



CHAPTER 1

Introduction

DRAFT 2018 Plan for the 1997, 2006, and 2012 PM2.5 Standards

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CHAPTER 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 (ARB) 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 \$1.9 billion in public/private funding towards clean air projects to date that have achieved over 140,000 tons of emissions reductions.

Due to the significant investments made by Valley businesses and residents and stringent regulatory programs by the District and ARB, 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. 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 and 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.

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 experts in the fields of science, engineering, or the social sciences. The committee is to provide 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.

EPA also adopts an Implementation Rule for each standard to provide guidance and CAA interpretations for states and local air districts as they prepare state implementation plans¹ (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 below summarizes the 1997, 2006, and 2012 PM_{2.5} national ambient air quality standards and District actions under the standards consistent with CAA requirements.

¹ 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 National Ambient Air Quality Standards (NAAQS)

	1997 PM2.5 NAAQS	2006 PM2.5 NAAQS	2012 PM2.5 NAAQS
1997-2006	EPA sets NAAQS: 24-hr: 65 µg/m ³ , annual: 15 µg/m ³ (7/18/97) EPA designates Valley nonattainment (1/5/05)	EPA sets NAAQS: 24-hr: 35 µg/m ³ , annual: 15 µg/m ³ (10/17/06)	
2007	EPA issues Implementation Rule (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 sets NAAQS: 24-hr: 35 µg/m ³ , annual: 12 µg/m ³ (1/15/13)
2013	D.C. Circuit Court remands EPA, found EPA erred in implementing the 1997 NAAQS pursuant solely to the general implementation provisions of Subpart 1, without also considering the particulate matter-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 designates Valley Moderate nonattainment (result of 2013 court finding) (6/2/14) District requests reclassification to Serious nonattainment (8/2014)	EPA designates Valley Moderate nonattainment (result of 2013 court finding) (6/2/14) District adopts supplement to 2012 PM2.5 Plan to address Subpart 4 and request reclassification to Serious nonattainment (9/18/14)	
2015	EPA reclassifies Valley to Serious nonattainment (5/7/15) District adopts 2015 Plan for the 1997 PM2.5 Standard with request for deadline extension (April 16, 2015) Attainment deadline for Serious nonattainment areas (12/31/2015)		EPA designates Valley Moderate nonattainment (1/15/2015)

	1997 PM2.5 NAAQS	2006 PM2.5 NAAQS	2012 PM2.5 NAAQS
2016	EPA proposes partial approval of 2015 PM2.5 Plan, and attainment date extension (2/9/16)	Valley reclassified Serious nonattainment area (effective 2/19/16) EPA approves 2012 PM2.5 [Moderate] Plan (effective 9/30/16)	District adopts 2016 Moderate Area Plan for the 2012 PM2.5 Standard (09/15/16) Moderate Area attainment plan due (10/15/16) ARB tables adoption of 2016 PM2.5 Plan and commits to revisit plan (10/20/16)
	EPA withdraws approval of 2008 PM2.5 Plan contingencies (due to court case) and disapproves 2008 PM2.5 Plan EPA fails to act on 2015 PM2.5 Plan EPA issues Finding of Failure to Attain (11/23/16) 5% Plan due (12/31/2016)		
EPA issues Implementation Rule to address Subpart 4 requirements (8/24/16)			
2017		Serious nonattainment plan due (8/19/17)	
2018			
2019		2019: Attainment deadline for Serious nonattainment areas (12/31/19)	
2020-2025	<u>2020: 2018 PM2.5 Plan demonstrates attainment by 12/31/20</u>	2024: 5-year extension attainment deadline (if requested/granted) (12/31/24) <u>2024: 2018 PM2.5 Plan demonstrates attainment by 12/31/24</u>	2025: Attainment deadline for Serious nonattainment areas (12/31/25) <u>2025: 2018 PM2.5 Plan demonstrates attainment by 12/31/25</u>

1.2 FEDERAL REQUIREMENTS

CAA Subparts 1 and 4 contain multiple statutory requirements that must be demonstrated in this PM2.5 plan. Subpart 1 contains general requirements and subpart 4 contains requirements specific to PM2.5 nonattainment areas. These requirements, and the location within this plan where they are demonstrated are summarized in the following table.

Table 1-2 Statutory Requirements

Requirement	Federal CAA	Description
CAA Subpart 1 – Nonattainment Areas in General		
Reasonable Further Progress	§172(c)(2)	Plan provisions that require reasonable further progress (RFP)
Emissions Inventory	§172(c)(3)	A comprehensive, accurate, current inventory of actual emissions from all sources of PM2.5 and PM2.5 precursors in the area
Contingency Measures	§172(c)(9)	Contingency measures to be implemented if the area fails to meet RFP or to attain by the applicable attainment date
CAA Subpart 4 – Additional Provisions for Particulate Matter Nonattainment Areas		
Permit Program	§189(a)(1)(A) §189(b)(1)(A)	Includes a permit program providing that permits are required for the construction and operation of new and modified major stationary sources
Attainment Demonstration	§188(c)(2), §189(b)(1)(A), §189(a)(1)(B)	Demonstration that the plan provides for attainment as expeditiously as practicable but no later than the applicable attainment deadline. Or Where the State is seeking an extension of the attainment date under Section 188(e), a demonstration that attainment by the applicable date is impracticable and that the plan provides for attainment by the most expeditious alternative date practicable.
Reasonably Available Control Measures	§189(a)(1)(C)	Provisions to assure that reasonably available control measures (RACM) be implemented no later than 4 years after designation (for Moderate areas)
Best Available Control Measures and Best Available Control Technology	§189(b)(1)(B)	Provisions to assure that the best available control measures (BACM) be implemented no later than 4 years after the date the area is classified (or reclassified) as a Serious Area
New Source Review Program Major Source Thresholds	§189(b)(3)	A revision to the nonattainment new source review (NSR) program to lower the applicable “major stationary source” thresholds from 100 tons per year (tpy) to 70 tpy for Serious areas

Requirement	Federal CAA	Description
Quantitative Milestones	§189(c)(1)	Quantitative milestones are to be achieved every three years until the area is redesignated attainment and which demonstrate RFP toward attainment by the applicable date.
5% Plan	§189(d)	If a Serious nonattainment does not attain the standard by the applicable attainment date, the State shall submit within 12 months after the applicable attainment date, plan revisions which provide for attainment of the standard, and, from the date of such submission, until attainment, for an annual reduction in PM or 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)	Provisions to assure that control requirements applicable to major stationary sources of PM2.5 also apply to major sources of PM2.5 precursors, except where the State demonstrates to EPA's satisfaction that such sources do not contribute significantly to PM2.5 levels that exceed the standard in the area.