

# Chapter 7

Demonstration of Federal Requirements for 2012 PM<sub>2.5</sub> Standard



This page intentionally blank.

## TABLE OF CONTENTS

|       |   |      |
|-------|---|------|
| 7.    | Demonstration Of Federal Requirements For The 2012 Pm2.5 Standard ..... | 7-1  |
| 7.1   | The Valley’s Attainment Classification for the 2012 PM2.5 NAAQS.....    | 7-1  |
| 7.2   | Federal Requirements.....   | 7-2  |
| 7.3   | Best Available Control Measures (BACM) .....                            | 7-3  |
| 7.4   | Attainment Demonstration and Modeling .....                             | 7-3  |
| 7.4.1 | Summary of Modeling Results.....  | 7-4  |
| 7.4.2 | Attainment Demonstration .....  | 7-8  |
| 7.5   | Reasonable Further Progress (RFP).....                                  | 7-8  |
| 7.6   | Quantitative Milestones.....  | 7-8  |
| 7.7   | Contingency .....   | 7-9  |
| 7.8   | Fulfillment of Serious Area Permitting Requirements.....                | 7-9  |
| 7.9   | Transportation Conformity.....  | 7-10 |

## TABLE OF TABLES

|           |  |     |
|-----------|--|-----|
| Table 7-1 | Summary of Moderate and Serious Nonattainment Area Plan Requirements ..... | 7-2 |
| Table 7-2 | Valley Model-Ready Annual Emissions for 2013 and 2025.....                 | 7-5 |
| Table 7-3 | Projected future year 2025 annual PM2.5 DVs at each monitor.....           | 7-7 |

## 7. DEMONSTRATION OF FEDERAL REQUIREMENTS FOR THE 2012 PM2.5 STANDARD

### 7.1 THE VALLEY'S ATTAINMENT CLASSIFICATION FOR THE 2012 PM2.5 NAAQS

EPA's 2012 PM2.5 national ambient air quality standard (NAAQS, or standard) revised the annual average PM2.5 standard to 12 µg/m<sup>3</sup>, while retaining the 24-hour standard of 35 µg/m<sup>3</sup> set in 2006.<sup>1</sup> In 2015, EPA designated the Valley as Moderate nonattainment for the 2012 PM2.5 standard, with an attainment deadline of December 31, 2021. Under the federal Clean Air Act (CAA) 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).<sup>2</sup> Areas may request reclassification to "Serious," with ten years from its initial attainment designation date to reach attainment.

Pursuant to CAA Subpart 4 §188(b), a Moderate area may be reclassified to Serious nonattainment for one of the following two circumstances:

- Before the attainment date. Any Moderate area that EPA determines cannot practicably attain the NAAQS by the mandated attainment date.
- Upon failure to attain. Any Moderate area that EPA finds is not in attainment after the applicable attainment date shall be reclassified by operation of law as a Serious area.

Modeling and analysis by CARB and District staff has shown that the Valley cannot practicably attain the 2012 PM2.5 Standard by the end of the sixth calendar year following the effective date of designation of the area (2021). 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 PM2.5 Standard* (2016 Moderate Plan), including an attainment impracticability demonstration and a request for reclassification of the Valley from Moderate nonattainment to Serious nonattainment. This plan was submitted to CARB in September of 2016.

In October 2016, CARB tabled the Plan at the request of the District and Valley stakeholders and directed CARB staff to return with additional measures to reduce mobile source emissions in the pre-2025 timeline that is critical for the Valley, and to work with the District to find additional measures to reduce directly emitted particulate matter from stationary sources. As detailed in Appendix C and D of this Plan, these additional measures have been incorporated into the District's PM2.5 attainment strategy. The 2016 Moderate Plan will be submitted to EPA by CARB as an addendum

---

<sup>1</sup> National Ambient Air Quality Standards for Particulate Matter; Final Rule. 78 Fed. Reg. 10, pp. 3086-3287 (2013, January 15). (to be codified at 40 CFR Parts 50, 51, 52 et al. <http://www.gpo.gov/fdsys/pkg/FR-2013-01-15/pdf/2012-30946.pdf>)

