

Documentation of CARB Having Met Previous State Implementation Plan Obligations for the 15 µg/m³ PM_{2.5} Standard for the San Joaquin Valley

Introduction

Along with having a clean year of data, section 172(a)(2)(C) of the Clean Air Act (Act) specifies that in order to obtain a one-year attainment date extension, the State must demonstrate that it “has complied with all requirements and commitments pertaining to the area in the applicable implementation plan.” The California Air Resources Board (CARB) has met this criterion for the 15 microgram per cubic meter (µg/m³) annual fine particulate matter (PM_{2.5}) National Ambient Air Quality Standard (NAAQS or standard) for the San Joaquin Valley (Valley) nonattainment area in multiple State Implementation Plan (SIP) submittals for this standard. In separate documentation, the San Joaquin Valley Air Pollution Control District (District) has similarly shown how it has met all applicable District commitments.

For the 15 µg/m³ annual PM_{2.5} standard, there are four applicable SIPs submitted to the U.S. Environmental Protection Agency (U.S. EPA) along with additional SIP submittals related to contingency measures: the 2008 PM_{2.5} Plan, the *2015 Plan for the 1997 PM_{2.5} Standard* (2015 PM_{2.5} Plan), the *2018 Plan for the 1997, 2006, and 2012 PM_{2.5} Standards* (2018 PM_{2.5} Plan), and the *Attainment Plan Revision for the 1997 Annual PM_{2.5} Standard* (15 µg/m³ SIP Revision).

In this document, CARB is providing documentation on required SIP submittals for the 15 µg/m³ annual PM_{2.5} standard, commitments to achieve emission reductions and implement measures, requirement to submit contingency measures, and requirements to submit quantitative milestone reports. The following sections discuss how CARB has complied with all requirements and commitments pertaining to the San Joaquin Valley in each SIP submittal.

2008 PM_{2.5} Plan

SIP Submittal

Effective April 5, 2005, U.S. EPA designated the San Joaquin Valley nonattainment for the 15 µg/m³ annual PM_{2.5} standard, requiring a SIP to be submitted three years later. In

May 2008, CARB adopted the 2008 PM_{2.5} Plan which set out the strategy to attain the 15 µg/m³ PM_{2.5} standard by the attainment date of 2014 per the general SIP planning requirements in Subpart 1 of the Act. CARB then submitted the 2008 PM_{2.5} Plan for the Valley to U.S. EPA in June 2008. On May 18, 2011, CARB submitted a SIP revision which updated some of the information in the 2008 PM_{2.5} Plan. On November 9, 2011, U.S. EPA approved the 2008 PM_{2.5} Plan for the 15 µg/m³ annual standard for the Valley except for the contingency measure requirements.

Emission Reductions and Measure Commitments

To demonstrate attainment, the 2008 PM_{2.5} Plan relied on emission reductions from adopted measures and commitments to propose new control measures by specific dates and achieve aggregate emission reductions for 2014. In the November 9, 2011 action, U.S. EPA approved the CARB commitment for reductions of 17.1 tons per day (tpd) of oxides of nitrogen (NO_x) emissions and 2.3 tpd of PM_{2.5}, and a District commitment for reductions of 9.0 tpd of NO_x, 6.7 tpd of PM_{2.5}, and 0.9 tpd of oxides of sulfur (SO_x). California later documented that the State met the 2008 PM_{2.5} Plan emission reduction commitments in documentation required for the 2015 PM_{2.5} Plan. See discussion below under 2015 PM_{2.5} Plan SIP submittal.

Contingency Measures

In the same November 2011 action to approve the 2008 PM_{2.5} Plan for the 15 µg/m³ annual standard for the Valley, U.S. EPA disapproved the contingency measure element for the 15 µg/m³ PM_{2.5} standard. In 2023, the State submitted, and U.S. EPA proposed to approve, the San Joaquin Valley Contingency Measures package, which resolved the contingency measure disapproval for the 15 µg/m³ PM_{2.5} standard. See the San Joaquin Valley Contingency Measures Package discussion below.

Quantitative Milestone Reports

Quantitative milestone reports were not required under Subpart 1 of the Act.

Summary

California met the obligation to submit a SIP for the 15 µg/m³ annual standard for the Valley due to being designated nonattainment on April 5, 2005. California met its emission reduction commitment included in the 2008 PM_{2.5} Plan as specified in the 2015 PM_{2.5} Plan discussed below. California has met the contingency measure requirement for the 15 µg/m³ annual standard for the Valley as specified under the San Joaquin Valley Contingency Measures Package described below.

