket for this action are generally available electronically at 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 at www.regulations.gov, some information may be publicly available only at the hard copy location (e.g., copyrighted material, large maps), and some may not be publicly available in either loca-

tion (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.

FOR FURTHER INFORMATION CONTACT: John Ungvarsky, Air Planning Office (AIR-2), U.S. Environmental Protection Agency, Region 9, (415) 972-3963, ungvarsky.john@epa.gov.

SUPPLEMENTARY INFORMATION: Throughout this document, "we," "us" and "our" refer to the EPA.

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I. Regulatory Context

A. Ozone Standards, SIPs, and Area Designations

Ground-level ozone is formed when oxides of nitrogen (NO_x) and volatile organic compounds (VOC) react in the presence of sunlight.[1] These two pollutants, referred to as ozone precursors, are emitted by many types of pollution sources, including on- and off-road motor vehicles and engines, power plants and industrial facilities, and smaller area sources such as lawn and garden equipment and paints. Scientific evidence indicates that adverse public health effects occur following exposure to ozone, particularly in children and adults with lung disease. Breathing air containing ozone can reduce lung function and inflame airways, which can increase respiratory symptoms and aggravate asthma or other lung diseases. See "Fact Sheet, Proposal to Revise the National Ambient Air Quality Standards for Ozone," January 6, 2010 and 75 FR 2938 (January 19, 2010).

Under section 109 of the Clean Air Act (CAA), the EPA promulgates national ambient air quality standards (NAAQS or standards) for pervasive air pollutants, such as ozone. In 1979, the EPA established the NAAQS for ozone at 0.12 parts per million (ppm) averaged over a 1-hour period ("1-hour ozone standard"). 44 FR 8202 (February 8, 1979). An area is considered to have attained the 1-hour ozone standard if there are no violations of the standard, as determined in accordance with the regulation codified at 40 CFR section 50.9, based on three consecutive

[1] California plans sometimes use the term Reactive Organic Gases (ROG) for VOC. These terms are essentially synonymous. For simplicity, we use the term VOC herein to mean either VOC or ROG.

calendar years of complete, quality assured and certified monitoring data. A violation occurs when the ambient ozone air quality monitoring data show greater than one (1.0) "expected number" of exceedances per year at any site in the area, when averaged over three consecutive calendar years.[2] An exceedance occurs when the maximum hourly ozone concentration during any day exceeds 0.124 ppm. For more information, see "National 1-hour primary and secondary ambient air quality standards for ozone" (40 CFR 50.9) and "Interpretation of the 1-Hour Primary and Secondary National Ambient Air Quality Standards for Ozone" (40 CFR part 50, appendix H).

In 1997, the EPA revised the NAAQS for ozone to set the acceptable level of ozone in the ambient air at 0.08 ppm, averaged over an 8-hour period ("1997 8-hour ozone standard"). 62 FR 38856 (July 18, 1997). The EPA determined that the 1997 8-hour standard would be more protective of human health, especially children and adults who are active outdoors, and individuals with a pre-existing respiratory disease, such as asthma. In 2008, the EPA revised and further strengthened the NAAQS for ozone by setting the acceptable level of ozone in the ambient air at 0.075 ppm, averaged over an 8-hour period ("2008 8-hour ozone standard"). 73 FR 16436 (March 27, 2008). In 2015, the EPA further tightened the 8-hour ozone standard to 0.070 ppm. 80 FR 65292 (October 26, 2015). While both the 1979 1-hour ozone standard and the 1997 8-hour ozone standard have been revoked, certain requirements that had applied under the revoked standards continue to apply under the anti-backsliding provisions of CAA section 172(e).

Once the EPA has promulgated a NAAQS, states are required to develop and submit plans that provide for the implementation, maintenance, and enforcement of the NAAQS under

[2] An "expected number" of exceedances is a statistical term that refers to an arithmetic average. An "expected number" of exceedances may be equivalent to the number of observed exceedances plus an increment that accounts for incomplete sampling. See, 40 CFR part 50, appendix H. Because, in this context, the term "exceedances" refers to days (during which the daily maximum hourly ozone concentration exceeded 0.124 ppm), the maximum possible number of exceedances in a given year is 365 (or 366 in a leap year).

CAA section 110(a)(1). The content requirements for such plans, which are referred to as state implementation plans (SIPs) are found in CAA section 110(a)(2). Under the Clean Air Act, as amended in 1977, the EPA designated all areas of the country as "attainment," "nonattainment," or "unclassifiable" for the various NAAQS depending upon the availability of ambient concentration data and depending upon whether violations of the NAAQS were occurring in a given area. The CAA further requires states with "nonattainment" areas to submit revisions to their SIPs that provide for, among other things, attainment of the relevant standard within certain prescribed periods.

In California, the California Air Resources Board (CARB) is responsible for adoption and submittal to the EPA of California SIPs and California SIP revisions and is the primary State agency responsible for regulation of mobile sources. Local and regional air pollution control districts are responsible for developing regional air quality plans and for regulation of stationary sources. For the San Joaquin Valley, the San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD or "District") develops and adopts air quality management plans to address CAA SIP planning requirements applicable to that region. Such plans are then submitted to CARB for adoption and submittal to the EPA as revisions to the California SIP.

B. The San Joaquin Valley Nonattainment Area

Under the 1977 CAA Amendments, the EPA designated the San Joaquin Valley Air Basin ("San Joaquin Valley" or "Valley") as a "nonattainment" area for the photochemical oxidant (later, the 1-hour ozone) NAAQS. 43 FR 8962, at 8972 (March 3, 1978). Initially, eight entire counties comprised the San Joaquin Valley: San Joaquin, Stanislaus, Merced, Madera, Fresno, Tulare, Kings, and Kern counties. In 2001, however, the EPA approved a request to revise the boundary of the San Joaquin Valley to exclude eastern Kern County. 66 FR 56476 (November 8,

2001). As such, the San Joaquin Valley ozone nonattainment area stretches over 250 miles from north to south, averages a width of 80 miles, and encompasses over 23,000 square miles. 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. The San Joaquin Valley is one of the nation's leading agricultural areas, and in recent decades, has experienced a high rate of growth in population. From 1990 to 2010, the population in the Valley increased from approximately 2.7 million to 4 million people. For a precise description of the geographic boundaries of the San Joaquin Valley, see 40 CFR 81.305.

The CAA, as amended in 1977, required states to submit SIP revisions for nonattainment areas that, among other requirements, provided for attainment no later than 1987; however, like many areas of the country, the San Joaquin Valley failed to attain the ozone NAAQS by 1987. In the 1990 CAA Amendments, Congress established a classification system for ozone nonattainment areas under which areas with more severe ozone problems were given a higher classification and more time to attain the standard but were subject to a greater number of, and more stringent, SIP requirements. The classifications include "Marginal," "Moderate," "Serious," "Severe," and "Extreme." See CAA section 181(a)(1).

Under this classification system, the San Joaquin Valley was classified as a "Serious" ozone nonattainment area for the 1-hour ozone standard with an attainment date of no later than November 15, 1999. 56 FR 56694 (November 6, 1991). In response, in 1994, CARB submitted *The California Ozone State Implementation Plan* ("1994 California Ozone Plan"), a comprehensive ozone plan for the State of California that included a state strategy as well as certain regional ozone plans, such as the regional plan for the San Joaquin Valley. The EPA approved the 1994 California Ozone Plan in 1997. 62 FR 1150 (January 8, 1997).

In 2001, the EPA found that the San Joaquin Valley had failed to attain the 1-hour ozone standard by the "Serious" area deadline and reclassified the area to "Severe." 66 FR 56476 (November 8, 2001). In 2004, the EPA granted the State's request to voluntarily reclassify the San Joaquin Valley from "Severe" to "Extreme" for the 1-hour ozone standard and required the state to submit a SIP revision providing for the "Extreme" area SIP elements in CAA section 182(e), which include a demonstration of attainment of the standard as expeditiously as practicable, but no later than November 15, 2010. 69 FR 20550 (April 16, 2004).

In response, CARB and the District developed and adopted the *Extreme Ozone Attainment Demonstration Plan* ("2004 Ozone Plan") for the San Joaquin Valley, and, in 2004, CARB submitted the 2004 Ozone Plan to the EPA as a revision to the California SIP. The 2004 Ozone Plan was supported by certain measures and commitments contained in the state's "2003 State Strategy." The 2004 Ozone Plan was later amended and clarified, and the EPA approved the plan, as amended and clarified, in 2010. 75 FR 10420 (March 8, 2010).

Specifically, we approved the following elements of the 2004 Ozone Plan: (1) rate-of-progress (ROP) demonstration as meeting the requirements of CAA section 172(c)(2) and 182(c)(2) and 40 CFR 51.905(a)(1)(i) and 51.900(f)(4); (2) ROP contingency measures as meeting the requirements of CAA section 172(c)(9) and 182(c)(9); (3) the attainment demonstration as meeting the requirements of 182(c)(2)(A) and 181(a) and 40 CFR 51.905(a)(1)(ii); (4) the attainment contingency measures as meeting the requirements of CAA section 172(c)(9); and (5), along with certain measures contained in the 2003 State Strategy, the demonstration of implementation of reasonably available control measures (RACM)(exclusive of RACT)[3] as meeting the requirements of CAA section 172(c) and 40 CFR 51.905(a)(1)(ii). *Id*., at 10436-10437. In

[3] We addressed the SIP requirements related to implementation of reasonably available control technology (RACT) for the 1-hour ozone standard in separately rulemakings. *See*, e.g., 77 FR 1417 (January 10, 2012)(final partial approval and partial disapproval of the San Joaquin Valley RACT SIP).

connection with the control strategy of the attainment demonstration, we approved certain committal measures and aggregate emission reduction commitments made by CARB and the District. *Id*. We also found that the 2004 Ozone Plan met the following requirements: (1) CAA section 182(e)(3) and 40 CFR 51.905(a)(1)(i) and 51.900(f)(7) for clean fuel/clean technology boilers; and (2) CAA section 182(d)(1)(A) and 40 CFR 51.905(a)(1)(i) and 51.900(f)(11) for transportation control measures (TCMs) sufficient to offset growth in emissions from growth in vehicle-miles-traveled (VMT) or the number of vehicle trips. Lastly, in our approval of the 2004 Ozone Plan, we approved a specific rule, District Rule 9310, related to school buses.

Our approval of the 2004 Ozone Plan was challenged, and the U.S. Court of Appeals for the Ninth Circuit remanded the approval of the plan back to the EPA based on its conclusion that the EPA had not adequately considered and addressed the implications of more recent emissions data in determining that the 2004 Ozone Plan had met all applicable CAA requirements. *Sierra Club* v. *EPA*, 671 F.3d 955 (9th Cir. 2012) ("*Sierra Club*").[4] In response to the *Sierra Club* decision, the EPA withdrew its approval of the 2004 Ozone Plan. 77 FR 70376 (November 26, 2012).[5] CARB indicated that it intended to withdraw the plan upon EPA's approval withdrawal action, and thus, in the same **Federal Register** document as the withdrawal of approval, the EPA issued a finding of failure to submit required SIP revisions to provide for attainment of the 1-hour ozone NAAQS in the San Joaquin Valley.

Meanwhile, as noted above, in 1997, the EPA established an 8-hour ozone standard to replace the 1-hour ozone standard, and in 2004, the EPA designated the San Joaquin Valley as a

[4] For further background on this court decision, see our proposed rule at 77 FR 58078 (September 19, 2012).
[5] The EPA's March 8, 2010 final rule taking action on the 2004 Ozone Plan also took final approval action on SJVUAPCD Rule 9310 ("School Bus Fleets"). Approval of District Rule 9310 was not affected by the decision in *Sierra Club*, and thus the EPA did not withdraw its approval of that rule when it withdrew its approval of the rest of the action taken on March 8, 2010. However, the EPA *did* intend to withdraw approval of all of the elements of the 2004 Ozone Plan but inadvertently failed to withdraw its approval of the 2008 Clarification submitted by CARB in support of the 2004 Ozone Plan. See 40 CFR 52.220(c)(371), and the EPA intends to fix this error by withdrawing that paragraph from 40 CFR 52.220(c) when it takes final action on the 2013 Ozone Plan.

"Serious" nonattainment area for the 1997 8-hour ozone standard. 69 FR 23858, at 23888-23899 (April 30, 2004). In 2010, the EPA approved a request by CARB to reclassify the San Joaquin Valley as "Extreme" for the 1997 8-hour ozone standard. 75 FR 24409 (May 5, 2010). In 2004, the EPA also established regulations governing the transition from the 1-hour ozone standard to the 1997 8-hour ozone standard, and under these regulations, the 1-hour ozone standard was revoked in most areas of the country, including the San Joaquin Valley, effective June 15, 2005, but the SIP revision requirements that applied at the time of revocation of the standard continue to apply after revocation consistent with the anti-backsliding provisions in section 172(e). This means that, notwithstanding revocation of the 1-hour ozone standard, the San Joaquin Valley remained subject to "Extreme" area requirements for the 1-hour ozone standard and is also subject to the "Extreme" area requirements for the 1997 8-hour ozone standard.

In 2007, in response to SIP revision requirements for the 1997 8-hour ozone standard, CARB and the District developed and adopted the *2007 Ozone Plan* ("2007 Ozone Plan") and related portions of the 2007 State Strategy and submitted them to the EPA as revisions to the SIP. The 2007 Ozone Plan was revised in 2008 and 2011, and in 2012, the EPA approved the plan, as revised, together with the related portions of the 2007 State Strategy. 77 FR 12652 (March 1, 2012). Our approval of the 2007 Ozone Plan and related portions of the 2007 State Strategy were challenged in the Ninth Circuit. In 2015, the Ninth Circuit upheld the EPA's approval of CARB's and the District's committal measures but rejected the EPA's longstanding interpretation of the CAA as allowing California to take emissions reduction credit for mobile source regulations that the EPA has waived or authorized under CAA section 209 notwithstanding their absence from the federally enforceable California SIP. See *Committee for a Better Arvin v. EPA*, 786 F.3d 1169 (9th Cir. 2015)("*Committee for a Better Arvin*"). In light of the deci-

sion in *Committee for a Better Arvin*, the EPA has proposed approval as a revision to the California SIP of a number of CARB's mobile source regulations for which preemption has been waived or authorized under CAA section 209. 80 FR 69915 (November 12, 2015).

