

# Chapter 5

Demonstration of Federal Requirements for 1997 PM<sub>2.5</sub> Standards



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## TABLE OF CONTENTS

5	Demonstration of Federal Requirements for 1997 PM2.5 Standard.....	5-1
5.1	5% Plan Control Strategy Requirements.....	5-3
5.2	5% Plan Demonstration .....	5-3
5.3	Attainment Demonstration and Modeling .....	5-4
5.3.1	Summary of Modeling Results.....	5-4
5.4	Reasonable Further Progress (RFP).....	5-9
5.5	Quantitative Milestones.....	5-9
5.6	Contingency Measures .....	5-9
5.7	Fulfillment of Serious Area Permitting Requirements.....	5-10
5.8	Transportation Conformity.....	5-10

## TABLE OF TABLES

Table 5-1	Summary of 5% Plan Requirements .....	5-2
Table 5-2	Summary of Emission Reductions in Valley Demonstrating 5% Annual Reductions through Attainment (2013-2020).....	5-4
Table 5-3	Valley Model-Ready Annual Emissions for 2013 and 2020.....	5-6
Table 5-4	Projected Future Year 2020 Annual PM2.5 DVs at Each Monitor .....	5-8
Table 5-5	Projected Future Year 2020 24-hour PM2.5 DVs at Each Monitor.....	5-9

## 5 DEMONSTRATION OF FEDERAL REQUIREMENTS FOR 1997 PM<sub>2.5</sub> STANDARD

The U.S. Environmental Protection Agency's (EPA) 1997 PM<sub>2.5</sub> national ambient air quality standard (NAAQS, or standard) has two components: an annual average standard of 15 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ), and a 24-hour average standard of 65  $\mu\text{g}/\text{m}^3$ . EPA designated the San Joaquin Valley (Valley) as nonattainment of this standard effective April 2005, and finalized its implementation rule effective May 29, 2007 consistent with federal Clean Air Act (CAA) Subpart 1. On April 30, 2008, the District adopted the *2008 PM<sub>2.5</sub> Plan* demonstrating attainment of the 1997 standard by April 2015 and satisfying all federal implementation requirements. EPA approved this plan effective January 9, 2012. Subsequently, on January 4, 2013, the D.C. Circuit Court ruled that EPA erred by solely using CAA Subpart 1 in establishing its PM<sub>2.5</sub> implementation rule, without consideration of the PM-specific provisions in Subpart 4.<sup>1</sup>

Subpart 4 differs from Subpart 1 in its attainment plan deadlines, the required level of emissions controls, and its handling of PM precursors. Another key difference is in the classification of nonattainment areas and corresponding attainment deadlines. Under Subpart 1, all areas were designated nonattainment without a corresponding classification. Under Subpart 4, nonattainment areas are initially classified as "Moderate," with six years from its initial nonattainment designation date to reach attainment (though two one-year extensions are available in certain circumstances). An area can request reclassification to "Serious," with ten years from its initial attainment designation date to reach attainment. Subpart 4 allows for an additional extension of up to five years if the area demonstrates that the mandated attainment deadline is infeasible, all requirements and commitments have been met, and the state implementation plan (SIP) includes the most stringent measures (MSM) possible. If an area fails to attain an applicable attainment deadline, under CAA § 189(d), the area must submit a SIP revision demonstrating expeditious attainment, with PM or PM precursor emissions reduced by at least 5% per year until attainment.

Following the 2013 D.C. Circuit Court ruling, EPA began redirecting all PM<sub>2.5</sub> implementation efforts to be consistent with Subpart 4, but under a truncated schedule as compared to what would have occurred had EPA initially designated nonattainment areas under Subpart 4 in 2005. In June 2014, EPA classified the Valley as a Moderate nonattainment area under Subpart 4 with an attainment date of April 5, 2015. In August 2014, the District submitted a formal request to EPA to reclassify the Valley to Serious nonattainment. EPA granted the Valley's Serious reclassification request in April 2015, setting a new attainment date of December 31, 2015.

After implementing the commitments in the *2008 PM<sub>2.5</sub> Plan*, the Valley had been on the verge of attaining the 1997 PM<sub>2.5</sub> Standard. However, due to the extreme drought, stagnation, strong inversions, and historically dry conditions experienced over the winter

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<sup>1</sup> *Nat. Res. Def. Council v. E.P.A.*, 706 F.3d 428 (D.C. Cir. 2013)

of 2013-2014, it was clear in 2014 that attainment by 2015 (based on 2013-2015 data) would be impossible.

