

Chapter 1

Introduction



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1. INTRODUCTION

The U.S. Environmental Protection Agency (EPA) periodically reviews and establishes health-based air quality standards (also referred to as National Ambient Air Quality Standards, or NAAQS) for ozone, particulates, and other pollutants. Although the San Joaquin Valley (Valley) experiences unique and significant difficulties in achieving these increasingly stringent standards, air quality in the Valley has improved considerably. Over the past couple of decades, the San Joaquin Valley Air Pollution Control District (District) has implemented several generations of emissions control measures for stationary and area sources under its jurisdiction. Similarly, the California Air Resources Board (CARB) has adopted regulations for mobile sources. Together, these efforts represent the nation's toughest air pollution emissions controls and have greatly contributed to reduced ozone and particulate matter (PM) concentrations in the Valley. In addition to having the toughest air regulations in the nation, the District also operates the most effective and efficient incentive grants program, investing over \$2.1 billion in public/private funding towards clean air projects to date that have achieved over 150,000 tons of emissions reductions.

Due to the significant investments made by Valley businesses and residents and stringent regulatory programs by the District and CARB, the Valley's ozone and PM2.5 precursor emissions are at historically low levels and air quality over the past few years has been better than any other time on record. This Plan builds upon the District's 1-hour ozone, 8-hour ozone and particulate matter strategies. Under these combined efforts, the Valley's 8-hour ozone concentrations and 24-hour and annual PM2.5 concentrations have significantly improved and will continue to improve as the existing and future control measure strategies are implemented in the coming years. Emissions from stationary sources have been reduced by 85%, cancer risk from exposure to air pollutants has been reduced by 95%, population exposure to elevated PM2.5 levels have been reduced by 85%, and population exposure to elevated ozone levels have been reduced by 90%.

This Plan satisfies federal Clean Air Act (CAA) requirements for the 1997, 2006, and 2012 PM2.5 air quality standards.

1.1 NATIONAL AMBIENT AIR QUALITY STANDARDS FOR PM

1.1.1 EPA'S STANDARD SETTING PROCESS

CAA §108 and §109 require EPA to set health-based standards for six criteria pollutants, including PM2.5. EPA periodically reviews existing standards to consider the most recent health studies. These reviews are to be conducted every five years, though in the past, some standard revisions did not meet the 5-year deadline. The review process starts as the Clean Air Scientific Advisory Committee (CASAC) analyzes available science and then, if supported by research, suggests to EPA a range of revised standards that would protect public health from the adverse effects of air pollution. The EPA Administrator appoints CASAC members, who are non-EPA staff

and who are experts in the fields of science, engineering, or the social sciences. The committee provides objective, independent advice to EPA on the technical basis for the standard. Thousands of peer-reviewed scientific studies are considered as EPA formulates its proposed standard, which is made available for scientific peer review and public comment. EPA then sets the standard. Setting new standards every five years results in confusing, overlapping standards, and duplicative requirements.

Once a standard is set, EPA designates an area as attainment or nonattainment based on the most recent three years of air quality data available. For particulate matter standards, EPA automatically classifies nonattainment areas as Moderate by order of law pursuant to CAA Subpart 4 requirements.¹

EPA also adopts an Implementation Rule for each standard to provide guidance and EPA's interpretation of CAA requirements for states and local air districts as they prepare state implementation Plans² (SIPs) to ensure compliance with CAA requirements and bring areas into attainment with 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 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 under authority of the federal Clean Air Act:

- Two-to-one offset requirement for major sources, leading to a de facto ban on new and expanding business
- Loss of federal highway funds
- A federal implementation Plan (FIP), which would result in a loss of local control

1.1.2 FEDERAL PM_{2.5} NAAQS AND IMPLEMENTATION

Table 1-1 provides a summary of the 1997, 2006, and 2012 PM_{2.5} national ambient air quality standards and EPA and District actions under the standards consistent with CAA requirements.