As part of the approval of the 2007 Ozone Plan, the EPA approved the demonstration that the plan provides for transportation control strategies (TCS) and TCMs sufficient to offset any growth in emissions from growth in VMT or the number of vehicle trips as meeting the requirements of CAA section 182(d)(1)(A). *Id*., at 12670.[6] In approving the VMT emissions offset demonstration in 2012, the EPA applied its then-longstanding interpretation of the VMT emissions offset requirement in CAA section 182(d)(1)(A), first explained in guidance in the General Preamble to Title I of the CAA (see 57 FR 13498, at 13521-13523, April 16, 1992) (herein referred to as the "General Preamble"), that no transportation control measures are necessary if aggregate motor vehicle emissions are projected to decline each year from the base year of the plan to the attainment year. See 76 FR 57872, at 57889 (September 16, 2011). The EPA approved the plan as meeting the requirements of CAA section 182(d)(1)(A) because the emissions inventories in the 2007 Ozone Plan showed decreases in aggregate year-over-year motor vehicle emissions in the San Joaquin Valley from a base year through the applicable attainment year.

However, between the time when the EPA's approval of the 2007 Ozone Plan was signed and when it was published in the **Federal Register**, the EPA's petition for rehearing in a case challenging the EPA's longstanding interpretation of CAA section 182(d)(1)(A) was denied. See *Association of Irritated Residents v. EPA*, 632 F.3d. 584, at 596-597 (9th Cir. 2011), reprinted as

[6] CAA section 182(d)(1)(A), which, in relevant part, requires the state, if subject to its requirements, to "submit a revision that identifies and adopts specific enforceable transportation control strategies and transportation control measures to offset any growth in emissions from growth in vehicle miles traveled or numbers of vehicle trips in such area." Herein, we use "VMT" to refer to vehicle miles traveled, and refer to the related SIP requirement as the "VMT emissions offset requirement." In addition, we refer to the SIP revision intended to demonstrate compliance with the VMT emissions offset requirement as the "VMT emissions offset demonstration."

amended on January 27, 2012, 686 F.3d 668, further amended February 13, 2012 ("*Association of Irritated Residents*"). In the *Association of Irritated Residents* case, the Court ruled that additional transportation control measures are required whenever vehicle emissions are projected to be higher than they would have been had VMT not increased, even when aggregate vehicle emissions are actually decreasing. In light of the *Association of Irritated Residents* decision, the EPA withdrew its determination that the 2007 Ozone Plan provided sufficient TCMs to offset the growth in emissions from the growth in VMT in the same **Federal Register** document as the Agency's withdrawal of the approval of the 2004 Ozone Plan and finding of failure to submit required SIP revisions. 77 FR 70376 (November 26, 2012).

In 2013, in response to the EPA's withdrawal of approval of the 2004 Ozone Plan and the VMT emission offset demonstration for the 1997 8-hour ozone standard and the related finding of failure to submit, CARB and the District prepared, adopted, and submitted the *2013 Plan for the Revoked 1-Hour Ozone Standard* ("2013 Ozone Plan"). The 2013 Ozone Plan addresses the various 1-hour ozone SIP elements for which the EPA had withdrawn approval (i.e., RACM, ROP and attainment demonstrations, ROP and attainment contingency measures, clean fuels/clean technology boilers, and VMT emissions offset demonstration) and also addresses the VMT emissions offset requirement for the 1997 8-hour ozone standard. The 2013 Ozone Plan builds upon the regulatory foundation built by previous San Joaquin Valley attainment plans for ozone as well as for other nonattainment pollutants, including PM_{10} and $PM_{2.5}$, including, but not limited to, dozens of District rules establishing VOC or NO_x emissions limits and other requirements for various types of stationary sources, and dozens of state regulations establishing such limits and requirements for various types of mobile sources, for vehicle inspection and maintenance, for gasoline and diesel fuels, for consumer products and pesticides. These various regula-

tory programs have resulted in significant emissions reductions of ozone precursors and corresponding ozone concentrations in the San Joaquin Valley despite high rates of growth in population and regional VMT. For instance, 1-hour ozone exceedance days within the Valley (i.e., number of days in a year during which the 0.12 ppm standard was violated at a (i.e., at least one) monitoring site) have decreased from 45 in 1990 to 3 in 2012. See table A-1 of 2013 Ozone Plan. However, as of 2012, the Valley continued to experience violations of the 1-hour ozone standard, and the 2013 Ozone Plan was developed to demonstrate attainment of that standard, and to meet the other remaining 1-hour ozone SIP obligations (and the VMT emissions offset requirement for the 1997 8-hour ozone standard).

Lastly, as noted above, the EPA tightened the 8-hour ozone standard in 2008 and tightened the standard further in 2015. The EPA has designated the San Joaquin Valley as an "Extreme" area for the 2008 8-hour ozone standard. 77 FR 30088 (May 21, 2012). The "Extreme" area plan for the San Joaquin Valley for the 2008 ozone standard is due in 2016. In establishing final implementation rules for the 2008 8-hour ozone standard, the EPA revoked the 1997 8-hour ozone standards and includes anti-backsliding requirements that apply upon revocation of the 1997 8-hour ozone standards. 80 FR 12264 (March 6, 2015). Consistent with the application of anti-backsliding provisions upon revocation of the 1-hour ozone standards, areas that remain designated as nonattainment for the 1997 8-hour ozone standard at the time of revocation of the 1997 8-hour ozone standard continue to be subject to certain SIP requirements that had applied by virtue of the area's classifications for the now-revoked 1997 8-hour ozone standard as well as the revoked 1-hour ozone standard. *Id*. at 12296; 40 CFR 51.1105 and 51.1100(o). For the purposes of this proposed action, this means that outstanding SIP requirements linked to the San Joaquin Valley's "Extreme" nonattainment area classifications for the 1-hour ozone standard and

1997 8-hour ozone standard continue to apply notwithstanding the revocation of these two ozone NAAQS. The EPA has not yet established area designations for the 2015 8-hour ozone standard.

II. CARB's SIP Revision Submittal to Address Remaining 1-Hour and 1997 8-Hour Ozone Requirements in the San Joaquin Valley

A. CARB's SIP Submittal

The District adopted the 2013 Ozone Plan on September 19, 2013, and CARB approved the plan as a revision to the California SIP on November 21, 2013.[7] CARB submitted the 2013 Ozone Plan to the EPA on December 20, 2013.[8] The 2013 Ozone Plan includes base year and projected future year emissions inventories, air quality modeling, provisions demonstrating implementation of RACM, provisions for advanced technology/clean fuels for boilers, provisions for transportation control strategies and measures, an ROP demonstration, an attainment demonstration, and contingency measures for failure to make ROP or attain.

Appendix D of the 2013 Ozone Plan contains the VMT emissions offset demonstrations for the 1-hour ozone and 1997 8-hour ozone NAAQS. On June 19, 2014, CARB submitted a technical supplement to the VMT emissions offset demonstrations submitted as part of the 2013 Ozone Plan.[9] CARB's technical supplement includes a revised set of motor vehicle emissions estimates reflecting technical changes to the inputs used to develop the original set of calculations.[10] While the vehicle emissions estimates in CARB's technical supplement differ from those

[7] See SJVUAPCD Governing Board Resolution 2013-09-13: In the Matter of Adopting the San Joaquin Valley Unified Air Pollution Control District 2013 Plan For The Revoked 1-Hour Ozone Standard, September 19, 2013; CARB Resolution No. 13-45, November 21, 2013.

[8] Letter, Richard Corey, Executive Officer, CARB to Jared Blumenfeld, Regional Administrator, EPA Region 9, December 20, 2013 with enclosures.

[9] See June 19, 2014 letter and enclosures from Lynn Terry, Deputy Executive Officer, CARB, to Deborah Jordan, Director, Air Division, EPA Region 9. On July 25, 2014, CARB sent the EPA a revised technical supplement that corrected a minor typographical error. See record of July 25, 2014 email and attachment from Jon Taylor, CARB, to Matt Lakin, EPA Region 9, included in the docket.

[10] The principal difference between the two sets of calculations is that CARB's technical supplement includes running exhaust, start exhaust, hot soak, and running loss emissions of VOCs in all of the emissions scenarios. These

contained in the demonstrations in the 2013 Ozone Plan, the conclusions of the analyses remain the same.

B. CAA Procedural Requirements for Adoption and Submittal of SIP Revisions

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 an opportunity for a public hearing was provided consistent with the EPA's implementing regulations in 40 CFR 51.102.

Both the District and CARB have satisfied applicable statutory and regulatory requirements for reasonable public notice and hearing prior to adoption and submittal of the 2013 Ozone Plan. The District conducted a public workshop on April 16, 2013. On August 20, 2013, the District posted on its web site an announcement and supporting documents for a September 19, 2013 public hearing and also sent out an email to ozone_plans@lists.valley.org informing interested individuals and parties about the public hearing and links to key documents and participation via webcast.[11] The District thereby provided the required public notice and opportunity for public comment prior to its public hearing on the 2013 Ozone Plan. On September 19, 2013, the District held a public hearing to adopt the 2013 Ozone Plan and adopted the plan on that date. See 2013 Ozone Plan, appendix J ("Summary of Significant Comments and Responses") and SJVUAPCD Governing Board Resolution 2013-9-13.

CARB also provided the required public notice and opportunity for public comment prior to its November 21, 2013 public hearing and approval of the 2013 Ozone Plan as a revision to

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processes are directly related to VMT and vehicle trips. The revised calculation excludes diurnal and resting loss emissions of VOCs from all of the emissions scenarios because such evaporative emissions are related to vehicle population rather than to VMT or vehicle trips.

[11] January 30, 2015 email from Elizabeth Melgoza, CARB, to John Ungvarsky, EPA Region 9; May 13, 2015 and May 19, 2015 emails from SJVUAPCD staff to John Ungvarsky, EPA Region 9.

the California SIP. See CARB "Notice of Public Meeting" dated October 21, 2013, and CARB Resolution No. 13-45. As noted previously, on December 20, 2013, CARB submitted the 2013 Ozone Plan and related public process documentation to the EPA. The EPA determined that CARB's December 20, 2013 SIP revision submittal was complete on May 19, 2014.[12]

Based on information in the December 20, 2013 SIP submittal and subsequent email communication with District staff, the EPA has determined that all hearings were properly noticed. We find, therefore, that the submittal of the 2013 Ozone Plan meets the procedural requirements for public notice and hearing in CAA sections 110(a) and 110(l).

III. Evaluation of the 2013 Ozone Plan

A. Emissions Inventories

We have evaluated the emissions inventories in the 2013 Ozone Plan to determine if they are consistent with EPA guidance (General Preamble at 13502) and adequate to support that plan's RACM, ROP and attainment demonstrations. Appendix B of the 2013 Ozone Plan presents the base year and projected emission inventories relied on for the ROP and attainment demonstrations. Appendix B also discusses the methodology used to determine base year (2007) emissions and identifies the growth and control factors used to project emissions for the 2013 and 2016 (ROP milestone years) and 2017 (ROP increment and attainment) projected year inventories. The plan includes summer (May through October) average daily inventories for the base year of 2007 and projected inventories for years 2013 through 2022 for all major source categories (stationary sources, area sources, and on-road and nonroad mobile sources). Emissions are calculated for the two major ozone precursors – NO_x and VOC. See tables B-1 and B-2 of

[12] See letter from Deborah Jordan, Director, Air Division, EPA Region 9, to Richard W. Corey, Executive Officer, CARB, dated May 19, 2014.

appendix B of the 2013 Ozone Plan. Additional documentation for the inventories prepared for the 2013 Ozone Plan are found in appendix E, section 6 of the 2013 Ozone Plan.

The emissions inventories in the 2013 Ozone Plan were developed using data provided by CARB, the California Department of Transportation, and the San Joaquin Valley's eight metropolitan planning organizations (MPO).[13] These agencies collect data (e.g., industry growth factors, socioeconomic projections, travel activity levels, emission factors, emission speciation profiles, and emissions) and develop methodologies (e.g., model and demographic forecast improvements) used to generate comprehensive emissions inventories. CARB maintains statewide inventories in its California Emissions Inventory Development and Reporting System (CEIDARS) and uses the California Emission Forecasting and Planning Inventory System (CEFS) to forecast or backcast emissions. CEFS is designed to generate year-specific emissions estimates for each county/air basin/district combination taking into account two factors: the effects of growth, and the effects of adopted emission control rules. It does this by linking these growth and control factors directly to CEIDARS emission categories for a particular base year. The 2007 inventory was used to project future years using CARB's CEFS v 1.06.

CARB also conducts periodic evaluations and updates of the growth profiles to ensure that emission forecasts are based on data that reflect historical trends, current conditions, and recent forecasts. CARB staff conducted a category-by-category review and update of the growth profile data for source categories that, in aggregate, comprise more than 95 percent of the NO_x or VOC emissions in the San Joaquin Valley. To capture the effects of the economic recession, CARB staff ensured that the growth profiles included historical data through at least 2008 (data

[13] These eight MPOs represent the eight counties in the San Joaquin Valley air basin: 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.

through 2009 or 2010 were included when available). Growth forecasts for the years 2009 and beyond were obtained primarily from government entities with expertise in developing forecasts for specific sectors, or in some cases, from econometric models.

Motor vehicle emissions were based on estimates of VMT provided by the regional transportation planning agencies and the California Department of Transportation. The plan uses CARB's Emission FACtor (EMFAC) model, version EMFAC2011, to calculate the emission factors for cars, trucks and buses. At the time that the 2013 Ozone Plan was developed, EMFAC2011 was the mobile source model approved for use in California SIPs.[14] Nonroad emissions estimates were based on CARB's OFFROAD model.

