Appendix H

RFP, Quantitative Milestones, and Contingency

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

Appendix H Revised February 11, 2020

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H. RFP, QUANTITATIVE MILESTONES, AND CONTINGENCY

Pursuant to federal Clean Air Act (CAA) requirements, states are required to submit a state implementation plan (SIP) to U.S. Environmental Protection Agency (EPA) for areas designated nonattainment of National Ambient Air Quality Standards (NAAQS, or standards) for PM2.5.[1] This appendix fulfills the following federal Clean Air Act requirements for PM2.5 nonattainment areas as identified in the CAA, codified in the code of federal regulations,[2] and clarified in the 2016 PM2.5 Implementation Rule:[3]

1. Reasonable Further Progress [CAA §172(c)(2)]
2. Quantitative Milestones [CAA §189(c)]
3. Contingency [CAA §172(c)(9)]

For standard-specific demonstrations of federal requirements refer to the following plan chapters:

- 1997 PM2.5 Standard Demonstration – Chapter 5
- 2006 PM2.5 Standard Demonstration – Chapter 6
- 2012 PM2.5 Standard Demonstration – Chapter 7

H.1 REASONABLE FURTHER PROGRESS (RFP)

The term "reasonable further progress" (RFP) means such annual incremental reductions in emissions of the relevant air pollutant as are required for the purpose of ensuring attainment of the applicable NAAQS by the applicable date.[4] Each attainment plan for a PM2.5 nonattainment area shall include an RFP plan that demonstrates that sources in the area will achieve such annual incremental reductions in emissions of PM2.5 and PM2.5 plan precursors as are necessary to ensure attainment of the applicable PM2.5 NAAQS as expeditiously as practicable. As demonstrated in this Plan (Appendices G and K), California Air Resources Board (CARB) modeling determined ammonia, VOCs, and SOx do not contribute significantly to PM2.5 levels that exceed the 1997, 2006, or 2012 NAAQS in the Valley. As such, the demonstrations in this appendix appropriately address direct PM2.5 emissions and NOx.

Regardless of whether a state is submitting a Moderate area plan, a Serious area plan, or a plan required pursuant to CAA §189(d) (5% Plan), to satisfy the statutory requirements for RFP at CAA §172(c)(2), a state must submit an RFP plan.

[1] Clean Air Act, Title 1, Part D Subpart 1 and CAA Title 1, Part D Subpart 4
[2] CFR part 51 – Requirements for preparation, adoption, and submittal of implementation Plans
[3] 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
[4] Clean Air Act Section 171(1)

Linear emission reductions
Historically, EPA's interpretation of the RFP requirement has been "generally linear progress" from the base year to the attainment year, demonstrated at RFP milestone years.[5]

Stepwise emission reductions
In its most recent Implementation Rule, EPA clarified that RFP requirements may be satisfied through generally linear progress, or through a stepwise demonstration. Stepwise emissions reductions would be slower than ''generally linear'' reductions for certain periods, and then would decline sharply (due to implementation of a new emission reduction program, or new operation of control technology on one or more stationary sources).

For example, in one area new emission standards for mobile sources may achieve reductions in a generally linear manner over time, as a portion of the existing vehicle fleet is replaced each year with new vehicles meeting the more stringent standards. In another area, regulations to reduce emissions from certain stationary source sectors could have a single compliance date by which controls must be in place, which could result in a significant drop in emissions in a **"**stepwise" manner over a relatively short period. In the first case, the EPA expects that, so long as the attainment date is as expeditious as practicable, then generally linear progress toward attainment by that date would satisfy the RFP requirement. In the second case, where progress is slower than generally linear, the state is required to submit a clear rationale and supporting information to explain why generally linear progress is not appropriate (*e.g.,* due to the nature of the nonattainment problem, the types of sources contributing to PM2.5 levels in the area and the implementation schedule for control requirements at such sources).

H.1.1 RFP PLAN REQUIREMENTS

Each attainment plan for a PM2.5 nonattainment area shall include an RFP plan that demonstrates that sources in the area will achieve such annual incremental reductions in emissions of direct PM2.5 and PM2.5 plan precursors as are necessary to ensure attainment of the applicable PM2.5 NAAQS as expeditiously as practicable. [6,7]

The RFP plan shall include the following:[8]

1. A schedule describing the implementation of control measures during each year of the applicable attainment Plan.

2. RFP projected emissions for direct PM2.5 and NOx for each applicable milestone year, based on the anticipated implementation schedule for control measures.

[5] 72 FR 20633, codified at 40 CFR 51 Subpart Z §51.1000 (definitions)
[6] 40 CFR §51.1012 Reasonable further progress requirements.
[7] Clean Air Act Section 171(1)
[8] 40 CFR §51.1012

3. An analysis that presents the schedule of control measures and estimated emissions changes to be achieved by each milestone year, and that demonstrates that the control strategy will achieve RFP toward attainment between the base year and the attainment year. The analysis shall rely on information from the base year inventory and the attainment projected inventory for the nonattainment area, in addition to the RFP projected emissions required.

4. An analysis that demonstrates that by the end of the calendar year for each milestone date for the area, pollutant emissions will be at levels that reflect either generally linear progress or stepwise progress in reducing emissions on an annual basis between the base year and the attainment year. A demonstration of stepwise progress must be accompanied by appropriate justification for the selected implementation schedule.

5. At the state's election, an analysis that identifies air quality targets associated with the RFP projected emissions identified for the milestone years at the design value monitor locations.

H.1.2 DETERMINATION OF RFP YEARS

The baseline year for this Plan for all three PM2.5 standards is 2013. Analyses and modeling performed for this Plan demonstrate the following attainment dates to be the most expeditious attainment dates practicable:

- 1997 annual PM2.5 standard attainment year is 2020
- 2006 24-hour PM2.5 standard attainment year is 2024
- 2012 annual PM2.5 standard attainment year is 2025

RFP years for an attainment Plan for a particulate matter air quality standard shall be determined by the quantitative milestone deadlines.[9] Refer to the Quantitative Milestone Requirements section below to see how milestone years were determined for each NAAQS.

Table H-1 Summary of Significant RFP and Quantitative Milestone Dates

Federal PM2.5 Standard	Base Year	Attainment Year	RFP and Quantitative Milestone Years
1997 PM2.5 NAAQS	2013	2020	2017, 2020, 2023*
2006 PM2.5 NAAQS	2013	2024	2017, 2020, 2023, 2026*
2012 PM2.5 NAAQS	2013	2025	2019, 2022, 2025, 2028*

* 2023, 2026, and 2028 are not RFP milestone years. They are Quantitative Milestone year only. All other dates are both RFP and Quantitative Milestone years.