2015 PM2.5 Plan

SIP Submittal

As a result of litigation, U.S. EPA erred in utilizing the general SIP requirements in Subpart 1 of the Act and should have used the particulate matter-specific requirements under Subpart 4. On June 2, 2014, nationally, U.S. EPA classified all 15 µg/m³ annual PM_{2.5} standard areas as moderate with an April 5, 2015, attainment date and requested that states address any outstanding moderate area requirements by December 31, 2014. On September 25, 2014, the District requested a serious classification for the Valley 15 µg/m³ annual PM_{2.5} standard since they could not attain by the moderate attainment date. On April 7, 2015, U.S. EPA classified the Valley as a serious nonattainment area for the 15 µg/m³ annual PM_{2.5} standard. This action established a December 31, 2015, attainment date and required a new SIP addressing the serious area requirements within 18 months.

The *2015 Plan for the 1997 PM_{2.5} Standard* (2015 PM_{2.5} Plan) was developed to address the serious area requirements for the 15 µg/m³ annual PM_{2.5} standard. Section 188(e) of the Act allows an additional 5-year extension of the attainment date if the State shows it is impracticable to attain by the attainment date, the state has complied with all requirements and commitments pertaining to the area, and the SIP includes most stringent measures (MSM). The 2015 PM_{2.5} Plan included a request for a 5-year extension of the attainment date thus requiring MSM and that the State show it has complied with all commitments pertaining to the 15 µg/m³ annual PM_{2.5} standard in the Valley. Appendix B¹ of CARB's Staff Report evaluating the 2015 PM_{2.5} Plan documented that the State had met the emission reduction commitment from the 2008 PM_{2.5} Plan. CARB submitted the 2015 PM_{2.5} SIP along with the CARB Staff Report to U.S. EPA on June 25, 2015, thereby meeting the State's obligation to submit a SIP for the 15 µg/m³ annual PM_{2.5} standard required by the April 7, 2015, U.S. EPA federal register notice classifying the Valley as serious for the 15 µg/m³ annual PM_{2.5} standard.

Emission Reductions and Measure Commitments

The 2015 PM_{2.5} Plan did not include any new commitments from CARB for aggregate emission reduction commitment or commitment to pursue additional measures.

California documented in the 2015 PM_{2.5} Plan that the State had met their emission reduction commitments in the 2008 PM_{2.5} Plan. U.S. EPA proposed approval of the 2015 PM_{2.5} Plan on February 9, 2016, and concluded that the State had satisfied the statutory criteria for the extension of the serious area attainment date to

¹ *CARB Staff Report: Appendix B - SJV 2015 PM_{2.5} SIP, Additional Emission Reductions Achieved Towards Meeting Aggregate Commitment, April 20, 2015*

December 31, 2020, including the State had complied with all requirements and commitments pertaining to the previous SIP. Due to adverse comments on the proposal, on September 23, 2016, U.S. EPA denied the State's request for an extension related to documentation on the most stringent measure (MSM) analysis.

Contingency Measures

U.S. EPA did not finalize action on the 2015 PM2.5 Plan.

Quantitative Milestone Reports

U.S. EPA did not finalize action on the 2015 PM2.5 Plan.

Summary

California met the requirement to submit a PM2.5 SIP required by the April 7, 2015, U.S. EPA action classifying the Valley as a serious nonattainment area for the 15 µg/m³ annual PM2.5 standard. U.S. EPA proposed approval that the State met its obligation in the 2008 PM2.5 Plan and these criteria were not disputed in the federal register notice that denied the extension. Since U.S. EPA did not finalize approval of the 2015 PM2.5 Plan, there are no further commitments resulting from this SIP.

2018 PM2.5 Plan

SIP Submittal

On November 23, 2016, U.S. EPA determined the Valley failed to attain the 15 µg/m³ annual PM2.5 standard by the December 31, 2015, attainment date and requested a new SIP meeting the requirements of section 189 (d) of the Act be submitted by December 31, 2016, with an attainment date established under 179(d)(3) of the Act.

The *2018 Plan for the 1997, 2006, and 2012 Standards* (2018 PM2.5 Plan) was developed in part to address U.S. EPA's November 23, 2016, notice that the Valley failed to attain the 15 µg/m³ annual PM2.5 standard by the December 31, 2015 attainment date and that a new SIP was due to U.S. EPA by December 31, 2016. The 2018 PM2.5 Plan was a comprehensive PM2.5 SIP addressing four separate PM2.5 standards including the 15 µg/m³ annual PM2.5 standard. CARB submitted the 2018 PM2.5 Plan to U.S. EPA on May 9, 2019, thereby meeting the State's obligation to submit a SIP for the 15 ug/m³ annual PM2.5 standard as required by U.S. EPA's November 2016 failure-to-attain notice.