Table 1 provides a summary of the emissions estimates prepared for the 2013 Ozone Plan for the base year (2007) and ROP and attainment years 2013, 2016, and 2017.

Table 1 – San Joaquin Valley Ozone Precursor Base Year and Projected Future Year Emissions (summer average, tpd)

Category	NO_x				VOC			
	2007	**2013**	**2016**	**2017**	**2007**	**2013**	**2016**	**2017**
Stationary	57	40	30	30	100	96	97	97
Area	11	11	11	11	221	186	191	193
On-road Mobile	273	158	119	110	71	49	35	33
Off-road Mobile	144	108	99	97	65	49	45	43
TOTAL	485	316	259	247	457	381	368	366

Source: 2013 Ozone Plan, appendix B.
Note: Because of rounding conventions, the totals may not reflect total of categories.

We have determined that the 2007 base year emission inventory in the 2013 Ozone Plan is comprehensive, accurate, and current and that this inventory as well as the 2013, 2016, and 2017 projected inventories have been prepared consistent with EPA guidance. Accordingly, we

[14] See 78 FR 14533 (March 6, 2013) regarding the EPA approval of the 2011 version of the California EMFAC model and announcement of its availability. The software and detailed information on the EMFAC vehicle emission model can be found on the following CARB web site: http://www.arb.ca.gov/msei/msei.htm. EMFAC2011 was the approved version of EMFAC at the time of adoption and submittal of the 2013 Ozone Plan. Recently, the EPA approved an updated version of the model, EMFAC2014. 80 FR 77337 (December 14, 2015).

propose to find that these inventories provide an appropriate basis for the various other elements of the 2013 Ozone Plan, including RACM, and the ROP and attainment demonstrations.

B. Reasonably Available Control Measures Demonstration and Control Strategy

1. Requirements for RACM and Control Strategies

CAA section 172(c)(1) requires nonattainment area plans to provide for the implementation of all RACM. The RACM demonstration requirement is a continuing applicable requirement for the San Joaquin Valley "Extreme" 1-hour ozone nonattainment area under EPA's anti-backsliding rules that apply once a standard has been revoked. See 40 CFR 51.1105(a)(1) and 51.1100(o)(17).

The EPA has previously provided guidance interpreting the RACM requirement in the General Preamble at 13560 and a memorandum entitled "Guidance on the Reasonably Available Control Measure Requirement and Attainment Demonstration Submissions for Ozone Nonattainment Areas," John Seitz, Director, OAQPS to Regional Air Directors, November 30, 1999 (Seitz memo). In summary, EPA guidance provides that states, in addressing the RACM requirement, should consider all potential measures for source categories in the nonattainment area to determine whether they are reasonably available for implementation in that area and whether they would advance the area's attainment date by one or more years.

2. RACM and Control Strategy in the 2013 Ozone Plan

The District's RACM demonstration and control strategy for the 1-hour ozone standard in the 2013 Ozone Plan relies on control measures that have been adopted by CARB and the District under previous attainment plans. In the more recent years prior to the adoption of the 2013 Ozone Plan, CARB and the District have developed and implemented comprehensive plans for the 1997 8-hour ozone standards, 1997 $PM_{2.5}$ standards, and 2006 $PM_{2.5}$ standards that resulted

in the adoption of many new rules and revisions to existing rules for stationary, area, and mobile sources. These previously adopted measures generated significant reductions in NO_x and VOC emissions. The measures are listed in the Technical Support Document (TSD) for today's action. The control measures were developed and adopted under previous San Joaquin Valley attainment plans, including the 2007 Ozone Plan, the *2008 $PM_{2.5}$ Plan* (adopted April 30, 2008)("2008 $PM_{2.5}$ Plan"), and the *2012 $PM_{2.5}$ Plan* (adopted December 20, 2012)("2012 $PM_{2.5}$ Plan"), which were developed to provide, among other things, for attainment of the 1997 8-hour ozone standard, the 1997 $PM_{2.5}$ standards, and the 2006 $PM_{2.5}$ standard, respectively, and which relied on adoption and implementation by CARB of new or tightened mobile source regulations under CARB's 2007 State Strategy.[15]

a. The District's RACM Analysis and Adopted Control Strategy

The District's RACM analysis builds on previously adopted measures. Table 3-1 (p. 3-3) in the 2013 Ozone Plan lists currently adopted District rules that are contributing towards attainment of the 1-hour ozone standard. The 2013 Ozone Plan's RACM evaluation for NO_x and VOC sources is summarized in section 4.2 (p. 4-2) and detailed in appendix C ("Stationary and Area Source Control Strategy Evaluation") of the 2013 Ozone Plan. The evaluation of potential controls in the 2013 Ozone Plan is presented by source category. For stationary and area source categories, the evaluation is broken down by the current District rule or rules that fall within a given source category.

The following information is provided in appendix C of the 2013 Ozone Plan for each stationary or area source category or District rule:

[15] The EPA approved the San Joaquin Valley 2007 Ozone Plan and related portions of the 2007 State Strategy at 77 FR 12652 (March 1, 2012); the San Joaquin Valley 2008 $PM_{2.5}$ Plan and related portions of the 2007 State Strategy at 76 FR 69896 (November 9, 2011). The EPA proposed to approve portions of the 2012 $PM_{2.5}$ Plan on January 13, 2015 (80 FR 1816).

- A description of the sources within the category or sources subject to the rule;
- Base year (2007) and projected baseline year emissions (for every year from 2013 to 2022) in the source category or affected by the rule;
- A discussion of the current rule requirements and/or listing and discussion of existing rules, regulations, or other control efforts that address the source category; and
- Identification and discussion of potential new controls, including in many cases, a discussion of the technological and economic feasibility of the new controls. Rules adopted by other agencies (including the EPA, South Coast Air Quality Management District (AQMD), and Bay Area AQMD) are discussed and compared to existing SJVUAPCD rules. Measures proposed by the public for the source category/rule are also identified and discussed. In addition, non-regulatory approaches to reducing emissions in each stationary and area source category are discussed, including the use of incentives, opportunities for technology advancement programs, policy initiatives, and education/outreach programs.

Through its RACM evaluation process, the District identified two new control measures for adoption, and through adoption of the 2013 Ozone Plan, the District committed to adopt and submit these measures as a revision to the California SIP (see District Resolution 2013-9-13, page 5), although the District and State do not rely on reductions from these commitments in their attainment demonstration. See 2013 Ozone Plan, section 3.1.3 (p. 3-8).

The District's commitments have been fulfilled in that the anticipated rule amendments have been adopted and the rules have been submitted to the EPA as a revision to the California SIP. The current status of the rules is shown in table 2, and as shown there, the EPA has ap-

proved one of the two rules and has proposed approval of the other. We expect to take final action on the second rule prior to final action on the 2013 Ozone Plan.

Table 2 – Status of Rule Adoption Commitments in the 2013 Ozone Plan

Rule	Measure Description	Adoption Date	Submittal Date	Emission Reductions	Status
4308	Boilers, Steam Generators, and Process Heaters 0.075 to <2 MMBtu/hr	11/14/13	5/13/14	Minimal in 2017	Approved 2/12/15 (80 FR 7803)
4905	Natural Gas-Fired, Fan Type Residential Central Furnaces	1/22/15	4/7/15	To Be Determined	Proposed Approval 11/5/15 (80 FR 68484)

Source: 2013 Ozone Plan, p. 3-9, table 3-3.

In light of the comprehensiveness of the District's stationary and area source program, and the stringency of the District's regulations, the 2013 Ozone Plan concludes that RACM is being implemented for sources under the District's jurisdiction. See section 4.2.1 of the 2013 Ozone Plan.

The District also identified a number of source categories for which existing information is inadequate to determine the feasibility of additional controls. These categories and the additional controls to be studied are discussed in section 3.1.4. (p. 3-9). The schedule for these studies is given in table 3-4 (see 2013 Ozone Plan, p. 3-10).

The TSD for today's action includes additional information on each District rule, including its status in terms of federal approval and the net inventory changes between 2007 and 2017.

b. CARB and Metropolitan Planning Organizations' RACM Analysis and Adopted Control Strategy

Given the need for significant emissions reductions in California nonattainment areas, CARB has been a leader in the development and adoption of stringent mobile source control

measures nationwide and has unique authority under CAA section 209 (subject to a waiver or authorization by the EPA) to adopt and implement new emissions standards for many categories of on-road vehicles and engines and new and in-use off-road engines. CARB has adopted standards and other requirements related to the control of emissions from numerous types of on-road motor vehicles and new and in-use off-road vehicles, such as passenger cars, trucks, buses, motorcycles, off-road engines (gasoline and diesel-powered), in-use off-road diesel fueled fleets, portable equipment, marine engines, and many others.

Historically, the EPA has allowed California to take into account emissions reductions from CARB regulations for which the EPA has issued waivers or authorizations under CAA section 209 notwithstanding the fact that these regulations have not been approved as part of the California SIP. However, in response to the decision by the Ninth Circuit in *Committee for a Better Arvin v. EPA*, discussed previously, the EPA has now proposed to approve the current set of mobile source regulations for which waivers or authorizations have been issued as a revision to the California SIP. 80 FR 69915 (November 12, 2015). We expect to take final action on California's mobile source regulations prior to final action on the 2013 Ozone Plan.

CARB's mobile source program extends beyond regulations that are subject to the waiver or authorization process set forth in CAA section 209 to include standards and other requirements to control emissions from in-use heavy-duty trucks and buses, gasoline and diesel fuel specifications, and many other types of mobile sources. Generally, these regulations have been submitted and approved as revisions to the California SIP. See, *e.g.*, 77 FR 20308 (April 4, 2012)(EPA approval of standards and other requirements to control emissions from in-use heavy-duty diesel-powered trucks).

Section 3.1.1.2 of the 2013 Ozone Plan discusses the emissions reductions from CARB's mobile source program and includes a table (table 3-2) that lists all of the regulations adopted or amended by CARB from 2000 through early 2012. While all of the listed measures contribute to some degree to attainment of the 1-hour ozone standard in the San Joaquin Valley, some are called out in particular as providing significant emissions reductions relied upon for attainment of the ozone standard under the 2013 Ozone Plan. These measures include the in-use heavy-duty diesel-powered truck regulation, the in-use off-road equipment regulation, and the advanced clean car program, among others. The 2013 Ozone Plan concludes that, in light of the comprehensiveness and stringency of CARB's mobile source program, all reasonable control measures under CARB's jurisdiction are being implemented.

With respect to TCMs, the 2013 Ozone Plan relies on the documentation found in appendix C of the 2012 $PM_{2.5}$ Plan to conclude that all reasonably available control measures under the jurisdiction of the Valley's MPOs are being implemented. Appendix C of the 2012 $PM_{2.5}$ Plan describes the efforts by the San Joaquin Valley's eight MPOs to implement cost-effective transportation control measures (TCMs). See section C.11.4 (p. C-33) of appendix C of the 2012 $PM_{2.5}$ Plan. While no additional TCMs were identified by the MPOs, the 2012 $PM_{2.5}$ Plan includes a discussion of the on-going implementation of a broad range of TCMs in the Valley. There is also a discussion of the MPOs' Congestion Management and Air Quality funding policy, which is a standardized process across the Valley for distributing 20 percent of the Congestion Management and Air Quality funds to projects that meet a minimum cost-effectiveness. During the comment period for the 2012 $PM_{2.5}$ Plan, a number of TCMs were suggested by the public for consideration. See appendix I, pp. I-10 to I-13 of the 2012 $PM_{2.5}$ Plan. The feasibility of these measures is discussed in the District's responses to comments. *Id.*

c. RACM Demonstration

The 2013 Ozone Plan concludes that the RACM requirement is met through implementation of the measures described above under the District's jurisdiction, CARB's jurisdiction, and the MPOs' jurisdiction for stationary and area sources, mobile sources, and TCMs, respectively. The plan also concludes that to advance the attainment date by one year (i.e., from 2017 to 2016) would require an additional reduction of 12.1 tpd of NO_x, and that there are no reasonable measures that collectively would reduce emissions in the Valley by that amount by 2016. In support for that conclusion, the plan notes that about 90 percent of NO_x emission reductions occurring between the 2007 base year and the 2017 attainment year come from mobile sources and that such reductions cannot be expedited through additional District action because, generally, the District does not have jurisdiction over mobile sources.

3. Proposed Action on RACM Demonstration

The process followed by the District in the 2013 Ozone Plan to identify RACM is generally consistent with the EPA's recommendations in the General Preamble. The process included compiling a comprehensive list of potential controls measures for sources of NO_x and VOC in the San Joaquin Valley. This list included measures suggested in public comments on the 2013 Ozone Plan. See 2013 Ozone Plan, appendix J. As part of this process, the District evaluated potential controls for all relevant source categories for economic and technological feasibility and provided justifications for the rejection of certain identified measures. *Id.* After completing this evaluation, the District committed to adopt and submit two measures (i.e., Rules 4308 and 4905), which it has now done. See 2013 Ozone Plan, table 3-3, p. 3-10 and table 2 above.

We have reviewed the District's determination in the 2013 Ozone Plan that its stationary and area source control measures represent RACM for NO_x and VOC. In our review, we also

considered our previous evaluations of the District's rules in connection with our approval of the San Joaquin Valley RACT SIP demonstration for the 1997 8-hour ozone standard, our comments on the 2012 $PM_{2.5}$ Plan, and our comments on the District's RACT SIP demonstration for the 2008 8-hour ozone standard.[16] We also reviewed measures suggested by the public in comments on the 2013 Ozone Plan. Based on this review, we believe that the District's rules provide for the implementation of RACM for stationary and area sources of NO_x and VOC.[17]

With respect to mobile sources, we recognize CARB as a leader in the development and implementation of stringent control measures for on-road and off-road mobile sources. Its current program addresses the full range of mobile sources in the San Joaquin Valley through regulatory programs for both new and in-use vehicles. See 2013 Ozone Plan, table 3-2 and appendix A of the TSD. With respect to transportation controls, we note that the MPOs have a program to fund cost-effective TCMs. See appendix C, p. C-33 of the 2012 $PM_{2.5}$ Plan. Overall, we believe that CARB's and the MPOs' programs provide for the implementation of RACM for NO_x and VOC from mobile sources in the San Joaquin Valley.