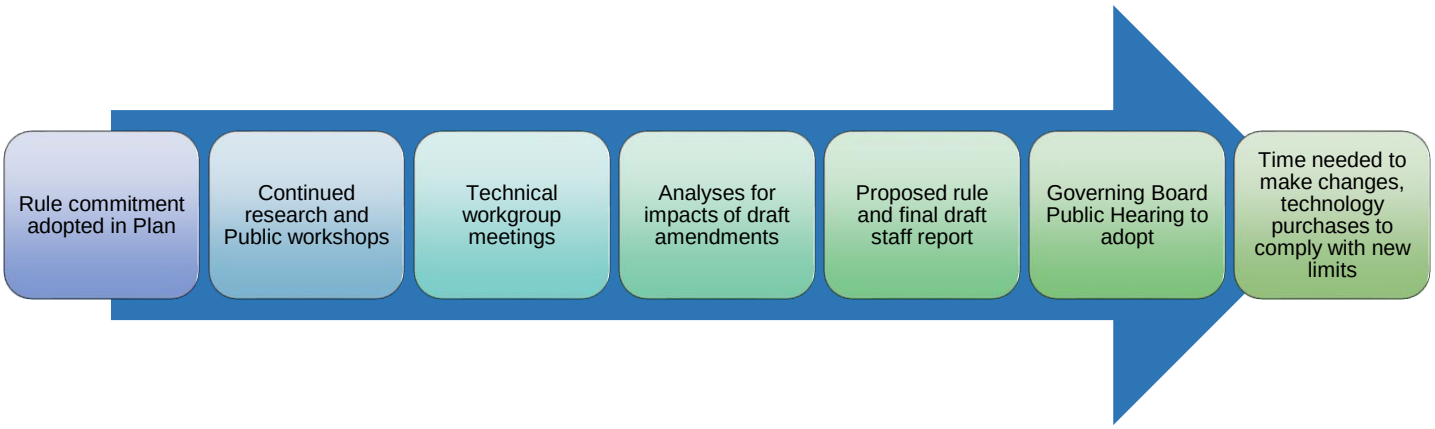
[9] 40 CFR 51.1012(a)(4)

H.1.3 RFP Milestone Requirement Targets and Attainment Demonstrations

As previously stated, RFP means such annual incremental reductions in emissions of the relevant air pollutant as are required or may reasonably be required by EPA for the purpose of ensuring attainment of the applicable national ambient air quality standard by the applicable date. This section of this Plan demonstrates satisfaction of CAA RFP requirements. In concurrence with CAA requirements this demonstration concludes at the attainment year for each NAAQS. The following analysis demonstrates linear RFP for the 1997 PM2.5 standard and stepwise RFP for the 2006 and 2012 PM2.5 standards. The 2006 and 2012 PM2.5 RFP demonstration is stepwise due to the necessary time required by the District and CARB to go through the process necessary to amend rules, develop programs, and for sources in the Valley to implement the emission reduction measures.

Significant time is required for regulatory measures to undergo a robust public rulemaking process after Plan adoption. In these efforts, the District and CARB are committed to a transparent public process that includes stakeholder, industry, and other-agency input at every step possible. As illustrated in Figure H-1, the rule amendment process is a robust process that can take significant time, sometimes years, to complete and implement. This process entails developing a complete understanding of the costs, socioeconomic impacts, and potential technological and economic feasibility issues associated with each proposed control measure. As outlined in Chapter 4, Table 4-4, the District and CARB have committed to an aggressive schedule to adopt rules as expeditiously as possible, while still allowing time for a robust public process.

Figure H-1 Public Process of Rule Development and Implementation



Stepwise Justification

CARB and the District are making progress reducing emissions of NOx and PM2.5 through ongoing implementation of the current control strategy. CARB and the District will reduce NOx emissions by 4.8 percent and PM2.5 emissions by 0.6 percent annually on average between 2013 and 2024 (See Appendix B); however, to attain the 35 µg/m^3 24-hour and 12 µg/m^3 annual NAAQS in 2024 and 2025 respectively, additional emissions reductions beyond those achieved through ongoing implementation of CARB's

mobile source control program and the District's stationary source program are needed. Therefore, CARB and the District committed to pursue further measures achieving additional emissions reductions, with the formal emissions reductions commitments being made for 2024 and 2025, the relevant attainment years.

These new mobile and stationary source control measures will facilitate the emissions reductions commitments for 2024 and 2025, and either have been, are being, or will be, developed by CARB and the District on the schedule laid out in this plan: the District's commitments in Table 4-4 and Table 4-5 and CARB's commitments in Table 4-8 include dates for both action and implementation for each measure. The action and implementation dates are as expeditious as possible and reflect CARB's and the District's best estimate of the time required for the process of developing and implementing each proposed measure.

To facilitate meeting the emissions reductions commitments for 2024 and 2025, all the action dates and many of the implementation dates for the measures fall prior to 2024, as indicated in Table 4-4, Table 4-5, and Table 4-8. This means emissions reductions from these measures are expected to occur prior to the attainment year. Because CARB and the District committed to new measures with implementation dates occurring in and before 2024, actual emissions up to 2024 will be lower than the emissions inventory. Actual reductions are already occurring and will continue over the lifetime of this Plan, as will be documented in future Quantitative Milestone Reports. Due to the difficulties associated with adopting measures that go beyond the most stringent measures feasible for implementation in the Valley, emission reductions from CARB and District measures are committed to occur not later than 2024 to allow time for affected sources to implement additional controls. This makes it necessary for CARB and the District to rely on a stepwise demonstration, rather than a linear RFP demonstration, for the 35 $\mu g/m^3$ 24-hour and 12 $\mu g/m^3$ annual NAAQS. Demonstrating linear progress is not feasible for the 35 $\mu g/m^3$ 24-hour and 12 $\mu g/m^3$ annual NAAQS due to the time required—during both the measure development and implementation phases—to resolve feasibility issues for less widely accepted or emerging technologies. Anticipated challenges in the measure development and implementation phases affect both the estimated action and implementation dates, as discussed below.

Action Dates

The action dates CARB and the District committed to in Table 4-4, Table 4-5, and Table 4-8 are based on CARB's and the District's best estimate of the amount of time required for the measure development phase. Time spent in this phase is influenced by the complexity of discussions with stakeholders and partner agencies about the feasibility of applying a control, and on what timeline. Implementation of the measure will be hindered if these issues are not resolved or dealt with during the rule development phase. In some cases, if a technology is not well established or widely adopted, there will need to be increased focus and time spent during the measure development phase on the need to innovate or develop a new or emerging technology. In developing the specifics of the regulation or rule, consideration will have to be given to the time it will take in the implementation phase to bring a technology to readiness for market-scale adoption. In addition, once the proposed measure has been developed, it must be

adopted by the relevant agency, either CARB or the District. This process entails procedural requirements with their own timing.

"Implementation Begins" Dates

The "Implementation Begins" dates CARB and the District committed to in Table 4-4, Table 4-5, and Table 4-8 are based on CARB's and the District's best estimate of the amount of time required for measure adoption and procedural elements as well as the implementation phase. CARB regulations, once adopted, undergo a prescribed review process by the State Office of Administrative Law (OAL) to ensure compliance with California's Administrative Procedure Act before the measure can be codified in the California Code of Regulations. The effective date of an OAL-approved regulation can be a year or more from the date of CARB adoption. Following development and adoption, in all cases, the implementation schedule of a measure must account for the time needed by the affected entities to comply with the requirements in the measure. This includes planning for, and investing in, the resources to implement the required controls—to change, buy, or install new technology if applicable.

