

Appendix G

RFP, QUANTITATIVE MILESTONES, AND CONTINGENCY



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Appendix G: 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 PM_{2.5}.¹ This appendix fulfills the following federal CAA requirements for PM_{2.5} nonattainment areas as identified in the CAA, codified in the code of federal regulations,² and clarified in the 2016 PM_{2.5} Implementation Rule:³

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

G.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 PM_{2.5} nonattainment area shall include an RFP plan that demonstrates that sources in the area will achieve such annual incremental reductions in emissions of PM_{2.5} and PM_{2.5} plan precursors as are necessary to ensure attainment of the applicable PM_{2.5} NAAQS as expeditiously as practicable. As demonstrated in this Plan (Appendices F and J), California Air Resources Board (CARB) modeling determined ammonia, volatile organic compounds (VOCs), and oxides of sulfur (SO_x) do not contribute significantly to PM_{2.5} levels that exceed the 2012 NAAQS in the Valley. As such, the demonstrations in this appendix appropriately address direct PM_{2.5} emissions and oxides of nitrogen (NO_x).

G.1.1 RFP Plan Requirements

The RFP plan shall include the following:⁵

1. A schedule describing the implementation of control measures during each year of the applicable attainment Plan.
2. RFP projected emissions for direct PM_{2.5} and NO_x for each applicable milestone year, based on the anticipated implementation schedule for control measures.
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

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 EPA. *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 §171(1)

⁵ 40 CFR §51.1012

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.

G.1.2 Determination of RFP Years

The baseline year for this Plan is 2017. Analyses and modeling performed for this Plan demonstrate that the District will attain the 2012 PM_{2.5} standard as expeditiously as practicable, by 2030. RFP years for an attainment Plan for a particulate matter air quality standard shall be determined by the quantitative milestone deadlines.⁶ Refer to the Quantitative Milestone Requirements section below to see how milestone years were determined.

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

Base Year	Attainment Year	RFP and Quantitative Milestone Years
2017	2030	2025, 2028, 2031*

* 2031 is a Quantitative Milestone year only, not an RFP milestone year. All other dates are both RFP and Quantitative Milestone years.

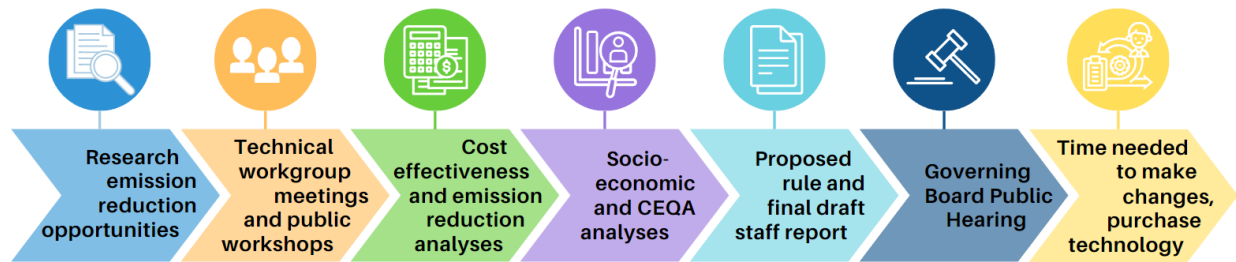
G.1.3 RFP Milestone Requirement Targets and Attainment Demonstrations

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, the following analysis demonstrates linear RFP for the 2012 PM_{2.5} standard, concluding at the attainment year of 2030.

The regulatory measures need time to undergo a robust public rulemaking process and implementation after the Plan adoption. In these efforts, the District and CARB is committed to a transparent public process that includes stakeholder, industry, and other-agency input at every step possible. As illustrated in Figure G-1, the rule amendment process is a robust process that can take significant time, sometimes years, to complete and implement.

⁶ 40 CFR 51.1012(a)(4)

Figure G-1 Public Process of Rule Development and Implementation



For the incentive-based measures, the total emission reductions can only be achieved over multiple years due to availability of willing participants and significant funding required. Modeling demonstrates attainment occurs in the Valley as expeditiously as practicable.

G.1.4 RFP Calculation Methodology and Generally Linear RFP Targets

Emissions data is presented as an annual average in tons per day (tpd).

1. Determine the emissions inventory of the Valley for the baseline year, the RFP years that have not yet passed, the attainment year, and the post-attainment RFP year (see Appendix B).

Table G-2 Annual Average Emission Inventory (tpd)

Pollutant	2017	2025	2028	2030	2031
Direct PM2.5	65.7	55.3	54.7	55.6	54.4
NOx	226.7	121.1	106.2	98.2	95.2

2. Identify additional annual average emission reductions between the Plan base year and the attainment year from adopted measures not yet in the Plan baseline and the Plan control measure commitments (see Chapter 4).

Table G-3 Annual Average Emissions Reductions from Measures Not Yet Included in the Baseline and Control Measure Commitments (tpd)

Pollutant	2017	2025	2028*	2030*	2031
Direct PM2.5	0	0	0	0.72	0.72
NOx	0	0	4.84	20.2	20.2

* 2028 reductions reflect emission reductions from measures in CARB’s 2016 and 2022 State SIP Strategies that have been adopted but are not yet in the baseline inventory (see Table G-3a).

Table G-3a Annual Average Emission Reductions in 2028 from Measures in CARB 2016 and 2022 State SIP Strategies Adopted but Not Yet in Baseline

Measure	2028 NOx (tpd)	2028 PM2.5 (tpd)
Advanced Clean Cars II	0.18	Not quantified
Advanced Clean Fleets Regulation	1.26	Not quantified
Clean Miles Standard	0.01	Not quantified
Amendments to the In-Use Off-Road Diesel-Fueled Fleets Regulation	0.74	Not quantified
In-Use Locomotive Regulation	2.42	Not quantified
Clean Trucks Plan	0.23	Not quantified
Total	4.84	0

+ 2030 reductions reflect emission reductions from measures in CARB's 2016 and 2022 State SIP Strategies that have been adopted but are not yet in the baseline inventory, plus CARB's aggregate emission reduction commitment (see Table 4-6) and the District's aggregate emission reduction commitment (see Table 4-3).

3. Subtract the emission reductions from measures not included in the baseline and control measure commitments (Table G-3) from the emission inventory (Table G-2) to determine the Plan inventory.

Table G-4 Projected Attainment Emissions Inventory after Control Measures (tpd)

Pollutant	2017	2025	2028	2030	2031
Direct PM2.5	65.7	55.3	54.7	54.88	53.71
NOx	226.7	121.1	101.36	78.0	75.0

4. Determine the total reductions from the 2017 baseline emission inventory that must be achieved to reach attainment by subtracting attainment year emissions after controls (Table G-4) from Plan base year emissions (Table G-2).

Table G-5 Total Reductions Necessary to Reach Attainment (tpd)

	A	B	C
Pollutant	Plan Base Year Emissions (2017)	Attainment Emissions (2030)	Reductions Needed for Attainment
	(Table G-2)	(Table G-4)	(A – B)
Direct PM2.5	65.7	54.88	10.82
NOx	226.7	78.0	148.7

5. Determine the fraction of reductions that are achieved in each RFP milestone year.

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

Table G-6 Milestone Year Fractions Achieved in Each Milestone Year

	2025	2028	2030	2031
% of Reductions Needed for Attainment	62%	85%	100%	100%

6. Calculate the linear RFP levels using reduction fractions.

Table G-7 Linear RFP Levels (tpd)

	A	B	C	D	E	F	G	H	I	J
			2025		2028		2030		2031	
Pollutant	2017 Base Year Emission Inventory	Reductions Needed to Attain NAAQS	Tons to be Reduced	Linear RFP Level	Tons to be Reduced	Linear RFP Level	Tons to be Reduced	Linear RFP Level	Tons to be Reduced	Linear RFP Level
	(Table G-2)	(Table G-5)	(B x Table G-6)	(A - C)	(B x Table G-6)	(A - E)	(B x Table G-6)	(A - G)	(B x Table G-6)	(A - I)
Direct PM2.5	65.7	10.82	6.66	59.04	9.16	56.54	10.82	54.88	10.82	54.88
NOx	226.7	148.7	91.51	135.19	125.82	100.88	148.7	78.0	148.7	78.0

7. Compare the linear RFP levels (Table G-7) to the projected attainment emissions inventory (Table G-4).

Table G-8 Comparison of Linear RFP Levels to Projected Attainment Emissions Inventory

	2025		2028		2030		2031	
Pollutant	Linear RFP Level	Attainment Emissions Inventory	Linear RFP Level	Attainment Emissions Inventory	Linear RFP Level	Attainment Emissions Inventory	Linear RFP Level	Attainment Emissions Inventory
	(Table G-7)	(Table G-4)	(Table G-7)	(Table G-4)	(Table G-7)	(Table G-4)	(Table G-7)	(Table G-4)
Direct PM2.5	59.04	55.3	56.54	54.7	54.88	54.88	54.88	53.71
NOx	135.19	121.1	100.88	101.36	78.0	78.0	78.0	75.0

8. Establish generally linear RFP target emission levels.

Table G-9 Generally Linear RFP Targets

Pollutant	2025	2028	2030	2031
Direct PM2.5	59.04	56.54	54.88	54.88
NOx	135.19	101.36	78.0	78.0

G.2 QUANTITATIVE MILESTONES

Consistent with CAA §189(c)(1), the state must submit in each attainment Plan for a PM_{2.5} nonattainment area specific quantitative milestones that demonstrate reasonable further progress toward attainment of the applicable PM_{2.5} NAAQS in the area.

G.2.1 Quantitative Milestone Requirements

Quantitative milestones in a SIP for an area reclassified as Serious nonattainment shall meet the following requirements:⁷

1. 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.
2. 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.
3. 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.

The Valley was designated Nonattainment for the 2012 PM_{2.5} NAAQS effective on April 15, 2015, and was reclassified as Serious on December 27, 2021. The Valley will attain the 2012 NAAQS in 2030. Based on these dates and pursuant to the requirements above, quantitative milestone years are as follows in Table G-10.

Table G-10 Quantitative Milestone Dates and Deadlines

Quantitative Milestone Dates	Milestone Report Due Dates
2025, 2028, 2031	2026, 2029, 2032

G.2.2 Stationary Sources Quantitative Milestone Commitments

The District will report on milestones for implementation of stationary source reductions set forth in previous District adopted attainment Plans as well as this *Plan for the 2012 Annual PM_{2.5} Standard*. The 2012 NAAQS has quantitative milestone years in 2025, 2028, and 2031. Notably, previous required quantitative milestone reports for the moderate nonattainment plan have already been submitted to the EPA per the *2016 Moderate Area Plan for the 2012 PM_{2.5} Standard*.

⁷ 40 CFR §51.1013 Quantitative milestone requirements.

2025

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

- The status of amendments to District Rule 4901 (Wood Burning Fireplaces and Wood Burning Heaters);

2028

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

- Implementation of amendments to District Rule 4901 (Wood Burning Fireplaces and Wood Burning Heaters);
- Implementation of amendments to District Rule 4550 (Conservation Management Practices);
- Implementation of incentive-based commitments for the *Fireplace and Woodstove Change-Out Program*, and *Low-Dust Nut Harvester Replacement Program*.

2031

For the 2031 milestone year, the District is reporting on the following milestones:

- Implementation of amendments to District Rule 4901 (Wood Burning Fireplaces and Wood Burning Heaters);
- Implementation of amendments to District Rule 4550 (Conservation Management Practices);
- Implementation of incentive-based commitments for the *Fireplace and Woodstove Change-Out Program*, and *Low-Dust Nut Harvester Replacement Program*.

