

Chapter 1

INTRODUCTION



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Chapter 1: Introduction

Over the years, the San Joaquin Valley Air Pollution Control District (District) and the California Air Resources Board (CARB) have adopted numerous attainment plans (State Implementation Plans, or SIPs), which serve as the primary vehicles for improving air quality in the San Joaquin Valley (Valley). These SIPs use extensive science and research, state of the art air quality modeling, and the best available information to develop a strategy to bring the Valley into attainment with federal health-based air quality standards. Following the adoption of each attainment plan, the District implements plan strategies through regulatory development, outreach, continued research, and incentive programs. As each attainment plan strategy builds upon previous strategies being implemented from other planning efforts, this attainment plan is just one milestone in the District's continued effort to improve air quality in the Valley.

The federal Clean Air Act (CAA) prompts the U.S. Environmental Protection Agency (EPA) to establish health-based national ambient air quality standards (NAAQS), designate nonattainment areas, and promulgate planning requirements. EPA established standards for particulate matter less than 2.5 microns in diameter (PM_{2.5}) in 1997, 2006, and 2012. The District addressed the Serious Plan requirements for the 2012 annual standard, along with other PM_{2.5} standards, as part of the integrated *2018 Plan for the 1997, 2006, and 2012 PM_{2.5} Standards (2018 PM_{2.5} Plan)*, years earlier than required in order to achieve early emissions reductions. In December 2021, EPA proposed approval of the Serious Plan for the 2012 PM_{2.5} standard,¹ then reversed the decision and proposed disapproval in October 2022.² In response to EPA's reversal, CARB withdrew the Plan for the 2012 standard with District concurrence.

The District and CARB worked together through a robust public process to develop an updated Serious Plan for the 2012 standard. Initial Plan elements, including an updated emissions inventory, precursor demonstration, Best Available Control Measure (BACM), and New Source Review (NSR) requirements, were addressed through the District and CARB's *Initial SIP Requirements for the 2012 Annual PM_{2.5} Standard*, as adopted by the District Governing Board on October 19, 2023 and subsequently submitted to EPA through CARB. This Plan addresses the remaining nonattainment area SIP requirements pursuant to the CAA.

1.1 NATIONAL AMBIENT AIR QUALITY STANDARDS FOR PARTICULATE MATTER

EPA is responsible for the promulgation of the federal air quality standards. CAA Sections (§) 108 and 109 govern the establishment, review, and revision of the NAAQS

¹ EPA. *Clean Air Plans; 2012 Fine Particulate Matter Serious Nonattainment Area Requirements; San Joaquin Valley, California; Proposed Rule*. 86 Fed. Reg. 247, pp. 74310-74352. (December 29, 2021). Retrieved from: <https://www.govinfo.gov/content/pkg/FR-2021-12-29/pdf/2021-27796.pdf>

² EPA. *Clean Air Plans; 2012 Fine Particulate Matter Serious Nonattainment Area Requirements; San Joaquin Valley, California; Proposed Rule*. 87 Fed. Reg. 192, pp. 60494-60531. (October 5, 2022). Retrieved from: <https://www.govinfo.gov/content/pkg/FR-2022-10-05/pdf/2022-21492.pdf>

for six criteria pollutants, including PM_{2.5}. The CAA requires periodic review of the science upon which the standards are based, and review of the standards themselves. Reviewing the NAAQS is a complex process based on a comprehensive review of relevant scientific literature, as further described below.

1.1.1 EPA's Standard Setting Process

The review process for a federal air quality standard starts with a planning phase, where EPA holds a science policy workshop to gather input from the scientific community and the public regarding policy-relevant issues. Based on input received during this initial planning phase, EPA formulates an Integrated Review Plan (IRP) that presents the schedule and process for the standard review.

Since 2008, EPA's Integrated Science Assessments (ISAs) have formed the scientific foundation for the review of NAAQS. An ISA is a comprehensive review, synthesis, and evaluation of the most policy-relevant science to help inform the risk and exposure assessments for criteria pollutants. EPA considers thousands of peer-reviewed scientific studies as it formulates its proposed standard. The ISA for particulate matter (PM) is publicly available on EPA's website.³

Building on the information presented in the ISA, EPA scientists complete a Risk/Exposure Assessment (REA) to develop quantitative characterizations of exposures to the specific pollutant and associate risk to human health or the environment from air quality conditions. This assessment includes a report of the uncertainties of REA findings. A Policy Assessment (PA) is then formulated, which provides an analysis of the scientific assessments completed in the ISA and the REA, and alternative policy options that could be considered by the EPA Administrator.