Some specific challenges related to the timing of implementation of innovative District and CARB measures are described in further detail below.

District Measures

As outlined in Table 4-4 in Chapter 4, the District has committed to take action on each PM2.5 control measure beginning in 2019, and not later than 2022, with the majority of rulemaking for District regulatory actions occurring in 2020. Implementation is set to begin as expeditiously as possible for each measure. Rule 4901 (Wood Burning Fireplaces and Wood Burning Heaters) was amended in June 2019, with implementation of the rule requirements beginning in the 2019-2020 winter wood burning season. The District's Burn Cleaner incentive program is achieving emission reductions from residential wood combustion on an ongoing basis. Similarly, the District's incentive programs for both commercial charbroiling control unit installation and for the installation of near-zero emissions technology agricultural pump engines to replace older, high-polluting diesel agricultural pump engines are active and already achieving emission reductions in the Valley.

However, other regulatory measures for stationary sources may require multiple years after the rule amendment date to provide the time for affected industries to implement and comply with new control requirements. Please refer to the control measure analyses included in Appendix C of this plan for each proposed District regulatory measure (Table H-2) for a full description of economic and technological feasibility considerations associated with each proposed control measure. Complications affecting the timing of implementation of new rule requirements for different types of stationary sources are further discussed in the following section.

Table H-2 Stationary Source Regulatory Control Measures

Regulatory Measures	Public Process Begins	Action Date	Imple-mentation Begins	Control Measure Analysis
Rule 4311 Flares	2018	2020	2023	See Pg. C-143 – C-161
Rule 4306 Boilers, Steam Generators, and Process Heaters – Phase 3 **Rule 4320** Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr	2019	2020	2023	See Pg. C-68 – C-94
Rule 4702 Internal Combustion Engines	2019	2020	2024	See Pg. C-212 – C-240
Rule 4354 Glass Melting Furnaces	2020	2021	2023	See Pg. C-189 – C-195
Rule 4352 Solid Fuel-Fired Boilers, Steam Generators And Process Heaters	2020	2021	2023	See Pg. C-163 – C-188
Rule 4550 Conservation Management Practices	2021	2022	2024	See Pg. C-196 – C-203
Rule 4692 Commercial Under-fired Charbroiling (Hot-spot Strategy)	2019	2020	2024	See Pg. C-204 – C-211
Rule 4901 Wood Burning Fireplaces and Wood Burning Heaters (Hot-spot Strategy)	2019	2019	2019	See Pg. C-248 – C-282

As the regulatory evaluation completed in Appendix C demonstrates, District rules currently require the most stringent measures feasible to implement in the Valley. Further understanding of the applicability of potential further control technologies to Valley operations, the cost-effectiveness of controls, and the socioeconomic impacts of potential regulations is necessary before regulations can be adopted. The market availability of control equipment capable of reducing emissions further than the already stringent limits required by these technology-forcing rules is an additional consideration in implementing new regulatory requirements.

Time after rule adoption will be necessary for unit manufacturers and vendors to make available compliant equipment, and for facility operators to source, purchase, and install new units or compliant retrofit equipment. Dependent on the source category, construction of controls will include engineering, site preparation and infrastructure upgrades, unit installation, and operator training on proper operation. Potential control technologies have significant costs to affected facilities, and these operations will also require time to plan for these investments. Based on these challenges, rule implementation is not expected to be feasible prior to the implementation date listed in Table 4-4 (in Chapter 4). The time necessary for affected industries to comply with

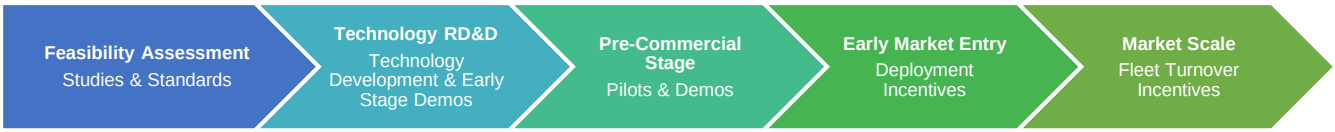
potential new regulatory requirements will be further evaluated in the rule amendment process, and a compliance schedule will be adopted as a part of potential rule amendments.

Due to the factors outlined above, and further discussed in the Appendix C control measure analyses for stationary sources, the difficulty of implementing emission reduction measures that will further advance the Valley towards attainment of the 2006 and 2012 PM2.5 NAAQS has resulted in the District and CARB committing to achieve emission reductions by 2024. This necessitates a stepwise RFP demonstration. The expeditious implementation of some measures, where feasible, may result (or has already resulted) in emission reductions that occur before the committed date of 2024/2025. Emission reductions achieved earlier than these commitment dates will be demonstrated and discussed in Quantitative Milestone Reports submitted after identified milestone years (see Table H-12).

CARB Measures

CARB's mobile source control program is designed to facilitate the transformation of California's transportation sector. As discussed in the Valley Supplement to the State SIP Strategy (Attachment A), the objective of many of CARB's new measures is to introduce or advance innovative technologies in early stages of development or market penetration. In the case of technology-forcing regulations, including CARB measures to increase the penetration of zero- and near-zero-emission technologies, time is needed by the affected industry to ready the technologies, including infrastructure, for market-scale adoption, and would have been discussed previously by CARB and stakeholders during the measure development phase. The time required to facilitate new and innovative technologies is a principle driver of the timeline for control measure implementation CARB laid out in Table 4-8. Figure H-2 illustrates stages in the commercialization path for an emerging technology.

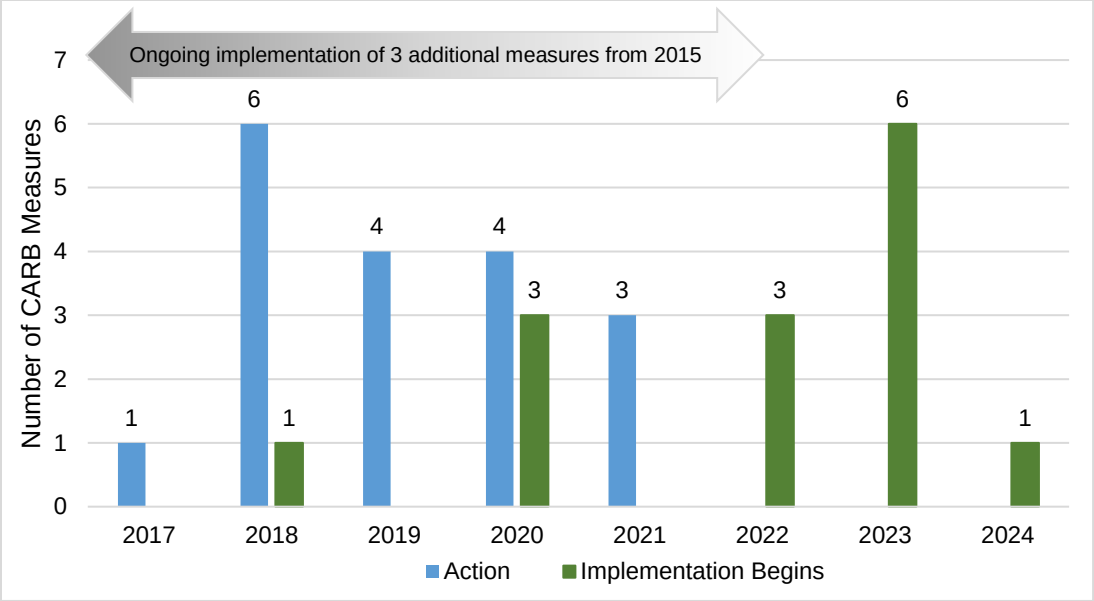
Figure H-2 Stages in the Commercialization Path