G.2.3 Mobile Sources Quantitative Milestone Commitments

[This section provided by the California Air Resources Board]

CARB will report on milestones for implementation of mobile source measures that contribute significant emissions reductions included in the reasonable further progress demonstration through the 2031 milestone year. These regulations were originally set forth as measure commitments in the 2016 State Strategy for the State Implementation Plan (2016 State SIP Strategy) and the 2022 State Strategy for the State Implementation Plan (2022 State SIP Strategy).

The applicable quantitative milestone years for the 2012 12 µg/m³ annual PM_{2.5} standard are 2025, 2028, and 2031.

2025

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

- Implementation from 2022 through 2025 of the *Clean Truck Check Program*, previously known as the *Heavy-Duty Vehicle Inspection and Maintenance Program*, which ensures that vehicles' emissions control systems are properly functioning when traveling on California's roadways;
- Implementation from 2022 through 2025 of the *Advanced Clean Fleets Regulation* which focuses on strategies to ensure that the cleanest vehicles are

deployed by government, business, and other entities in California to meet their transportation needs; and

- Implementation from 2022 through 2025 of the *In-Use Off-Road Diesel-Fueled Fleets Regulation* which requires fleets operating in-use off-road diesel equipment to meet an annual fleet average emissions target that decreases over time.

2028

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

- Implementation from 2026 through 2028 of the *Heavy-Duty Vehicle Inspection and Maintenance Program*, also known as Clean Truck Check, which ensures that vehicles' emissions control systems are properly functioning when traveling on California's roadways;
- Implementation from 2026 through 2028 of the *Advanced Clean Fleets Regulation* which focuses on strategies to ensure that the cleanest vehicles are deployed by government, business, and other entities in California to meet their transportation needs; and
- Implementation from 2026 through 2028 of the *In-Use Off-Road Diesel-Fueled Fleets Regulation* which requires fleets operating in-use off-road diesel equipment to meet an annual fleet average emissions target that decreases over time.

2031

For the 2031 milestone year, CARB is reporting on the following milestone:

- The status of new CARB SIP measures adopted between 2024 and 2030 per the schedule included in the adopted San Joaquin Valley 12 ug/m³ annual PM_{2.5} Plan that provide for attainment of the 12 ug/m³ PM_{2.5} annual standard in 2030.

G.3 CONTINGENCY MEASURES

Through an attainment plan, a region puts forth strategies to achieve air quality improvements by federal CAA mandated deadlines. Agencies strive to be thorough and scientific in air quality planning to ensure an area meets attainment of federal standards by the attainment date. However, given the large number of variables inherent in planning and air quality more generally, there is a possibility that the air quality benefits will not occur as quickly as expected. In air quality planning, a contingency measure is a measure that would reduce direct PM_{2.5} emissions or PM_{2.5} precursors in the event the region does not reach attainment by the applicable attainment date, fails to make RFP towards the standard, fails to submit a quantitative milestone report, or fails to meet a quantitative milestone. The purpose of contingency measures is to achieve additional air quality benefits while the region and state formally revise the attainment plan pursuant to CAA requirements for plan revisions and attainment date extensions.⁸

⁸ EPA. *Fine Particulate Matter National Ambient Air Quality Standards: State Implementation Plan Requirements; Final Rule*. 81 Fed. Reg. 164, pp. 58010-58162. (August 24, 2016). <https://www.govinfo.gov/content/pkg/FR-2016-08-24/pdf/2016-18768.pdf>

Contingency measures “must be fully adopted rules or measures that can take effect without further action by the state or the EPA upon failure to meet milestones or attain by the attainment deadline.” Legal interpretations of what qualifies as approvable contingency measures under the CAA have changed over the years.

Prior to 2016, agencies could use “surplus” emissions reductions from fully adopted rules to satisfy the contingency requirement. These rules achieved continuing and new emissions reductions past the attainment deadline through phased-in implementation and ongoing technology deployment. However, in *Bahr v. EPA*, 836 F.3d 1218 (9th Cir. 2016) (“*Bahr*”), the court rejected EPA’s interpretation allowing for early implementation of contingency measures that provided additional emission reductions, and held instead that contingency measures may only consist of new measures that do not take effect until triggered by an applicable CAA failure.

For many years, air basins outside the Ninth Circuit were able to continue relying on emissions reductions from already-implemented measures to fulfill the contingency measure requirement (*Louisiana Environmental Action Network v. EPA*, 283 F.3d 575 (5th Cir. 2004) (“*LEAN*”). However, in *Sierra Club v. EPA*, 21 F.4th 185 (D.C. Cir. 2021) the court cited and agreed with the *Bahr* case, superseding *LEAN* and now prohibiting all regions in the nation from relying on surplus emissions reductions from early implemented measures to satisfy contingency measure requirements. This 2021 *Sierra Club* decision (published after EPA’s implementation rule for the 2012 PM_{2.5} NAAQS in 2016), coupled with increased nonattainment areas under increasingly stringent NAAQS, elevates the contingency measure problem to one of nation-wide significance.

In response to *Bahr* and as part of the 75 parts per billion (ppb) 8-hour ozone SIP due in 2016, CARB developed the statewide Enhanced Enforcement Contingency Measure (Enforcement Contingency Measure) as a part of the *2018 Updates to the California State Implementation Plan* to address the need for a triggered action as a part of the contingency measure requirement. Additionally, the District developed a new contingency measure achieving additional reductions from architectural coatings if required by an applicable CAA failure. CARB and the District worked closely with EPA regional staff in developing the contingency measure package that included the Enforcement Contingency Measure, the District architectural coatings measure and emission reductions from implementation of CARB’s mobile source emissions program. As part of the *San Joaquin Valley 2016 Ozone Plan for 2008 8-hour Ozone Standard* SIP action, EPA approved CARB’s enforcement as a “SIP strengthening” measure. In this action, EPA also approved the District’s architectural coatings measure and the implementation of the mobile source reductions along with a CARB emission reduction commitment as meeting the contingency measure requirement for this SIP.

Subsequently, the Association of Irrigated Residents filed a lawsuit against EPA for its approval of various elements within the *San Joaquin Valley 2016 Ozone Plan for 2008 8-hour Ozone Standard*, including the contingency measure. The Ninth Circuit Court of Appeals issued its decision in *Association of Irrigated Residents v. EPA*⁹ (*AIR*) that

⁹ *Association of Irrigated Residents v. U.S. Environmental Protection Agency*, 10 F.4th 937 (9th Cir. 2021).

EPA's approval of the contingency element was arbitrary and capricious because EPA departed from its long-standing policy of requiring a SIP's contingency measure element to provide for emissions reductions equating to at least one year's RFP without providing a reasoned explanation for its change in policy. The Ninth Circuit Court of Appeals held that, in line with EPA's longstanding interpretation of what is required of a contingency measure and the purpose it serves, together with *Bahr*, all reductions needed to satisfy the CAA's contingency measure requirements must come from the contingency measure itself, and that the amount of reductions needed for contingency cannot be reduced based upon surplus emission reductions from ongoing programs.

G.3.1 EPA Draft Guidance for Contingency Measures

In light of the recent court decisions described above, EPA developed the *Draft Guidance on the Preparation of State Implementation Plan Provisions that Address the Nonattainment Area Contingency Measure Requirements for Ozone and Particulate Matter (Draft Guidance)* on March 16, 2023.¹⁰ The District, CARB, and other local/state air quality management agencies engaged with EPA in the development of this *Draft Guidance* to provide technical input and recommendations through workgroup meetings and ongoing staff discussions. The purpose of the *Draft Guidance* is to identify solutions and flexibility related to key issues that regions face in developing approvable contingency measures, including the scarcity of available measures, implementation timelines following a contingency trigger, and the amount of reductions needed, among other issues.

The *Draft Guidance* contains three main concepts: (1) revising the quantity of emissions reductions that contingency measures should provide to account for declining emissions inventories over time; (2) allowing for an infeasibility justification if an area is unable to identify feasible contingency measures in sufficient quantities due to a scarcity of available, qualifying measures and/or (3) revising the time period within which emissions reductions from contingency measures should occur.

G.3.2 Contingency Measure Emission Reduction Targets

In its *Draft Guidance*, EPA has recognized that the longstanding policy of requiring emission reductions of one year's worth of RFP for contingency measures is extremely challenging and infeasible for areas such as the Valley. EPA's *Draft Guidance* therefore puts forth a new approach to calculate the recommended quantity of emission reductions, which EPA has named One Year's Worth of Progress (OYW_P). Based on this *Draft Guidance*, Table G-11 summarizes the NO_x and PM_{2.5} emission reductions needed to demonstrate that OYW_P is being achieved through the contingency measure. In EPA's *Draft Guidance*, the OYW_P value is calculated as the average emission reductions expected per year over the planning time line, expressed as a percentage of the base year emission inventory, and then applying this percentage to the attainment

¹⁰ EPA. *Guidance on the Preparation of State Implementation Plan Provisions that Address the Nonattainment Area Contingency Measure Requirements for Ozone and Particulate Matter*. March 16, 2023. Retrieved from: <https://www.epa.gov/system/files/documents/2023-03/CMTF%202022%20guidance%203-17-23.pdf>

year inventory to result in an emission reduction target for contingency. In mathematical form, this would be expressed as:

$$OYW_P = \frac{\frac{(base\ year\ EI - attainment\ year\ EI)}{(attainment\ year - base\ year)}}{base\ year\ EI} * (attainment\ year\ EI)$$

The steps for the calculations for the 2012 PM2.5 standard are detailed below, consistent with EPA's *Draft Guidance*.

Step 1: Calculate the annual average reductions needed to attain for each relevant precursor.

	2012 Standard
PM2.5 Step 1a	$65.7\ tpd - 54.88\ tpd = 10.8\ tpd$
PM2.5 Step 1b	$10.8\ tpd \div 13\ years = 0.83\ tpd$
NOx Step 1a	$226.7\ tpd - 78.00\ tpd = 148.7\ tpd$
NOx Step 1b	$148.7\ tpd \div 13\ years = 11.4\ tpd$

Step 2: Calculate the annual percentage reduction needed to attain.

	2012 Standard
PM2.5	$0.83\ tpd \div 65.7 = 0.013\ (or\ 1.3\%)$
NOx	$11.4\ tpd \div 226.7 = 0.050\ (or\ 5.0\%)$

Step 3: Calculate the amount of reductions needed for OYW of progress.

	2012 Standard
PM2.5	$54.88\ tpd \times 1.3\ \% = 0.70\ tpd$
NOx	$78.00\ tpd \times 5.0\ \% = 3.94\ tpd$

The following table summarizes the amount of emissions reductions needed to achieve the target, for the 2012 PM2.5 NAAQS, based on the OYW_P approach outlined in the Draft Guidance.¹¹

Table G-11 Contingency Measure Reductions Needed under OYW_P Approach

Base Year	Attainment Year	Contingency Annual Average Emission Reduction Targets (tpd)	
		NOx	PM2.5
2017	2030	3.94	0.70

¹¹ EPA. *Guidance on the Preparation of State Implementation Plan Provisions that Address the Nonattainment Area Contingency Measure Requirements for Ozone and Particulate Matter*. March 16, 2023. Retrieved from: <https://www.epa.gov/system/files/documents/2023-03/CMTF%202022%20guidance%203-17-23.pdf>

Under the prior EPA contingency policy, the contingency reductions would need to be achieved in the year after which the contingency provision was triggered.¹² However, EPA's *Draft Guidance* on contingency measures allows emission reductions to be achieved within two years of the contingency triggering event.¹³

Additionally, EPA's *Draft Guidance* explains that, where areas are unable to identify and adopt feasible contingency measures that would reduce emissions by an amount sufficient to meet the OYW of progress, then it would be appropriate to submit contingency measures that result in less than that amount, using a reasoned justification approach demonstrating the lack of sufficient feasible measures to meet the recommended quantity of contingency measures. EPA's *Draft Guidance* also notes "a state may use the ratio to substitute contingency measure reductions of one precursor for a shortfall in contingency measure reductions of another precursor."