The above technical reports are provided to the EPA Clean Air Scientific Advisory Committee (CASAC), an independent scientific committee that advises the EPA Administrator on the adequacy of existing standards and any revisions that should be considered. Section 109(d)(2) of the CAA requires that an independent scientific review committee "shall recommend to the Administrator any new...standards and revisions of existing criteria and standards as may be appropriate." CASAC is comprised of seven members appointed by the EPA Administrator. These members include experts from outside of the EPA in topics such as air quality, health effects, ecological effects, and risk assessment methods. The seven-member CASAC is supported by sub-committee panels for each NAAQS review, which may be augmented by additional subject-matter experts. The panel for each NAAQS review will analyze the ISA, REA, and other available research to provide objective advice to EPA on the technical basis for the standard.

Finally, taking into account the information contained in the ISA, REA, PA, and the advice of CASAC, the EPA Administrator develops and publishes a notice of proposed

³ EPA. Integrated Science Assessment (ISA) for Particulate Matter. (2018). Retrieved from: <https://www.epa.gov/isa/integrated-science-assessment-isa-particulate-matter>

rulemaking. After public review and comment on the proposed standard and associated draft reports, the EPA Administrator promulgates the NAAQS.

1.1.2 Implementation of PM Standards

After a standard is set, EPA designates areas as attainment or nonattainment based on the most recent three years of air quality data available. For PM standards, EPA automatically classifies nonattainment areas as Moderate pursuant to CAA⁴ requirements, with six years from the initial nonattainment designation date to reach attainment (though two one-year extensions are available in certain circumstances). Nonattainment areas may request reclassification to “Serious,” with ten years from the initial attainment designation date to reach attainment.

EPA interprets CAA requirements and adopts an Implementation Rule⁵ for each standard as guidance for states and local air districts as they develop SIPs to ensure compliance with CAA requirements and attainment of each standard. While EPA cannot consider costs or difficulty in setting the standards, costs and difficulty are inescapable for states and local air districts as they determine the best way to bring areas into attainment. That being said, local air districts must meet planning and attainment requirements to improve public health and to avoid federal sanctions. Upon development of an attainment strategy, an area submits the adopted plan to EPA for approval. Once EPA approves a plan as an amendment to the SIP, that plan becomes federally enforceable.

There are a number of serious penalties and risks associated with any failure to submit approvable attainment strategies for meeting federal standards. If EPA finds that an area has failed to submit an approvable plan on time; has failed to submit a revised plan or rule in response to an EPA disapproval; or has failed to implement commitments included in the plan after the plan has been approved, then the following sanctions may be applied to the area under authority of the federal Clean Air Act:

- Two-to-one offset requirement for major sources, leading to permitting barriers for new and expanding businesses
- Loss of federal highway funds
- A federal implementation plan (FIP), which would result in a loss of local control

1.2 2012 PM_{2.5} ANNUAL STANDARD

On January 15, 2013, EPA revised the annual average PM_{2.5} standard to 12 µg/m³ (2012 PM_{2.5} standard).⁶ In 2015, EPA designated the Valley as Moderate

⁴ Clean Air Act Section 188(a)

⁵ Fine Particulate Matter National Ambient Air Quality Standards: State Implementation Plan Requirements; Final Rule. 81 Fed. Reg. 164, pp. 58010-58162. (August 24, 2016). (Codified at 40 CFR Parts 50, 51, and 93). Retrieved from: <https://www.gpo.gov/fdsys/pkg/FR-2016-08-24/pdf/2016-18768.pdf>