CARB conducts technology and fuels assessments[10] as part of this process. These reports discuss in detail the status of the technology and potential challenges with getting the technology to market scale. In spite of the challenges associated with the rulemaking process, CARB has committed to implementation of a suite of measures prior to 2024 in order to achieve emissions reductions as expeditiously as possible. As shown in Figure H-3, all the action dates and the majority of the implementation dates for CARB measures fall prior to 2024.

[10] https://ww2.arb.ca.gov/resources/documents/technology-and-fuels-assessments

Figure H-3 Action and Implementation Begins Dates for CARB Measures



Implementation of three key incentive measures is already ongoing. The Accelerated Turnover of Agricultural Equipment incentive-based measure was adopted by CARB in December 2019, but has been achieving reductions in NOx and PM2.5 since 2015 and will continue to achieve significant reductions annually through the 2025 attainment year. In addition, CARB and the District are already implementing turnover of vehicles for the Accelerated Turnover of Trucks and buses and Accelerated Turnover of Off-Road Equipment incentive measures. The ongoing implementation of these measures illustrates that CARB and the District are achieving continual emissions reductions well in advance of the 2024 and 2025 attainment dates for which formal emissions reductions commitments exist.

The timing of action and implementation for other key CARB measures is impacted by specific challenges. For example:

- Heavy-Duty Vehicle Inspection and Maintenance Program:
    - Legislation signed in 2019 (SB 210, Leyva) ensures that this program's emissions reductions are maximized.
    - The legislative process took time and influenced the action and implementation dates committed to in the SIP.
    - With the law now in place, CARB is working on program design and establishing the infrastructure for a successful program. CARB has held two public workshops and three public working group meetings on the Heavy-Duty Vehicle Inspection and Maintenance Program since February 2019.

- Low-NOx Engine Standard (California Action):
  - CARB's established action and implementation timelines for this standard were impacted by an ongoing multi-year, three-phase research effort to assess the feasibility of lower NOx emissions.
  - The California Low-NOx Engine Standard for heavy-duty vehicles has been part of an extensive public process with workshops beginning in November 2016.
  - CARB staff is working hard to ensure the California program will meet all of the State's needs while preserving the ability to harmonize with the federal low-NOx program that U.S. EPA has initiated through its Cleaner Trucks Initiative. Coordination on the federal low-NOx rulemaking will also take time.

H.1.4 RFP Calculation Methodology and Demonstration

1. Determine the emissions inventory of the Valley with the Plan control strategy for the baseline year, the RFP years, and the attainment year.

Table H-3 Annual Average Emission Inventory (tpd) (see Appendix B)

Pollutant	2013	2017	2019	2020	2021	2022	2023	2024	2025	2026
Direct PM2.5	62.5	58.9	59.2	59.0	58.5	58.4	58.3	58.3	58.3	58.4
NOx	317.2	233.3	214.5	203.3	191.0	179.8	153.6	148.9	143.7	139.4

2. Identify additional annual average emission reductions from the Plan control measure commitments (see Chapter 4) between the Plan base year and the attainment year.

Table H-4 Annual Average Emissions Reduced from Control Measure Commitments (tpd)

Pollutant	2013	2017	2019	2020	2021	2022	2023	2024	2025	2026
Direct PM2.5	0	0	0	0	0	0	0	2.2	2.2	2.2
NOx	0	0	0	0	0	0	0	33.9	33.9	33.9

3. Subtract the emission reductions from Plan control measure commitments (Table H-3) from the emission inventory (Table H-2) to determine the Plan inventory.

Table H-5 Projected Attainment Emissions Inventory after Control Measures (tpd)

Pollutant	2013	2017	2019	2020	2021	2022	2023	2024	2025	2026
Direct PM2.5	62.5	58.9	59.2	59.0	58.5	58.4	58.3	56.1	56.1	56.2
NOx	317.2	233.3	214.5	203.3	191.0	179.8	153.6	115.0	109.8	105.5

4. Determine the total reductions from the 2013 baseline emission inventory that must be achieved to reach attainment by subtracting Plan base year (2013) emissions (Table H-2) from attainment year emissions after controls (Table H-4).

Table H-6 Total Reductions Necessary to Reach Attainment (tpd)*

Pollutant	A	B	C	D	E	F	G
	2013 Plan Base Year Emissions	1997 NAAQS Attainment Emissions (2020)	1997 NAAQS Reductions Needed	2006 NAAQS Attainment Emissions (2024)	2006 NAAQS Reductions Needed	2012 NAAQS Attainment Emissions (2025)	2012 NAAQS Reductions Needed
	(Table H-2)	(Table H-4)	(A – B)	(Table H-4)	(A – D)	(Table H-4)	(A – F)
Direct PM2.5	62.5	59.0	3.5	56.1	6.4	56.1	6.4
NOx	317.2	203.3	114.0	115.0	202.2	109.8	207.4

**This table has been updated to include the correct value for NOx NAAQS Attainment Emissions for the 2006 standard (updated in Column D), included in Table H-4. This technical correction of an error value results in updated values being included in all subsequent tables.*

5. Determine the fraction of reductions that are achieved in each RFP milestone year. The following Table H-6 shows the fraction of emissions reductions to be achieved for each milestone year, assuming a linear reduction in emissions for the 1997 standard, and using the attainment emissions inventory targets established for the 2006 and 2012 standards. In the RFP demonstrations in the tables that follow, the 1997 NAAQS follows the generally linear method, while the 2006 and 2012 NAAQS follow the stepwise method, for reasons as described above.

   Where (milestone year – base year) / (attainment year – base year)

Table H-7 Milestone Year Fractions Achieved in Each Milestone Year

	Milestone Years				
	2017	2020	2023	2024	2026
1997 NAAQS (PM2.5 and NOx)	57.1%	100.0%	100.0%	100.0%	100.0%
2006 NAAQS (PM2.5)	56.3%	54.7%	65.6%	100.0%	100.0%
2006 NAAQS (NOx)	41.5%	56.3%	81.0%	100.0%	100.0%
	2019	2022	2025		
2012 NAAQS (PM2.5)	51.6%	64.1%	100.0%		
2012 NAAQS (NOx)	49.5%	66.2%	100.0%		

6. Determine the RFP target emissions levels using reduction fractions for linear RFP demonstration (for 1997 PM2.5 NAAQS).