Emission Reductions and Measure Commitments

The 2018 PM2.5 Plan demonstrated attainment of the 15 µg/m³ annual PM2.5 standard in 2020 using only emission reductions from control measures in the baseline modeling—that is, the State did not make any commitments for additional emission reductions or commitments to pursue additional measures for this standard in this SIP.

Contingency Measures

The 2018 PM2.5 Plan SIP included contingency measures for the 15 µg/m³ annual PM2.5 standard related to the District’s Rule regulating residential woodburning.

Quantitative Milestone Reports

The 2018 PM2.5 Plan included quantitative milestones for the 15 µg/m³ standard for the 2017, 2020, and 2023 milestone years. On December 20, 2018, CARB submitted the *2017 Quantitative Milestone Report for the 1997 and 2006 NAAQS*², later providing supplemental clarifying information on August 12, 2019.³ On March 30, 2021, CARB submitted the *2020 Quantitative Milestone Report for the 1997 and 2006 NAAQS*.⁴ On March 19, 2024, CARB submitted the *2023 Quantitative Milestone Report for the 1997 and 2006 NAAQS*.⁵ The State has met its obligation to submit quantitative milestone reports to U.S. EPA for the 15 µg/m³ annual PM2.5 standard.

Summary

The State met the obligation to submit a SIP for the 15 ug/m³ annual PM2.5 standard for the Valley as required by U.S. EPA’s November 2016 failure-to-attain notice. The State met the obligation to submit the required quantitative milestone reports to U.S. EPA for the 15 µg/m³ annual PM2.5 standard.

² CARB. *2017 Quantitative Milestone Report for the 1997 and 2006 NAAQS*.
https://ww2.arb.ca.gov/sites/default/files/2021-05/2017_SJV_QM_Report.pdf

³ CARB. https://ww2.arb.ca.gov/sites/default/files/2021-05/2017_QM_Report_Corrections_Clarifications_Letter.pdf

⁴ CARB. *2020 Quantitative Milestone Report for the 1997 and 2006 NAAQS*.
https://ww2.arb.ca.gov/sites/default/files/2021-05/2020_SJV_QM_Report.pdf

⁵ CARB. *2023 Quantitative Milestone Report for the 1997 and 2006 NAAQS*.
https://ww2.arb.ca.gov/sites/default/files/2024-03/San_Joaquin_Valley_2023_Quantitative_Milestone_Report_031924.pdf

15 µg/m³ SIP Revision

SIP Submittal

U.S. EPA disapproved portions of the 2018 PM_{2.5} Plan related to the 15 µg/m³ annual PM_{2.5} standard on November 26, 2021, including contingency measures. In response, the *Attainment Plan Revision for the 1997 Annual PM_{2.5} Standard* (15 µg/m³ SIP Revision)⁶ was developed by CARB and the District to resolve this disapproval. The 15 µg/m³ SIP Revision amended the 2018 PM_{2.5} Plan to update the SIP elements associated with the disapproved attainment demonstration and updated the attainment deadline to 2023. It addressed the deficiencies identified in U.S. EPA's proposed disapproval, with the exception of the precursor demonstration, which was addressed in the CARB Staff Report⁷ for the 15 µg/m³ SIP Revision, and contingency measures which was addressed separately.

Emission Reductions and Measure Commitments

On December 14, 2023, U.S. EPA finalized approval of the 15 µg/m³ SIP Revision including the CARB aggregate emission reduction commitment except for the contingency measure requirement. In U.S. EPA's July 14, 2023 proposed action on the 15 µg/m³ SIP Revision, U.S. EPA included the CARB aggregate emission reduction commitment of 3.0 tpd of NO_x and 0.04 tpd of PM_{2.5} through adoption of CARB's Heavy-Duty I/M program and/or substitute measures. In the proposed action, U.S. EPA mentioned that CARB adopted the Heavy-Duty I/M measure on December 9, 2021, fulfilling CARB's control measure commitment in the 15 µg/m³ SIP Revision with implementation beginning on January 1, 2023. The proposal also stated that U.S. EPA was not proposing to credit the emission reductions from the Heavy-Duty I/M program towards the aggregate tonnage commitment at that time but would take such action in a separate future rulemaking.

The July 14, 2023, proposed approval also specified that U.S. EPA had just approved the San Joaquin Valley Agricultural Equipment Incentive Measure (Incentive Measure), and while U.S. EPA was not proposing to credit the measure at that time towards the aggregate tonnage commitment for the 15 µg/m³ annual PM_{2.5} standard, the agency agreed with the State that the Incentive Measure would further reduce ambient PM_{2.5} levels and exposure to PM_{2.5} pollution for communities in the San Joaquin Valley.