Areas like the Valley that have significant nonattainment challenges have developed several generations of aggressive and far-reaching emission reduction measures to meet various CAA requirements. When viable emission reductions are identified, they are implemented to contribute to expeditious attainment. Reductions are not held in reserve and 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 the *2024 Plan for the 2012 Annual PM2.5 Standard*.

G.3.3 Adopted Contingency Measures for the 2012 Annual PM2.5 Standard

On May 18, 2023, the District's Governing Board adopted the *PM2.5 Contingency Measure State Implementation Plan Revision (PM2.5 Contingency Measure SIP Revision)*.¹⁴ The *Contingency SIP Revision* included a contingency measure feasibility analysis of all emission sources under District and CARB control, an amendment to Rule 4901 (Wood Burning Fireplaces and Wood Burning Heaters) to add a contingency measure provision, and a commitment to evaluating District Rule 8051 (Open Areas) for a potential second contingency measure. On September 21, 2023, the District's Governing Board adopted revisions to Rule 8051 to add a contingency provision.

On December 20, 2023, EPA proposed approval of the District and CARB's *PM2.5 Contingency Measure SIP Revision*,¹⁵ which closely followed EPA's recommendations in the *Draft Guidance*. EPA found that the District and CARB implemented all feasible

¹² "Guidance on Issues Related to 15 Percent Rate-of-Progress Plans," Memorandum from Michael H. Shapiro to Regional Air Directors (August 23, 1993), available at:

https://www3.epa.gov/ttn/naaqs/aqmguidance/collection/cp2/19930823_shapiro_15pct_rop_guidance.pdf

¹³ EPA. *Guidance on the Preparation of State Implementation Plan Provisions that Address the Nonattainment Area Contingency Measure Requirements for Ozone and Particulate Matter*. March 16, 2023. Retrieved from:

<https://www.epa.gov/system/files/documents/2023-03/CMTF%202022%20guidance%203-17-23.pdf>

¹⁴ SJVAPCD. *PM2.5 Contingency Measure State Implementation Plan Revision*. (May 18, 2023). Retrieved from:

<https://www2.valleyair.org/media/jkhaefnp/06-pm25-contingency-measure-sip-revision.pdf>

¹⁵ EPA. *Clean Air Plans; Contingency Measures for the Fine Particulate Matter Standards; San Joaquin Valley; Proposed Rule*. 88 Fed. Reg. 243, pp. 87988-88012. (December 20, 2023).

<https://www.govinfo.gov/content/pkg/FR-2023-12-20/pdf/2023-27686.pdf>

contingency measure opportunities and that no other opportunities for contingency measures exist in the Valley, which demonstrates the stringency of the District and CARB's regulations. EPA's proposed approval of the *PM2.5 Contingency Measure SIP Revision* sets the foundation for this section. Contingency measures for the District are included in District Rules 4901 and 8051, and CARB has incorporated a contingency measure within their smog check measure for mobile sources.

G.3.3.1 Wood Burning Fireplaces and Wood Burning Heaters

Background

The District's residential wood burning emission reduction strategy includes wood burning curtailments implemented through District Rule 4901 (Wood Burning Fireplaces and Wood Burning Heaters), in conjunction with the District's incentive grant program for fireplace and woodstove change-outs, and robust public education and outreach efforts. This approach is designed to improve public health by reducing toxic wood smoke emissions in Valley neighborhoods during the peak PM2.5 winter season (November through February), and has proven to be extremely effective in advancing the District's objectives to attain the PM2.5 federal standards and protect public health. Commitments in the District's *2018 Plan for the 1997, 2006, and 2012 PM2.5 Standards (2018 PM2.5 Plan)* included rulemaking for Rule 4901 to further lower wood burning curtailment levels, as well as enhancements to the District's incentive grant funding levels, public outreach and education, enforcement, and air quality forecasting programs.

Through the District's Residential Wood Smoke Reduction Program, which is based on Rule 4901, the District has declared and enforced episodic wood burning curtailments, also called "No Burn" days, since 2003. The District's Residential Wood Smoke Reduction Program and District Rule 4901 reduce harmful species of PM2.5 when and where those reductions are most needed, in impacted urbanized areas when the local weather is forecast to hamper particulate matter dispersion.

Rule 4901 was first adopted in 1993, and has been subsequently amended five times. The 1993 adoption of Rule 4901 established a public education program on techniques to reduce wood burning emissions. It also enforced EPA Phase II requirements for new wood burning heaters, prohibited the sale of used wood burning heaters, established a list of prohibited fuel types, and required the District to request voluntary curtailment of wood burning on days when the ambient air quality was unhealthy.

In 2003, the rule was amended to add episodic wood burning curtailments when air quality was forecast to be at 150 or higher on the air quality index (AQI), which was equivalent to a PM2.5 concentration of 65 $\mu\text{g}/\text{m}^3$ at the time; restrictions on the installation of wood burning devices in new residential developments, based on housing density; and a requirement that during the transfer of a residential property, sellers provide a statement of compliance to the District and buyer for residential real properties with non-compliant wood burning devices.

In 2008, the rule was amended, lowering the mandatory curtailment level to a PM_{2.5} concentration of 30 µg/m³, and adding an attainment plan contingency measure that would lower the wood burning curtailment level to 20 µg/m³ if EPA were to find that the Valley did not attain the 1997 PM_{2.5} NAAQS in 2014.

In 2014, Rule 4901 was amended again to lower the No Burn threshold for high polluting wood burning heaters and fireplaces from 30 µg/m³ to 20 µg/m³ and establish a separate No Burn threshold for cleaner certified wood burning devices. The amendment doubled the number of No Burn days for high polluting units that were the source of over 95% of the wintertime residential wood smoke emissions.

In 2019, the District amended Rule 4901 to lower the curtailment threshold from 20 to 12 µg/m³ for older, higher-polluting wood burning heaters, open hearth fireplaces, and non-registered wood burning heaters in the Hot Spot counties of Madera, Fresno, and Kern. Within these same Hot Spot counties, the cleaner, registered wood burning heaters are allowed to burn when air quality is forecast to be between 12 and 35 µg/m³. In these counties, no wood burning is allowed when air quality is forecast to be above 35 µg/m³. In the remaining Valley counties, the previous curtailment thresholds remain in place.

Following these amendments, EPA recognized in their February 2020 evaluation of BACM and most stringent measures (MSM) for the 2006 PM_{2.5} NAAQS, that Rule 4901 implements BACM and MSM levels of control.¹⁶ In July 2020, EPA took final action to approve the 2019 amendments to Rule 4901 and provide SIP credit for emissions reductions achieved through the strategy.¹⁷

Contingency Measure

On May 18, 2023, as part of the *PM_{2.5} Contingency Measure State Implementation Plan Revision (Contingency SIP Revision)*,¹⁸ the District amended District Rule 4901 (Wood Burning Fireplaces and Wood Burning Heaters) to include a contingency measure trigger that would be activated should EPA issue a final rulemaking that the Valley failed to:

1. Meet any RFP requirement;
2. Meet any quantitative milestone in an approved attainment plan;
3. Submit a quantitative milestone report; or
4. Attain the applicable PM_{2.5} NAAQS by the applicable attainment date.

Effective 60 days after EPA final action, the trigger would impose the following District-wide lower residential wood burning curtailment levels:

¹⁶ EPA. Technical Support Document, Evaluation of BACM/MSM, San Joaquin Valley PM_{2.5} Plan for the 2006 PM_{2.5} NAAQS. (February 2020). Retrieved from: <https://www.regulations.gov/document/EPA-R09-OAR-2019-0318-0005>

¹⁷ EPA. *Air Plan Approval; California; San Joaquin Valley Unified Air Pollution Control District*. 85 Fed. Reg. 141, pp. 44206-44209. (July 22, 2020). Retrieved from: <https://www.govinfo.gov/content/pkg/FR-2020-07-22/pdf/2020-14298.pdf>

¹⁸ SJVAPCD. *PM_{2.5} Contingency Measure State Implementation Plan Revision*. (May 18, 2023). Retrieved from: <https://ww2.valleyair.org/media/jkhaefnp/06-pm25-contingency-measure-sip-revision.pdf>

- No burning for non-registered units (Level One) when PM2.5 concentrations are forecast to equal or exceed 12 $\mu\text{g}/\text{m}^3$
- No burning for all devices (Level Two) when PM2.5 concentrations are forecast to exceed 35 $\mu\text{g}/\text{m}^3$

Further, should EPA subsequently find that the Valley failed to meet another of the aforementioned regulatory requirements, stricter curtailment levels would apply District-wide:

- No burning for non-registered units (Level One) when PM2.5 concentrations are forecast to equal or exceed 11 $\mu\text{g}/\text{m}^3$
- No burning for all devices (Level Two) when PM2.5 concentrations are forecast to exceed 35 $\mu\text{g}/\text{m}^3$

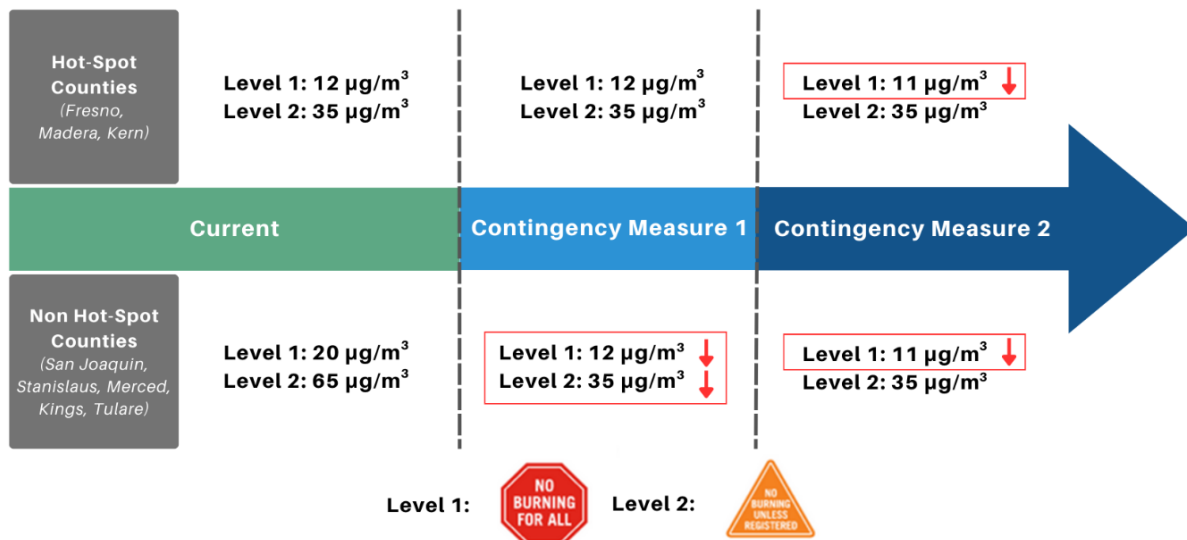
Table G-12 and Figure G-2 depict the sequence of increasingly stringent contingency curtailment thresholds to be enforced following each contingency trigger.