Table H-8 Target Emissions Levels for RFP Milestone Years (tons per day)

	A	B	C	D	E	F	G	H
			2017		2020		2023	
1997 NAAQS	2013 Base Year Emission Inventory	Reductions Needed To Attain NAAQS	Tons to be Reduced	RFP Target Emissions Level	Tons to be Reduced	RFP Target Emissions Level	Tons to be Reduced	RFP Target Emissions Level
	(Table H-2)	(Table H-5)	(B x Table H-6)	(A – C)	(B x Table H-6)	(A – E)	(B x Table H-6)	(A – G)
Direct PM2.5	62.5	3.5	2.0	60.5	3.5	59.0	3.5	59.0
NOx	317.2	114.0	65.1	252.1	114.0	203.3	114.0	203.3

7. Compare RFP target emissions level to the projected emissions inventory to demonstrate RFP.

Table H-8 demonstrates linear RFP for the 1997 PM2.5 NAAQS. As justified earlier in this chapter, stepwise RFP is demonstrated for both the 2006 and 2012 PM2.5 NAAQS, as outlined in Tables H-9 and H-10. For Table H-9 and H-10, the "RFP Target Emissions Level" selected is equal to the attainment emissions inventory (calculated in Table H-4). Consistent with EPA's discussion of stepwise methodology included in the 2016 PM2.5 Implementation Rule, the attainment inventory drops significantly in 2024 due to the implementation of District and CARB emission reduction strategies further outlined in Chapter 4 of this plan.

Table H-9 Demonstration of Compliance with Linear RFP Targets for 1997 NAAQS

	2017			2020			2023		
1997 NAAQS	RFP target emissions level	Attainment Emissions Inventory	Linear RFP target met?	RFP target emissions level	Attainment Emissions Inventory	Linear RFP target met?	RFP target emissions level	Attainment Emissions Inventory	Linear RFP target met?
	(Table H-7)	(Table H-4)		(Table H-7)	(Table H-4)		(Table H-7)	(Table H-4)	
Direct PM2.5	60.5	58.9	**YES**	59.0	59.0	**YES**	59.0	58.3	**YES**
NOx	252.1	233.3	**YES**	203.3	203.3	**YES**	203.3	153.6	**YES**

Table H-10 Demonstration of Compliance with Stepwise RFP Targets for 2006 NAAQS

	2017			2020			2023			2026		
2006 NAAQS	RFP target emissions level	Attainment Emissions Inventory	Stepwise RFP target met?	RFP target emissions level	Attainment Emissions Inventory	Stepwise RFP target met?	RFP target emissions level	Attainment Emissions Inventory	Stepwise RFP target met?	RFP target emissions level	Attainment Emissions Inventory	Stepwise RFP target met?
	(Table H-4)	(Table H-4)		(Table H-4)	(Table H-4)		(Table H-4)	(Table H-4)		(Table H-4)	(Table H-4)	
Direct PM2.5	58.9	58.9	**YES**	59.0	59.0	**YES**	58.3	58.3	**YES**	56.2	56.2	**YES**
NOx	233.3	233.3	**YES**	203.3	203.3	**YES**	153.6	153.6	**YES**	105.5	105.5	**YES**

Table H-11 Demonstration of Compliance with Stepwise RFP Targets for 2012 NAAQS

	2019			2022			2025		
2012 NAAQS	RFP target emissions level	Attainment Emissions Inventory	Stepwise RFP target met?	RFP target emissions level	Attainment Emissions Inventory	Stepwise RFP target met?	RFP target emissions level	Attainment Emissions Inventory	Stepwise RFP target met?
	(Table H-4)	(Table H-4)		(Table H-4)	(Table H-4)		(Table H-4)	(Table H-4)	
Direct PM2.5	59.2	59.2	YES	58.4	58.4	YES	56.1	56.1	YES
NOx	214.5	214.5	YES	179.8	179.8	YES	109.8	109.8	YES

H.2 QUANTITATIVE MILESTONES

Consistent with CAA §189(c)(1), the state must submit in each attainment Plan for a PM2.5 nonattainment area specific quantitative milestones that demonstrate reasonable further progress toward attainment of the applicable PM2.5 NAAQS in the area.

H.2.1 QUANTITATIVE MILESTONE REQUIREMENTS

Quantitative milestones in a State Implementation Plan shall meet the following requirements:[11]

1. Nonattainment areas initially classified as Moderate

a. Milestones achieved no later than a milestone date of 4.5 years and 7.5 years from the date of designation of the area.
b. Milestones that provide for objective evaluation of reasonable further progress toward timely attainment of the applicable PM2.5 NAAQS in the area. At a minimum, each quantitative milestone Plan must include a milestone for tracking progress achieved in implementing the SIP control measures, including Reasonably Available Control Measures (RACM) and Reasonable Available Control Technology (RACT), by each milestone date.

2. Areas reclassified as Serious

a. For areas that can attain the NAAQS by the end of the tenth calendar year following the effective date of designation, milestone dates of 7.5 years and 10.5 years respectively, from the date of designation of the area
b. For areas that cannot attain the NAAQS by the end of the tenth calendar year following the effective date of designation, milestone dates of 7.5 years, 10.5 years, and 13.5 years from the date of designation. If the attainment date is beyond 13.5 years from the date of designation, such Plan shall also contain a quantitative milestone to be achieved no later than milestones dates of 16.5 years, respectively from the date of designation of the area.
c. Milestones that provide for objective evaluation of RFP toward timely attainment of the NAAQS in the area. At a minimum each quantitative milestone Plan must include a milestone for tracking progress achieved in implementing SIP control measures, including Best Available Control Measure (BACM) and Best Available Control Technology (BACT) by each milestone date.

3. Serious areas that fail to attain by the applicable Serious area attainment date

a. If the attainment Plan is due prior to a date 13.5 years from designation of the area, then the Plan shall contain milestones to be achieved by no later than a milestone date of 13.5 years from the date of designation of the area, and every three years thereafter, until the milestone date that falls within three years *after* the applicable attainment date.
b. If the attainment Plan is due later than a date 13.5 years from designation, then the Plan shall contain milestones to be achieved by no later than a

[11] 40 CFR §51.1013 Quantitative milestone requirements.

milestone date of 16.5 years from the date of designation of the area, and every three years thereafter, until the milestone date that falls within three years *after* the applicable attainment date.

c. Milestones that provide for objective evaluation of RFP toward timely attainment of the NAAQS. At a minimum, each quantitative milestone Plan must include a milestone for tracking progress achieved in implementing the SIP control measures by each milestone date.