¹ Clean Air Act Section 188(a)

² Fine Particulate Matter National Ambient Air Quality Standards: State Implementation Plan Requirements; Final Rule. 81 Fed. Reg. 164, pp. 58010-58162. (2016, August 24). (to be codified at 40 CFR Parts 50, 51, and 93). <https://www.gpo.gov/fdsys/pkg/FR-2016-08-24/pdf/2016-18768.pdf>

Table 1-1 PM2.5 NAAQS and District Actions

	1997 PM2.5 NAAQS	2006 PM2.5 NAAQS	2012 PM2.5 NAAQS
1997-2006	EPA NAAQS (7/18/97): 24-hr: 65 µg/m ³ Annual: 15 µg/m ³ EPA designates Valley: Nonattainment (1/5/05)	EPA NAAQS (10/17/06): 24-hr: 35 µg/m ³ Annual: 15 µg/m ³	
2007	EPA issues Implementation Rule for (4/25/07)		
2008	District adopts 2008 PM2.5 Plan (4/30/08)		
2009		EPA designates Valley: Nonattainment (11/13/09)	
2010			
2011	EPA approves 2008 PM2.5 Plan (except contingencies) (11/9/11)		
2012		EPA issues Implementation Rule (3/2/12) District adopts 2012 PM2.5 Plan (12/20/12)	EPA NAAQS (1/15/13): 24-hr: 35 µg/m ³ Annual: 12 µg/m ³
2013	D.C. Circuit Court remands EPA, 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 (1/14/13)		
	District adopts contingencies for 2008 PM2.5 Plan (6/20/13)		
2014	EPA approves 2008 PM2.5 Plan contingencies (5/22/14) EPA classifies Valley: Moderate nonattainment (result of 2013 court finding) (6/2/14) District requests reclassification to Serious nonattainment (8/14)	EPA classifies Valley: Moderate nonattainment (result of 2013 court finding) (6/2/14) District adopts supplement to 2012 PM2.5 Plan to address CAA Subpart 4 and request reclassification to Serious nonattainment (9/18/14)	
	District requests reclassification to Serious nonattainment (8/14)		
2015	EPA reclassifies Valley: Serious nonattainment (5/7/15) District adopts 2015 Plan for the 1997 PM2.5 Standard with a request for deadline extension (April 16, 15) Attainment deadline as a Serious nonattainment area (12/31/15)		EPA designates Valley: Moderate nonattainment (1/15/2015)

	1997 PM2.5 NAAQS	2006 PM2.5 NAAQS	2012 PM2.5 NAAQS
2016	<p>EPA proposes partial approval of <i>2015 Plan for the 1997 PM2.5 Standard</i>, and attainment date extension (2/9/16)</p> <p>EPA withdraws approval of <i>2008 PM2.5 Plan</i> contingencies (due to another court case) and as a result, disapproves <i>2008 PM2.5 Plan</i> (5/12/16)</p> <p>EPA fails to act on <i>2015 Plan for the 1997 PM2.5 Standard</i> by mandated date of July 2016, as a result:</p> <ul style="list-style-type: none"> - EPA denies request for extension of attainment date (10/6/16) - EPA issues Finding of Failure to Attain (11/23/16) <p><i>5% Plan</i> due (12/31/16)</p>	<p>EPA reclassifies Valley: Serious nonattainment (effective 2/19/16)</p> <p>EPA approves <i>2012 PM2.5 [Moderate] Plan</i> (effective 9/30/16)</p>	<p>District adopts <i>2016 Moderate Area Plan for the 2012 PM2.5 Standard</i> (09/15/16)</p> <p>Moderate Area attainment plan due 10/15/16</p> <p>CARB tables adoption of <i>2016 Moderate Area Plan for the 2012 PM2.5 Standard</i>, Plan not forwarded to EPA, CARB commits to revisit Plan later (10/20/16)</p>
	EPA issues Implementation Rule to address CAA Subpart 4 requirements (8/24/16)		
2017		<p>Serious nonattainment Plan due (8/19/17)</p>	
2018			
2019		<p>Attainment deadline as a Serious nonattainment area (12/31/19)</p>	
2020	<p><i>2018 PM2.5 Plan</i> demonstrates attainment by 12/31/2020</p>		
2021			
2022			
2023			
2024		<p>5-year extension attainment deadline (if requested/granted) (12/31/24)</p> <p><i>2018 PM2.5 Plan</i> demonstrates attainment by 12/31/24</p>	
2025			<p>Attainment deadline as a Serious nonattainment area (12/31/25)</p> <p><i>2025: 2018 PM2.5 Plan</i> demonstrates attainment by 12/31/25</p>

1.2 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.