Based on our review of the results of these RACM analyses, the District's and CARB's adopted rules, we propose to find that there are, at this time, no additional reasonably available measures that would advance attainment of the 1-hour ozone standard in the San Joaquin Valley. In the 2013 Ozone Plan, the District estimates that it would take a reduction between of 12.1 tpd of NO_x to advance attainment from 2017 to 2016 in the San Joaquin Valley. See section 4.2 (p.

[16] See 77 FR 1417 (January 10, 2012); EPA Region 9, Technical Support Document for the EPA's Notice of Proposed Rulemaking for the California State Implementation Plan - EPA's Evaluation of the San Joaquin Valley Unified Air Pollution Control District's Reasonably Available Control Technology (RACT) Demonstration for Ozone State Implementation Plan (SIP), Adopted April 16, 2009 (dated August 29, 2011); letter dated October 19, 2012, from Kerry Drake, Associate Director, Air Division EPA-Region 9 to Samir Sheikh, SJVUAPCD; and letter dated June 4, 2014, from Andrew Steckel, Chief, Rules Office, EPA Region 9 to Errol Villegas, Planning Manager, SJVUAPCD.

[17] A full list of the District's rules, including cites to our most recent final or proposed rulemaking on each can be found in the TSD.

4-3). We find that no reasonably available and unadopted measures identified in the 2013 Ozone Plan, either individually or collectively, could deliver this additional increment of reductions in 2016 because of the extent to which the emissions inventory reflects mobile sources (see table 1 above) and the extent to which the mobile source inventory already reflects CARB's emissions standards and other requirements for new and in-use on-road and off-road vehicles and engines.

For the foregoing reasons, we propose to find that the 2013 Ozone Plan provides for the implementation of all RACM as required by CAA section 172(c)(1) and 40 CFR 51.1105(a)(1) and 51.1100(o)(17).

C. Rate of Progress Demonstration

1. Requirements for Rate of Progress Demonstrations

CAA section 172(c) requires nonattainment area plans to provide for reasonable further progress (RFP) which is defined in section 171(1) as such annual incremental reductions in emissions as are required in part D or may reasonably be required by the Administrator in order to ensure attainment of the relevant ambient standard by the applicable date. CAA sections 182(c)(2) and (e) require that "Serious" and above area SIPs include ROP quantitative milestones that are to be achieved every 3 years after 1996 until attainment. For ozone areas classified as Serious and above, section 182(c)(2) requires that the SIP must provide for reductions in ozone-season, weekday VOC emissions of at least 3 percent per year net of growth averaged over each consecutive 3-year period. This is in addition to the 15 percent reduction over the first 6-year period required by CAA section 182(b)(1) for areas classified as moderate and above. The CAA requires that these milestones be calculated from the 1990 inventory after excluding, among other things, emission reductions from "[a]ny measure related to motor vehicle exhaust or evaporative emissions promulgated by the Administrator by January 1, 1990" and emission re-

ductions from certain federal gasoline volatility requirements. CAA section 182(b)(1)(B)-(D). The EPA has issued guidance on meeting 1-hour ozone ROP requirements. See General Preamble at 13516 and "Guidance on the Post-1996 Rate-of-Progress Plan and the Attainment Demonstration," EPA-452/R-93-015, EPA Office of Air Quality Planning and Standards, February 18, 1994 (corrected).

CAA section 182(c)(2)(C) allows for NO_x reductions that occur after 1990 to be used to meet the post-1996 ROP emission reduction requirements, provided that such NO_x reductions meet the criteria outlined in the CAA and the EPA guidance. The criteria require that: (1) the sum of all creditable VOC and NO_x reductions must meet the 3 percent per year ROP requirement; (2) the substitution is on a percent-for-percent of adjusted base year emissions for the relevant pollutant; and (3) the sum of all substituted NO_x reductions cannot be greater than the cumulative NO_x reductions required by the modeled attainment demonstration. See General Preamble at 13517 and "NO_x Substitution Guidance," EPA Office of Air Quality Planning and Standards, December 1993. Our guidance in the General Preamble states that by meeting the specific ROP milestones discussed above, the general RFP requirements in CAA section 172(c)(2) will also be satisfied. General Preamble at 13518.

The ROP demonstration requirement is a continuing applicable requirement for the San Joaquin Valley "Extreme" 1-hour ozone nonattainment area under the EPA's anti-backsliding rules that apply once a standard has been revoked. See 40 CFR 51.1105(a)(1) and 51.1100(o)(4).

2. ROP Demonstration in the 2013 Ozone Plan

Section 4.3.2 (beginning on page 4-5) of the 2013 Ozone Plan provides a demonstration that the San Joaquin Valley meets the 2010, 2013, and 2016 ROP milestones and 2017 increment.[18] We have summarized the ROP demonstrations in table 3.

Table 3 - San Joaquin ROP Demonstrations (tpd or percent)

VOC Emission Calculations	**2007**	**2010**	**2013**	**2016**	**2017**
Baseline VOC inventory	457.2	440.5	380.5	368	366.3
Non-creditable FMVCP/RVP adjustments		5.6	3.7	2.7	0.7
Adjusted baseline VOC inventory in baseline year (Line 1 – Line 2)		451.6	447.9	445.2	444.5
Basis for required VOC reductions		451.6	407.3	367.9	334.1
RFP Percent Reduction Required from prior milestone		9%	9%	9%	3%
Target level		411.0	370.6	334.8	324.1
Apparent Shortfall		29.5	9.9	33.2	42.2
Forecasted Percent VOC shortfall		6.5%	2.2%	7.5%	9.5%
VOC percent shortfall previously addressed provided by NO_x substitution		0%	6.5%	2.2%	7.5%
Actual VOC percent shortfall		6.5%	-4.3%	5.2%	2.0%
NO_x Emission Calculations	**2007**	**2010**	**2013**	**2016**	**2017**
Baseline NO_x inventory	484.9	368.2	316.0	259.2	247.1
Non-creditable FMVCP adjustments		4.9	-1.9	6.3	0.4
Adjusted baseline NO_x inventory for milestones		480.0	481.9	475.6	475.2
Change since 2007		111.8	165.9	216.4	228.1
Forecasted Percent NO_x creditable reductions since 2007		23.3%	34.4%	45.5%	48.0%
NO_x percent previously used for VOC shortfall by NO_x substitution		0%	6.5%	6.5%	11.7%
NO_x percent available for VOC shortfall by NO_x substitution and contingency		23.3%	27.9%	39.0%	36.3%

[18] In later 2014, i.e., after adoption and submittal of the 2013 Ozone Plan, CARB revised the state's Truck and Bus regulation (see http://www.arb.ca.gov/regact/2014/truckbus14/truckbus14.htm). The 2014 revisions resulted in a temporary emission reduction disbenefit of approximately 5 tpd of NO_x in the 2016 and 2017 milestone years in the San Joaquin Valley. See letter from Sylvia Vanderspek, Chief, Air Quality Planning Branch, CARB, to Matthew Lakin, Manager, Air Planning Office, EPA Region 9, dated April 23, 2015. The EPA has determined that because the 2013 Ozone Plan demonstrates that ROP milestones are met by a significant margin in 2016 and 2017, even if the 5 tpd NO_x disbenefit was added back into the 2016 and 2017 baselines, the 2013 Ozone Plan would still exceed the 2016 and 2017 ROP milestones by approximately 33% for both years.

NO_x percent substitution needed for VOC shortfall		6.5%	0.0%	5.2%	2.0%
Forecasted NO_x percent reduction surplus		16.7%	27.9%	33.8%	34.2%
Contingency measure reserve achieved?		Yes	Yes	Yes	Yes
ROP achieved?		Yes	Yes	Yes	Yes

Source: 2013 Ozone Plan, table 4-2 (page 4-6)

3. Proposed Action on the ROP Demonstration

Based on our review of the ROP calculations in the 2013 Ozone Plan, summarized in table 3 above, we conclude the 2013 Ozone Plan demonstrates that sufficient emission reductions have or will be achieved to meet the 2010, 2013, and 2016 ROP milestones and the 2017 increment. Therefore, we propose to approve the ROP demonstration in the 2013 Ozone Plan as meeting the requirements of CAA section 172(c)(2) and 182(c)(2)(B), and 40 CFR 51.1105(a)(1) and 51.1100(o)(4).

D. Attainment Demonstration

1. Requirements for Attainment Demonstrations

CAA section 182(c)(2)(A) requires states with ozone nonattainment areas classified as "Serious" or above to submit plans that demonstrate attainment of the 1-hour ozone standard by the applicable attainment date. Under the CAA, as amended in 1990, the San Joaquin Valley "Extreme" nonattainment area was to have attained the 1-hour ozone standard by November 15, 2010. In 2011, we determined that the San Joaquin Valley had failed to attain the standard by the 2010 attainment date. 76 FR 82133 (December 30, 2011). Given that the original statutory attainment date had passed and the 1-hour ozone standard had been revoked, in our 2012 final action withdrawing our approval of the 2004 Ozone Plan and issuing findings of failure to submit, we set a new attainment date by reference to CAA section 172(a)(2). 77 FR 70376, at 70377 (November 26, 2012), effective November 26, 2012. Application of the attainment date formulation in section 172(a)(2) means that the state was required to submit a revised San Joaquin Val-

ley plan demonstrating attainment of the 1-hour ozone standard as expeditiously as practicable, but no later than five years from the effective date of the findings of failure to submit, or, in this case, no later than November 26, 2017.

An attainment demonstration should include a control strategy that identifies specific measures to reduce emissions and photochemical modelling results showing that the emissions reductions from implementation of the control strategy is sufficient to attain the standard by the applicable attainment date. The attainment demonstration requirement is a continuing applicable requirement for the San Joaquin Valley "Extreme" 1-hour ozone nonattainment area under the EPA's anti-backsliding rules that apply once a standard has been revoked. See 40 CFR 51.1105(a)(1) and 51.1100(o)(12).

2. One-Hour Ozone Attainment Demonstration in the 2013 Ozone Plan

a. Control Strategy for Attainment of the 1-Hour Ozone Standard

The 2013 Ozone Plan relies entirely on reductions from previously adopted measures. Tables 3-1 and 3-2 in the 2013 Ozone Plan documents District and State measures that contribute to attainment of the 1-hour ozone standard in 2017. Although the 2013 Ozone Plan includes two commitment measures (see table 3-3 in 2013 Ozone Plan), reductions from those measures were not relied on for attainment. Moreover, the two measures have been adopted and submitted to the EPA.

The future year inventories, which include reductions from adopted and creditable measures, were used in the 2013 Ozone Plan's modeling analysis described in appendix E of the 2013 Ozone Plan. Based on the modeling analysis, the District determined that the 1-hour ozone standard could be attained in 2017. A summary of the base year (2007) and 2017 attainment-year emissions inventories is shown in table 1 above. It reflects reductions of 238 tpd of NO_x and 91

tpd of VOCs from the 2007 base year emissions inventory. For a more detailed comparison of the 2007 base year and 2017 attainment year inventories, see appendix B of the 2013 Ozone Plan and the TSD for today's action.

For purposes of evaluating the 2013 Ozone Plan, all of the measures relied on to satisfy the applicable control requirements are baseline measures. As the term is used here, baseline measures are federal, State, and District rules and regulations adopted prior by the end of January 2012 (i.e., prior to the development of 2013 Ozone Plan) that continue to achieve emissions reductions through the projected 2017 attainment year and beyond.[19]

The District has adopted more than 50 prohibitory rules that limit emissions of either VOC or NO_x. These rules include controls for a variety of sources including boilers, oil field and refinery equipment, surface coatings operations, and open burning. The 2013 Ozone Plan lists many of these measures in table 3-1. Reductions from these measures are incorporated into the future year baseline inventories. Appendix C of the 2013 Ozone Plan includes inventory information that allows for a comparison of 2007 rule-specific emissions inventory data for stationary and area sources against future year rule-specific inventories. The net inventory impact of the rule reductions and growth is included in the TSD for today's proposal. We have also provided in the TSD a list of the District's prohibitory NO_x and VOC rules and SIP approval status.

The state's baseline measures fall within two categories: measures for which the State has obtained a waiver or authorization of federal pre-emption under CAA section 209 ("waiver" measures) and those for which the state is not required to obtain a waiver ("non-waiver"

[19] These measures are typically rules that may have compliance dates that occur after the adoption date of a plan and mobile source measures that achieve reductions as older engines are replaced through attrition (e.g., through fleet turnover). On December 31, 2014 and subsequent to the submittal of the 2013 Ozone Plan, the State of California's Office of Administrative Law approved revisions to CARB's Truck and Bus regulation (see http://www.arb.ca.gov/regact/2014/truckbus14/truckbus14.htm). The revisions resulted in a temporary emission reduction disbenefit of approximately 5 tpd of NO_x in 2017. In an April 23, 2015 letter from Sylvia Vanderspek, Chief, Air Quality Branch, CARB to Matt Lakin, Manager, Air Planning Office, EPA Region IX, the State provides an adequate technical justification showing that the demonstration of attainment in 2017 is not affected.

measures). Non-waiver measures include: improvements to California's inspection and maintenance (I/M) program, SmogCheck; cleaner burning gasoline and diesel regulations; and limits on the VOC content and reactivity of consumer products. Table 3-2 of the 2013 Ozone Plan lists many of the state's measures adopted since 2006 that are contributing to attainment of the 1-hour ozone standard.

Over the years, the EPA has approved the non-waiver measures and amendments to those measures as part of the California SIP. Historically, the EPA has allowed California to take credit for waiver measures (to meet CAA SIP requirements including ROP and attainment demonstrations) notwithstanding the fact that the regulations themselves have not been submitted or approved into the California SIP. However, in light of the Ninth Circuit's decision in *Committee for a Better Arvin v. EPA*, as discussed above, CARB has submitted the most recent set of waiver measures that contribute emissions reductions to the state's attainment plans as part of the SIP, and the EPA has proposed approval of the measures. 80 FR 69915 (November 12, 2015). We anticipate final action on the CARB mobile source SIP submittal prior to final action on the 2013 Ozone Plan.