Table G-12 District Contingency Curtailment Thresholds

Contingency Concept	Hot Spot County ($\mu\text{g}/\text{m}^3$)		Non Hot Spot County ($\mu\text{g}/\text{m}^3$)	
	Level 1	Level 2	Level 1	Level 2
Current Requirements	12	35	20	65
Contingency Measure 1	12	35	12	35
Contingency Measure 2	11	35	11	35

Hot Spot counties: Madera, Fresno, Kern
 Non Hot Spot counties: San Joaquin, Stanislaus, Merced, Kings, Tulare

Figure G-2 Adopted Contingency Measure – Residential Wood Burning



Estimated Contingency Emission Reductions

Rule 4901 already includes the most stringent residential wood combustion control strategy in the nation, and this contingency measure further enhances the stringency of this rule. Table G-13 estimates the expected increase in curtailment days that would occur if the contingency thresholds are triggered. The values represent the collective increase in Level One and Level Two curtailment days.

Table G-13 Additional Curtailments by Contingency Trigger (Days)

County	First Trigger		Second Trigger	
	Level One (12 µg/m ³)	Level Two (35 µg/m ³)	Level One (11 µg/m ³)	Level Two (35 µg/m ³)
Fresno	0.00	0.00	3.66	-
Kern (SVJ)	0.00	0.00	3.35	-
Kings	5.65	22.60	3.32	-
Madera	0.00	0.00	4.71	-
Merced	37.77	2.34	4.68	-
San Joaquin	29.91	5.65	2.66	-
Stanislaus	25.93	8.31	3.32	-
Tulare	22.52	14.79	5.38	-

*The expected additional curtailment is calculated using a 3-year average of District air quality data from 2019-2022

The District performed an analysis of recent ambient air quality data and estimates these amendments would achieve the emission reductions found in the following table. The analysis and emissions reduction estimates are largely based on the methodology that was used in the analysis for 2019 amendments to Rule 4901,¹⁹ which was approved by EPA.²⁰ See Appendix C of the *PM2.5 Contingency Measure SIP Revision*²¹ for additional details on the District's emission reduction analysis.

¹⁹ SJVAPCD. *Appendix B Emission Reduction Analysis for Proposed Amendments Residential Wood Burning Emission Reduction Strategy*, pp. B-1 – B-14. (June 20, 2019). Retrieved from:

https://www.valleyair.org/Board_meetings/GB/agenda_minutes/Agenda/2019/June/final/13.pdf

²⁰ EPA. *Air Plan Approval; California; San Joaquin Valley Unified Air Pollution Control District; Final Rule*. 85 Fed Reg. 141, pp. 44206-44209. (July 22, 2020). Retrieved from: <https://www.govinfo.gov/content/pkg/FR-2020-07-22/pdf/2020-14298.pdf>

²¹ SJVAPCD. *PM2.5 Contingency Measure State Implementation Plan Revision*. (May 18, 2023). Retrieved from: <https://ww2.valleyair.org/media/jkhaefnp/06-pm25-contingency-measure-sip-revision.pdf>

Table G-14 Annual Average Emission Reductions by Proposed Contingency Trigger (tpd)

County	First Trigger (12/35 $\mu\text{g}/\text{m}^3$)		Second Trigger (11/35 $\mu\text{g}/\text{m}^3$)	
	PM2.5	NOx	PM2.5	NOx
Fresno	0.0000	0.0000	0.0297	0.0039
Kern (SVJ)	0.0000	0.0000	0.0161	0.0023
Kings	0.0258	0.0040	0.0030	0.0004
Madera	0.0000	0.0000	0.0021	0.0003
Merced	0.0895	0.0109	0.0104	0.0013
San Joaquin	0.1786	0.0264	0.0133	0.0020
Stanislaus	0.1619	0.0229	0.0156	0.0022
Tulare	0.1235	0.0175	0.0176	0.0025
Total	0.5793	0.0817	0.1078	0.0148

In total, the emission reductions achievable from these amendments to Rule 4901 for purposes of qualifying contingency measures are 0.69 tpd of PM2.5 and 0.10 tpd NOx on an annual average basis. These amendments, once approved by EPA into the SIP, will contribute towards satisfying the contingency measure requirements for NOx and PM2.5 for the PM2.5 NAAQS. As mentioned above, on December 20, 2023, EPA proposed approval of this measure.²²

G.3.3.2 Dust from Open Areas

Background

The District's Regulation VIII suite of rules limit fugitive PM10 emissions from numerous activities associated with significant dust emissions. These rules reduce fugitive dust from construction sites, earthmoving activities, parking and staging areas, open areas, agricultural operations, carryout and trackout, paved and unpaved roads, and material storage sites. The Regulation VIII rules were adopted in November 2001, and subsequently amended in 2004 to incorporate more stringent requirements.

The 2004 rule amendment to District Rule 8051 (Open Areas) implemented BACM to control fugitive dust emissions from open areas. Amendments to the rule included limiting visible dust emissions (VDE) to 20% opacity and maintaining stabilized surface conditions in urban open areas 0.5 acres and greater and rural open areas 3.0 acres and greater that have at least 1,000 square feet of disturbed surface area.

Rule 8051 allows for a variety of control options to maintain a stabilized surface and limit VDE to less than 20% opacity. Rule 8051 allows control of fugitive dust by applying water, chemical dust suppressant, or organic dust suppressant to areas

²² EPA. *Clean Air Plans; Contingency Measures for the Fine Particulate Matter Standards; San Joaquin Valley; Proposed Rule*. 88 Fed. Reg. 243, pp. 87988-88012. (December 20, 2023).
<https://www.govinfo.gov/content/pkg/FR-2023-12-20/pdf/2023-27686.pdf>

without vegetation; establishing vegetation on all previously disturbed surfaces; or paving, applying and maintaining gravel, or applying and maintaining chemical/organic dust stabilizers/suppressants. To prevent unauthorized vehicle access to open areas, property owners must also post “No Trespassing” signs or install physical barriers to prevent vehicle access to the area. District Rule 8051 has continued to be an integral part of the District’s fugitive windblown dust control strategy.

Contingency Measure

Consistent with commitments outlined in the *Contingency SIP Revision*, the District proposed amendments to Rule 8051 to incorporate a contingency measure that would lower the rural acreage applicability threshold within the rule. The District’s Governing Board adopted the amendments to Rule 8051 on September 21, 2023.²³

The adopted amendments to Rule 8051 added a contingency measure that would lower the rural open area applicability level to include rural parcels between 1 to 3 acres. The amendments also modified the exemptions section of the rule to incorporate considerations for fire prevention activities. EPA proposed approval of this contingency measure on December 20, 2023, which would be activated upon issuance of final determination by EPA that the Valley failed to meet one of the contingency elements as outlined in the CAA.

Estimated Contingency Emission Reductions

The total PM_{2.5} emission reductions achieved from the proposed contingency measure is estimated at 0.008 tpd, on an annual average basis. For further analysis of the emission reductions, see Appendix B of the Final Staff Report for Rule 8051.²⁴

G.3.3.3 Smog Check Contingency Measure

On October 26, 2023, CARB unanimously adopted the *California Smog Check Contingency Measure State Implementation Plan Revision*,²⁵ and transmitted the revision to EPA on November 13, 2023. The EPA proposed approval on December 20, 2023. The *California Smog Check Contingency Measure State Implementation Plan Revision* addresses SIP contingency measure requirements of the federal CAA for certain areas designated as nonattainment of the NAAQS within the State, including the San Joaquin Valley.

The Motor Vehicle Inspection and Maintenance Program (Smog Check Program) is a vehicle inspection and maintenance program administered by the California Bureau of Automotive Repair (BAR) that identifies vehicles with faulty emission control

²³ SJVAPCD. *Adopt Amendments to Rule 8051 (Open Areas)*. (September 21, 2023). Retrieved from: https://ww2.valleyair.org/media/04efhheh/item-9_-_adopt-proposed-ammdments-to-rule-8051.pdf

²⁴ SJVAPCD. *Adopt Amendments to Rule 8051 (Open Areas)*. (September 21, 2023). Retrieved from: https://ww2.valleyair.org/media/04efhheh/item-9_-_adopt-proposed-ammdments-to-rule-8051.pdf

²⁵ CARB. *California Smog Check Contingency Measure State Implementation Plan Revision*. September 15, 2023. Retrieved from: https://ww2.arb.ca.gov/sites/default/files/2023-09/Smog_Check_CM_SIP_Revision_Final.pdf

components. Smog Check Program inspections are required biennially as a part of the vehicle registration process and/or when a vehicle changes ownership or is registered for the first time in California. In 2017, Assembly Bill (AB) 1274 added Health and Safety Code (H&SC) § 44011(a)(4)(B)(ii), which allowed vehicles eight or less model-years old to be exempt from requirements for Smog Check Program inspections. In lieu of an inspection, this law requires seven and eight model-year old vehicles owners to pay an annual Smog Abatement Fee of \$25, \$21 of which goes to the Air Pollution Control Fund for use to incentivize clean vehicles and equipment through the Carl Moyer Memorial Air Quality Standards Attainment Program (Moyer Program). This law also specifies that this exemption is allowed unless CARB determines that exempting these vehicles prohibits the State from meeting SIP commitments.

To address contingency measure requirements, CARB's Smog Check Contingency Measure would remove exemptions within the current Smog Check Program. Should any air district within the state fail one of the four triggering events under the CAA, the measure would:

- Change the existing smog check inspection exemptions in the California Smog Check Program in the applicable nonattainment area(s);
- Apply to the California nonattainment area(s) and standard(s) for which the Triggering Event occurs, which includes the 1997, 2008, and 2015 8-hour ozone standards, and 1997, 2006, and 2012 PM_{2.5} standards for the San Joaquin Valley; and
- Be implemented within 30 days of the effective date of a U.S. EPA finding that a Triggering Event occurred.

If triggered, these additional vehicles would then be subject to Smog Check Program inspections based on the area in which the vehicle is registered (i.e., enhanced, basic, and change of ownership), resulting in additional emissions control equipment failures being identified and corrected, thereby reducing emissions that typically result when emissions control equipment is not performing as designed. CARB expects to achieve 0.086 tpd NO_x emission reductions in the Valley upon triggering this contingency measure for the 2012 PM_{2.5} standard.

For further analysis, please see CARB's analysis in the *California Smog Check Contingency Measure State Implementation Plan Revision*.

G.3.4 Reasoned Justification Approach

Section 4 of EPA's *Draft Guidance* outlines the procedures for preparation of a reasoned justification for providing contingency measures achieving less than OYW_P. These procedures involve the identification of existing and potential controls not already included in the applicable attainment plan and evaluation of the feasibility of such controls.

The following sections evaluate potential contingency measure opportunities for PM_{2.5} and NO_x, consistent with EPA's guidance for a reasoned justification approach in their

Draft Guidance. Table G-15 below lists all source categories in the San Joaquin Valley emissions inventory, as output by CEPAM v1.00. PM2.5 and NOx emissions inventory data for each category is included for the year 2030 (representing the attainment year for the 2012 PM2.5 standard), reported in tpd and as percentages of the total.