<sup>2</sup> Air Quality Designations for the 2012 Primary Annual Fine Particle (PM2.5) NAAQS; Final Rule 80 RF. Vol.80 No10. pp. 2206-2284 (2015, January 15) (to be codified at 40 CFR part 81) <http://www.gpo.gov/fdsys/pkg/FR-2015-01-15/pdf/2015-00021.pdf>

to this Plan to fulfil CAA requirements for a Moderate area that cannot practicably obtain the standard within six years of the effective date of designation.<sup>3</sup>

Pursuant to CAA language, after an area is reclassified to Serious under CAA §188(b)(1), the state shall submit a Serious area Plan to EPA four years after the reclassification.<sup>4</sup> However, waiting four years to prepare the Plan is not feasible for the Valley for this standard. Air quality modeling for this attainment Plan demonstrates that the Valley will attain the standard by 2025, but only if the most stringent feasible control measures are implemented as soon as possible. To achieve attainment of the annual 12 µg/m<sup>3</sup> standard as expeditiously as practicable, District staff have included the Serious area attainment plan for the 2012 PM2.5 standard in this comprehensive PM2.5 plan. In order to obtain the 2012 standard, this Plan goes beyond the requirements for a Serious area attainment plan to include the most stringent measures feasible for implementation in the Valley (see Chapter 4), and will be submitted approximately 5 years ahead of the deadline that would otherwise be applicable.

## 7.2 FEDERAL REQUIREMENTS

The requirements for Moderate areas requesting a reclassification and Serious nonattainment area attainment plans are detailed in CAA Subpart 4 and EPA's 2016 *Fine Particulate Matter National Ambient Air Quality Standards: State Implementation Plan Requirements; Final Rule*.<sup>5</sup> This attainment Plan satisfies statutory requirements for both Moderate and Serious nonattainment area SIP submissions, as shown below in Table 7-1.

**Table 7-1 Summary of Moderate and Serious Nonattainment Area Plan Requirements**

| Moderate and Serious Plan Elements                     | Source of Requirement                                 | Location of Plan Where Element Satisfied |
|--|---|--|
| Current Moderate area attainment date is impracticable | 40 CFR §51.1002(b)(1)                                 | Appendix K<br>2016 Moderate Plan         |
| Base year and attainment projected emissions inventory | 40 CFR §§51.1003(b), 51.1008(b)(1), and 51.1008(b)(2) | Appendix B<br>2016 Moderate Plan         |
| Reasonably Available Control Measures (RACM)           | 40 CFR §§51.1003(b) and 51.1009(a)(3)                 | Appendix C<br>2016 Moderate Plan         |
| Best Available Control Measures (BACM)                 | 40 CFR §§51.1003(b)(iii) and 51.1010                  | Section 7.3<br>Appendices C and D        |
| Attainment demonstration and modeling                  | 40 CFR §§51.1003(b)(iv) and 51.1011                   | Section 7.4<br>Appendices K, L, M        |
| Reasonable Further Progress                            | 40 CFR §§51.1003(b)(v) and 51.1012                    | Section 7.5<br>Appendix H                |
| Quantitative milestones                                | 40 CFR §§51.1003(b)(vi) and 51.1013                   | Section 7.6<br>Appendix H                |

<sup>3</sup> 40 CFR §51.1009 (4)(i)

<sup>4</sup> Federal Clean Air Act §189(b)(2)

<sup>5</sup> See also 81 Fed. Reg. 58074-58097 (Aug. 24, 2016)

| Moderate and Serious Plan Elements                | Source of Requirement                | Location of Plan Where Element Satisfied |
|---|--------------------------------------|--|
| Contingency measures                              | 40 CFR §§51.1003(b)(vii) and 51.1014 | Section 7.7<br>Appendix H                |
| Nonattainment new source review Plan requirements | 40 CFR §§51.1003(b)(viii) and 51.165 | Section 7.8                              |
| Transportation Conformity                         | 40 CFR §51.1003(b and d)             | Section 7.9 and<br>Appendix D            |