The District adopted the *2015 PM2.5 Plan for the 1997 PM2.5 Standard (2015 PM2.5 Plan)* in April 2015 with an MSM demonstration and an attainment date extension request of 2020, as provided for in Subpart 4. The District had worked closely with EPA for over a year developing this plan to address concerns and ensure CAA requirements were satisfied. The *2015 PM2.5 Plan's* comprehensive control strategy would achieve a 38% reduction in NOx emissions between 2012 and 2020 as well as significant reductions in directly emitted PM2.5.

EPA formally proposed to approve portions of the *2015 PM2.5 Plan* and the attainment date extension on February 9, 2016. EPA needed to finalize its approval of the Valley's attainment date extension by July 2016, but EPA failed to finalize this action. EPA subsequently denied the District's attainment extension request on the basis that they did not have enough information to act, and found that the Valley failed to attain the 1997 standard by its December 2015 attainment deadline. EPA's action was effective December 23, 2016,<sup>2</sup> just seven days before the new SIP amendment would be due to EPA as a result of EPA's action.

Pursuant to CAA §189(d), EPA's 2016 PM2.5 Implementation Rule,<sup>3</sup> and 40 CFR §51.1003(c), the District must now submit a SIP revision that meets the requirements summarized in Table 5-1, commonly called a 5% Plan. Although this 1997 PM2.5 SIP update was technically due by December 2016, this was not feasible given the already-truncated schedule described above. Addressing these requirements as part of this *2018 Plan for the 1997, 2006, and 2012 PM2.5 Plan (Plan)* allowed for better stakeholder involvement and harmonization of SIP elements between the 1997, 2006, and 2012 PM2.5 standards.

This attainment Plan satisfies statutory requirements for a CAA §189(d) plan for a Serious nonattainment area SIP submission.

**Table 5-1 Summary of 5% Plan Requirements**

5% Plan Element	Source of Requirement	Location of Plan Where Element Satisfied
Emissions Inventory that includes a Base Year Inventory and an Attainment Projected Inventory for the Area	40 CFR §§51.1003(c) and 51.1008(c) 81 Fed Reg 58098	Appendix B
Identify Pollutants to be Addressed	CAA 189(d) 81 Fed Reg 58099	Appendices G and K
Control Strategy Analysis	40 CFR §§ 51.1003(c)(1)(iii) and 51.1010(c)	Section 5.1 and Appendices C and D
5% Demonstration	CAA §189(d)	Section 5.2 and Chapter 4

<sup>2</sup> <https://www.gpo.gov/fdsys/pkg/FR-2016-11-23/pdf/2016-28100.pdf>

<sup>3</sup> 81 Fed. Reg. 58098-58106, available at <https://www.gpo.gov/fdsys/pkg/FR-2016-08-24/pdf/2016-18768.pdf>

5% Plan Element	Source of Requirement	Location of Plan Where Element Satisfied
	40 CFR §51.1003(c)	
Attainment Demonstration and Modeling	40 CFR §§ 51.1003(c)(1)(iv), 51.1010(c), and 51.1011	Section 5.3 and Appendices K and L
Reasonable Further Progress	40 CFR §§ 51.1003(c)(1)(v) and 51.1012	Section 5.4, Appendix H
Quantitative Milestone	40 CFR §§ 51.1003(c)(1)(vi) and 51.1013(a)(3 and 4)	Section 5.5, Appendix H
Contingency Measures	CAA §172(c)(9) 40 CFR §§ 51.1003(c)(1)(vii) and 51.1014.	Section 5.6, Appendix H
Nonattainment New Source Review Requirements	CAA §189(b)(3) 40 CFR §51.1003(c)(1)(viii)	Section 5.7
Transportation Conformity	40 CFR §51.1003(d) 81 Fed. Reg. 58103	Section 5.8, Appendix D

### 5.1 5% PLAN CONTROL STRATEGY REQUIREMENTS

This CAA §189(d) Plan must include a control strategy satisfying the requirements of 40 CFR §§ 51.1003(c)(1)(iii) and 51.1010(c).<sup>4</sup> This control strategy must be sufficient to achieve the emissions reductions necessary for the 5% demonstration and expeditious attainment. The District's evaluation of emissions sources and emissions controls demonstrates that the most stringent measures, which includes all reasonably available emission reduction opportunities and best available control measures, are in place in the Valley for NOx and directly emitted PM2.5 emissions. Refer to Appendices C and D for these demonstrations.