⁶ SJVAPCD. *Attainment Plan Revision for the 1997 Annual PM_{2.5} Standard*.
<https://ww2.valleyair.org/media/spjlsext/attainment-plan-revision.pdf>

⁷ CARB. *Staff Report: Proposed SIP Revision for the 15 µg/m³ Annual PM_{2.5} Standard for the San Joaquin Valley*. Published August 13, 2021. https://ww2.arb.ca.gov/sites/default/files/2021-09/SJV%2015%20ug%20SIP%20Revision%20Staff%20Report%20FINAL_0.pdf

The 15 µg/m³ SIP Revision demonstrated attainment with reductions in emissions of NO_x and PM_{2.5} coming from ongoing implementation of CARB and the District’s existing control strategy, newly adopted CARB and District measures providing near-term reductions, and a new CARB aggregate emission reduction commitment for 2023 for reductions from measures in the 2018 PM_{2.5} Plan that provided reductions in the 2023 timeframe. In the new commitment, CARB committed to achieve, in aggregate, 3.0 tpd of NO_x emission reductions and 0.04 tpd of PM_{2.5} emission reductions in 2023. These reductions were anticipated to come from implementation of the Heavy-Duty Inspection and Maintenance Program regulation (Heavy-Duty I/M) and/or substitute measures.

Heavy-Duty Vehicle Inspection and Maintenance Program

CARB adopted the Heavy-Duty I/M regulation in December 2021, and submitted it to U.S. EPA for inclusion into the SIP. The Heavy-Duty I/M regulation includes a periodic testing component complemented by roadside emissions monitoring—remote sensing devices and/or CARB’s Portable Emissions AcQuisition System, known as PEAQS—to detect high-emitting vehicles between periodic test cycles and require additional testing and repair to ensure emissions control components are operating properly. PEAQS captures a portion of the emissions from the exhaust plumes of passing heavy-duty vehicles and, within seconds, reports the concentration of pollutants, including carbon dioxide, black carbon particulate matter, and nitrogen oxide, in the vehicle exhaust.

To implement the Heavy-Duty I/M program and to ensure that the program’s benefits are maximized in the near-term, CARB deployed mobile PEAQS units in the San Joaquin Valley in 2023. As shown in the table below, 2,594 heavy-duty vehicles were screened, 176 heavy-duty vehicles were inspected, and 52 citations were issued to high-emitting vehicles. These enforcement efforts contribute to reduced emissions from heavy-duty vehicles on the road in the San Joaquin Valley. CARB has yet to quantify the emission reductions from implementation of this measure in the Valley.

Mobile PEAQS Deployments in the San Joaquin Valley in 2023

Location (City)	Deployment Days	Heavy-Duty Vehicles Screened Total	Heavy-Duty Vehicles Inspected	Citations Issued
Chowchilla	2	1,079	12	5
Fresno	2	426	43	12
Santa Nella	2	19	43	11
Shafter	4	484	61	24
Stockton	3	586	17	-
Total	13	2,594	176	52

Agricultural Equipment Incentive Measure

Due to the time sensitive nature of documenting that we achieved the CARB emission reduction commitment, CARB is relying on the emission benefits from the Incentive Measure that has already been approved by U.S. EPA. CARB's overall commitment in the SIP is to achieve the total emission reductions necessary to attain the federal air quality standards while reflecting the combined reductions from the existing control strategy and new measures. Therefore, if a particular measure does not get its expected emission reductions, the State is still committed to achieving the total aggregate emission reductions. CARB has quantified the emission reductions achieved through implementation of the Incentive Measure through required annual reports to U.S. EPA for commitments in 2024 and 2025. Naturally, any agriculture equipment project that can be credited in 2024 can also be credited in 2023.