### 7.3 BEST AVAILABLE CONTROL MEASURES (BACM)

This Plan demonstrates that the Valley can attain the 12  $\mu\text{m}^3$  annual standard through the implementation of all feasible potential control measures by the applicable attainment date of 2025. As a part of the Serious area attainment demonstration for this standard, in addition to implementing all feasible measures identified as RACM and RACT through the Moderate Area analysis, the District is required to identify, adopt, and implement the best available control measures (BACM) that are feasible for implementation on sources of direct PM<sub>2.5</sub> and PM<sub>2.5</sub> precursors. The analysis of BACM for stationary sources is contained in Appendix C, and identified control measures will be implemented as discussed further in Chapter 4. The control measures included in this plan go beyond RACM and BACM to implement the most stringent measures (MSM) that are feasible for implementation in the Valley.

Although the Valley has some of the most stringent regulations in the nation that will continue to bring about significant reductions into the future, the region will need enormous additional emission reductions, specifically from sources that are under the state and federal jurisdiction, in order to meet this standard. Appendix D discusses BACM that will be implemented by CARB to achieve emission reductions from mobile sources.

Pursuant to CAA §51.1010, this plan addresses Serious Area attainment Plan requirements, including the adoption of measures that are BACM and BACT, by identifying all emission source categories that emit direct PM<sub>2.5</sub> or a significant PM<sub>2.5</sub> precursor (NO<sub>x</sub>) and providing an emissions inventory for those sources. These sources were analyzed for any further control that could be feasibly implemented beyond those already adopted under previous year SIP commitments. Measures implemented in other NAAQS nonattainment areas were also identified and evaluated in each control measure analysis for economic and technological feasibility of implementation in the Valley. Measures identified as feasible are outlined in Chapter 4 (Attainment Strategy), including the implementation schedule for the rule or policy. BACM and BACT are discussed further in Appendices C and D.

### 7.4 ATTAINMENT DEMONSTRATION AND MODELING

Photochemical modeling shows that, while attainment of the 2012 PM<sub>2.5</sub> NAAQS is impracticable by the Moderate area attainment date of 2021, the Valley will reach expeditious attainment of the 12  $\mu\text{g}/\text{m}^3$  annual standard by the Serious area attainment

deadline of 2025. Further details about modeling conducted for the 2012 PM<sub>2.5</sub> standard are discussed below.

#### 7.4.1 SUMMARY OF MODELING RESULTS

*[This section provided by the 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, Valley is designated as a moderate nonattainment area for the 2012 annual PM<sub>2.5</sub> standard (12 µg/m<sup>3</sup>). However, the SJV Air Pollution Control District applied for a reclassification from a moderate to serious nonattainment area, which extended the attainment deadline to 2025. Consistent with U.S. EPA guidance for model attainment demonstrations (U.S. EPA, 2014<sup>6</sup>), photochemical modeling was used to project PM<sub>2.5</sub> design values (DVs) to the future. 2025 annual PM<sub>2.5</sub> DVs at each monitor in the Valley demonstrate attainment of the 2012 annual PM<sub>2.5</sub> standard.

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>1</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

---

<sup>6</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)

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 Tables 2 – 5 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 2025. These simulations were the same as the reference year simulation, except projected anthropogenic emissions for 2025 were used in lieu of the 2013 emissions.

Table 1 shows the 2013 and 2025 Valley annual anthropogenic emissions for the five PM<sub>2.5</sub> precursors calculated from the model-ready emissions inventory. Relative to 2013, anthropogenic emissions in the SJV in 2025 will reduce by 64%, 9%, 11%, 6%, and 1% for NO<sub>x</sub>, ROG, primary PM<sub>2.5</sub>, SO<sub>x</sub>, and ammonia, 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 104.6 tons/day in 2025. Note that the emission totals presented in Table 1 were calculated from the modeling inventory based on CEPAM.

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. In addition, the 2024 and 2025 emission totals in Table 1 are from the attainment inventory, and so include additional emission reductions beyond the future baseline inventory for the respective year. Details about these additional emission reductions can be found in the model attainment demonstration appendix, while the actual emission commitments are outlined in the SIP.