4. Areas designated for 1997 and/or 2006 PM2.5 NAAQS before January 15, 2015

a. Each attainment Plan submission for an area designated nonattainment for the 1997 and/or 2006 PM2.5 NAAQS before January 15, 2015, shall contain quantitative milestone to be achieved no later than 3 years after December 31, 2014, and every three years thereafter until the milestone date that falls within three years *after* the applicable attainment date.

H.2.1.1 1997 NAAQS

As discussed throughout this Plan, EPA designated the Valley for the 1997 NAAQS on January 5, 2005 (see Chapter 1 for a timeline). Additionally, the Valley failed to attain by the applicable Serious area attainment date. As such, the quantitative milestones for this Plan are guided by requirement 3.c and 4 above. The Valley will attain the 1997 NAAQS in 2020. See Table H-12 for milestone years.

H.2.1.2 2006 NAAQS

As discussed throughout this Plan, EPA designated the Valley for the 2006 NAAQS on November 13, 2009 (see Chapter 1 for a timeline). The Valley is designated Serious nonattainment for this standard. As such, the quantitative milestones for this Plan are guided by requirement 2.c and 4 above. The Valley will attain the 2006 NAAQS in 2024. See Table H-12 for milestone years.

H.2.1.3 2012 NAAQS

The Valley is currently designated Moderate for this NAAQS. Moderate area requirements and request for reclassification requirements were satisfied through the District's *2015 Plan for the 1997 PM2.5 Standard,* adopted and submitted to CARB in 2016. The District is proactively satisfying Serious area requirements for this NAAQS in this Plan. The quantitative milestones for this Plan are guided by requirements 1 and 2 above. The Valley will attain the 2012 NAAQS in 2025. See Table H-12 for quantitative milestone years.

Table H-12 Quantitative Milestone Dates and Deadlines

NAAQS	Quantitative Milestone Dates	Milestone Report Due Date
1997	December 31: 2017, 2020, 2023	March 31: 2018, 2021, 2024
2006	December 31: 2017, 2020, 2023, 2026	March 31: 2018, 2021, 2024, 2027
2012	October 15: 2019, 2022, 2025, 2028	January 15: 2020, 2023, 2026, 2029

H.2.2 STATIONARY SOURCES QUANTITATIVE MILESTONE COMMITMENTS

The District will report on milestones for implementation of stationary source reductions set forth in District Board-adopted attainment Plans as well as this this 2018 PM2.5 Plan.

H.2.2.1 1997 NAAQS Quantitative Milestones

The 1997 65 µg/m^3 24-hour and 15 µg/m^3 annual standards have quantitative milestone years in 2017, 2020, and 2023.

2017

For the 2018 milestone report for the 2017 milestone, the District is reporting on the following milestones (see Attachment B):

- Implementation of amendments to the District's residential wood burning program from 2014 through 2017 that required lower No Burn thresholds for high polluting wood burning heaters and fireplaces and enhancements to the District Burn Cleaner incentive program;
- Implementation of Rule 4308 (Boilers, Steam Generators, and Process Heaters (0.075 to <2 MMBtu/hr)) regulation requirements from 2015 through 2017 that required lower NOx emission limits for instantaneous water heaters with a rated heat input of 0.075 to 0.4 MMBtu/hr;
- Implementation of Rule 4354 (Glass Melting Furnaces) regulation requirements from 2013 through 2017 that required lower emission limits for NOx, SOx, and PM10 on glass melting furnaces in the Valley;
- Implementation of Rule 4702 (Internal Combustion Engines) regulation requirements from 2013 through 2017 that required lower NOx and SOx emission limits for various types of engines;
- Implementation of Rule 4902 (Residential Water Heaters) regulation requirements from 2013 through 2017 that required lower NOx emission limits for new residential natural gas-fired water heaters; and
- Implementation of Rule 4905 (Reduction of NOx Emissions from Natural Gas-Fired, Fan-Type Central Furnaces) regulation requirements from 2015 through 2017 that required lower NOx emission limits for natural gas-fired, fan-type, central furnaces.

2020

For the 2020 milestone year, the District is reporting on the following milestones:

- The status of SIP measures adopted between 2017 and 2020 as per the schedule included in the adopted Plan.

2023
For the 2023 milestone year, the District is reporting on the following milestones:

- The status of SIP measures adopted between 2017 and 2020 as per the schedule included in the adopted Plan.

H.2.2.2 2006 NAAQS Quantitative Milestones

The 2006 35 µg/m^3 24-hour standard has quantitative milestone years in 2017, 2020, 2023, and 2026.

2017
For the 2017 milestone year, the District is reporting on the following milestones (see Attachment B to this Plan):

- Implementation of amendments to the District's residential wood burning program from 2014 through 2017 that required lower No Burn thresholds for high polluting wood burning heaters and fireplaces and enhancements to the District Burn Cleaner incentive program;
- Implementation of Rule 4308 (Boilers, Steam Generators, and Process Heaters (0.075 to <2 MMBtu/hr)) regulation requirements from 2015 through 2017 that required lower NOx emission limits for instantaneous water heaters with a rated heat input of 0.075 to 0.4 MMBtu/hr;
- Implementation of Rule 4354 (Glass Melting Furnaces) regulation requirements from 2013 through 2017 that required lower emission limits for NOx, SOx, and PM10 on glass melting furnaces in the Valley;
- Implementation of Rule 4702 (Internal Combustion Engines) regulation requirements from 2013 through 2017 that required lower NOx and SOx emission limits for various types of engines;
- Implementation of Rule 4902 (Residential Water Heaters) regulation requirements from 2013 through 2017 that required lower NOx emission limits for new residential natural gas-fired water heaters; and
- Implementation of Rule 4905 (Reduction of NOx Emissions from Natural Gas-Fired, Fan-Type Central Furnaces) regulation requirements from 2015 through 2017 that required lower NOx emission limits for natural gas-fired, fan-type, central furnaces.

2020
For the 2020 milestone year, the District is reporting on the following milestones:

- The status of SIP measures adopted between 2017 and 2020 as per the schedule included in the adopted Plan, including *Residential Wood Burning Strategy* and *Commercial Under-Fired Charbroiler* incentive-based strategy.

2023
For the 2023 milestone year, the District is reporting on the following milestones:

- The status of SIP measures adopted between 2020 and 2023 as per the schedule included in the adopted Plan, including *Residential Wood Burning Strategy* and *Commercial Under-Fired Charbroiler* incentive-based strategy.

2026
For the 2026 milestone year, the District is reporting on the following milestones:

- Implementation of amendments to *Residential Wood Burning Strategy*, including any regulatory amendments and enhancements to the District Burn Cleaner incentive program;
- Implementation of amendments to the *Commercial Under-Fired Strategy*, including any regulatory amendments and implementation of related incentive-based strategy
- The status of SIP measures adopted between 2023 and 2026 as per the schedule included in the adopted Plan.

H.2.2.3 2012 NAAQS Quantitative Milestones

The 2012 12 µg/m^3 annual standard has quantitative milestone years in 2019, 2022, 2025, and 2028.