The 2013 Ozone Plan also includes reductions from federal measures. These measures include, for example, the EPA's national emission standards for heavy duty diesel trucks,[20] certain new construction and farm equipment,[21] and locomotives.[22] States are allowed to rely on reductions from federal measures in attainment and ROP demonstrations.

b. Air Quality Modeling in the 2013 Ozone Plan

[20] 66 FR 5001 (January 18, 2001). CARB estimates that interstate trucks registered outside of California represent over 50 percent of the heavy duty trucks in California. See Table III-1 in "Staff Report: Initial Statement of Reason for Proposed Rulemaking, Proposed Regulation for In-Use, On-road Diesel Vehicles," California Air Resources Board (October 2008).
[21] Tier 2 and 3 non-road engines standards, 63 FR 56968 (October, 23, 1998); Tier 4 diesel non-road engine standard, 69 FR 38958 (June 29, 2004).
[22] 63 FR 18978 (May 16, 1998) and 73 FR 37045 (June 30, 2008).

CAA section 182(c)(2)(A) requires SIPs for ozone nonattainment areas to include a "demonstration that the plan, as revised, will provide for attainment of the ozone [NAAQS] by the applicable attainment date. This attainment demonstration must be based on photochemical grid modeling or any other analytical method determined by the Administrator, in the Administrator's discretion, to be at least as effective." Air quality modeling is used to establish emissions attainment targets, that is, the combination of emissions of ozone precursors that the area can accommodate without exceeding the relevant standard, and to assess whether the proposed control strategy will result in attainment of that standard. The procedures for modeling ozone as part of an attainment demonstration are contained in the EPA's Guidance on the Use of Models and Other Analyses for Demonstrating Attainment of Air Quality Goals for the 8-Hour Ozone and $PM_{2.5}$ NAAQS and Regional Haze ("Modeling Guidance").[23] The Modeling Guidance recommends for a modeling protocol to be reviewed by the EPA prior to performance of the modeling. The Guidance includes recommendations for model input preparation, model performance evaluation, use of the model output for the attainment demonstration, and modeling documentation. Air quality modeling is performed using meteorology and emissions from a base year, and the modeled concentrations are compared to air quality monitoring data from that year to evaluate model performance. Once the performance is determined to be acceptable, future year emissions are simulated with the model. The relative (or percent) change in modeled concentration due to future emissions reductions provides a Relative Response Factor (RRF). For each monitoring site, the site's RRF is applied to its monitored base year design value to provide the future design value for comparison to the NAAQS. The Modeling Guidance also recommends supplemental air quality analyses, which may be used as part of a Weight of Evidence (WOE) analysis. A

[23] "Guidance on the Use of Models and Other Analyses for Demonstrating Attainment of Air Quality Goals for the 8-Hour Ozone and $PM_{2.5}$ NAAQS and Regional Haze," EPA-454/B-07-002, April 2007. Additional EPA modeling guidance can be found in the "Guideline on Air Quality Models" in 40 CFR part 51, appendix W.

WOE analysis assesses attainment by considering evidence other than the main air quality modeling attainment test, such as trends and additional monitoring and modeling analyses.

Older guidance for the 1-hour ozone NAAQS was provided in Guideline for Regulatory Application of the Urban Airshed Model;[24] however, much of its content is outdated. Most importantly, formerly photochemical models were used in an absolute sense for the modeled attainment test, whereas currently the EPA recommends that models be used in a relative sense. That is, formerly the modeled concentration due to future emissions (absolute model prediction) was used directly to compare to the NAAQS. Currently, the EPA recommends that the relative change in modeled concentration (RRF) due to future emission reductions be used; this is applied to the monitored design value and the result compared to the NAAQS. Given that the current guidance is aimed at the 8-hour standard, whereas the older guidance is aimed at the 1-hour standard but is outdated, the State has flexibility in the approach to be used. Discussions between the EPA, CARB, and the District resulted in the approach described in the Plan's Modeling Protocol, which mainly followed the more recent Modeling Guidance, but accommodated the form and level of the 1-hour standard and incorporated model performance goals from the older 1-hour guidance.

CARB performed the air quality modeling for the 2013 Ozone Plan, with assistance from the District. The 2013 Ozone Plan's modeling protocol is contained in appendix E ("Modeling Protocol"). This protocol was reviewed by the EPA, and contains all of the elements recommended in the Guidance, including selection of model, and modeling period, modeling domain, and model boundary conditions and initialization procedures; a thorough discussion of emission inventory development and their spatial and temporal allocation; and other model input preparation procedures, model performance evaluation procedures; selection of days and other details

[24] "Guideline for Regulatory Application of the Urban Airshed Model," EPA-450/4-91-013, July 1991.

for calculating RRFs; and provisions for the archiving of and access to raw model inputs and outputs. While some additional detail on the input meteorological data could have been useful, overall the protocol adequately addresses all of the expected elements.

The modeling analysis uses the Community Multiscale Air Quality (CMAQ) photochemical model, developed by the EPA. The SAPRC99 (State-wide Air Pollution Research Center, 1999 version) chemical mechanism was used in CMAQ, based on CARB's historical experience with it, its favorable scientific review and good performance over the years. The modeling incorporates routinely available meteorological and air quality data collected during 2007, the base year for the 2013 Ozone Plan. The WRF model (Weather and Research Forecasting model, from the National Center for Atmospheric Research) was used to prepare meteorological input for CMAQ. CMAQ and WRF are both recognized in the Modeling Guidance as technically sound, state-of-the-art models. Air quality modeling was performed for May through September, 2007, a period that spans the ozone season in the San Joaquin Valley. The overall air quality modeling domain includes the entire State of California with 12 km resolution, and a nested domain of finer 4 km resolution that covers the San Joaquin Valley. The overall meteorological modeling covers California's neighboring states, and major portions of the next outer ring of states, with 35 km resolution; it has nested domains at 12 km and 4 km, with the latter, innermost covering the entire State of California. The areal extent, and the horizontal and vertical resolution used in these models were more than adequate for modeling San Joaquin Valley ozone.

Model performance information is provided in appendix F of the 2013 Ozone Plan in the form of time series and scatter plots of modeled ozone compared to monitored ozone, for the May – September, 2007 period. The time series show a good match between predicted and observed concentrations. While there is some underprediction during the second half of the period

(mid-July through September), performance is generally good, and the overall peaks were captured by the model. Scatter plots also show good performance, with very few outliers. Modeled values are generally within 20% of observations, and root-mean-square error (RMSE) values are typically near 0.7, showing good correlation between modeled and monitored concentrations. While current Modeling Guidance does not prescribe specific performance goals, the Modeling Protocol adopted goals from the older, 1991 EPA 1-hour ozone modeling guidance, section 5.2: Unpaired highest prediction accuracy: within 20 percent; Normalized bias within 15 percent; and Gross error of all pairs above 60 parts per billion (ppb)(i.e., 0.060 ppm) within 35 percent (appendix F, section 1.4.1). The Modeling Protocol mentions evaluation of model performance within multiple geographic subregions, as well as additional performance statistics and spatial plots for ozone and precursor species, but these were not provided in the SIP submittal. The CARB Staff Report stated that all the performance goals were met. See CARB's "Staff Report, San Joaquin Valley 2013 Plan for the Federal 1-Hour Ozone Standard," dated November 8, 2013, page 8. The EPA agrees that the model performance is adequate for the San Joaquin Valley 1-hour ozone attainment demonstration.

The 2013 Ozone Plan used a "band-RRF" approach for the use of modeling results in the modeled attainment test. This a refinement of the approach in the Modeling Guidance, and is described in appendix F ("Modeling Approach and Results," section 1.4.1) of the 2013 Ozone Plan, as well as in the Modeling Protocol and in a journal paper.[25] The Modeling Guidance approach is briefly reviewed here before the band-RRF approach is described. As mentioned above, in simplest terms, an RRF is the relative model response to emissions changes, that is, the ratio of fu-

[25] Sarika Kulkarni, Ajith P. Kaduwela, Jeremy C. Avise, John A. DaMassa & Daniel Chau (2014), "An extended approach to calculate the ozone relative response factors used in the attainment demonstration for the National Ambient Air Quality Standards", *Journal of the Air & Waste Management Association*, 64:10, 1204-1213, DOI: 10.1080/10962247.2014.936984

ture modeled concentration to base year modeled concentration. Since the model provides concentrations for every grid square, for every hour of the simulated period, in actually implementing an RRF, a choice must be made of which particular model concentrations should be included in the calculation. The Modeling Guidance recommends that high concentration days selected from grid cells near the monitor be used; these will be most relevant for estimating the future design value at the monitor. Specifically, for the 1997 0.08 ppm (80 ppb) 8-hour ozone NAAQS in effect at the time, the Modeling Guidance recommends that the highest concentration among grid cells within 15 km of the monitor be used to represent the monitor, and that all modeled maximum daily 8-hour concentrations at or above 085 ppb[26] (0.085 ppm) be averaged. The RRF is the average for future days divided by the average for base year days; this ratio reflects the average response of high ozone concentrations near the monitor to future emission changes.

The 2013 Ozone Plan band-RRF approach parallels the Modeling Guidance, but differs in several specifics, especially in the choice of concentration levels to include in calculating the RRF. The 2013 Ozone Plan applied an initial performance screen: only days that meet the model performance criteria cited above were retained for the calculation. For the choice of grid cell to represent the monitor, the 2013 Ozone Plan used the grid cell containing the monitor itself, rather than the maximum cell within 15 km; this puts a somewhat greater reliance on the spatial accuracy of the model, but is not necessarily less conservative. The 2013 Ozone Plan's choice of concentration days to include is more complex than in the Guidance. Instead of using an average over all high concentration days, in the band-RRF approach there is a different RRF for each 10 ppb-wide (0.010 ppm) band of ozone concentrations; the RRF used for a particular monitored day is computed from future and base year averages only within the concentration band relevant

[26] The 1997 8-hour ozone NAAQS is actually 0.08 ppm; concentrations of 84.999 ppb or below round to 80 and comply with the NAAQS, and concentrations of 85.0 or higher exceed the NAAQS.

for that day, rather than from all high days.[27] This refinement has the advantage of allowing the model response to vary depending on the concentration, instead of assuming the relative response is always the same, as the Modeling Guidance procedure does. The Modeling Guidance acknowledges that there tends to be a greater model response to emission changes at higher ozone concentrations (Modeling Guidance, page 37), so the use of RRF bands is a reasonable refinement. The use of band-RRFs requires that each day be scaled by its corresponding RRF, and that the future design value be estimated from those scaled values concentrations. This is different than the Modeling Guidance approach, in which a single RRF is applied to the monitored design value itself. The "design value" for the 1-hour ozone standard is nearly equivalent to the 4th highest concentration.[28] In the 2013 Ozone Plan's approach, the 10 days with the highest observed concentration were multiplied by their respective RRFs, and the 4th highest resulting concentration was used as the predicted future design value for the monitor. The inclusion of 10 candidate days accommodates any shifts in the concentration rank of the days as the result of controls; it ensures the inclusion of days that could contribute to the post-control design value. Applying different RRFs to different days and estimating the design value afterward is very similar to the EPA's updated guidance procedure for $PM_{2.5}$ attainment demonstrations.[29] The band-

[27] Specifically, a linear regression between observed and modeled concentrations was used to choose a modeled concentration for each observed day; that modeled concentration predicted from the linear fit was then used to select a ppb band and the corresponding RRF. This indirect procedure avoids quirks of individual days, providing a typical model response appropriate for future projections. It also avoids introducing any inconsistency and model bias into the RRF calculation. If the observed value were used directly to choose a band, and the model happened to underpredict on that day, then the RRF, chosen on the basis of the higher observed value, would be the model response appropriate for a higher ozone concentration, rather than for the modeled base year concentration. In short, it keeps both the RRF numerator and denominator both as modeled values, consistent with the definition of an RRF.

[28] The 1-hour ozone NAAQS is met when the "expected number of days per calendar year with maximum hourly average concentrations above 0.12 parts per million... is equal to or less than 1" (40 CFR 50.9); 40 CFR part 50, appendix H describes the procedure for calculating this, based on three calendar years. This is approximately the same as allowing one exceedance per year over three years, that is, the three highest values are allowed to exceed 0.12 ppm. Thus, the fourth highest concentration is a unbiased single-year value to use for comparison to the NAAQS level in a modeling context.

[29] "Update to the 24 Hour $PM_{2.5}$ NAAQS Modeled Attainment Test," EPA memorandum dated June 28, 2011, from Tyler Fox, Air Quality Modeling Group, EPA Office of Air Quality Planning and Standards. The updated guidance

RRF approach is a refinement to the 8-hour ozone approach recommended in the Modeling Guidance for the modeled attainment test, and is adequate for the San Joaquin Valley 1-hour ozone attainment demonstration.