⁶ EPA. *National Ambient Air Quality Standards for Particulate Matter; Final Rule*. 78 Fed. Reg. 10, pp. 3086-3287 (January 15, 2013). (Codified at 40 CFR Parts 50, 51, 52 et al.). Retrieved from: <http://www.gpo.gov/fdsys/pkg/FR-2013-01-15/pdf/2012-30946.pdf>

nonattainment for the 2012 PM_{2.5} standard, with an attainment deadline of December 31, 2021.⁷ Due to the impracticability of achieving the standard by the Moderate area attainment date, the District adopted the *2016 Moderate Area Plan for the 2012 PM_{2.5} Standard (2016 Moderate Plan)*, including an attainment impracticability demonstration and a request for reclassification of the Valley from Moderate nonattainment to Serious nonattainment. Effective December 27, 2021, EPA finalized partial approval of the District's *2016 Moderate Plan* and reclassified the District as a Serious nonattainment area for the 2012 PM_{2.5} NAAQS, with an attainment deadline of December 31, 2025.⁸ Due to the impracticability of attaining the annual 12 µg/m³ standard by 2025, the District is requesting an attainment deadline extension to 2030. Table 1-1 provides a summary of the 2012 PM_{2.5} NAAQS and EPA, CARB, and District actions related to the standard consistent with CAA requirements.

Table 1-1 2012 PM_{2.5} NAAQS and Associated Actions

	2012 PM_{2.5} NAAQS
2012	EPA establishes 2012 PM _{2.5} NAAQS (1/15/13): 24-hr: 35 µg/m ³ Annual: 12 µg/m³
2013	D.C. Circuit Court found EPA erred in implementing 1997 NAAQS pursuant solely to General Implementation provisions of CAA Subpart 1, without also considering the PM-specific provisions of Subpart 4 (1/4/13)
2015	EPA designates Valley: Moderate nonattainment (1/15/15)
2016	District adopts <i>2016 Moderate Plan</i> (9/15/16)
	Moderate Plan due (10/15/16)
	CARB tables adoption of <i>2016 Moderate Plan</i> , does not submit to EPA, commits to revisit Plan at a later date (10/20/16)
	EPA issues Implementation Rule to address CAA Subpart 4 requirements (8/24/16)
2018	District adopts <i>2018 Plan for the 1997, 2006, and 2012 PM_{2.5} Standards</i> , addressing Serious Plan requirements in advance of 2023 due date (11/15/18)
2019	CARB adopts <i>2018 Plan</i> and <i>2016 Moderate Plan</i> (1/24/19)
2021	EPA approves <i>2016 Moderate Plan</i> , except contingency measures, and reclassifies Valley to Serious (11/26/21)
	EPA proposes approval of portions of <i>2018 Plan</i> related to 2012 standard, except contingency measures (12/26/21)
2022	EPA reverses prior proposed approval and proposes to disapprove portions of <i>2018 Plan</i> related to 2012 standard (10/5/22)
	District and CARB withdraw portions of <i>2018 Plan</i> related to 2012 standard (10/27/22)

⁷ EPA. *Air Quality Designations for the 2012 Primary Annual Fine Particle (PM_{2.5}) NAAQS; Final Rule*. 80 Fed. Reg. 10, pp. 2206-2284. (January 15, 2015). Retrieved from: <http://www.gpo.gov/fdsys/pkg/FR-2015-01-15/pdf/2015-00021.pdf>

⁸ EPA. *Clean Air Plans; California; San Joaquin Valley Moderate Area Plan and Reclassification as Serious Nonattainment for the 2012 PM_{2.5} NAAQS; Contingency Measures for the 2006 PM_{2.5} NAAQS; Final Rule*. 86 Fed. Reg. 225, pp. 67343-67350. (November 26, 2021). Retrieved from: <https://www.govinfo.gov/content/pkg/FR-2021-11-26/pdf/2021-25616.pdf>

2012 PM2.5 NAAQS	
2023	EPA issues draft guidance on SIP provisions that address contingency measures (3/17/23)
	District adopts contingency measure package to meet contingency requirements for PM2.5 standards (5/18/23)
	District and CARB adopted <i>Initial SIP Requirements for the 2012 Annual PM2.5 Standard</i> (10/19/23)
	EPA proposes to promulgate a FIP that consists of contingencies measures for PM2.5 standards (8/8/23)
	EPA proposes approval of two SIP submissions addressing contingency requirements for PM2.5 standards, including the area's contingency measure plan element and two specific measures (residential wood burning heaters and fireplaces, and non-agricultural, rural open areas) (12/20/23)
	EPA made interim final determination that the Valley has satisfied CAA requirements for nonattainment areas classified as Serious for the 1997 annual standard and for contingency measures for the 2006 24-hour and 2012 annual PM2.5 standards (12/20/23)
2024	District to adopt <i>2024 PM2.5 Plan</i> addressing Serious Plan requirements
2025	Serious area attainment deadline (12/31/25)
2030	5-year extension attainment deadline (12/31/30)

1.2.1 Federal Requirements

CAA Subparts 1 and 4 contain multiple statutory requirements that must be demonstrated in this Plan. Subpart 1 contains general requirements and Subpart 4 contains requirements specific to PM2.5 nonattainment areas. These requirements are summarized in Table 1-2 below.