2019
For the 2019 milestone year, the District is reporting on the following milestones:

- The status of SIP measures adopted between 2017 and 2019 as per the schedule included in the adopted Plan, including *Residential Wood Burning Strategy* and *Commercial Under-Fired Charbroiler* incentive-based strategy.

2022
For the 2022 milestone year, the District is reporting on the following milestones:

- The status of SIP measures adopted between 2019 and 2022 as per the schedule included in the adopted Plan, including *Residential Wood Burning Strategy* and *Commercial Under-Fired Charbroiler* incentive-based strategy.

2025
For the 2025 milestone year, the District is reporting on the following milestones:

- Implementation of amendments to *Residential Wood Burning Strategy*, including any regulatory amendments and enhancements to the District Burn Cleaner incentive program;
- Implementation of amendments to the *Commercial Under-Fired Strategy*, including any regulatory amendments and implementation of related incentive-based strategy

- The status of SIP measures adopted between 2022 and 2025 as per the schedule included in the adopted Plan.

2028
For the 2028 milestone year, the District is reporting on the following milestones:

- Implementation of amendments to *Residential Wood Burning Strategy*, including any regulatory amendments and enhancements to the District Burn Cleaner incentive program;
- Implementation of amendments to the *Commercial Under-Fired Strategy*, including any regulatory amendments and implementation of related incentive-based strategy
- The status of SIP measures adopted between 2023 and 2026 as per the schedule included in the adopted Plan.

H.2.3 MOBILE SOURCES QUANTITATIVE MILESTONE COMMITMENTS

[This section provided by the California Air Resources Board]

Mobile Source Quantitative Milestones for the San Joaquin Valley

CARB will report on milestones for implementation of mobile source reductions set forth in the *2016 State Strategy for the State Implementation Plan* (State SIP Strategy) and new measures in the *Proposed San Joaquin Valley Supplement to the 2016 State Strategy for the State Implementation Plan* (Valley State SIP Strategy).

The 1997 **65** µg/m^3 24-hour and **15** µg/m^3 annual standards have quantitative milestone years in **2017**, **2020**, and **2023**.

2017
For the 2017 milestone year, CARB is reporting on the following three milestones:

1. Implementation of the *On-Road Heavy-Duty Diesel Vehicles (In-Use) Regulation* (the Truck and Bus Regulation) between 2012 and 2017 that required particulate filters and cleaner engine standards on existing California heavy-duty diesel trucks and buses;
2. Implementation of the *Advanced Clean Cars Program* (the ACC Program) between 2014 and 2017 that required manufacturers of new light-duty passenger vehicles sold in California to limit emissions; and
3. Implementation of *In-Use Off-Road Diesel-Fueled Fleets Regulation* (the Off-Road Regulation) that began in 2014 for large fleets and in 2017 for medium fleets and limited emissions from existing off-road diesel vehicles operated in California.

2020
For the 2020 milestone year, CARB is reporting on the following two milestones:

1. Implementation of the *On-Road Heavy-Duty Diesel Vehicles (In-Use) Regulation* (the Truck and Bus Regulation) between 2017 and 2020 that required particulate

filters and cleaner engine standards on existing California heavy-duty diesel trucks and buses; and
2. The status of SIP measures adopted between 2017 and 2020, including *Advanced Clean Cars 2* and the *Heavy-Duty Vehicle Inspection and Maintenance Program* as part of the *Lower In-Use Emission Performance Level* measure.

2023

For the 2023 milestone year, CARB is reporting on the following two milestones:

1. Implementation of the *On-Road Heavy-Duty Diesel Vehicles (In-Use) Regulation* (the Truck and Bus Regulation) between 2020 and 2023 that required particulate filters and cleaner engine standards on existing California heavy-duty diesel trucks and buses; and
2. Implementation of the California *Low-NOx Engine Standard* for new on-road heavy-duty engines used in medium- and heavy-duty trucks purchased in California.

The 2006 **35** µg/m^3 24-hour standard has quantitative milestone years in **2017**, **2020**, **2023**, and **2026**.

2017

For the 2017 milestone year, CARB is reporting on the following three milestones:

1. Implementation of the *On-Road Heavy-Duty Diesel Vehicles (In-Use) Regulation* (the Truck and Bus Regulation) between 2012 and 2017 that required particulate filters and cleaner engine standards on existing California heavy-duty diesel trucks and buses;
2. Implementation of the *Advanced Clean Cars Program* (the ACC Program) between 2014 and 2017 that required manufacturers of new light-duty passenger vehicles sold in California to limit emissions; and
3. Implementation of *In-Use Off-Road Diesel-Fueled Fleets Regulation* (the Off-Road Regulation) that began in 2014 for large fleets and in 2017 for medium fleets and limited emissions from existing off-road diesel vehicles operated in California.

2020

For the 2020 milestone year, CARB is reporting on the following two milestones:

1. Implementation of the *On-Road Heavy-Duty Diesel Vehicles (In-Use) Regulation* (the Truck and Bus Regulation) between 2017 and 2020 that required particulate filters and cleaner engine standards on existing California heavy-duty diesel trucks and buses; and
2. The status of SIP measures adopted between 2017 and 2020, including *Advanced Clean Cars 2* and the *Heavy-Duty Vehicle Inspection and Maintenance Program*.

2023

For the 2023 milestone year, CARB is reporting on the following two milestones:

1. Implementation of the *On-Road Heavy-Duty Diesel Vehicles (In-Use) Regulation* (the Truck and Bus Regulation) between 2020 and 2023 that required particulate filters and cleaner engine standards on existing California heavy-duty diesel trucks and buses; and

2. Implementation of the California *Low-NOx Engine Standard* for new on-road heavy-duty engines used in medium- and heavy-duty trucks purchased in California.

2026

For the 2026 milestone year, CARB is reporting on the following two milestones:

1. Identify the number of pieces of agricultural equipment turned over to Tier 4 Final due to the *Accelerated Turnover of Agricultural Tractors Measure* through 2026; and
2. Identify the number of trucks and buses turned over to a low-NOx engine or cleaner due to the *Accelerated Turnover of Trucks and Buses Measure* through 2026.

The 2012 **12** µg/m^3 annual standard has quantitative milestone years in **2019**, **2022**, **2025**, and **2028**.

2019

For the 2019 milestone year, CARB is reporting on the following three milestones:

1. Implementation of the *On-Road Heavy-Duty Diesel Vehicles (In-Use) Regulation* (the Truck and Bus Regulation) between 2017 and 2019 that required particulate filters and cleaner engine standards on existing California heavy-duty diesel trucks and buses;
2. Implementation of *In-Use Off-Road Diesel-Fueled Fleets Regulation* (the Off-Road Regulation) that began in 2014 for large fleets and in 2017 for medium fleets and limited emissions from existing off-road diesel vehicles operated in California.
3. The status of SIP measures adopted between 2017 and 2019, including the California *Low-NOx Engine Standard* for new on-road heavy-duty engines used in medium- and heavy-duty trucks purchased in California.