Table G-15 District CEPAM v1.00 Annual Average Inventories for 2030

2030 Annual Average					
MSC	SUB CATEGORY	PM2.5 Emissions (tpd)	% of PM2.5 Inventory	NOx Emissions (tpd)	% of NOx Inventory
10	ELECTRIC UTILITIES	0.72	1.29%	2.23	2.27%
20	COGENERATION	0.33	0.60%	0.72	0.73%
30	OIL AND GAS PRODUCTION (COMBUSTION)	1.30	2.33%	1.45	1.47%
40	PETROLEUM REFINING (COMBUSTION)	0.06	0.11%	0.16	0.16%
50	MANUFACTURING AND INDUSTRIAL	0.27	0.48%	1.30	1.33%
52	FOOD AND AGRICULTURAL PROCESSING	0.50	0.89%	3.02	3.07%
60	SERVICE AND COMMERCIAL	0.45	0.80%	4.08	4.16%
99	OTHER (FUEL COMBUSTION)	0.01	0.01%	0.51	0.52%
110	SEWAGE TREATMENT	0.01	0.02%	0.04	0.04%
120	LANDFILLS	0.10	0.17%	0.16	0.16%
130	INCINERATORS	0.01	0.02%	0.04	0.04%
140	SOIL REMEDIATION	0.00	0.00%	0.00	0.00%
199	OTHER (WASTE DISPOSAL)	0.04	0.08%	0.01	0.01%
210	LAUNDERING	0.01	0.01%	0.00	0.00%
220	DEGREASING	0.05	0.10%	0.00	0.00%
230	COATINGS AND RELATED PROCESS SOLVENTS	0.32	0.57%	0.00	0.00%
240	PRINTING	0.00	0.00%	0.00	0.00%
250	ADHESIVES AND SEALANTS	0.00	0.00%	0.00	0.00%
299	OTHER (CLEANING AND SURFACE COATINGS)	0.00	0.00%	0.00	0.00%
310	OIL AND GAS PRODUCTION	0.02	0.04%	0.09	0.09%
320	PETROLEUM REFINING	0.02	0.04%	0.01	0.01%
330	PETROLEUM MARKETING	0.02	0.03%	0.05	0.05%
399	OTHER (PETROLEUM PRODUCTION AND MARKETING)	0.00	0.00%	0.00	0.00%
410	CHEMICAL	0.33	0.59%	0.34	0.34%
420	FOOD AND AGRICULTURE	0.77	1.38%	0.00	0.00%
430	MINERAL PROCESSES	1.08	1.95%	0.21	0.21%
440	METAL PROCESSES	0.02	0.04%	0.00	0.00%
450	WOOD AND PAPER	0.20	0.36%	0.00	0.00%
460	GLASS AND RELATED PRODUCTS	0.07	0.12%	1.75	1.78%
470	ELECTRONICS	0.00	0.00%	0.00	0.00%
499	OTHER (INDUSTRIAL PROCESSES)	0.07	0.13%	0.01	0.01%
510	CONSUMER PRODUCTS	0.00	0.00%	0.00	0.00%
520	ARCHITECTURAL COATINGS AND RELATED PROCESS SOLVENTS	0.00	0.00%	0.00	0.00%

2030 Annual Average					
MSC	SUB CATEGORY	PM2.5 Emissions (tpd)	% of PM2.5 Inventory	NOx Emissions (tpd)	% of NOx Inventory
530	PESTICIDES/FERTILIZERS	0.00	0.00%	0.00	0.00%
540	ASPHALT PAVING / ROOFING	0.00	0.00%	0.00	0.00%
610	RESIDENTIAL FUEL COMBUSTION	3.01	5.41%	4.47	4.56%
620	FARMING OPERATIONS	12.72	22.89%	0.00	0.00%
630	CONSTRUCTION AND DEMOLITION	2.84	5.12%	0.00	0.00%
640	PAVED ROAD DUST	5.55	9.98%	0.00	0.00%
645	UNPAVED ROAD DUST	3.67	6.60%	0.00	0.00%
650	FUGITIVE WINDBLOWN DUST	7.08	12.74%	0.00	0.00%
660	FIRES	0.21	0.38%	0.04	0.04%
670	MANAGED BURNING AND DISPOSAL	5.95	10.70%	1.79	1.82%
690	COOKING	2.59	4.66%	0.00	0.00%
699	OTHER (MISCELLANEOUS PROCESSES)	0.00	0.00%	0.00	0.00%
710	LIGHT DUTY PASSENGER (LDA)	0.27	0.48%	2.24	2.29%
722	LIGHT DUTY TRUCKS - 1 (LDT1)	0.02	0.04%	0.43	0.44%
723	LIGHT DUTY TRUCKS - 2 (LDT2)	0.14	0.24%	1.72	1.76%
724	MEDIUM DUTY TRUCKS (MDV)	0.10	0.18%	1.77	1.80%
725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	0.15	0.27%	2.68	2.72%
726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	0.05	0.09%	0.82	0.83%
727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	0.04	0.07%	1.46	1.49%
728	HEAVY HEAVY DUTY TRUCKS (HHDT)	0.54	0.97%	10.16	10.35%
750	MOTORCYCLES (MCY)	0.00	0.00%	0.20	0.20%
775	BUSES	0.01	0.02%	0.42	0.43%
780	MOTOR HOMES (MH)	0.00	0.01%	0.13	0.13%
810	AIRCRAFT	1.69	3.04%	4.54	4.63%
820	TRAINS	0.33	0.59%	16.50	16.80%
833	OCEAN GOING VESSELS	0.00	0.00%	0.05	0.05%
835	COMMERCIAL HARBOR CRAFT	0.00	0.00%	0.03	0.03%
840	RECREATIONAL BOATS	0.37	0.67%	2.36	2.40%
850	OFF-ROAD RECREATIONAL VEHICLES	0.02	0.04%	0.14	0.15%
860	OFF-ROAD EQUIPMENT	0.46	0.83%	10.61	10.81%
861	OFF-ROAD EQUIPMENT (PERP)	0.05	0.09%	2.17	2.21%
870	FARM EQUIPMENT	0.94	1.69%	17.27	17.59%
890	FUEL STORAGE AND HANDLING	0.00	0.00%	0.00	0.00%

As part of this evaluation, the District and CARB analyzed contingency measure opportunities for each source category. Notably, as demonstrated in Section G.3.5, the District and CARB's contingency measures achieve the necessary reductions to achieve OYW_P for PM2.5 sources. However, the District is still including an analysis for PM2.5 source categories below.

This evaluation included analysis of technological and economic feasibility of potential measures. Each measure was evaluated on whether it could be implemented within 60 days of being triggered and achieve the necessary reductions within 1-2 years of being triggered. Additionally, the technological feasibility of each option was considered to assess whether the measure would be technologically feasible to implement. More stringent requirements may be unavailable or economically infeasible to implement, especially in the time frame required for contingency measure implementation. Notably, as part of the District's rule analyses conducted for this plan, in addition to the recent *2018 PM2.5 Plan*, *2022 Ozone Plan*, and *2023 Initial SIP Requirements for the 2012 Annual PM2.5 Standard*,²⁶ comparisons to analogous rules from other regions were completed, demonstrating the stringency of the District's rules. The District is referring to these comparisons as a part of the below analyses, as allowed under the *Draft Guidance*.

²⁶ SJVAPCD. *Initial SIP Requirements for the 2012 Annual PM2.5 Standard*. October 19, 2023. Retrieved from: <https://ww2.valleyair.org/media/vzbbnhkg/00-final-adopted-initial-sip-requirements-for-the-2012-annual-pm25-standard.pdf>

G.3.4.1 Fuel Combustion

Table G-16 Fuel Combustion Inventory Contributions

MSC	SUB CATEGORY	PM2.5 (tpd)	NOx (tpd)
10	ELECTRIC UTILITIES	0.72	2.23
20	COGENERATION	0.33	0.72
30	OIL AND GAS PRODUCTION (COMBUSTION)	1.30	1.45
40	PETROLEUM REFINING (COMBUSTION)	0.06	0.16
50	MANUFACTURING AND INDUSTRIAL	0.27	1.30
52	FOOD AND AGRICULTURAL PROCESSING	0.50	3.02
60	SERVICE AND COMMERCIAL	0.45	4.08
99	OTHER (FUEL COMBUSTION)	0.01	0.51
610	RESIDENTIAL FUEL COMBUSTION	3.01	4.47
	Total	6.65	17.94

This category includes turbines, boilers, steam generators, process heaters, one large solid waste combustor, internal combustion engines, central fan-type furnaces primarily fueled by Public Utility Commission (PUC) quality natural gas; liquid fuel e.g., diesel, is used in the internal combustion engines, but for other units it is rare and predominately held in reserve for emergency use. These units are used to generate electricity, produce hot water, produce steam, transfer heat from combustion gases to liquid or process streams, and condition living and office spaces. These units emit PM2.5 and NOx and can be found at facilities representing a wide range of industries including, but not limited, to electrical utilities, cogeneration operations, oil and gas production, petroleum refining, manufacturing and industrial processes, food and agricultural processing, hospitals, hotels, service and commercial facilities, residential housing and commercial office spaces. These units have significant variability in technology, size, use, and age of equipment, as well as variability in potential controls for various pollutants.

The District has evaluated opportunities for contingency measures within the fuel combustion category and did not identify a feasible measure. The District has recently amended a number of fuel combustion rules to incorporate more stringent regulations that go beyond state and federal regulations. Notably, CARB plans to implement a zero-NOx regulation for both residential space heating and residential water heating, thus leaving no opportunities for a contingency measure. The District's analysis is provided below:

District Rule	Contingency Options	Technological and Economic Feasibility	Trigger Feasibility
<p>Rule 4306 and 4320 (Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters >5 MMBtu/hr)</p>	<p>Refer to the District’s analysis in the <i>PM2.5 Contingency Measure SIP Revision</i> for Emissions from Oil and Gas Production Combustion Equipment.</p>	<p>The District concludes that this source category is not an appropriate contingency measure due to the following reasons:</p> <ul style="list-style-type: none"> • Analyses provided by the District shows that further controls are either technologically infeasible, or not cost effective • District is already requiring the most stringent feasible controls, exceeding MSM requirements • Significant time is needed to plan and prepare for the installation of equipment including budgeting appropriate funds for large projects (2-3 years), which is incompatible with a contingency trigger • Operations are in the process of investing in and installing technologies to meet recently amended rule limits • A contingency trigger is incompatible with the technologies involved in reducing emissions from this category, as operations would need time to plan and install technology and reductions would not be achieved within one to two years of a contingency trigger <p>Rules 4306 and 4320 meet or exceed BACM requirements for this source category based upon evaluation of applicable federal regulations, state standards, and other air districts’ rules. Therefore, the District concludes that this control measure is not an appropriate contingency measure because the most stringent feasible controls are already in place, and a contingency trigger is incompatible with the technologies involved in reducing emissions from this category.</p>	<p>No; Any new regulation would need approximately two years (or more) of rule development to allow for a robust public process with all affected industries, stakeholders, and public. Operations would need long lead time to design, plan, obtain operating permits, and install control technology. Lead time required would not conform with the required trigger timeline. It also would be infeasible to implement new requirements within 60 days and achieve reductions within one to two years.</p>
<p>Rule 4307 (Boilers, Steam Generators and Process Heaters 2 – 5 MMBtu/hr)</p>	<p>Require use of technologies such as SCRs, ultra-low NOx burners, and EMx.</p>	<p>No; As stated in Appendix C of the <i>2024 PM2.5 Plan</i>, the potential emission reduction opportunities are not cost effective.</p> <p>Various control technologies that were further evaluated for their potential to reduce emissions as a contingency measure include SCRs, ultra-low NOx burners, and EMx.</p> <ul style="list-style-type: none"> • Retrofitting a range of SCR options has annualized costs ranging from \$225,378 to \$19,532,760. These options range from \$140,726 to \$912,868 per ton of emissions reduced • Retrofitting a range of ultra-low NOx burner options has annualized costs ranging from \$64,977 to \$5,631,340, which 	<p>No; Any new regulation would need approximately two years (or more) of rule development to allow for a robust public process with all affected industries, stakeholders, and public. Operations would need long lead time to design, plan, and install control technology. Lead time required would not conform with the required trigger timeline. It also would be infeasible to implement new requirements within 60 days and achieve reductions within one to two years.</p>