Table 1-2 Statutory Requirements

Requirement	Federal CAA	Description	Location in Plan
CAA Subpart 1 – Nonattainment Areas in General			
Reasonable Further Progress	§172(c)(2)	Plan provisions shall require reasonable further progress (RFP)	Appendix G
Emissions Inventory	§172(c)(3)	A comprehensive, accurate, current inventory of actual emissions from all sources of the relevant pollutant or pollutants	Adopted in <i>Initial SIP Requirements for the 2012 Annual PM2.5 Standard</i> , updated in Appendix B

Requirement	Federal CAA	Description	Location in Plan
Contingency Measures	§172(c)(9)	Fully adopted rules or control measures that are ready to be implemented should EPA issue a final rulemaking that the Valley failed to meet a regulatory requirement necessitating implementation of a contingency measure. Contingency measures must take effect without significant additional action by the state, local agency or by EPA.	Appendix G
CAA Subpart 4 – Additional Provisions for Particulate Matter Nonattainment Areas			
Permit Program	§189(a)(1)(A)	A permit program providing that permits are required for the construction and operation of new and modified major stationary sources of PM	Appendix H
Attainment Demonstration – Serious Areas	§188(c)(2) §189(b)(1)(A)	Attainment date shall be as expeditiously as practicable but no later than the end of the tenth calendar year after the areas designation as nonattainment	Appendix J
Extension of Attainment Date for Serious Areas	§188(e)	Demonstrations that 1) attainment by the attainment date is impracticable, 2) the State has complied with all requirements and commitments pertaining to the area in the implementation Plan, 3) the State demonstrates that the Plan includes the most stringent measures (MSM) feasible for the area, and 4) attainment as expeditiously as practicable	Chapter 5 Appendix C Appendix D Appendix J
Reasonably Available Control Measures	§189(a)(1)(C)	Provisions to assure that reasonably available control measures (RACM) for the control of PM _{2.5} shall be implemented no later than 4 years after designation/classification as a Moderate nonattainment area	Adopted in <i>2016 Moderate Area Plan for the 2012 PM_{2.5} Standard</i>
Best Available Control Measures and Best Available Control Technology	§189(b)(1)(B)	Serious Areas – Provisions to assure that the best available control measures (BACM) for the control of PM _{2.5} shall be implemented no later than 4 years after the date the area is classified (or reclassified) as a Serious nonattainment area	Adopted in <i>Initial SIP Requirements for the 2012 Annual PM_{2.5} Standard</i> , included in Appendices C and D
New Source Review Program Major Source Thresholds	§189(b)(3)	For any Serious Area – the terms “major source” and “major stationary source” include any stationary source or group of stationary sources located within a contiguous areas and under common control that emits, or has the potential to emit, at least 70 tons per year of PM _{2.5}	District Rule 2201 (<i>New and Modified Stationary Source Rule</i>), Appendix H

Requirement	Federal CAA	Description	Location in Plan
Quantitative Milestones	§189(c)(1)	The Plan shall contain quantitative milestones which are to be achieved every three years until the area is redesignated attainment and which demonstrate reasonable further progress toward attainment by the applicable attainment date	Appendix G
PM2.5 Precursors	§189(e)	Control requirements applicable to major stationary sources of PM2.5 shall also apply to major stationary sources of PM2.5 precursors, except where EPA determines that such sources do not contribute significantly to PM2.5 levels which exceed the standard in the area	Adopted in <i>Initial SIP Requirements for the 2012 Annual PM2.5 Standard</i> , included in Appendix F

1.3 EXTENSIVE PUBLIC PROCESS

This *2024 PM2.5 Plan* was prepared through an involved public process that provided multiple opportunities for the public and interested stakeholders to offer suggestions and comments for improving and strengthening the Plan, as summarized in Table 1-3.