**Table 7-2 Valley Model-Ready Annual Emissions for 2013 and 2025**

| 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>2025 (tons/day)</b>                |                 |              |                   |                 |                 |
| Stationary                            | 26.0            | 100.3        | 8.6               | 6.8             | 16.4            |
| Area                                  | 6.8             | 152.9        | 38.5              | 0.3             | 304.1           |
| On-road Mobile                        | 30.5            | 16.9         | 3.1               | 0.6             | 3.4             |
| Other Mobile                          | 41.2            | 25.3         | 3.6               | 0.3             | 6.0             |
| <b>Total</b>                          | <b>104.6</b>    | <b>295.4</b> | <b>53.7</b>       | <b>7.9</b>      | <b>330.0</b>    |
| <b>Total change from 2013 to 2025</b> | <b>-64%</b>     | <b>-9%</b>   | <b>-11%</b>       | <b>-6%</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 (2025) 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,  $[C]_{j, \text{future}}$  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  $[C]_{j, \text{reference}}$  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>7</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 future year 2025 annual PM<sub>2.5</sub> DVs for each monitor are given in Table 5. The Bakersfield-Planz site has the highest projected DV at 12.0 µg/m<sup>3</sup>, which meets the 2012 annual PM<sub>2.5</sub> standard at 12 µg/m<sup>3</sup>. Similar to 2024, the reduction in 2025 annual PM<sub>2.5</sub> DVs is largely due to significant reduction in ammonium nitrate and EC, with

<sup>7</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.

modest reductions in OM. As discussed previously, reductions in ammonium nitrate are a direct result of dramatic NO<sub>x</sub> reductions from 2013 to 2025. Reductions in EC and OM are primarily due to emission reductions from primary PM<sub>2.5</sub> sources, such as residential wood combustion and commercial cooking.

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>8</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 7-3 Projected future year 2025 annual PM<sub>2.5</sub> DVs at each monitor**

| Site AQS ID | Name                       | Base DV (µg/m <sup>3</sup> ) | 2025 Annual DV (µg/m <sup>3</sup> ) |
|-------------|----------------------------|------------------------------|-------------------------------------|
| 60290016    | Bakersfield – Planz        | 17.2                         | 12.0                                |
| 60392010    | Madera                     | 16.9                         | 11.9                                |
| 60311004    | Hanford                    | 16.5                         | 10.4                                |
| 61072002    | Visalia                    | 16.2                         | 11.1                                |
| 60195001    | Clovis                     | 16.1                         | 11.4                                |
| 60290014    | Bakersfield - California   | 16.0                         | 11.0                                |
| 60190011    | Fresno-Garland             | 15.0                         | 10.4                                |
| 60990006    | Turlock                    | 14.9                         | 11.1                                |
| 60195025    | Fresno - Hamilton & Winery | 14.2                         | 10.0                                |
| 60771002    | Stockton                   | 13.1                         | 10.6                                |
| 60470003    | Merced - S Coffee          | 13.1                         | 9.6                                 |
| 60990005    | Modesto                    | 13.0                         | 9.9                                 |
| 60472510    | Merced – M. Street         | 11.0                         | 8.6                                 |
| 60772010    | Manteca                    | 10.1                         | 7.9                                 |
| 60192009    | Tranquility                | 7.7                          | 5.5                                 |

<sup>8</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)

## 7.4.2 ATTAINMENT DEMONSTRATION

Attaining federal health-based air quality standards is an important milestone for improving public health. As detailed in Appendix K, this Plan demonstrates that the Valley will attain the federal 2012 PM2.5 standard as expeditiously as practicable, with all feasible measures and strategies being implemented to accomplish this goal.

Given the significant contribution of ammonium nitrate to the Valley's PM2.5 concentrations, reductions in NOx emissions are particularly important. To achieve the NOx reductions critical for reaching attainment in the Valley, CARB has adopted regulations that will significantly reduce NOx emissions from various mobile sources. Achieving this level of emissions reductions requires adequate time and carries a tremendous cost.