District Rule	Contingency Options	Technological and Economic Feasibility	Trigger Feasibility
		<p>would have a cost effectiveness ranging from \$48,296 to \$371,297 per ton of emissions reduced</p> <ul style="list-style-type: none"> • Replacement of an older unit with a new boiler meeting the 9 ppmv NOx unit has annualized costs ranging from \$147, 816 to \$12,810,720, with a cost effectiveness ranging from \$109,869 to \$844,633 per ton of emissions reduced • The District researched post-combustion controls such as EMx, the second generation of the SCONox technology that reduces NOx, SOx, CO, and VOC emissions. Per EmeraChem, manufacturer/vendor of the technology, this technology has not been achieved in practice (AIP) for natural gas fired boilers. SCONox and EMx systems have only been used by power plants for the control of turbine emissions. The cost of an EMx system would be anywhere from \$3 to \$5 million, or even up to \$8 million in some cases for large power plant installations. Moreover, an EMx system is ideal for a new installation, but becomes extremely challenging and sometimes nearly impossible to retrofit to an existing unit. In fact, cost-effectiveness analyses conducted by the District for the installation of SCONox/EMx units on large power plant turbine installations within the Valley have shown that this technology is not cost-effective. Given the high cost-effectiveness demonstrated for turbines and lack of demonstrated practice with boilers, this technology is not feasible or cost-effective for reducing emissions from this category. <p>While cost-effectiveness was further reviewed, there are a number of additional feasibility considerations and complexities that potentially render the utilization of the above technologies as infeasible, including physical constraints, control effectiveness for the wide variety of potential applications, and other considerations.</p> <p>Rule 4307 meets or exceeds BACM requirements for this source category based upon evaluation of applicable federal regulations, state standards, and other air districts' rules. Therefore, the District concludes that this control measure is not an appropriate contingency measure because the most stringent feasible controls are already in place, and a contingency trigger is incompatible with</p>	

District Rule	Contingency Options	Technological and Economic Feasibility	Trigger Feasibility
<p>Rule 4308 (Boilers, Steam Generators and Process Heaters 0.075 to less than 2.0 MMBtu/hr)</p>	<p>Require use of technologies such as SCRs, ultra-low NOx burners, and EMx.</p>	<p>the technologies involved in reducing emissions from this category.</p> <p>No; As stated in Appendix C of the <i>2024 PM2.5 Plan</i>, the technologies involved with reducing emissions from this source category are not cost effective and this source category is not suitable for a contingency measure.</p> <p>These potential controls are also not cost effective as implementation of:</p> <ul style="list-style-type: none"> • Selective Catalytic Reduction (SCR) systems reduce NOx emissions from 20 ppmv @ 3% O₂ to 5 ppmv @ 3% O₂ has a cost effectiveness of at least \$484,684/ton of emissions reduced • Ultra-low NOx burner system reduces NOx emissions from 20 ppmv @ 3% O₂ to 9 ppmv @ 3% O₂ at a cost effectiveness of \$91,746/ton of emissions reduced • EMx systems, as explained under Rule 4307, are not cost effective and most likely not technologically feasible for these small units <p>While cost-effectiveness was further reviewed, there are a number of additional feasibility considerations and complexities that potentially render the utilization of the above technologies as infeasible, including physical constraints, control effectiveness for the wide variety of potential applications, and other considerations.</p> <p>Rule 4308 meets or exceeds BACM requirements for this source category based upon evaluation of applicable federal regulations, state standards, and other air districts' rules. Therefore, the District concludes that this control measure is not an appropriate contingency measure because the most stringent feasible controls are already in place, and a contingency trigger is incompatible with the technologies involved in reducing emissions from this category.</p>	<p>No; Any new regulation would need approximately two years (or more) of rule development to allow for a robust public process with all affected industries, stakeholders, and public. All units subject to 4308 have to be certified by the manufacturer prior to sale. Manufacturers would need long lead time to design new units and have them tested by independent third party laboratories, and finally certified by the Air District. Manufacturers would also need time to produce the amount of units needed Lead time required would not conform with the required trigger timeline. It also would be infeasible to implement new requirements within 60 days and achieve reductions within one to two years.</p>

District Rule	Contingency Options	Technological and Economic Feasibility	Trigger Feasibility
<p>Rule 4309 (Dryers, Dehydrators, and Ovens)</p>	<p>Require use of technologies such as low NOx burners.</p>	<p>No; As stated in Appendix C of the <i>2024 PM2.5 Plan</i>, alternative control technology such as low NOx burners would reduce NOx emissions, however, more stringent requirements have not been implemented for many categories. For example, the 2022 Ozone Plan concluded that District Rule 4309 is at least as stringent as or more stringent than analogous rules from other California air districts. The only analogous rule identified to be more stringent than Rule 4309 was South Coast Air Quality Management District (SCAQMD) Rule 1147.1, which the District concluded that this rule exceeds RACT requirements and the NOx requirement has not been widely adopted in other SIP rules.</p> <p>In addition, requiring the use of these burners has proven to have a negative impact on product quality such as drying onions and changing onion color due to higher carbon monoxide emissions. The District does not see implementing low NOx burners as feasible due to affecting the facilities ability to carry out normal business until the technologies are further improved.</p> <p>Rule 4309 meets or exceeds BACM requirements for this source category based upon evaluation of applicable federal regulations, state standards, and other air districts' rules. Therefore, the District concludes that this control measure is not an appropriate contingency measure because the most stringent feasible controls are already in place, and a contingency trigger is incompatible with the technologies involved in reducing emissions from this category.</p>	<p>No; Any new regulation would need approximately two years (or more) of rule development to allow for a robust public process with all affected industries, stakeholders, and public. Operations would need long lead time to design, plan, obtain operating permits, and install control technology. Lead time required would not conform with the required trigger timeline. It also would be infeasible to implement new requirements within 60 days and achieve reductions within one to two years.</p>
<p>Rule 4352 (Solid Fuel Fired Boilers, Steam Generators, and Process Heaters)</p>	<p>Require use of additional or alternative control technologies beyond existing stringent controls.</p>	<p>No; The District recently adopted amendments to Rule 4352 in December 2021 after going through a robust public process of a year and a half. Appendix C of the 2021 Rule 4352 Staff Report evaluated alternative control technologies applicable to sources subject to Rule 4352.²⁷ District analysis found that all alternative control technology that could reduce emissions further require technology that has prohibitively high capital costs and is not cost effective. In addition, many of these technologies have not been</p>	<p>No; Any new regulation would need approximately two years (or more) of rule development to allow for a robust public process with all affected industries, stakeholders, and public. Operations would need long lead time to design, plan, obtain operating permits, and install control technology. Lead time required</p>

²⁷ SJVAPCD. *Adopt Proposed Amendments to Rule 4352 (Solid Fuel Fired Boilers, Steam Generators, and Process Heaters)*. (December 16, 2021). Retrieved from: https://www.valleyair.org/Board_meetings/GB/agenda_minutes/Agenda/2021/December/final/12.pdf

District Rule	Contingency Options	Technological and Economic Feasibility	Trigger Feasibility
		<p>implemented at facilities subject to Rule 4352; therefore, these control technologies are not commercially tested and proven.</p> <p>Rule 4352 meets or exceeds BACM requirements for this source category based upon evaluation of applicable federal regulations, state standards, and other air districts' rules. Therefore, the District concludes that this control measure is not an appropriate contingency measure because the most stringent feasible controls are already in place, and a contingency trigger is incompatible with the technologies involved in reducing emissions from this category.</p>	<p>would not conform with the required trigger timeline. It also would be infeasible to implement new requirements within 60 days and achieve reductions within one to two years. Additionally, operations are currently investing in control technologies to meet recently amended rule limits.</p>
<p>Rule 4702 (Internal Combustion Engines)</p>	<p>Require use of additional or alternative control technologies beyond existing stringent controls.</p>	<p>No; The District recently adopted amendments to Rule 4702 per commitments in the <i>2018 PM2.5 Plan</i> in August 2021 after going through a robust public process. The 2021 Rule 4702 staff report included evaluations of additional control technology including SCRs, electrification and solar power, and other control technologies.²⁸</p> <ul style="list-style-type: none"> • SCR systems require significant capital, up to \$300,000 to purchase a single unit and up to \$60,000 of annual operation and maintenance costs • Introducing an electric engine/solar system has a cost effectiveness ranging from \$150,000 to \$260,000 per ton of emissions reduced <p>In addition to cost effectiveness, there are a number of additional feasibility considerations and complexities that potentially render the utilization of the above technologies as infeasible, including physical constraints, control effectiveness variation for the wide range of potential applications, and other considerations.</p> <p>Rule 4702 meets or exceeds BACM requirements for this source category based upon evaluation of applicable federal regulations, state standards, and other air districts' rules. Therefore, the District concludes that this control measure is not an appropriate contingency measure because the most stringent feasible controls</p>	<p>No; Any new regulation would need approximately two years (or more) of rule development to allow for a robust public process with all affected industries, stakeholders, and public. Operations would need long lead time to design, plan, obtain operating permits, and install control technology. Lead time required would not conform with the required trigger timeline. It also would be infeasible to implement new requirements within 60 days and achieve reductions within one to two years. Additionally, operations are currently investing in control technologies to meet recently amended rule limits.</p>

²⁸ SJVAPCD. *Proposed Amendments to Rule 4702 (Internal Combustion Engine)*. (July 20, 2021). Retrieved from: <http://www.valleyair.org/workshops/postings/2021/08-19-21-r4702/DraftStaffReport.pdf>

District Rule	Contingency Options	Technological and Economic Feasibility	Trigger Feasibility
<p>Rule 4703 (Stationary Gas Turbines)</p>	<p>Require use of additional or alternative control technologies beyond existing stringent controls.</p>	<p>are already in place, and a contingency trigger is incompatible with the technologies involved in reducing emissions from this category.</p> <p>No; As stated in Appendix C of the <i>2024 PM2.5 Plan</i>, the District has found that further control from sources subject to Rule 4703 is not currently feasible or cost effective.</p> <ul style="list-style-type: none"> • Retrofitting a SCR system on units producing less than 3 megawatts (to comply with 2 ppmvd NOx @ 15% O₂) incurs an estimated \$439,278 of annual costs, which costs \$348,633 per ton of emissions reduced. • Retrofitting a SCR system on units producing between 3 to 10 megawatts (to comply with 2 ppmvd NOx @ 15% O₂) incurs an estimated \$716,998 of annual costs, which costs \$770,965 per ton of emissions reduced. • Retrofitting a SCR system on units producing greater than 10 megawatts (simple cycle unit to comply with 2.5 ppmvd NOx @ 15% O₂) incurs an estimated \$1,737,092 of annual costs, which costs \$232,231 per ton of emissions reduced. • Retrofitting SCRs on units producing greater than 10 megawatts (combined cycle to comply with 2 ppmvd NOx @ 15% O₂) incurs an estimated \$2,785,635 of annual costs, which costs \$141,116 per ton of emissions reduced. <p>While cost-effectiveness was further reviewed, there are a number of additional feasibility considerations and complexities that potentially render the utilization of the above technologies as infeasible, including physical constraints, control effectiveness for the wide variety of potential applications, and other considerations.</p> <p>Rule 4703 meets or exceeds BACM requirements for this source category based upon evaluation of applicable federal regulations, state standards, and other air districts' rules. Therefore, the District concludes that this control measure is not an appropriate contingency measure because the most stringent feasible controls are already in place, and a contingency trigger is incompatible with the technologies involved in reducing emissions from this category.</p>	<p>No; Any new regulation would need approximately two years (or more) of rule development to allow for a robust public process with all affected industries, stakeholders, and public. Operations would need long lead time to design, plan, obtain operating permits, and install control technology. Lead time required would not conform with the required trigger timeline. It also would be infeasible to implement new requirements within 60 days and achieve reductions within one to two years.</p>