The District presented regular updates on the development of this Plan at public meetings, including meetings of District Governing Board, Citizens Advisory Committee (CAC), and Environmental Justice Advisory Group (EJAG), and each update was followed by an opportunity for the public to ask questions or request additional information.

The District and CARB also hosted 5 public workshops to discuss, present, and receive feedback on the development of this Plan. The public was notified in advance of public workshops via the District's email lists and website. To promote an equitable public process, workshop materials were made available in English and Spanish, and the District provided simultaneous Spanish interpretation during all plan development workshops. Simultaneous interpretation in other languages was made available upon request. In addition, the District conducted the workshops through a hybrid approach, where members of the public are welcome to attend either in person, or join virtually through the Zoom webinar environment. This allows for access and engagement opportunities for members of the public who may not be able to attend in person.

In addition, the District provided multiple additional resources to the public, including the following:

- A new web page to provide updates, presentations, documents and other information related to the development of the Plan:
<http://www.valleyair.org/pmplans/>
- A public mailing list, so members of the public can sign up to receive email notifications about activities related to this and future PM2.5 Plans:
<https://ww2.valleyair.org/about/sign-up/>
- An email address specifically for the public to submit comments:
airqualityplanning@valleyair.org

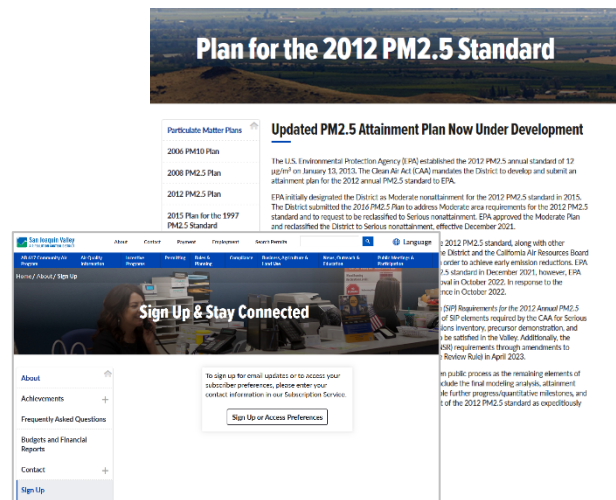


Table 1-3 2024 PM2.5 Plan Public Process

Date	Meeting Summary
Throughout 2023-2024	Ongoing updates to the District’s Governing Board, Citizen’s Advisory Committee, and Environmental Justice Advisory Committee meetings.
3/23/2023	Public workshop to present, discuss, and receive feedback on the development of the Plan for the 2012 annual PM2.5 standard, and solicit suggestions for more robust public engagement and suggestions for discussion topics for future workshops.
5/11/2023	Public workshop to present, discuss, and receive feedback on the development of the Plan for the 2012 annual PM2.5 standard, and solicit suggestions for sources of interest, and potential emission reduction opportunities to be included in BACM/MSM analysis.
8/28/2023	Publication of the <i>Draft Initial SIP Requirements</i> on the District website.
9/7/2023	Public workshop to present, discuss, and receive feedback on the development of the Plan for the 2012 annual PM2.5 standard, including results of the precursor and BACM/MSM analyses, and solicit feedback on the <i>Draft Initial SIP Requirements</i> .
9/19/2023	Publication of the Proposed Initial SIP Requirements on the District website, with paper copies available upon request for public review and comment.
10/19/2023	District Governing Board adoption of the <i>Proposed Initial SIP Requirements</i> at a public hearing with opportunities for public comment.
2/15/2024	Public workshop to present, discuss, and receive feedback on the development of the Plan for the 2012 annual PM2.5 standard.
4/26/2024	Publication of draft chapters of the <i>2024 PM2.5 Plan</i> on the District website, with paper copies available upon request for public review and comment.
4/29/2024	Public workshop to present, discuss, and receive feedback on the development of the Plan for the 2012 annual PM2.5 standard.
5/21/2024	Publication of the Proposed <i>2024 PM2.5 Plan</i> on the District website, with paper copies available upon request for public review and comment.
6/20/2024	Public hearing for the adoption of the Proposed <i>2024 PM2.5 Plan</i> with opportunities for public comment.

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