2022

For the 2022 milestone year, CARB is reporting on the following two milestones:

1. Implementation of the *On-Road Heavy-Duty Diesel Vehicles (In-Use) Regulation* (the Truck and Bus Regulation) between 2019 and 2022 that required particulate filters and cleaner engine standards on existing California heavy-duty diesel trucks and buses;
2. The status of SIP measures adopted between 2019 and 2022, including *Advanced Clean Cars 2* and the *Heavy-Duty Vehicle Inspection and Maintenance Program*.

2025

For the 2025 milestone year, CARB is reporting on the following three milestones:

1. Identify the number of pieces of agricultural equipment turned over to Tier 4 Final due to the *Accelerated Turnover of Agricultural Tractors Measure* through 2025;
2. Identify the number of trucks and buses turned over to a low-NOx engine or cleaner due to the *Accelerated Turnover of Trucks and Buses Measure* through 2025; and
3. The status of SIP measures adopted between 2022 and 2025, including the proposed *Cleaner In-Use Agricultural Equipment Measure* to incentivize the penetration of cleaner agricultural equipment used in California.

2028

For the 2028 milestone year, CARB is reporting on the following milestone:

1. Implementation of the *Advanced Clean Cars 2* requirements between 2026 and 2028.

H.3 CONTINGENCY MEASURES

Pursuant to CAA §172(c)(9) and 40 CFR § 51.1014, all PM2.5 attainment plans must contain contingency measures. Contingency measures are additional control measures to be implemented in the event that EPA issues final rulemaking that the Valley failed to meet a regulatory requirement necessitating implementation of a contingency measure.

Pursuant to the Clean Air Act (Act) §172(c)(9), contingency 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. Contingency measures take effect without significant additional action by the state or local agency or by EPA. Requirements are codified in the code of federal regulations 51 CFR §51.1014. Pursuant to §51.1014(b), contingencies must meet the following requirements:

- The contingency measures shall consist of control measures that are not otherwise included in the control strategy or that achieve emissions reductions not otherwise relied upon in the control strategy for the area,
- Each contingency measure shall specify the timeframe within which its requirements become effective following a determination by EPA,
- The attainment plan submission shall contain a description of any specific trigger mechanisms for the contingency measures and specify a schedule for implementation.

In addition to the above-mentioned requirements, a recent court case, *Bahr v. EPA* (Bahr), has provided further interpretation of implementation requirements. EPA staff has interpreted the decision in Bahr to mean that contingency measures must include a future action that that would be activated ("triggered") should EPA issue a final rulemaking that the Valley failed to meet a regulatory requirement necessitating implementation of a contingency measure.

Areas like the Valley that have significant nonattainment challenges have developed several generations of aggressive and far-reaching emission reduction measures to meet various Clean Air Act requirements. When viable emission reductions are identified, they are implemented to contribute to expeditious attainment. Reductions are not usually held in reserve to be used only if an area fails to meet a milestone. As a result, developing contingency measures for District attainment plans is a significant challenge. From extensive analyses and discussions, the District and CARB developed the following contingency commitments for this Plan.

District Contingency Commitment

The District will amend District Rule 4901 (Wood Burning Fireplaces and Wood Burning Heaters) to include a requirement in the rule with a trigger that that would be activated should EPA issue a final rulemaking that the Valley failed to meet a regulatory requirement necessitating implementation of a contingency measure. Effective 60 days after the EPA final action, the trigger would impose lower residential wood burning curtailment levels in any county that has failed to meet the regulatory requirement necessitating implementation of contingency to the following:

Consistent with the proposed Rule 4901 enhancements in hot-spot areas, impose the following requirements:

- No Burn for non-registered units at or above 12 µg/m^3
- No burn for all devices above 35 µg/m^3

CARB Contingency Commitment

[This section provided by the California Air Resources Board]

Basic requirements for contingency measures are defined in the Clean Air Act (Act). The Act's General Preamble and U.S. EPA guidance also provide a framework for implementing this provision of the Act. In addition, a recent court case, *Bahr v. U.S. EPA* (*Bahr*), has provided further interpretation of implementation requirements. U.S. EPA staff has interpreted the decision in *Bahr* to mean that contingency measures must include a future action triggered by a failure to attain or failure to make reasonable further progress.

Contingency measures are required for all federal PM2.5 standards. CARB approved a contingency measure for the 65 µg/m^3 24-hour and 15 µg/m^3 annual PM2.5 standards as a revision to the SIP on September 28, 2017 (Resolution 17-27). The contingency measure included complementary elements that addressed the contingency measure requirements of the Act as interpreted in *Bahr*, namely a trigger mechanism directing the CARB Executive Officer to allocate resources and enhance enforcement activities in the San Joaquin Valley to provide additional NOx reductions in the event that U.S. EPA determines the San Joaquin Valley failed to attain in 2020, and new NOx emission reductions that provide for approximately one year's worth of progress that will be achieved through ongoing implementation of CARB's mobile source program.

The *2018 Updates to the California State Implementation Plan* (2018 SIP Update, released by CARB September 21, 2018) addresses the contingency measure requirements of the Act as interpreted by U.S. EPA in response to *Bahr* for the 35 µg/m^3 24-hour and 12 µg/m^3 annual standards in a similar way to the adopted contingency measure mentioned above. The 2018 SIP Update includes a trigger mechanism directing the CARB Executive Officer to allocate resources and enhance enforcement activities in nonattainment areas in the State, including the Valley, to provide additional NOx reductions in the event that U.S. EPA determines the area failed to meet an RFP

milestone or failed to attain the 35 µg/m^3 24-hour and/or 12 µg/m^3 annual PM2.5 standards.

Additional NOx emission reductions that are expected to occur due to ongoing State mobile source control programs, together with emission reductions from the Enhanced Enforcement Activities contingency measures and district contingency measures, provide emissions reductions for attainment contingency. Table H-13 below demonstrates the emission reductions that occur after the attainment year for each applicable standard due to implementation of California's Mobile Source Program to be used for contingency purposes.

Table H-13 Mobile San Joaquin Valley Attainment Contingency Reductions

1997 65 µg/m3 and 15 µg/m3 standard (tpd, reductions calculated on annual planning inventory)	**2020 Emissions**	**2021 Emissions**	**2020 to 2021 Emission Reductions**
Mobile Source Direct PM2.5	8.5	8.2	0.3
Mobile Source NOx	166.8	154.7	12.1
2006 35 µg/m3 standard (tpd, reductions calculated on winter planning inventory)	**2024 Emissions**	**2025 Emissions**	**2024 to 2025 Emission Reductions**
Mobile Source Direct PM2.5	6.8	6.7	0.1
Mobile Source NOx	101.6	97.4	4.2
2012 12 µg/m3 standard (tpd, reductions calculated on annual planning inventory)	**2025 Emissions**	**2026 Emissions**	**2025 to 2026 Emission Reductions**
Mobile Source Direct PM2.5	7.5	7.4	0.1
Mobile Source NOx	108.6	104.5	4.1