District Rule	Contingency Options	Technological and Economic Feasibility	Trigger Feasibility
<p>Rule 4901 (Wood Burning Fireplaces and Wood Burning Heaters)</p>	<p>Refer to the District's analysis above in Section G.3.3.1 for Wood Burning Fireplaces and Wood Burning Heaters.</p>	<p>-</p>	<p>-</p>
<p>Rule 4902 (Residential Water Heaters)</p>	<p>Adopt zero-NOx requirements earlier than CARB measure.</p>	<p>No; CARB currently has an existing commitment that will require zero-NOx water heaters and achieve emission reductions statewide starting in 2030. The District evaluated opportunities to advance the implementation timeframe of zero-NOx requirements in the Valley. Manufacturers need time to ramp up production of zero-emission technologies to meet the expected demand. Further, any such standard would have to be developed in collaboration with energy and building code regulators and the District would need to ensure it was consistent with all State and local efforts. The District would need to work carefully with communities to consider any housing cost or affordability impacts. The District would need to engage with community-based organizations and other key stakeholders to incorporate equity considerations for low-income and environmental justice communities where feasible. Given the need for triggerable and potentially short-term reductions, the long lead time associated with this potential measure, the attrition-based nature of implementation, and the existing CARB measure in place that would conflict with a local contingency measure, this measure is deemed infeasible.</p> <p>In an effort to identify potential emission reduction opportunities, the District's <i>2022 Ozone Plan</i> includes a further study commitment to evaluate current and upcoming work from CARB and other agencies related to reducing emissions from residential and commercial combustion sources, and evaluate the feasibility of implementing zero-emission or low-NOx requirements for these sources in the Valley. Through this effort, the District will also evaluate opportunities to advocate for funding under the Inflation Reduction Act, Bipartisan Infrastructure Law, and other funding sources, which are prioritizing funding opportunities for electrification of appliances to reduce greenhouse gas emissions.</p>	<p>No; Any new regulation would need approximately two years (or more) of rule development to allow for a robust public process with all affected industries, stakeholders, and public. Operations would need long lead time to design, plan, obtain operating permits, and install control technology. Lead time required would not conform with the required trigger timeline. It also would be infeasible to implement new requirements within 60 days and achieve reductions within one to two years.</p>

District Rule	Contingency Options	Technological and Economic Feasibility	Trigger Feasibility
		<p>The District continues to support CARB in the development and implementation of a statewide zero-NOx appliances measure, as it will result in direct air quality and public health benefits for the Valley. Additionally, as part of this <i>2024 PM2.5 Plan</i>, the District commits to further evaluating potential opportunities to reduce NOx emissions from natural gas building appliances in the Valley. As part of this evaluation, the District will consider the implementation of zero-NOx requirements earlier than CARB's statewide measure, to the extent that measures are technologically and economically feasible in the Valley. The District will collaborate with utilities, agencies, and organizations to help leverage funding and coordinate incentives with existing programs.</p>	
<p>Rule 4905 (Natural Gas – Fired, Fan Type Residential Central Furnace)</p>	<p>Adopt zero-NOx requirements earlier than CARB measure.</p>	<p>No; CARB currently has an existing commitment that will require zero-NOx furnaces and achieve emission reductions statewide starting in 2030. The District evaluated opportunities to advance the implementation timeframe of zero-NOx requirements in the Valley. Manufacturers need time to ramp up production of zero-emission technologies to meet the expected demand. Further, any such standard would have to be developed in collaboration with energy and building code regulators and the District would need to ensure it was consistent with all State and local efforts. The District would need to work carefully with communities to consider any housing cost or affordability impacts. The District would need to engage with community-based organizations and other key stakeholders to incorporate equity considerations for low-income and environmental justice communities where feasible. Given the need for triggerable and potentially short-term reductions, the long lead time associated with this potential measure, the attrition-based nature of implementation, and the existing CARB measure in place that would conflict with a local contingency measure, this measure is deemed infeasible.</p> <p>In an effort to identify potential emission reduction opportunities, the District's 2022 Ozone Plan includes a further study commitment to evaluate current and upcoming work from CARB and other agencies related to reducing emissions from residential and commercial combustion sources, and evaluate the feasibility of implementing zero-emission or low-NOx requirements for these</p>	<p>No; This measure would require a very robust public process that would take at least two years (or more). Manufacturers would require long lead time to design and produce the amount of units needed. Lead time required would not conform with the required trigger timeline. It also would be infeasible to implement new requirements within 60 days and achieve reductions within one to two years.</p>

District Rule	Contingency Options	Technological and Economic Feasibility	Trigger Feasibility
		<p>sources in the Valley. Through this effort, the District will also evaluate opportunities to advocate for funding under the Inflation Reduction Act, Bipartisan Infrastructure Law, and other funding sources, which are prioritizing funding opportunities for electrification of appliances to reduce greenhouse gas emissions.</p> <p>The District continues to support CARB in the development and implementation of a statewide zero-NOx appliances measure, as it will result in direct air quality and public health benefits for the Valley. Additionally, as part of this <i>2024 PM2.5 Plan</i>, the District commits to further evaluating potential opportunities to reduce NOx emissions from natural gas building appliances in the Valley. As part of this evaluation, the District will consider the implementation of zero-NOx requirements earlier than CARB’s statewide measure, to the extent that measures are technologically and economically feasible in the Valley. The District will collaborate with utilities, agencies, and organizations to help leverage funding and coordinate incentives with existing programs.</p> <p>Rule 4905 meets or exceeds federal BACM requirements for this source category based upon evaluation of applicable federal regulations, state standards, and other air districts’ rules. Therefore, the District concludes that this control measure is not an appropriate contingency measure because the most stringent feasible controls are already in place, and a contingency trigger is incompatible with the technologies involved in reducing emissions from this category.</p>	

G.3.4.2 Waste Disposal

Table G-17 Waste Disposal Inventory Contributions

MSC	SUB CATEGORY	PM2.5 (tpd)	NOx (tpd)
110	SEWAGE TREATMENT	0.01	0.04
120	LANDFILLS	0.10	0.16
130	INCINERATORS	0.01	0.04
140	SOIL REMEDIATION	0.00	0.00
199	OTHER (WASTE DISPOSAL)	0.04	0.01
	Total	0.16	0.25

This category includes sewage treatment, landfills, incinerators, flares, soil remediation, composting, and other miscellaneous categories. These units emit NOx and PM2.5 and are primarily found at landfills, public owned treatment works, locations with contaminated soils, oil and gas operations, refineries, and agricultural operations. Flare emissions under the waste disposal source categories are predominately generated by landfill flares. Smaller quantities of emissions are generated by sewage treatment and incineration flares combusting digester gas, process gas, waste gas, and natural gas. Composting emissions are generated by the decomposition of organic materials. Incinerator emissions are primarily generated by waste disposal activities in the industrial sector and involve combustion of distilled oil, liquefied petroleum gas, natural gas, pathological waste and waste gas. These units have significant variability in technology, size, use and age of equipment, as well as variability in potential controls for various pollutants. Collectively, this category contributes to 0.17 tpd of PM2.5 emissions and 0.33 tpd of NOx.

The District has evaluated opportunities for contingency measures within the waste disposal category and did not identify a feasible measure. The District's analysis is provided below:

Landfills

The evaluation for Rule 4311 (Flares) is provided in Section G.3.4.4 below. The District did not identify any other PM2.5 or NOx controls for this category for consideration as contingency measures. District rules that are applicable to landfill operations, such as Rule 4642 (Solid Waste Disposal Sites), control VOC emissions and do not include PM2.5 or NOx control measures.

Composting

Composting is a VOC emissions source category, and the District did not identify any PM_{2.5} or NO_x controls for consideration as contingency measures.

Incinerators

The District did not identify any incinerator control measures for further consideration as a potential contingency measure. The District reviewed the comparable requirements to other states for Rule 4203 (Particulate Matter Emissions from Incineration of Combustible Refuse) and Rule 4302 (Incinerator Burning), and did not identify requirements for control of incinerator emissions beyond those of Rules 4203 and 4302. For example, neither BAAQMD nor SCAQMD implement rules with similar particulate matter emissions requirements.

G.3.4.3 Cleaning and Surface Coating

This category includes inks, solvents, coatings, adhesives, surface preparation products, and sealants. The primary pollutant emitted from these source categories are VOCs and the products are primarily used at dry cleaners, automotive assembly and repair operations, cardboard box and container manufacturing operations, printing operations, and a variety of coatings operations including; automotive, paper, plastics, metal parts, pleasure craft, aerospace, and wood.

These source categories contribute 0.35 tpd of PM_{2.5} emissions and less than 0.01 tpd of NO_x emissions to the 2017 Fissions inventory. The small quantity of PM_{2.5} emissions is associated with spraying, material handling, and mixing processes. Additionally, in EPA's *Technical Support Document for the Proposed Contingency Measures Federal Implementation Plan for the Fine Particulate Matter Standards for San Joaquin Valley, California (PM_{2.5} Contingency TSD)*,²⁹ EPA did not identify any control measure for further consideration in the Cleaning and Surface Coating Category. Upon further review, the District has not identified any Cleaning and Surface Coating control measures for further consideration as contingency measures.

²⁹ EPA. *Technical Support Document (TSD) for the Proposed Contingency Measures Federal Implementation Plan for the Fine Particulate Matter Standards for San Joaquin Valley, California*. (July 2023). Retrieved from: <https://www.regulations.gov/document/EPA-R09-OAR-2023-0352-0034>

G.3.4.4 Petroleum Production and Marketing

Table G-18 Petroleum Production and Marketing Inventory Contributions

MSC	SUB CATEGORY	PM2.5 (tpd)	NOx (tpd)
310	OIL AND GAS PRODUCTION	0.02	0.09
320	PETROLEUM REFINING	0.02	0.01
330	PETROLEUM MARKETING	0.02	0.05
399	OTHER (PETROLEUM PRODUCTION AND MARKETING)	0.00	0.00
	Total	0.06	0.15

This category includes oil and natural gas wells, storage tanks, vapor recovery units, flares, sumps, wastewater separators, and other petroleum processes. These units emit NOx and PM2.5 and are primarily located at oil and natural gas fields, refineries, fuel terminals, gasoline dispensing facilities, natural gas processing plants, and pipelines. These units have significant variability in technology, size, use and age of equipment, as well as variability in potential controls for various pollutants.