### 5.2 5% PLAN DEMONSTRATION

Pursuant to 40 CFR §51.1003(c), this 189(d) Plan's control strategy must achieve a 5 percent annual reduction in either direct PM2.5 emissions or in the emissions of any PM2.5 Plan precursor based on the most recent emissions inventory.<sup>5</sup> Areas can vary between direct PM2.5 and PM2.5 precursors, or among precursors, from year to year. Areas are not penalized for achieving emissions reductions early, as they are permitted to carry forward any emissions reductions beyond the required minimum 5 percent in a given year to subsequent years.

The base year for this analysis should be one of the three years used to determine that the area failed to attain the 1997 PM2.5 standard. For the Valley, these years were 2013, 2014, and 2015. Using 2013 as the inventory base year, the following demonstrates that NOx emissions reductions achieved from already adopted control measures are sufficient to provide at least a 5% annual reduction from the plan submittal date until attainment.

<sup>4</sup> See also 81 Fed. Reg. 58099-58100

<sup>5</sup> See also 81 Fed. Reg. 58100-58101.

**Table 5-2 Summary of Emission Reductions in Valley Demonstrating 5% Annual Reductions through Attainment (2013-2020)**

		% reduction from 2013 base	5% Target (tpd NO <sub>x</sub> )	CEPAM Inventory v1.05 (tpd NO <sub>x</sub> )	Meets 5%
Base Year	2013			317.3	
	2014			283.5	
	2015			263.4	
	2016			248.4	
Year 1	2017	5%	301.3	233.4	YES
Year 2	2018	10%	285.5	221.5	YES
Year 3	2019	15%	269.6	214.5	YES
Year 4	2020	20%	253.8	203.3	YES

### 5.3 ATTAINMENT DEMONSTRATION AND MODELING

This CAA §189(d) Plan must demonstrate expeditious attainment pursuant to 40 CFR §§ 51.1003(c)(1)(iv), 51.1010(c), and 51.1011.<sup>6</sup> “Expeditious attainment” should be no later than five years from the date of EPA’s finding of failure to attain, which EPA finalized in 2016. EPA may extend the attainment date by up to five additional years considering the severity of nonattainment and the availability and feasibility of pollution control measures. The modeling performed by California Air Resources Board (CARB) and the District demonstrates the Valley will attain the standard by 2020 (see below and Appendix K). In fact, the Valley has already attained the 24-hour portion of the standard, based on monitoring data from the three year period of 2014 to 2016, and continues to attain based on monitoring data from the three year period from 2015 to 2017. This Plan demonstrates the Valley will attain the standard as expeditiously as practicable (Appendices K and H).

#### 5.3.1 SUMMARY OF MODELING RESULTS

*[Section 5.3.1 provided by California Air Resources Board]*

Photochemical modeling plays a crucial role in demonstrating attainment of the national ambient air quality standards based on projected future year emissions. Currently, the San Joaquin Valley (SJV or Valley) is designated as a serious nonattainment area for the 1997 U.S. EPA annual (15 µg/m<sup>3</sup>) and 24-hour (65 µg/m<sup>3</sup>) PM<sub>2.5</sub> standards with an attainment deadline 2020 for both standards. Consistent with U.S. EPA guidance for model attainment demonstrations (U.S. EPA, 2014<sup>7</sup>), photochemical modeling was used to project PM<sub>2.5</sub> design values (DVs) to the future. 2020 annual and 24-hour PM<sub>2.5</sub> DVs

<sup>6</sup> See also 81 Fed. Reg. 58102-58103 and 58106.

<sup>7</sup> U.S. EPA, 2014, Draft Modeling Guidance for Demonstrating Attainment of Air Quality Goals for Ozone, PM<sub>2.5</sub> and Regional Haze, available at [https://www.epa.gov/ttn/scram/guidance/guide/Draft\\_O3-PM-RH\\_Modeling\\_Guidance-2014.pdf](https://www.epa.gov/ttn/scram/guidance/guide/Draft_O3-PM-RH_Modeling_Guidance-2014.pdf)

at each monitoring site in the Valley show attainment of the 1997 annual and 24-hour PM<sub>2.5</sub> standards.