An additional difference between the 2013 Ozone Plan modeled attainment test and the Modeling Guidance is that it uses only the single 2005-2007 design value as the starting point, whereas for a 2007 base year the Modeling Guidance would recommend the average of the three design values for 2005-2007, 2006-2008, and 2007-2009. It is not clear how to use band-RRF approach in conjunction with this Guidance recommendation, but presumably it would involve using ozone observations from a longer period than 2005 through 2007. Using a longer period might make for more stable design value estimates, less subject to year-to-year meteorological variability; conversely it also introduces some inconsistency given that emissions changes during a longer period would generally be larger. The EPA estimated the effect of using an alternative starting point by applying modeled percent change in design value from the 2013 Ozone Plan to the 2006-2008 design value, and to the three-design value average mentioned above. The results were 120.2 and 119.6 ppb (0.1202 and 0.1196 ppm), respectively, both slightly higher than the 2013 Ozone Plan's 119.3 ppb (0.1193 ppm), but both less than the NAAQS-compliant value of 124 ppb (or 0.124 ppm, which rounds to 0.12 ppm). Documentation on the rationale for the 2013 Ozone Plan choice of the 2005-2007 design value starting point would have strengthened the

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allowed for the shifting of $PM_{2.5}$ day ranks. A shift is possible since emission controls affect $PM_{2.5}$ species components differently, and species composition may be different for different seasons: control could affect mainly winter days, with summer days little affected and so becoming higher ranked. The 2013 Ozone Plan's RRF procedure was carried out for the top 10 observed days. This accommodates differences in ranking between the observed days and their corresponding modeled days and bands, ensuring that days that were not the highest before controls, but are so after control, are available for the design value calculation. It also accommodates the fact that applying controls may result in shifting in the ranks of the days; the particular day that is 4th highest before controls may not be the 4th highest post-control day. The 2013 Ozone Plan does explicitly state whether such rank shifts actually occurred in applying the band-RRF approach, but table 4 in appendix G of the 2013 Ozone Plan does not appear to show such shifts: the 2017 design values remain sorted from high to low as are the 2007 design values. Shifts might be expected to occur if a concentration near the bottom of a band with a relatively small RRF was reduced more than a concentration at the top of the next lower band.

support for the attainment demonstration, but even in its absence, the EPA finds the procedure followed to be adequate for the San Joaquin Valley 1-hour ozone attainment demonstration.

The final model results appear in chapter 2 of the 2013 Ozone Plan (and are repeated in appendix F, section 1.4.2 "Attainment Demonstration"). These are tables of three-year design values for base year 2007 and for the projected year 2017. The highest monitored 2007 design value was 135 ppb (0.135 ppm) at the Edison monitor. The highest projected 2017 design value, accounting for emission reductions occurring during 2007-2017 was 119.3 ppb (0.1193 ppm) at Edison monitor. This is comfortably below the maximum 124 ppb (0.124 ppm) consistent with NAAQS attainment. The next highest 2017 design value was substantially less, 107.4 ppb (0.1074 ppm) at the Arvin monitor.

The 2013 Ozone Plan contains a "Weight of Evidence" (WOE) section in its appendix G. This section includes analyses of ambient concentration and emission trends, and additional analyses that strengthen the 2013 Ozone Plan's attainment demonstration conclusion that NAAQS attainment will be achieved in 2017. The overall San Joaquin Valley design value trend from 1994 through 2012 is downward, despite some individual multi-year periods of little progress, and corroborates the projection of attainment in 2017 (appendix G, figure 1, page G-2). This pattern is also seen for individual monitoring site design values trends (appendix G, figures 4 – 6 and 8 – 10, pages G-6 – G-10). An exception to this is the Fresno-Drummond site, for which the 2007 - 2011 trend is upward, though the number of NAAQS exceedance days remains small (appendix G, figure 6, page G-7). Since VOC and especially NOx emission trends have been steadily downward (appendix G, figures 18 – 22, pages G-20 – G-23), these stagnant periods are likely due to unfavorable meteorology. The 2013 Ozone Plan also includes trends adjusted for the effect of meteorology, based on a statistical analysis that estimates what ozone would

have been had wind speeds and temperatures been more typical (appendix G, section G-2). Since a statistical analysis requires numerous data points, 20-day averages were examined rather than the design values, of which there are only one per year. While this means that the results cannot be used to directly adjust the design value trends, it is clear that for 2008 - 2011, unfavorable meteorology resulted in higher ozone concentrations (appendix G, figure 12, page G-14), and partly explains the slower recent progress in the design values at some monitoring sites.

The 2013 Ozone Plan includes NO_x vs. VOC diagrams showing the modeled sensitivity of ozone to reductions at each monitoring site (appendix G, figure 23, pages G-34 – G-39.). The relatively flat slopes mean that ozone changes relatively little with VOC reductions. While the relative effectiveness varies by site and reduction amount, on a tpd basis NO_x reductions approximately 20 times as effective as VOC reductions; for the Edison design value site, the relative effectiveness is closer to 7. In conjunction with the pronounced downward NO_x emission trend referred to above, these findings provide confidence in the attainment strategy.

Finally, the 2013 Ozone Plan provides a supplemental attainment demonstration using a traditional "single RRF" approach, in addition to the "band-RRF" approach (appendix G, sections 6.1 and 6.2, pages G-26 – G-33). (As described above, in the former approach, described in the Modeling Guidance for 8-hour ozone, a single RRF is used regardless of the ozone concentration. In the latter approach there is a different RRF for each "band" or range of ozone values.) The single RRF approach is more conservative, giving slightly higher future concentrations; this was expected since the RRF includes model results from lower, less responsive, ozone levels. The single RRF approach nevertheless also shows 2017 attainment.

The various analyses provided in appendix G of the 2013 Ozone Plan provide assurance in the attainment demonstration's conclusion that the 1-hr ozone NAAQS will be attained in 2017.

c. Evaluation of the Air Quality Modeling in the 2013 Ozone Plan

The modeling showed that existing State and District control measures are sufficient to attain the 1979 1-hour Ozone NAAQS by 2017 at all monitoring sites in the San Joaquin Valley. Given the extensive discussion of modeling procedures, tests, and performance analyses called for in the Modeling Protocol and the good model performance, the EPA finds that the modeling is adequate for purposes of supporting the 1-hour ozone attainment demonstration.

3. Proposed Action on the Attainment Demonstration

To approve a SIP's attainment demonstration, the EPA must make several findings: First, we must find that the demonstration's technical bases--emissions inventories and air quality modeling--are adequate. As discussed above in section III.A, we propose to find that the inventories in the 2013 Ozone Plan provide an appropriate basis for the various other elements of the 2013 Ozone Plan, including the attainment demonstration, and for the reasons discussed above, we find the air quality modeling adequate to support the attainment demonstration.

Second, we must find that the SIP provides for expeditious attainment through the implementation of all RACM. As discussed above in section III.B, we are proposing to approve the RACM demonstration in the 2013 Ozone Plan.

Third, we must find that the emissions reductions that are relied on for attainment are creditable and are sufficient to provide for attainment. As stated previously in today's action, the EPA is proposing to approve the 2013 Ozone Plan in part based on the permanence and enforceability of the waiver measures flowing from the approval of the measures as part of the SIP.

Thus, the EPA will not finalize approval of the 2013 Ozone Plan until the Agency takes final action to approve the waiver measures as part of the California SIP. Once that occurs, the 2013 Ozone Plan will rely entirely on adopted and approved rules to achieve the emissions reductions needed to attain the 1-hour ozone standards in the San Joaquin Valley in 2017.

E. Contingency Measures

1. Requirements for Contingency Measures

Section 172(c)(9) and 182(c)(9) of the CAA require that SIPs contain contingency measures that will take effect without further action by the state or the EPA if an area fails to attain the ozone standard by the applicable attainment date (section 172(c)(9)) or fails to meet an ROP milestone (section 182(c)(9)). This requirement is a continuing applicable requirement for the San Joaquin Valley "Extreme" 1-hour ozone nonattainment area under the EPA's anti-backsliding rules that apply once a standard has been revoked. See 40 CFR 51.1105(a)(1) and 51.1100(o)(13).

The Act does not specify how many contingency measures are needed or the magnitude of emission reductions that must be provided by these measures. However, the EPA provided initial guidance interpreting the contingency measure requirements in the General Preamble at 13510. Our interpretation is based upon the language in sections 172(c)(9) and 182(c)(9) in conjunction with the control measure requirements of sections 172(c), 182(b) and 182(c)(2)(B), the reclassification and failure to attain provisions of section 181(b) and other provisions. In the General Preamble, the EPA indicated that states with moderate and above ozone nonattainment areas should include sufficient contingency measures so that, upon implementation of such measures, additional emissions reductions of three percent of the emissions in the adjusted base year inventory (or such lesser percentage what will cure the identified failure) would be achieved

in the year following the year in which the failure is identified. These reductions should be beyond what is needed to meet the attainment and/or ROP requirement. States may use reductions of either VOC or NO_x or a combination of both to meet the contingency measure requirements. General Preamble at 13520, footnote 6. The states must show that the contingency measures can be implemented with minimal further action on their part and with no additional rulemaking actions.

In subsequent guidance,[30] the EPA indicated that contingency measures could be implemented early, i.e., prior to the milestone or attainment date. Consistent with this policy, states are allowed to use excess reductions from already adopted measures to meet the CAA sections 172(c)(9) and 182(c)(9) contingency measures requirement. This is because the purpose of contingency measures is to provide extra reductions that are not relied on for ROP or attainment that will provide continued progress while the plan is being revised to fully address the failure to meet the required milestone. Nothing in the CAA precludes a state from implementing such measures before they are triggered. This approach has been approved by the EPA in numerous SIPs. See 62 FR 15844 (April 3, 1997) (approval of the Indiana portion of the Chicago area 15 percent ROP plan); 62 FR 66279 (December 18, 1997) (approval of the Illinois portion of the Chicago area 15 percent ROP plan); 66 FR 30811 (June 8, 2001) (proposed approval of the Rhode Island post-1996 ROP plan); and 66 FR 586 and 66 FR 634 (January 3, 2001) (approval of the Massachusetts and Connecticut 1-hour ozone attainment demonstrations). In the only adjudicated challenge to this approach, the court upheld it. See *LEAN v. EPA*, 382 F.3d 575 (5th Cir. 2004). 70 FR 71611, 71651.

2. Contingency Measures in the 2013 Ozone Plan

[30] G.T. Helms, Chief, Ozone/Carbon Monoxide Programs Branch, EPA Office of Air Quality Planning and Standards, memorandum titled "Early Implementation of Contingency Measures for Ozone and Carbon Monoxide (CO) Nonattainment Areas," August 13, 1993.

Contingency measure provisions are described in Section 4.4 of the 2013 Ozone Plan. To provide for contingency measures for failure to meet the ROP milestones, the SIP relies on surplus NO_x reductions in the ROP demonstration. See 2013 Ozone Plan, table 4-2. See also table 3 above.

For the failure to attainment contingency measure, the 3 percent reduction from the 2007 baseline can come from either VOC or NO_x. A three percent reduction from the 2007 baseline is equivalent to 14.5 tpd of NO_x. VOC emission reductions are only 0.3 tpd between 2017 and 2018; thus, NO_x emission reductions are necessary to satisfy the attainment contingency measure requirement. Fleet turnover in 2018 is expected to reduce NO_x emissions by 11.0 tpd. See 2013 Ozone Plan, appendix B, Tables B-1 and B-2. In the 2013 Ozone Plan, the District relies on 3.5 tpd of NO_x reductions from unspecified incentive programs plus the NO_x reductions from fleet turnover to achieve the 14.5 tpd of NO_x necessary for the failure to attainment contingency measure. See 2013 Ozone Plan, table 4-4.

3. Proposed Action on the Contingency Measures

Contingency measures for ROP. As discussed above in section III.C, we are proposing to approve the 2013 Ozone Plan's ROP demonstration. As seen in the second to last line on table 3 above (in the ROP demonstration), there are sufficient excess reductions of NO_x in each milestone year beyond those needed to meet the next ROP percent reduction requirement to provide the 3 percent of adjusted baseline emissions reductions needed to meet the RFP contingency measure requirement for 2010, 2013, 2016, and 2017. Accordingly, we propose to approve the ROP contingency measures in the 2013 Ozone Plan under CAA section 182(c)(9) and 40 CFR 51.1105(a)(1) and 51.1100(o)(13).

Contingency measures for failure to attain. We are not proposing action on the plan's attainment contingency measures at this time. Attainment contingency measures are a distinct provision of the CAA that we may act on separately from the attainment demonstration.

F. Clean Fuels or Advanced Control Technology for Boilers

1. Requirements for Clean Fuels or Advanced Control Technology for Boilers

CAA section 182(e)(3) provides that SIPs must require each new, modified, and existing electric utility and industrial and commercial boiler that emits more than 25 tons per year (tpy) of NO_x to either burn as its primary fuel natural gas, methanol, or ethanol (or a comparably low polluting fuel), or use advanced control technology (such as catalytic control technology or other comparably effective control methods). This requirement is a continuing applicable requirement for the San Joaquin Valley "Extreme" 1-hour ozone nonattainment area under the EPA's anti-backsliding rules that apply once a standard has been revoked. See 40 CFR 51.1105(a)(1) and 51.1100(o)(6).

Further guidance on this requirement is provided in the General Preamble at 13523. According to the General Preamble, a boiler should generally be considered as any combustion equipment used to produce steam and generally does not include a process heater that transfers heat from combustion gases to process streams. General Preamble at 13523. In addition, boilers with rated heat inputs less than 15 million Btu (MMBtu) per hour which are oil or gas fired may generally be considered de minimis and exempt from these requirements since it is unlikely that they will exceed the 25 tpy NO_x emission limit. General Preamble at 13524.

2. Provisions for Controls on Boilers in the San Joaquin Valley District Rules

The 2013 Ozone Plan, which addresses the CAA section 182(e)(3) requirements on page 4-10, states that District Rules 4306 and 4352 address NO_x from affected boilers and that these rules meet the requirements of the CAA.

Rule 4306 "Boilers, Steam Generators, and Process Heaters – Phase 3" as revised on October 16, 2008, applies to any gaseous fuel or liquid fuel fired boiler, steam generator, or process heater with a total rated heat input greater than 5 million Btu per hour. The emission limits in the rule (5 ppm to 30 ppm for gaseous fuels and 40 ppm for liquid fuels) cannot be achieved without the use of advanced control technologies. See "Alternative Control Techniques Document--NO_x Emissions from Industrial/Commercial/Institutional (ICI) Boilers," Emissions Standards Division, EPA, March 1994; see also 76 FR 57846 at 57864-57865 (September 11, 2011) and 77 FR 12652 at 12670 (March 1, 2012) (proposed and final rules approving 2007 Ozone Plan for the San Joaquin Valley). All units subject to Rule 4306 were required to comply with the limits in the rule no later than December 1, 2008. See Rule 4306, section 7.0. We most recently approved Rule 4306 as a SIP revision at 75 FR 1715 (January 13, 2010).