Modeling performed by CARB and the District demonstrates the Valley will attain the 2012 PM2.5 standard by 2025. See above for the summary of modeling results and Appendix K for the full discussion. This Plan also demonstrates the Valley will attain the standard as expeditiously as practicable as validated in Appendix H.

The attainment demonstration for this Plan includes the benefits of CARB and District control programs that provide ongoing emission reductions. The NOx reductions result from implementation of MSM, which includes the ongoing implementation of both new vehicle standards for passenger and heavy-duty diesel vehicles and equipment; and rules accelerating the turnover of legacy diesel fleets. Implementation of stringent requirements for new off-road engines and in-use off road equipment lead to further NOx reductions, along with District rules addressing stationary source NOx emissions. Appendix C and D contain an evaluation of BACM and MSM feasible for implementation in the Valley.

## 7.5 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>9</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.

## 7.6 QUANTITATIVE MILESTONES

CAA Subpart 4 §189(c)(1) requires Plans submitted to EPA to contain quantitative milestones which are to be achieved every three years until the area is re-designated attainment and which demonstrate reasonable further progress as defined in CAA §171. For a Serious nonattainment area, the quantitative milestones shall be achieved no later than milestone dates of 7.5 and 10.5 years from the date of designation. The Valley was designated Nonattainment for the 2012 PM2.5 NAAQS effective on April, 15,

---

<sup>9</sup> See also 81 Fed. Reg. 58103-58104.

2015.<sup>10</sup> Therefore, the quantitative milestones dates for the 2012 PM2.5 NAAQS for the San Joaquin Valley are 2019, 2022, and 2025.<sup>11</sup> Please refer to Appendix H for specific quantitative milestones for the 2012 PM2.5 standard.

## 7.7 CONTINGENCY

All PM2.5 attainment Plans must contain contingency measures that are consistent with CAA §172(c)(9). Contingency measures are additional control measures to be implemented in the event that an area fails to meet RFP requirements, fails to meet any quantitative milestone, fails to submit a quantitative milestone report or fails to attain the PM2.5 standard by the applicable attainment date. These measures must be fully adopted rules or control measures that are ready to be implemented quickly upon a determination by the EPA that a failure occurred, and such measures are required to take effect without significant further action by the state or the EPA.<sup>12</sup> The statutory contingency measure requirement at CAA §172(c)(9) is not superseded or subsumed by any requirement under subpart 4. This attainment Plan satisfies contingency requirements, see Appendix H for this demonstration.

## 7.8 FULFILLMENT OF SERIOUS AREA PERMITTING REQUIREMENTS

Pursuant to Subpart 4 §189(b)(3) the District must provide a revision to the nonattainment new source review (NNSR) program to lower the applicable “major stationary source” thresholds from 100 tons per year (tpy) to 70 tpy for areas designated Serious nonattainment. This Plan addresses this 2012 standard as both a Moderate and Serious nonattainment area. 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 PM2.5. Currently, through Rule 2201, the District identifies the major source emission threshold for NOx major sources at 10 tpy and PM2.5 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 State Implementation Plan. However, in August of 2016, EPA released long-overdue regulations on implementing the PM2.5 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,

---

<sup>10</sup> Air Quality Designations for the 2012 Primary Annual Fine Particle (PM2.5) NAAQS; Final Rule 80 RF. Vol.80 No10. pp. 2206-2284 (2015, January 15) (to be codified at 40 CFR part 81) <http://www.gpo.gov/fdsys/pkg/FR-2015-01-15/pdf/2015-00021.pdf>

<sup>11</sup> 40 CFR 51.1013(a)

<sup>12</sup> 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>

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.

## **7.9 TRANSPORTATION CONFORMITY**

This CAA §189(d) Plan must include transportation conformity budgets for the attainment year pursuant to 40 CFR §51.1003(d)<sup>13</sup>. Please see Appendix D for more information.

---

<sup>13</sup> See also 81 Fed. Reg. 58103.

This page intentionally blank.