The findings from the model attainment demonstration are summarized below. A detailed description of the model inputs, modeling procedures, and attainment test can be found in the Modeling Attainment Demonstration and Modeling Protocol Appendices of this document.

The current modeling approach draws on the products of large-scale, scientific studies as well as past PM<sub>2.5</sub> SIPs in the region, collaboration among technical staff at state and local regulatory agencies, and from participation in technical and policy groups in the region (See Photochemical Modeling Protocol Appendix for further details). In this work, the Weather Research and Forecasting (WRF) model version 3.6 was utilized to generate the annual meteorological fields. The Community Multiscale Air Quality (CMAQ) Model version 5.0.2 with state-of-the-science aerosol treatment was used for modeling annual PM<sub>2.5</sub> in the Valley. Other model inputs and configuration, including the modeling domain definition, chemical mechanism, initial and boundary conditions, and emission processing can be found in the Photochemical Modeling Protocol and Modeling Emissions Inventory Appendices.

The U.S. EPA modeling guidance (U.S. EPA, 2014<sup>8</sup>) recommends using modeling in a “relative” rather than “absolute” sense. Based on analysis of recent years’ ambient PM<sub>2.5</sub> levels and meteorological conditions leading to elevated PM<sub>2.5</sub> concentrations, the year 2013 was selected for baseline modeling calculations. In particular, in 2013 SJV experienced one of the worst years for PM<sub>2.5</sub> pollution in the Valley within the last decade.

Specifying the baseline design value is a key consideration in the model attainment test, because this value is projected forward to the future and used to test for future attainment of the standard at each monitor. To minimize the influence of year-to-year variability in demonstrating attainment, the U.S. EPA modeling guidance recommends using the average of three DVs, where one of the DV years is the same as the baseline emissions inventory and modeling year. This average DV is referred to as the baseline (or reference) DV. Here, the average DVs from 2012, 2013, and 2014 are used to calculate baseline DVs (see table below for the baseline DVs utilized in the attainment demonstration modeling).

In order to use the modeling in a relative sense, five simulations were conducted: 1) base year simulation for 2013, which demonstrated that the model reasonably reproduced the observed PM<sub>2.5</sub> concentrations in the Valley; 2) reference (or baseline) year simulation for 2013, which was the same as the base year simulation, but excluded exceptional event emissions such as wildfires; and 3) future year simulations for 2020. These simulations were the same as the reference year simulation, except projected anthropogenic emissions for 2020 were used in lieu of the 2013 emissions.

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<sup>8</sup> U.S. EPA, 2014, Draft Modeling Guidance for Demonstrating Attainment of Air Quality Goals for Ozone, PM<sub>2.5</sub> and Regional Haze, available at [https://www.epa.gov/ttn/scram/guidance/guide/Draft\\_O3-PM-RH\\_Modeling\\_Guidance-2014.pdf](https://www.epa.gov/ttn/scram/guidance/guide/Draft_O3-PM-RH_Modeling_Guidance-2014.pdf)

Table 5-3 shows the 2013 and 2020 Valley annual anthropogenic emissions for the five PM<sub>2.5</sub> precursors calculated from the model-ready emissions inventory. From 2013 to 2020, anthropogenic emissions in the Valley are estimated to drop approximately 35%, 8%, 6%, 8%, and 1% for nitrogen oxides (NO<sub>x</sub>), reactive organic gases (ROG), primary PM<sub>2.5</sub>, sulfur oxides (SO<sub>x</sub>), and ammonia (NH<sub>3</sub>), respectively. Among these five precursors, anthropogenic NO<sub>x</sub> emissions show the largest relative reduction, dropping from 288.2 tons/day in 2013 to 187.1 tons/day in 2020. Note that the emission totals presented in the following table were calculated from the modeling inventory based on CEPAM version 1.05.

Since the modeling inventory includes day-specific adjustments not included in the planning inventory, the planning and modeling inventories are expected to be comparable, but not identical.