Rule 4352 "Solid Fuel Fired Boilers, Steam Generators And Process Heaters" as revised December 15, 2011, applies to any boiler, steam generator or process heater fired on solid fuel at a source that has a potential to emit more than 10 tpy of NO_x or VOC. All units subject to Rule 4352 were required to comply with the rule's most stringent limits no later than January 1, 2013. Rule 4352, section 5.1. We most recently approved Rule 4352 into the California SIP at 77 FR 77 FR 66548 (November 6, 2012). In an EPA action on the previous version of Rule 4352, we determined that all of the NO_x emission limits in Rule 4352 effectively require operation of Selective Noncatalytic Reduction (SNCR) control systems, which are comparably effective to Selective Catalytic Reduction for the affected sources. SNCR also appears to achieve NO_x emission

reductions comparable to combustion of clean fuels at these types of boilers. We therefore concluded that Rule 4352 satisfies the requirements of section 182(e)(3) for solid fuel-fired boilers in the San Joaquin Valley. 75 FR 60623 (October 10, 2010).

New and modified boilers that will emit or have the potential to emit 25 tpy or more of NO_x are subject to the District's new source permitting rule, Rule 2201 "New and Modified Stationary Source Review Rule." This rule requires new and modified source to install and operate best available control technology/lowest achievable emissions reductions technology. The EPA most recently approved Rule 2201 into the California SIP at 79 FR 55637 (September 17, 2014).

3. Proposed Finding on the Clean Fuel / Advanced Technology for Boilers

Based on our review of, and previous approval of, the emission limitations in the District's rules discussed above, we propose to find that the 2013 Ozone Plan meets the clean fuels or advanced control technology for boilers requirement in CAA section 182(e)(3) and 40 CFR 40 CFR 51.1105(a)(1) and 51.1100(o)(6).

G. Transportation Control Strategies and Transportation Control Measures to Offset Growth in Emissions from Growth in Vehicle Miles Traveled or Number of Vehicle Trips

1. Requirements for VMT Emissions Offset Demonstrations

Section 182(d)(1)(A) of the Act requires, in relevant part, the state, if subject to its requirements for a given area, to "submit a revision that identifies and adopts specific enforceable transportation control strategies and transportation control measures to offset any growth in emissions from growth in vehicle miles traveled or number of vehicle trips in such area."[31] This

[31] CAA section 182(d)(1)(A) includes three separate elements. In short, under section 182(d)(1)(A), states are required to adopt transportation control strategies and measures (1) to offset growth in emissions from growth in VMT, and, (2) in combination with other emission reduction requirements, to demonstrate RFP, and (3) to demonstrate attainment. For more information on the EPA's interpretation of the three elements of section 182(d)(1)(A), please see 77 FR 58067, at 58068 (September 19, 2012)(proposed withdrawal of approval of South Coast VMT emissions offset demonstrations). The decision by the Ninth Circuit in the *Association of Irritated Residents* case, and the EPA's related withdrawal of the San Joaquin Valley approvals and finding of failure to submit, relate only to

requirement is a continuing applicable requirement for the San Joaquin Valley "Extreme" ozone nonattainment area for the 1-hour and 1997 8-hour standards under the EPA's anti-backsliding rules that apply once a standard has been revoked. See 40 CFR 40 CFR 51.1105(a)(1) and 51.1100(o)(10).

As described above, in 2012, 77 FR 70376 (November 26, 2012), the EPA withdrew the Agency's approvals of the VMT emissions offset demonstrations for the San Joaquin Valley for the 1-hour ozone and 1997 8-hour ozone standards. In both instances, the EPA had based its approvals on the Agency's long-standing interpretation of the VMT emissions offset requirement that was rejected by the Ninth Circuit in the *Association of Irritated Residents* case. In response to the Court's decision, the EPA issued a memorandum titled "Guidance on Implementing Clean Air Act Section 182(d)(1)(A): Transportation Control Measures and Transportation Control Strategies to Offset Growth in Emissions Due to Growth in Vehicle Miles Travelled" (herein referred to as the "August 2012 guidance").[32]

The August 2012 Guidance discusses the meaning of the terms, "transportation control strategies" (TCSs) and "transportation control measures" (TCMs), and recommends that both TCSs and TCMs be included in the calculations made for the purpose of determining the degree to which any hypothetical growth in emissions due to growth in VMT should be offset. Generally, TCSs is a broad term that encompasses many types of controls including, for example, motor vehicle emission limitations, inspection and maintenance (I/M) programs, alternative fuel programs, other technology-based measures, and TCMs, that would fit within the regulatory definition of "control strategy." See, e.g., 40 CFR 51.100(n). TCMs are defined at 40 CFR 51.100(r) as

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the first element of CAA section 182(d)(1)(A)(i.e., the VMT emissions offset requirement). Accordingly, this proposed action relates only to the first element of CAA section 182(d)(1)(A).

[32] Memorandum from Karl Simon, Director, Transportation and Climate Division, Office of Transportation and Air Quality, to Carl Edland, Director, Multimedia Planning and Permitting Division, EPA Region 6, and Deborah Jordan, Director, Air Division, EPA Region 9, August 30, 2012.

meaning "any measure that is directed toward reducing emissions of air pollutants from transportation sources. Such measures include, but are not limited to those listed in section 108(f) of the Clean Air Act[,]" and generally refer to programs intended to reduce the VMT, the number of vehicle trips, or traffic congestion, such as programs for improved public transit, designation of certain lanes for passenger buses and high-occupancy vehicles (HOVs), trip reduction ordinances, and the like.

The August 2012 guidance explains how states may demonstrate that the VMT emissions offset requirement is satisfied in conformance with the Court's ruling. States are recommended to estimate emissions for the nonattainment area's base year and the attainment year. One emission inventory is developed for the base year, and three different emissions inventory scenarios are developed for the attainment year. For the attainment year, the state would present three emissions estimates, two of which would represent hypothetical emissions scenarios that would provide the basis to identify the "growth in emissions" due solely to the growth in VMT, and one that would represent projected actual motor vehicle emissions after fully accounting for projected VMT growth and offsetting emissions reductions obtained by all creditable TCSs and TCMs. See the August 2012 guidance for specific details on how states might conduct the calculations.

The base year on-road VOC emissions should be based on VMT in that year and it should reflect all enforceable TCSs and TCMs in place in the base year. This would include vehicle emissions standards, state and local control programs such as I/M programs or fuel rules, and any additional implemented TCSs and TCMs that were already required by or credited in the SIP as of that base year.

The first of the emissions calculations for the attainment year would be based on the projected VMT and trips for that year, and assume that no new TCSs or TCMs beyond those already

credited in the base year inventory have been put in place since the base year. This calculation demonstrates how emissions would hypothetically change if no new TCSs or TCMs were implemented, and VMT and trips were allowed to grow at the projected rate from the base year. This estimate would show the potential for an increase in emissions due solely to growth in VMT and trips. This represents a "no action" taken scenario. Emissions in the attainment year in this scenario may be lower than those in the base year due to the fleet that was on the road in the base year gradually being replaced through fleet turnover; however, provided VMT and/or numbers of vehicle trips will in fact increase by the attainment year, they would still likely be higher than they would have been assuming VMT had held constant.

The second of the attainment year's emissions calculations would also assume that no new TCSs or TCMs beyond those already credited have been put in place since the base year, but would also assume that there was no growth in VMT and trips between the base year and attainment year. This estimate reflects the hypothetical emissions level that would have occurred if no further TCMs or TCSs had been put in place and if VMT and trip levels had held constant since the base year. Like the "no action" attainment year estimate described above, emissions in the attainment year may be lower than those in the base year due to the fleet that was on the road in the base year gradually being replaced by cleaner vehicles through fleet turnover, but in this case they would not be influenced by any growth in VMT or trips. This emissions estimate would reflect a ceiling on the attainment emissions that should be allowed to occur under the statute as interpreted by the Court because it shows what would happen under a scenario in which no offsetting TCSs or TCMs have yet been put in place and VMT and trips are held constant during the period from the area's base year to its attainment year. This represents a "VMT offset ceiling" scenario. These two hypothetical status quo estimates are necessary steps in identifying the target

level of emissions from which states would determine whether further TCMs or TCSs, beyond those that have been adopted and implemented in reality, would need to be adopted and implemented in order to fully offset any increase in emissions due solely to VMT and trips identified in the "no action" scenario.

Finally, the state would present the emissions that are actually expected to occur in the area's attainment year after taking into account reductions from all enforceable TCSs and TCMs that in reality were put in place after the baseline year. This estimate would be based on the VMT and trip levels expected to occur in the attainment year (i.e., the VMT and trip levels from the first estimate) and all of the TCSs and TCMs expected to be in place and for which the SIP will take credit in the area's attainment year, including any TCMs and TCSs put in place since the base year. This represents the "projected actual" attainment year scenario. If this emissions estimate is less than or equal to the emissions ceiling that was established in the second of the attainment year calculations, the TCSs or TCMs for the attainment year would be sufficient to fully offset the identified hypothetical growth in emissions.

If, instead, the estimated projected actual attainment year emissions are still greater than the ceiling which was established in the second of the attainment year emissions calculations, even after accounting for post-baseline year TCSs and TCMs, the state would need to adopt and implement additional TCSs or TCMs to further offset the growth in emissions and bring the actual emissions down to at least the "had VMT and trips held constant" ceiling estimated in the second of the attainment year calculations, in order to meet the VMT offset requirement of section 182(d)(1)(A) as interpreted by the Court.

2. Revised San Joaquin Valley VMT Emissions Offset Demonstrations

For the revised San Joaquin Valley VMT emissions offset demonstrations, the State used EMFAC2011, the latest EPA-approved motor vehicle emissions model for California. The EMFAC2011 model estimates the on-road emissions from two combustion processes (i.e., running exhaust and start exhaust) and four evaporative processes (i.e., hot soak, running losses, diurnal losses, and resting losses). The EMFAC2011 model combines trip-based VMT data from the eight San Joaquin Valley MPOs (e.g., Council of Fresno County Governments), starts data based on household travel surveys, and vehicle population data from the California Department of Motor Vehicles. These sets of data are combined with corresponding emission rates to calculate emissions.

Emissions from running exhaust, start exhaust, hot soak, and running losses are a function of how much a vehicle is driven. As such, emissions from these processes are directly related to VMT and vehicle trips, and the State included emissions from them in the calculations that provide the basis for the revised San Joaquin Valley VMT emissions offset demonstrations. The State did not include emissions from resting loss and diurnal loss processes in the analysis because such emissions are related to vehicle population, not to VMT or vehicle trips, and thus are not part of "any growth in emissions from growth in *vehicle miles traveled or numbers of vehicle trips* in such area" (emphasis added) under CAA section 182(d)(1)(A).

The revised San Joaquin Valley VMT emissions offset demonstrations address both the 1-hour ozone standard and the 1997 8-hour ozone standard and include two different "base year" scenarios: 1990, for the purposes of the VMT emissions offset demonstration for the 1-hour ozone standard, and 2002, for the purposes of the VMT emissions offset demonstration for the 1997 8-hour ozone standard. The "base year" for VMT emissions offset demonstration purposes should generally be the same "base year" used for nonattainment planning purposes. In 2012, the

EPA approved the 2002 base year inventory for the San Joaquin Valley for the purposes of the 1997 8-hour ozone standard, 77 FR 12652, at 12670 (March 1, 2012), and thus, the State's selection of 2002 as the base year for the revised San Joaquin Valley VMT emissions offset demonstration for the 1997 8-hour ozone standard is appropriate. With respect to the 1-hour ozone standard, the attainment demonstration in the 2013 Ozone Plan relies on a base year of 2007, rather than 1990; however, the State's selection of 1990 as the base year for the VMT offset demonstration is appropriate because 1990 was used as the base year for 1-hour ozone SIP planning purposes under the CAA Amendments of 1990, which established, among other requirements, the VMT emissions offset requirement in section 182(d)(1)(A).

The demonstrations also include the previously described three different attainment year scenarios (i.e., no action, VMT offset ceiling, and projected actual) but the attainment year differs between the two demonstrations. Year 2017 was selected as the attainment year for the revised VMT emissions offset demonstration for the 1-hour ozone standard, and year 2023 was selected as the attainment year for the revised demonstration for the 1997 8-hour ozone standard. For the 1997 8-hour ozone standard, the State's selection of 2023 is appropriate given that the approved San Joaquin Valley 1997 8-hour ozone plan demonstrates attainment by the applicable attainment date of June 15, 2024 based on the 2023 controlled emissions inventory. See 76 FR 57846, at 57856-57861 (September 16, 2011) and 77 FR 12652, at 12670 (March 1, 2012).

The San Joaquin Valley 2013 Ozone Plan, which includes the revised VMT emissions offset demonstrations in appendix D, provides a demonstration of attainment by 2017. The revised San Joaquin Valley 1-hour ozone attainment demonstration thus provides a demonstration of attainment of the 1-hour ozone standard in the San Joaquin Valley by 2017 based on the controlled 2017 emissions inventory. As described in section III.D of this document, the EPA is pro-

posing to approve 2017 as the attainment year for the 1-hour ozone standard in the San Joaquin Valley.[33] Based on the proposed approval of 2017 as the attainment year for the San Joaquin Valley for the 1-hour ozone standard, we find CARB's selection of year 2017 as the attainment year for the revised VMT emissions offset demonstration for the 1-hour ozone standard to be acceptable. For additional background and justification regarding the 2017 attainment year, please see section III.D in today's notice.

Tables 4 and 5 summarize the relevant distinguishing parameters for each of the emissions scenarios and show the State's corresponding VOC emissions estimates. Table 4 provides the parameters and emissions estimates for the revised VMT emissions offset demonstration for the 1-hour ozone standard, and table 5 provides the corresponding values for the revised demonstration for the 1997 8-hour ozone standard.