Table 1-2 Statutory Requirements

Requirement	Federal CAA	Description
CAA Subpart 1 – Nonattainment Areas in General		
Reasonable Further Progress	§172(c)(2)	Plan provisions shall require reasonable further progress (RFP)
Emissions Inventory	§172(c)(3)	A comprehensive, accurate, current inventory of actual emissions from all sources of the relevant pollutant or pollutants
Contingency Measures	§172(c)(9)	Specific measures to be undertaken if the area fails to make reasonable further progress, or to attain by the attainment date, as contingency measures to take effect in any such case without further action by the State or EPA
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
Attainment Demonstration – Moderate Areas	§188(c)(1), §189(a)(1)(B)	Attainment date shall be as expeditiously as practicable but no later than the end of the sixth calendar year after the areas designation as nonattainment, or a demonstration that attainment by such date is impracticable
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
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) a attainment as expeditiously as practicable

Requirement	Federal CAA	Description
Reasonably Available Control Measures	§189(a)(1)(C)	Provisions to assure that reasonably available control measures (RACM) for the control of PM2.5 shall be implemented no later than 4 years after designation/classification as a Moderate nonattainment area
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 PM2.5 shall be implemented no later than 4 years after the date the area is classified (or reclassified) as a Serious nonattainment area
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 PM2.5
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
5% Plan	§189(d)	Serious nonattainment areas that do not attain the standard by the applicable attainment date, shall submit within 12 months after the applicable attainment date, Plan revisions which provide for attainment of the PM2.5 standard, and, from the date of such submission, until attainment, for an annual reduction in PM2.5 or PM2.5 precursor emissions within the area of not less than 5 percent of the amount of such emissions as reported in the most recent inventory prepared for such area
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

1.3 EXTENSIVE PUBLIC PROCESS

To ensure that the public has had the opportunity for meaningful participation in the development of this *2018 PM2.5 Plan*, the District has provided multiple opportunities for the public to learn more about this Plan and to provide the District with comments or to request more information. The District has presented regular updates on this plan at public meetings, such as 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.

Additionally, the District reconvened the Public Advisory Workgroup (PAW) formed under direction from the District's Governing Board, with appointments made by the Executive Director/Air Pollution Control Officer. The PAW committee consists of representatives from regulated entities (industry, farms, dairy families and municipalities), community advocates, and advisors from EPA and CARB. The District hosted five PAW meetings to discuss specific aspects of the integrated Plan and strategies to attain the multiple PM2.5 standards. All PAW meetings are open to the public.

The District and CARB also hosted ten public workshops, each of which could be attended in-person or online via webcast. The following is a summary of public workshops, meetings, and updates related to this Plan since May 2016.

- **On-going.** Monthly updates on Plan development and progress at District held public meetings of the Governing Board, Citizen's Advisory Committee, and Environmental Justice Advisory Group. Each update is followed by an opportunity for the public to provide comments and ask questions.
- **May 4th and 5th 2016.** Governing Board Study Session Meeting:
 - Review and provide feedback on risk tolerance with respect to District's Technology Advancement Program. The District's TAP program was developed to accelerate the development of technologies that can help reduce air pollutant emissions in the Valley to attain EPA's increasingly stringent ozone and particulate matter air quality standards
 - Use of incentive-based control measures in upcoming ozone and particulate matter attainment Plans
 - Approve development of San Joaquin Valley Healthy Soils Initiative
- **June 16, 2016.** Governing Board Meeting Board Item - Petition requesting that EPA adopt new national standards for on-road heavy-duty trucks and locomotives under federal jurisdiction. Mobile sources make up over 85% of the Valley's NOx emissions. This item is part of the strategy to reduce emissions from mobile sources.
- **August 18, 2016.** Governing Board Meeting Board Items:
 - Consider options for addressing the PM2.5 Clean Air Act mandates in light of federal EPA inaction on the District's 2015 PM2.5 Plan and attainment deadline extension request for the 1997 PM2.5 standard