**Table 5-3 Valley Model-Ready Annual Emissions for 2013 and 2020**

Category	NO <sub>x</sub>	ROG	PM <sub>2.5</sub>	SO <sub>x</sub>	NH <sub>3</sub>
<b>2013 (tons/day)</b>					
Stationary	38.5	90.8	8.5	7.2	13.9
Area	8.1	153.3	40.2	0.3	310.0
On-road Mobile	154.6	45.1	5.7	0.6	4.4
Other Mobile	87.1	35.8	6.2	0.3	6.0
<b>Total</b>	<b>288.2</b>	<b>325.0</b>	<b>60.5</b>	<b>8.4</b>	<b>334.3</b>
<b>2020 (tons/day)</b>					
Stationary	28.5	95.1	8.4	6.5	15.2
Area	7.8	151.8	40.0	0.3	306.9
On-road Mobile	81.0	22.4	3.2	0.6	3.6
Other Mobile	69.8	28.7	5.4	0.3	6.0
<b>Total</b>	<b>187.1</b>	<b>298.0</b>	<b>57.0</b>	<b>7.7</b>	<b>331.7</b>
<b>Total change from 2013 to 2020</b>	<b>-35%</b>	<b>-8%</b>	<b>-6%</b>	<b>-8%</b>	<b>-1%</b>

In this relative approach, the fractional change (or ratio) in PM<sub>2.5</sub> concentration between the modeled future year (2020) and modeled baseline year (or reference year, 2013) are calculated. These ratios are called relative response factors (RRFs). Since PM<sub>2.5</sub> is comprised of different chemical species, which respond differently to changes in emissions of various pollutants, separate RRFs were calculated for individual PM<sub>2.5</sub> species. In addition, because of potential seasonal differences in PM<sub>2.5</sub> formation mechanisms, RRFs for each species were also calculated separately for each quarter. The RRF for a specific PM<sub>2.5</sub> component *j* for each quarter is calculated using the following expression:

$$RRF_j = \frac{[C]_{j, \text{future}}}{[C]_{j, \text{reference}}} \quad (1)$$

Where for the annual PM<sub>2.5</sub> standard, [C]<sub>j, future</sub> is the modeled quarterly mean concentration for component *j* predicted for the future year averaged over the 3x3 array of grid cells surrounding the monitor, and [C]<sub>j, reference</sub> is the same, but for the reference

year simulation. For the 24-hour PM<sub>2.5</sub> standard,  $[C]_{j, \text{future}}$  is the mean concentration for component  $j$  (for the top 10 percent of modeled PM<sub>2.5</sub> days in a quarter) predicted at the single grid cell which contains the monitor, and  $[C]_{j, \text{reference}}$  is the same, but for the reference year simulation.

The measured FRM/FEM (i.e., Federal Reference Method/Federal Equivalent Method) PM<sub>2.5</sub> must be separated into its various chemical components. Species concentrations were obtained from the four PM<sub>2.5</sub> chemical speciation sites in the Valley. These four speciation sites are located at: Bakersfield – California Avenue, Fresno – Garland, Visalia – North Church, and Modesto – 14<sup>th</sup> Street. Since not all of the 16 FRM/FEM PM<sub>2.5</sub> sites in the Valley have collocated speciation monitors, the speciated PM<sub>2.5</sub> measurements at one of the four speciation sites were utilized to represent the speciation profile at each of the FRM/FEM sites based on geographic proximity, analysis of local emission sources, and measurements from previous field studies.

Since the FRM PM<sub>2.5</sub> monitors do not retain all of the PM<sub>2.5</sub> mass that is measured by the speciation samplers, the U.S. EPA modeling guidance recommends using the SANDWICH approach (Sulfate, Adjusted Nitrate, Derived Water, Inferred Carbon Hybrid material balance) described by Frank (2006<sup>9</sup>) to apportion the FRM PM<sub>2.5</sub> mass to individual PM<sub>2.5</sub> species based on nearby chemical speciation measurements. Based on completeness of the data, PM<sub>2.5</sub> speciation data from 2010 – 2013 were utilized. For each quarter, percent contributions from individual chemical species to FRM/FEM PM<sub>2.5</sub> mass were calculated as the average of the corresponding quarter from 2010-2013 for the annual standard calculation. For the 24-hour standard calculation, only the top 10% of measured PM<sub>2.5</sub> days from that quarter were utilized for percentage calculations.