Table 4 - VMT Emissions Offset Inventory Scenarios and Results for 1-Hour Ozone Standard

Scenario	VMT		Starts		Controls	VOC Emissions
	Year	1000/day	Year	1000/day	Year	tpd
Base Year	1990	52,199	1990	7,730	1990	196
No Action	2017	115,070	2017	17,133	1990	178
VMT Offset Ceiling	1990	52,199	1990	7,730	1990	81
Projected Actual	2017	115,070	2017	17,133	2017	30

Source: CARB's Technical Supplement, April 24, 2014. 2017 VMT based on 2013 Federal Transportation Improvement Plans from the eight San Joaquin Valley MPOs.

Table 5 - VMT Emissions Offset Inventory Scenarios and Results for 1997 8-Hour Ozone Standard

[33] In this context, "attainment year" refers to the ozone season immediately preceding a nonattainment area's attainment date. In the case of the San Joaquin Valley for the 1-hour ozone standard, the proposed applicable attainment date is November 26, 2017, and the ozone season immediately preceding that date will occur in year 2017.

Scenario	VMT		Starts		Controls	VOC Emissions
	Year	1000/day	Year	1000/day	Year	tpd
Base Year	2002	78,400	2002	11,307	2002	76
No Action	2023	130,431	2023	19,466	2002	49
VMT Offset Ceiling	2002	78,400	2002	11,307	2002	28
Projected Actual	2023	130,431	2023	19,466	2023	24

Source: CARB's Technical Supplement, April 24, 2014. 2023 VMT based on 2013 Federal Transportation Improvement Plans from the eight San Joaquin Valley MPOs.

For the two "base year" scenarios, the State ran the EMFAC2011 model for the applicable base year (i.e., 1990 for the 1-hour ozone standard and 2002 for the 1997 8-hour ozone standard) using VMT and starts data corresponding to those years. As shown in tables 5 and 6, the State estimates the San Joaquin Valley VOC emissions at 196 tpd in 1990 and 76 tpd in 2002.

For the two "no action" scenarios, the State first identified the on-road motor vehicle control programs (i.e., TCSs or TCMs) put in place since the base years and incorporated into EMFAC2011 and then ran EMFAC2011 with the VMT and starts data corresponding to the applicable attainment year (i.e., 2017 for the 1-hour ozone standard and 2023 for the 1997 8-hour ozone standard) without the emissions reductions from the on-road motor vehicle control programs put in place after the base year. Thus, the "no action" scenarios reflect the hypothetical VOC emissions that would occur in the attainment years in the San Joaquin Valley if the State had not put in place any additional TCSs or TCMs after 1990 (for the 1-hour ozone VMT emissions offset demonstration) or after 2002 (for the 8-hour ozone demonstration). As shown in tables 5 and 6, the State estimates the "no action" San Joaquin Valley VOC emissions at 178 tpd in 2017 and 49 tpd in 2023. The principal difference between the two estimates is that the latter value (used for

the revised VMT emissions offset demonstration for the 8-hour ozone standard) reflects the emissions reductions from TCSs and TCMs put in place by the end of 2002 whereas the former value (used for the revised demonstration for the 1-hour ozone standard) reflects only the emissions reductions from TCSs and TCMs put in place by the end of 1990. The most significant of the measures adopted since 1990 and relied upon for the 1-hour ozone VMT emissions offset demonstration include tiered (series of increasingly stringent limits) emissions standards for new motor vehicles (i.e., Low Emissions Vehicles I, II, and III standards), content specifications for gasoline (i.e., California Reformulated Gasoline Phases 1, 2, and 3), and enhancements to the State's I/M program (i.e., Smog Check II). See attachments A and B to appendix D of the 2013 Ozone Plan for lists of TCSs and TCMs adopted by the State and MPOs since 1990.[34]

For the "VMT offset ceiling" scenarios, the State ran the EMFAC2011 model for the attainment years but with VMT and starts data corresponding to base year values. Like the "no action" scenarios, the EMFAC2011 model was adjusted to reflect the VOC emissions levels in the attainment years without the benefits of the post-base-year on-road motor vehicle control programs. Thus, the "VMT offset ceiling" scenarios reflect hypothetical VOC emissions in the San Joaquin Valley if the State had not put in place any TCSs or TCMs after the base years and if there had been no growth in VMT or vehicle trips between the base years and the attainment years.

The hypothetical growth in emissions due to growth in VMT and trips can be determined from the difference between the VOC emissions estimates under the "no action" scenarios and the corresponding estimates under the "VMT offset ceiling" scenarios. Based on the values in tables 5 and 6, the hypothetical growth in emissions due to growth in VMT and trips in the San

[34] The docket for today's action includes an updated list of the post-1990 transportation control strategies in attachment A of appendix D to the 2013 Ozone Plan.

Joaquin Valley would have been 97 tpd (i.e., 178 tpd minus 81 tpd) for the purposes of the revised VMT emissions offset demonstration for the 1-hour ozone standard, and 21 tpd (i.e., 49 tpd minus 28 tpd) for the purposes of the corresponding demonstration for the 8-hour ozone standard. These hypothetical differences establish the levels of VMT growth-caused emissions that need to be offset by the combination of post-baseline year TCMs and TCSs and any necessary additional TCMs and TCSs.

For the "projected actual" scenario calculations, the State ran the EMFAC2011 model for the attainment years with VMT and starts data at attainment year values and with the full benefits of the relevant post-baseline year motor vehicle control programs. For this scenario, the State included the emissions benefits from TCSs and TCMs put in place since the base year. The most significant measures put in place during the 2002 to 2023 time frame include Low Emission Vehicles II and III standards, Zero Emissions Vehicle standards, and California Reformulated Gasoline Phase 3. These measures are also relied upon for the revised 1-hour ozone attainment demonstration (proposed for approval herein) and the approved 8-hour ozone attainment demonstration.

As shown in tables 5 and 6, the results from these calculations establish projected actual attainment-year VOC emissions of 30 tpd for the 1-hour standard demonstration and 24 tpd for the 1997 8-hour standard demonstration. The State then compared these values against the corresponding VMT offset ceiling values to determine whether additional TCMs or TCSs would need to be adopted and implemented in order to offset any increase in emissions due solely to VMT and trips. Because the "projected actual" emissions are less than the corresponding "VMT Offset Ceiling" emissions, the State concluded that the demonstration shows compliance with the VMT emissions offset requirement and that there are sufficient adopted TCSs and TCMs to offset the

growth in emissions from the growth in VMT and vehicle trips in the San Joaquin Valley for both the 1-hour and 1997 8-hour standards. In fact, taking into account of the creditable post-baseline year TCMs and TCSs, the State showed that they offset the hypothetical differences by 148 tpd for the 1-hour standard and by 25 tpd for the 1997 8-hour standards, rather than merely the required 97 tpd and 21 tpd, respectively.[35]

3. Proposed Action on the VMT Emissions Offset Demonstrations

Based on our review of revised San Joaquin Valley VMT emissions offset demonstrations in appendix D of the 2013 Ozone Plan and the related technical supplement, we find the State's analysis to be acceptable and agree that the State has adopted sufficient TCSs and TCMs to offset the growth in emissions from growth in VMT and vehicle trips in the San Joaquin Valley for the purposes of the 1-hour ozone and 1997 8-hour ozone standards. As such, we find that the revised San Joaquin Valley VMT emissions offset demonstrations comply with the VMT emissions offset requirement in CAA section 182(d)(1)(A). Therefore, we propose approval of the revised San Joaquin Valley VMT emissions offset demonstrations for the 1-hour ozone and 1997 8-hour ozone standards as a revision to the California SIP.

IV. Proposed Action

For the reasons discussed above, the EPA is proposing to approve, under CAA section 110(k)(3), CARB's submittal dated December 20, 2013 of the San Joaquin Valley 2013 Ozone Plan as a revision to the California SIP.[36] In so doing, the EPA is proposing to approve the fol-

[35] The offsetting VOC emissions reductions from the TCSs and TCMs put in place after the respective base year can be determined by subtracting the "projected actual" emissions estimates from the "no action" emissions estimates in tables 5 and 6. For the purposes of the 1-hour ozone demonstration, the offsetting emissions reductions, 148 tpd (178 tpd minus 30 tpd), exceed the growth in emissions from growth in VMT and vehicle trips (97 tpd). For the purposes of the 8-hour ozone demonstration, the offsetting emissions reductions, 25 tpd (49 tpd minus 24 tpd), exceed the growth in emissions from growth in VMT and vehicle trips (21 tpd).

[36] In our final action, we also intend to remove a certain paragraph from the "Identification of Plan" section of 40 CFR part 52 for the State of California. In withdrawing our approval of the 2004 Ozone Plan, as revised and clarified, 77 FR 70376 (November 26, 2012), we inadvertently failed to remove 40 CFR 52.220(c)(371) which codified

lowing elements of the plan as meeting the specified requirements for the revoked 1-hour ozone standard:

- RACM demonstration as meeting the requirements of CAA section 172(c)(1) and 40 CFR 51.1105(a)(1) and 51.1100(o)(17);
- ROP demonstrations as meeting the requirements of CAA section 172(c)(2) and 182(c)(2)(B), and 40 CFR 51.1105(a)(1) and 51.1100(o)(4);
- Attainment demonstration as meeting the requirements of CAA section 182(c)(2)(A), and 40 CFR 51.1105(a)(1) and 51.1100(o)(12);
- ROP contingency measures as meeting the requirements of CAA sections 182(c)(9) and 40 CFR 51.1105(a)(1) and 51.1100(o)(13); and
- Provisions for clean fuels or advanced control technology for boilers as meeting the requirements of CAA section 182(e)(3) and 40 CFR 51.1105(a)(1) and 51.1100(o)(6).

The EPA is also proposing to approve the 2013 Ozone Plan as meeting the specified requirements for the revoked 1-hour ozone standard and the revoked 1997 8-hour ozone standard:

- VMT emissions offset demonstrations as meeting the requirements of CAA section 182(d)(1)(A) and 40 CFR 51.1105(a)(1) and 51.1100(o)(10).

The EPA is soliciting public comments on the issues discussed in this document or on other relevant matters. We will accept comments from the public on this proposal for the next 30 days. We will consider these comments before taking final action.

V. Statutory and Executive Order Reviews

Under the CAA, the Administrator is required to approve a SIP submission that complies with the provisions of the Act and applicable Federal regulations. 42 U.S.C. 7410(k); 40 CFR

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our March 8, 2010 final approval of the "2008 Clarifications" for the 2004 San Joaquin Valley (1-hour ozone) plan.

52.02(a). Thus, in reviewing SIP submissions, the EPA's role is to approve State choices, provided that they meet the criteria of the CAA. Accordingly, this action merely proposes to approve a state plan as meeting Federal requirements and does not impose additional requirements beyond those imposed by State law. For that reason, this proposed action:

- Is not a "significant regulatory action" subject to review by the Office of Management and Budget under Executive Order 12866 (58 FR 51735, October 4, 1993);
- Does not impose an information collection burden under the provisions of the Paperwork Reduction Act (44 U.S.C. 3501 et seq.);
- Is certified as not having a significant economic impact on a substantial number of small entities under the Regulatory Flexibility Act (5 U.S.C. 601 et seq.);
- Does not contain any unfunded mandate or significantly or uniquely affect small governments, as described in the Unfunded Mandates Reform Act of 1995 (Public Law 104-4);
- Does not have Federalism implications as specified in Executive Order 13132 (64 FR 43255, August 10, 1999);
- Is not an economically significant regulatory action based on health or safety risks subject to Executive Order 13045 (62 FR 19885, April 23, 1997);
- Is not a significant regulatory action subject to Executive Order 13211 (66 FR 28355, May 22, 2001);
- Is not subject to requirements of Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (15 U.S.C. 272 note) because application of those requirements would be inconsistent with the CAA; and

- Does not provide the EPA with the discretionary authority to address disproportionate human health or environmental effects with practical, appropriate, and legally permissible methods under Executive Order 12898 (59 FR 7629, February 16, 1994).

Executive Order 13175, entitled "Consultation and Coordination with Indian Tribal Governments" (65 FR 67249, November 9, 2000), requires the EPA to develop an accountable process to ensure "meaningful and timely input by tribal officials in the development of regulatory policies that have tribal implications." "Policies that have Tribal implications" is defined in the Executive Order to include regulations that have "substantial direct effects on one or more Indian tribes, on the relationship between the Federal government and the Indian tribes, or on the distribution of power and responsibilities between the Federal government and Indian Tribes."

Eight Indian tribes are located within the boundaries of the San Joaquin Valley air quality planning area for the 1-hour ozone and 1997 8-hours ozone standards: the Big Sandy Rancheria of Mono Indians of California, the Cold Springs Rancheria of Mono Indians of California, the North Fork Rancheria of Mono Indians of California, the Picayune Rancheria of Chukchansi Indians of California, the Santa Rosa Rancheria of the Tachi Yokut Tribe, the Table Mountain Rancheria of California, the Tejon Indian Tribe, and the Tule River Indian Tribe of the Tule River Reservation.

The EPA's proposed approval of the various SIP elements submitted by CARB to address the 1-hour ozone and 1997 8-hours ozone standards in the San Joaquin Valley would not have tribal implications because the SIP is not approved to apply on any Indian reservation land or in any other area where the EPA or an Indian tribe has demonstrated that a tribe has jurisdiction. In those areas of Indian country, the proposed SIP approvals do not have tribal implications and will not impose substantial direct costs on tribal governments or preempt tribal law as speci-

fied by Executive Order 13175 (65 FR 67249, November 9, 2000). Therefore, the EPA has concluded that the proposed action will not have tribal implications for the purposes of Executive Order 13175, and would not impose substantial direct costs upon the tribes, nor would it preempt Tribal law. We note that none of the tribes located in the San Joaquin Valley has requested eligibility to administer programs under the CAA.

List of Subjects in 40 CFR Part 52

Environmental protection, Air pollution control, Incorporation by reference, Intergovernmental regulations, Nitrogen dioxide, Ozone, Reporting and recordkeeping requirements, Volatile organic compounds.

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

Dated: December 24, 2015.

Alexis Strauss,
Acting Regional Administrator,
EPA Region 9.

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