- Authorize initiative to secure additional state and national funding to support future incentive based state implementation Plans
- **September 15, 2016.** Governing Board public hearing to adopt the 2016 Moderate Area Plan for the 2012 PM2.5 Standard with an attainment impracticability demonstration and request for reclassification
- **October 20, 2016.** CARB Board Meeting at the District's Fresno Office for a public hearing on the *Moderate Area Plan for the 2012 PM2.5 Standard* and attainment impracticability demonstration with request for reclassification. CARB tabled the adoption of this plan with direction for their staff to come back at a later date.
- **December 1, 2016.** CARB public workshop to discuss strategies for meeting PM2.5 standards and science-based assessment of sources contributing to PM2.5 levels in the Valley, benefits of current controls programs, and initial assessment of the scope of further emissions reductions needed to meet annual and 24-hour PM2.5 standards over the next ten years
- **December 7, 2016.** District public workshop – Scoping Meeting
- **December 15, 2016.** Governing Board Item to adopt policy positions in working with CARB to prepare District's attainment strategy for PM2.5
- **January 11, 2017.** District Public Advisory Workgroup Meeting to discuss Air Quality Modeling
- **January 25, 2017.** District Public Advisory Workgroup Meeting to discuss CARB Mobile Source measures for the Valley
- **February 9, 2017.** District Public Advisory Workgroup Meeting to discuss District measures under consideration for 2017 Integrated PM2.5 Plan
- **February 16, 2017.** Governing Board Item to review the feasibility of potential options for pursuing additional emissions reductions from public fleet vehicles within the pre-2025 timeframe necessary to address federal PM2.5 standards. While the state and federal have the bulk of the responsibility over mobile sources, the District is exploring potential opportunities for further reducing emissions from public fleets.
- **March 9, 2017.** District public workshop to discuss the development of 2017 PM2.5 Plan
- **March 16, 2017.** Governing Board Meeting Board Items:
 - Review and reaffirm the District's existing position that draconian measures that impose no driving days and severe restrictions on commerce are not feasible
 - Review District's preliminary cost estimates for measures aimed at reducing directly emitted PM2.5 and NOx emissions in pursuit of the District's attainment strategy for federal PM2.5 standards
- **April 12, 2017.** District Public Advisory Workgroup Meeting to provide an update on air quality modeling and continue discussions on potential measures
- **May 8, 2017.** District public workshop to discuss potential District measures under consideration
- **May 17, 2017.** CARB Community Meeting held in Fresno to discuss strategies for meeting PM2.5 standards and to assess opportunities for reductions from

stationary and mobile sources as part of a comprehensive PM2.5 attainment strategy