On December 27, 2021, U.S. EPA approved Incentive Measure projects associated with CARB's Carl Moyer Memorial Air Quality Standards Attainment Program (Moyer Program) and Funding Agricultural Replacement Measures for Emission Reductions Program (FARMER Program). As of now, U.S. EPA has not finalized approval of the U.S. Department of Agriculture Natural Resources Conservation Service Environmental Quality Incentive Program projects. As part of the Incentive Measure, CARB is required to submit annual reports to U.S. EPA. The most current quantification of emission reductions from the Incentive Measure is found in the *2022 Annual Demonstration Report: San Joaquin Valley Agricultural Equipment Incentive Measure Covering Projects Completed Through*

12/31/2022 (2022 Annual Demonstration Report), submitted to U.S. EPA in May 2023.⁸ As documented in the 2022 Annual Demonstration Report, agricultural equipment replacement projects funded with incentives from Moyer Program and FARMER Program and completed by December 31, 2022, will have SIP credible emissions reductions in effect for the 2023 calendar year. The 2022 Annual Demonstration Report documented that Moyer Program and Farmer Program agricultural replacement projects completed by December 31, 2022 will result in reductions of 5.0 tpd of NO_x and 0.27 tpd PM_{2.5} emission reductions. The emission reductions from these projects exceed the 3.0 tpd of NO_x reductions and 0.04 tpd of PM_{2.5} reductions committed to for 2023 in the 15 µg/m³ SIP Revision. Thus, CARB has met its commitment to achieve the aggregate emission reductions in the 15 µg/m³ SIP Revision.

Quantitative Milestone Reports

The 15 µg/m³ SIP Revision did not revise the quantitative milestone reporting commitments in the 2018 PM_{2.5} Plan.

Contingency Measures

Contingency measures for the 15 µg/m³ SIP Revision were addressed in the San Joaquin Valley Contingency Measures Package discussed below.

Summary

CARB has met the commitment to submit a PM_{2.5} SIP for the 15 µg/m³ annual PM_{2.5} standard due to the November 26, 2021, U.S. EPA disapproval of the 2018 PM_{2.5} Plan. CARB has met the commitment to achieve the aggregate emission reductions in the 15 µg/m³ SIP Revision.

San Joaquin Valley Contingency Measures Package

In 2023, CARB and the District submitted three measures to address contingency measure requirements for PM_{2.5} standards in the Valley, including the 15 µg/m³ annual PM_{2.5} standard, and to resolve a November 26, 2021 U.S. EPA disapproval and U.S. EPA's August 7, 2023, proposed *Federal Implementation Plan for Contingency Measures for the Fine Particulate Matter Standards; San Joaquin Valley*. These measures, collectively referred to as the San Joaquin Valley Contingency Measures package, are:

⁸ CARB. *2022 Annual Demonstration Report: San Joaquin Valley Agricultural Equipment Incentive Measure Covering Projects Completed Through 12/31/2022*. May 15, 2023.

<https://ww2.arb.ca.gov/resources/documents/implementation-state-sip-strategy>

1. The *PM2.5 Contingency Measure State Implementation Plan Revision*, including amendments to Rule 4901: Wood Burning Fireplaces and Wood Burning Heaters, adopted by the District on May 18, 2023, and submitted by CARB to U.S. EPA on June 8, 2023;⁹
2. *Amendments to Rule 8051: Open Areas*, adopted by the District in September 2023 and submitted by CARB to U.S. EPA on October 16, 2023;¹⁰ and
3. The *California Smog Check Contingency Measure State Implementation Plan Revision*, adopted by CARB on October 26, 2023, and submitted to U.S. EPA on November 13, 2023.¹¹

The San Joaquin Valley Contingency Measures package was developed by CARB and the District consistent with U.S. EPA *Draft Guidance on the Preparation of State Implementation Plan Provisions that Address the Nonattainment Area Contingency Measure Requirements for Ozone and Particulate Matter* published in March 2023. In two separate actions in December 2023, U.S. EPA proposed approval of the measures in the San Joaquin Valley Contingency Measures package.¹²

Summary of CARB SIP Obligations Met for the 15 ug/m³ PM_{2.5} NAAQS

As documented above, the State has met all SIP obligations for the 15 ug/m³ PM_{2.5} standard: the State submitted all required SIPs, met emission reduction and measure commitments, submitted contingency measures, and submitted quantitative milestone reports.

⁹ SJVAPCD. *PM2.5 Contingency Measure State Implementation Plan Revision*. May 18, 2023. <https://ww2.valleyair.org/media/hgqb1amd/0000-pm25-contingency-measure-sip-revision.pdf>

¹⁰ SJVAPCD. Proposed Amendments to Rule 8051 (Open Areas). September 21, 2023. https://ww2.valleyair.org/media/04efhheh/item-9_-adopt-proposed-ammendments-to-rule-8051.pdf

¹¹ CARB. *California Smog Check Contingency Measure State Implementation Plan Revision*. Published September 15, 2023. https://ww2.arb.ca.gov/sites/default/files/2023-09/Smog_Check_CM_SIP_Revision_Final.pdf

¹² 88 Fed. Reg. 87,981 (December 20, 2023); 88 Fed. Reg. 87,988 (December 20, 2023)