Projected 2020 annual and 24-hour PM<sub>2.5</sub> DVs for each site are given in Tables 5-4 and 5-5, respectively. For the annual standard, the Bakersfield-Planz site has the highest projected DV at 14.6 µg/m<sup>3</sup>, which is below the 1997 annual PM<sub>2.5</sub> standard of 15 µg/m<sup>3</sup>. For the 24-hour standard, the Bakersfield-California Avenue site has the highest projected DV at 47.6 µg/m<sup>3</sup>, which is also below the 1997 U.S EPA 24-hour PM<sub>2.5</sub> standard of 65 µg/m<sup>3</sup>. Since projecting future year PM<sub>2.5</sub> DVs is performed by projecting individual PM<sub>2.5</sub> components and then summing those components to get the total PM<sub>2.5</sub>, it is useful to examine the RRFs associated with individual components to evaluate how the changes in each component contributes to the overall change in PM<sub>2.5</sub>. From 2013 to 2020, there are modest reductions projected for ammonium nitrate, EC, and organic matter (OM), a slight reduction in sulfate, and a slight increase in crustal material. The reduction in ammonium nitrate is a direct result of NO<sub>x</sub> emission reductions from 2013 to 2020. EC and OM reductions are primarily tied to the reduction in primary PM<sub>2.5</sub> emissions from 2013 to 2020. Detailed RRFs and base/future year concentrations for each individual species can be found in the Modeling Attainment Demonstration.

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<sup>9</sup> Frank, N.H., 2006, Retained nitrate, hydrated sulfates, and carbonaceous mass in federal reference method fine particulate matter for six eastern U.S. cities, Journal of Air & Waste Management Association, 56, 500-511.

To evaluate the impact of reducing emissions of different PM<sub>2.5</sub> precursors to PM<sub>2.5</sub> DVs, a series of model sensitivity simulations were performed, for which anthropogenic emissions within the SJV were reduced by a certain percentage from the baseline emissions. Following U.S. EPA precursor demonstration guidance<sup>10</sup> as well as considering SJV's control strategies, sensitivity runs involving 30% emission reductions were performed for NO<sub>x</sub> and direct PM<sub>2.5</sub>. For other precursors (i.e., ammonia, VOCs, and SO<sub>x</sub>), both 30% and 70% emission reductions were performed. In addition, sensitivity simulations were performed for the years 2013, 2020, and 2024. The key conclusion from the sensitivity runs is that in 2024, reductions of direct PM<sub>2.5</sub> and NO<sub>x</sub> emissions will continue to have a significant impact on annual and 24-hour PM<sub>2.5</sub> DVs, while reductions of ammonia, ROG, and SO<sub>x</sub> have a much smaller impact compared to that of direct PM<sub>2.5</sub> and NO<sub>x</sub>.

**Table 5-4 Projected Future Year 2020 Annual PM<sub>2.5</sub> DVs at Each Monitor**

Site AQS ID	Name	Base DV (µg/m <sup>3</sup> )	2020 Annual DV (µg/m <sup>3</sup> )
60290016	Bakersfield - Planz	17.2	14.6
60392010	Madera	16.9	14.2
60311004	Hanford	16.5	13.3
61072002	Visalia	16.2	13.5
60195001	Clovis	16.1	13.4
60290014	Bakersfield - California	16.0	13.5
60190011	Fresno-Garland	15.0	12.4
60990006	Turlock	14.9	12.5
60195025	Fresno - Hamilton & Winery	14.2	11.9
60771002	Stockton	13.1	11.4
60470003	Merced - S Coffee	13.1	10.9
60990005	Modesto	13.0	11.0
60472510	Merced - Main Street	11.0	9.3
60772010	Manteca	10.1	8.7
60192009	Tranquility	7.7	6.4

<sup>10</sup> U.S. EPA, 2016, PM<sub>2.5</sub> Precursor Demonstration Guidance, available at [https://www.epa.gov/sites/production/files/2016-11/documents/transmittal\\_memo\\_and\\_draft\\_pm25\\_precursor\\_demo\\_guidance\\_11\\_17\\_16.pdf](https://www.epa.gov/sites/production/files/2016-11/documents/transmittal_memo_and_draft_pm25_precursor_demo_guidance_11_17_16.pdf)