- **May 18, 2017.** District public workshop to discuss the District's 5% Plan and PM10 Maintenance Plan
- **May 25, 2017.** CARB Board Meeting to provide an update to the Board on development of District's PM2.5 State Implementation Plan
- **August 17, 2017.** Governing Board Meeting Board Item discussions:
 - Review and action to submit a Clean Data Finding to EPA demonstrating that the District now meets the national 1997 24-hour PM2.5 standard of $65 \mu\text{g}/\text{m}^3$
 - Review the District's strategy to attain the 1997 PM2.5 annual standard of $15 \mu\text{g}/\text{m}^3$, the 2006 PM2.5 24-hr standard of $35 \mu\text{g}/\text{m}^3$, and the 2012 annual standard of $12 \mu\text{g}/\text{m}^3$
- **August 23, 2017.** District public Scoping Meeting workshop to present, discuss, and receive feedback on potential amendments to District Rule 4311 (Flares)
- **September 20th and 21st 2017.** Governing Board Study Session Meeting:
 - Discuss pursuing Community-Level-Targeted Strategies to regulate or incentivize control measures focusing on pollution sources which cause localized community concern
 - Update on current technologies and partnerships for underfired charbroilers pollution control units and to explore the best approaches to reduce air pollution from underfired charbroilers in the Valley
 - Consider to pursue targeted strategies focused on regional hot-spots to expedite attainment of federal standards in a more cost-effective fashion
- **September 26, 2017.** Joint public workshop hosted by CARB and the District to outline attainment strategy for meeting PM2.5 standards, specifically discuss and solicit public feedback on hot-spot strategy
- **September 28, 2017.** CARB Board Meeting to provide an update on the development of State Implementation Plan for meeting multiple PM2.5 standards and discuss the consideration of attainment contingency measures for the 1997 PM2.5 annual standard of $15 \mu\text{g}/\text{m}^3$
- **October 19, 2017.** Governing Board Meeting to discuss the District's initiative to facilitate good citizen science for utilizing personal air sensors in the Valley, which involves but limited to, engaging residents in the Valley with proper installation, operation, and interpretation of the data obtained.
- **November 14, 2017.** District Public Advisory Workgroup Meeting to discuss the development of the PM2.5 attainment strategy
- **November 16, 2017.** CARB Board Meeting to receive update on secondary PM2.5 formation in the San Joaquin Valley and research on potential controls
- **December 21, 2017.** Governing Board Meeting to provide update on PM2.5 Attainment Strategy
- **January 18, 2018.** Governing Board Meeting Item discussions:
 - Discuss the District's 2018 Legislative Platform
 - Review the significant findings from residential wood burning survey results and discuss options for program enhancements to the District's comprehensive residential wood burning programs.

- **February 15, 2018.** Governing Board Meeting Item discussions:
 - Report and consider recommendations from the Central Valley Summit on Alternatives to Open Burning of Agricultural Waste
 - Provide updates to development of new permitting program for commercial underfired charbroilers.
- **March 8, 2018.** District public workshop to present, discuss and solicit feedback on draft amendments to District Rule 4905 (Natural Gas-Fired, Fan-Type Central Furnaces)
- **March 8, 2018.** District public workshop to provide update on continued efforts in defining the final proposed attainment strategy and the remaining steps for development of the comprehensive Plan. The discussion include a review of potential District and CARB regulatory and incentive-based control measures and air quality modeling activities.
- **April 19, 2018.** Governing Board Meeting Item discussion: Report End-of-Season 2017-2018 Wood Burning Season
- **April 26, 2018.** District public workshop to discuss and receive comments on potential amendments to District Rule 4692 (Commercial Charbroiling) to assist the District in developing a strategy to reduce emissions from commercial charbroiling operations as part of the District's efforts to attain federal health-based standards for PM2.5.
- **June 21, 2018.** Governing Board Meeting Item discussions:
 - Adopt proposed amendments to Rule 4905 (Natural Gas-Fired, Fan-Type Central Furnaces)
 - Adopt proposed amendment to Rule 4692 (Commercial Charbroiling)
 - Review and set agenda for the September 2018 Governing Board Study Session for Educational and Strategic Planning purposes
- **July 31, 2018.** District and CARB hosted a joint workshop to present, discuss and solicit feedback on the 2018 PM2.5 Plan. The workshop discussion included updates on continued efforts toward air quality attainment modeling, proposed attainment strategy, and the next steps for development of the comprehensive strategy along with reviewing potential District and CARB regulatory and incentive-based control measures and air quality modeling activities.
- **August 28, 2018.** District, CARB, and EPA hosted a joint public workshop to present, discuss and solicit feedback on the 2018 PM2.5 Plan. The workshop discussion included updates on air quality attainment, proposed attainment strategy, and next steps for finalizing the draft attainment Plan.

In addition to the robust public process summarized above, 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 this 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 at:
http://lists.valleyair.org/mailman/listinfo/pm_plans
- An email address specifically for this plan for the public to submit comments to at their leisure: airqualityplans@valleyair.org

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