**Table 5-5 Projected Future Year 2020 24-hour PM<sub>2.5</sub> DVs at Each Monitor**

Site AQS ID	Name	Base DV (µg/m <sup>3</sup> )	2020 24-hour DV (µg/m <sup>3</sup> )
60290014	Bakersfield – California	64.1	47.6
60190011	Fresno – Garland	60.0	44.3
60311004	Hanford	60.0	43.7
60195025	Fresno – Hamilton & Winery	59.3	45.6
60195001	Clovis	55.8	41.1
61072002	Visalia	55.5	42.8
60290016	Bakersfield – Planz	55.5	41.2
60392010	Madera	51.0	38.9
60990006	Turlock	50.7	37.8
60990005	Modesto	47.9	35.8
60472510	Merced – M. Street	46.9	32.9
60771002	Stockton	42.0	33.5
60470003	Merced – S Coffee	41.1	30.0
60772010	Manteca	36.9	30.1
60192009	Tranquility	29.5	21.5

#### 5.4 REASONABLE FURTHER PROGRESS (RFP)

This CAA §189(d) Plan must demonstrate Reasonable Further Progress (RFP) pursuant to 40 CFR §§ 51.1003(c)(1)(v) and 51.1012.<sup>11</sup> RFP is the incremental emission reductions leading to the attainment date of a standard for an area. Refer to Appendix H for a full description and the RFP demonstration.

#### 5.5 QUANTITATIVE MILESTONES

This CAA §189(d) Plan must include quantitative milestones pursuant to CAA §189(c) and 40 CFR §§ 51.1003(c)(1)(vi) and 51.1013(a)(3 and 4). Quantitative milestones are designed to track RFP, to track progress in achieving the minimum 5 percent annual emission reductions as well as control measures needed for expeditious attainment. See Appendix H for this demonstration. The quantitative milestone years for this CAA §189(d) Plan are 2017, 2020, and 2023.

#### 5.6 CONTINGENCY MEASURES

This CAA §189(d) Plan must include contingency measures pursuant to CAA §172(c)(9) and 40 CFR §§ 51.1003(c)(1)(vii) and 51.1014. Contingency measures are additional control measures to be implemented in the event that EPA issues final rulemaking that

<sup>11</sup> See also 81 Fed. Reg. 58103-58104.

the Valley failed to meet a regulatory requirement necessitating implementation of a contingency measure. See Appendix H for this demonstration.

## 5.7 FULFILLMENT OF SERIOUS AREA PERMITTING REQUIREMENTS

Pursuant to CAA §189(b)(3) and 40 CFR §51.1003(c)(1)(viii), the District must provide 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. The District’s New and Modified Stationary Source Review Rule (Rule 2201) identifies the major source emission thresholds for each pollutant. The District adopted amendments to Rule 2201 on February 18, 2016, to meet requirements related to the District’s reclassification from Moderate to Serious nonattainment for the 1997 and 2006 federal standards for PM<sub>2.5</sub>. Currently, through Rule 2201, the District identifies the major source emission threshold for NO<sub>x</sub> major sources at 10 tpy and PM<sub>2.5</sub> at 70 tpy. However, the rule amendments have not been submitted to EPA for inclusion into the SIP because CARB and EPA requested changes to some of the new rule language. The District hosted a public workshop on the proposed amendments on July 26, 2016. District staff had planned on presenting the rule to the Governing Board for adoption in September of 2016. While these revisions do not change the District’s interpretation or implementation of the rule, these amendments must be adopted by the District Governing Board before CARB can submit the rule to EPA for inclusion into the SIP. However, in August of 2016, EPA released long-overdue regulations on implementing the PM<sub>2.5</sub> standards in NSR rules that require an assessment of the significance of precursor pollutant emissions using a specific type of air quality modeling. Due to these new requirements, EPA will not be able to approve an NSR rule that does not address EPA’s implementation regulation, so adoption has been delayed until such modeling can be completed. The District anticipates taking rule amendments to the District’s Governing Board in 2018.

## 5.8 TRANSPORTATION CONFORMITY

This CAA §189(d) Plan must include transportation conformity budgets for the attainment year pursuant to 40 CFR §51.1003(d)<sup>12</sup>. See Appendix D for more information.

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<sup>12</sup> See also 81 Fed. Reg. 58103.

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