The District has evaluated opportunities for contingency measures within the petroleum production and marketing category and did not identify a feasible measure. The District’s analysis is provided below:

District Rule	Contingency Options	Technological and Economic Feasibility	Trigger Feasibility
Rule 4311 (Flares)	None; no technologies currently available to achieve lower limits.	No; The District recently adopted amendments to Rule 4311 in December 2020 after going through a robust public process of over 3 years. As stated in the Appendix B of the 2020 Rule 4311 staff report, the control level implemented in the recent rule amendment (December 2020) required substantial costs and the emission levels selected are the most stringent levels. ³⁰ The District did not identify any new level of control more stringent than what is currently required under Rule 4311. The 2020 amendments require operators to install the cleanest ultra-low NOx flaring technology available. Further reductions from this source category would require control technologies with greater complexity and costs, which have yet to be identified and	No; Any new regulation would need approximately two years (or more) of rule development to allow for a robust public process with all affected industries, stakeholders, and public. Operations would need long lead time to design, plan, obtain operating permits, and install control technology. Lead time required would not conform with the required trigger timeline. It also would be infeasible to implement new requirements within 60 days and achieve reductions within one to two years.

³⁰ SJVAPCD. *Adopt Proposed Amendments to Rule 4311 (Flares)*. (December 17, 2020). Retrieved from: https://www.valleyair.org/Board_meetings/GB/agenda_minutes/Agenda/2020/December/final/12.pdf

District Rule	Contingency Options	Technological and Economic Feasibility	Trigger Feasibility
		<p>would be less cost effective than the previous rule amendment. Notably, the most recent amendments to these rules required over 3 years of analysis and public engagement.</p> <p>Additionally, operations are still in the process of complying with the recent rule amendments, and imposing more stringent requirements on these facilities at this time would be infeasible. Rule 4311 meets or exceeds BACM requirements for this source category based upon evaluation of applicable federal regulations, state standards, and other air districts' rules. Therefore, the District concludes that this control measure is not an appropriate contingency measure because the most stringent feasible controls are already in place, and a contingency trigger is incompatible with the technologies involved in reducing emissions from this category.</p>	

G.3.4.5 Industrial Processes

Table G-19 Industrial Processes Inventory Contributions

MSC	SUB CATEGORY	PM2.5 (tpd)	NOx (tpd)
410	CHEMICAL	0.33	0.34
420	FOOD AND AGRICULTURE	0.77	0.00
430	MINERAL PROCESSES	1.08	0.21
440	METAL PROCESSES	0.02	0.00
450	WOOD AND PAPER	0.20	0.00
460	GLASS AND RELATED PRODUCTS	0.07	1.75
470	ELECTRONICS	0.00	0.00
499	OTHER (INDUSTRIAL PROCESSES)	0.07	0.01
	Total	2.54	2.30

This category includes dryers, dehydrators, ovens, glass melting furnaces, chemical storage tanks, wine fermentation tanks, resin, polypropylene, polystyrene, polyethylene manufacturing, inks and coatings manufacturing. These processes and units emit NOx and PM2.5 and are located at glass plants, agricultural and chemical distributors, operations that use fiberglass to manufacture products, hot mix asphalt batch plants, food manufacturing operations, agricultural drying operations, container manufacturing operations, and wine and brandy aging operations. These processes and units have

significant variability in technology, size, use and age of equipment, as well as variability in potential controls for various pollutants.

The District has evaluated opportunities for contingency measures within the industrial processes category and did not identify a feasible measure. Notably, the District has recently amended a number of rules within this category to incorporate more stringent regulations that go beyond state and federal regulations. The District’s analysis is provided below:

District Rule	Contingency Options	Technological and Economic Feasibility	Trigger Feasibility
Rule 4204 (Cotton Gins)	Require use of additional or alternative control technologies beyond existing stringent controls.	<p>No; As stated in Appendix C of the District’s <i>2024 PM2.5 Plan</i>, the District did not find additional feasible emission reduction opportunities from baghouse filters and 1D-3D cyclones with expansion chambers. Baghouse filters are unable to effectively control cotton fibers at the high air velocities and potentially high humidity needed at these facilities. 1D-3D cyclones with expansion chambers were found to be ineffective against the small particle sizes of PM2.5. Therefore, the most effective controls are currently in place.</p> <p>Additionally, the District considered mechanical conveyance for the main trash handling system as a potential opportunity to reduce emissions, however it has only been demonstrated as feasible for newly constructed or rebuilt cotton gins. Operators that have installed a mechanical conveyance system for their cotton gin have had to build a lower floor, below the main level containing the major cotton gin equipment, to house the mechanical conveyors. Therefore, as confirmed by equipment manufacturers, it is not technologically feasible to retrofit existing cotton gins with mechanical conveyance systems to replace existing trash handling equipment.</p> <p>Rule 4204 meets or exceeds BACM requirements for this source category based upon evaluation of applicable federal regulations, state standards, and other air districts’ rules. Therefore, the District concludes that this control measure is not an appropriate contingency measure because the most stringent feasible controls are already in place, and a contingency trigger is incompatible with</p>	<p>No; Any new regulation would need approximately two years (or more) of rule development to allow for a robust public process with all affected industries, stakeholders, and public. Operations would need long lead time to design, plan, obtain operating permits, and install control technology. Lead time required would not conform with the required trigger timeline. It also would be infeasible to implement new requirements within 60 days and achieve reductions within one to two years.</p>

District Rule	Contingency Options	Technological and Economic Feasibility	Trigger Feasibility
Rule 4354 (Glass Melting Furnaces)	Require use of additional or alternative control technologies beyond existing stringent controls.	<p>the technologies involved in reducing emissions from this category.</p> <p>No; As stated in Appendix C of the 2021 Rule 4354 Staff Report, the District reviewed alternative control technologies, including, but not limited to, oxy-fuel fired furnaces and natural gas furnaces equipped with a SCR, and found no additional feasible control technologies for this source category.³¹ Alternative control technologies, require substantial capital, operation, and maintenance costs associated with implementation. In addition, significant amount of space is also required for certain types of controls, making implementation of these technologies infeasible. Capital costs are estimated to range from \$2,123,053 to \$28,307,370 while annual operation and maintenance costs range from \$595,088 to \$3,676,829.</p> <p>Additionally, as a comparison, EPA recently finalized their interstate transport FIP which included new national emissions limits that are significantly higher (less stringent) than the District’s rule limits.</p> <p>Rule 4354 meets or exceeds BACM requirements for this source category based upon evaluation of applicable federal regulations, state standards, and other air districts’ rules. Therefore, the District concludes that this control measure is not an appropriate contingency measure because the most stringent feasible controls are already in place, and a contingency trigger is incompatible with the technologies involved in reducing emissions from this category.</p>	<p>No; Any new regulation would need approximately two years (or more) of rule development to allow for a robust public process with all affected industries, stakeholders, and public. Operations would need long lead time to design, plan, obtain operating permits, and install control technology. Lead time required would not conform with the required trigger timeline. It also would be infeasible to implement new requirements within 60 days and achieve reductions within one to two years. Additionally, operations are currently investing in control technologies to meet recently amended rule limits.</p>
Rule 8021 (Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities)	This Rule is part of the Regulation VIII (Fugitive PM10 Prohibitions) series of Rules. The District identified one opportunity for Open Areas in Rule 8051, as	The District has evaluated all potential requirements achieved in practice in other areas or included in other state implementation plans. As demonstrated in Appendix C of the <i>2024 PM2.5 Plan</i> , Regulation VIII currently has in place the most stringent measures feasible to implement in the Valley and therefore meets or exceeds RACM, BACM, and MSM requirements for this source category.	-

³¹ SJVAPCD. *Adopt Proposed Amendments to Rule 4354 (Glass Melting Furnaces)*. (December 16, 2021). Retrieved from: https://www.valleyair.org/Board_meetings/GB/agenda_minutes/Agenda/2021/December/final/11.pdf

District Rule	Contingency Options	Technological and Economic Feasibility	Trigger Feasibility
	discussed in Section G.3.3.2 above.		
Rule 8031 (Bulk Materials)	This Rule is part of the Regulation VIII (Fugitive PM10 Prohibitions) series of Rules. The District identified one opportunity for Open Areas in Rule 8051, as discussed in Section G.3.3.2 above.	The District has evaluated all potential requirements achieved in practice in other areas or included in other state implementation plans. As demonstrated in Appendix C of the <i>2024 PM2.5 Plan</i> , Regulation VIII currently has in place the most stringent measures feasible to implement in the Valley and therefore meets or exceeds RACM, BACM, and MSM requirements for this source category.	-
Almond Harvesting	Refer to the District's analysis in the <i>PM2.5 Contingency Measure SIP Revision</i> for Dust Emissions from Almond Harvesting.	<p>The District concludes that this source category is not an appropriate contingency measure due to the following reasons:</p> <ul style="list-style-type: none"> • There is a significant amount of time manufacturers need to build low-dust nut harvesters, with a minimum 1 year required lead time, to deliver one low-dust nut harvester • Supply chain issues within the industry • Manufacturers will not be able to manufacture a sufficient amount of harvesters within the implementation time period required under the contingency guidance by EPA • More work is needed to better understand the emissions profile and more research and collaboration must be undertaken with USDA-NRCS and agricultural stakeholders 	No; Any new regulation would need approximately two years (or more) of rule development to allow for a robust public process with all affected industries, stakeholders, and public. Operations would need long lead time to design, plan, obtain operating permits, and install control technology. Lead time required would not conform with the required trigger timeline. It also would be infeasible to implement new requirements within 60 days and achieve reductions within one to two years.

G.3.4.6 Solvent Evaporation

This category includes consumer products, architectural coatings and related process solvents, pesticides/fertilizers, asphalt paving and roofing. Most rules in this category apply to products that emit VOCs and can be found in a multitude of consumer products that are packaged in aerosol containers, asphalt paving operations, residential and commercial developments and remodeling locations. CEPAM reports zero PM2.5 and NOx emissions in this category and therefore, a contingency measure is not applicable for this source category. Additionally, in EPA's *PM2.5 Contingency TSD*, EPA did not identify any control measure for further consideration in the Solvent Evaporation Category for the San Joaquin Valley.

G.3.4.7 Miscellaneous Processes

Table G-20 Miscellaneous Processes Inventory Contributions

MSC	SUB CATEGORY	PM2.5 (tpd)	NOx (tpd)
610	RESIDENTIAL FUEL COMBUSTION	3.01	4.47
620	FARMING OPERATIONS	12.72	0.00
630	CONSTRUCTION AND DEMOLITION	2.84	0.00
640	PAVED ROAD DUST	5.55	0.00
645	UNPAVED ROAD DUST	3.67	0.00
650	FUGITIVE WINDBLOWN DUST	7.08	0.00
660	FIRES	0.21	0.04
670	MANAGED BURNING AND DISPOSAL	5.95	1.79
690	COOKING	2.59	0.00
699	OTHER (MISCELLANEOUS PROCESSES)	0.00	0.00
	Total	43.62	6.30

This category includes a number of subcategories, such as residential fuel combustion (space heating, water heating, cooking, and other appliances, such as clothes dryers, barbecues, and water heaters used for pools, spas and hot tubs). Residential fuel combustion also includes wood-burning heaters (e.g., woodstoves, pellet stoves, and wood-burning fireplace inserts). Farming Operations includes various animal specific feedlot operations. Fires includes emissions from automobile fires and structure fires. Managed burning and disposal includes various agricultural burning, forest management, and non-agricultural open burning. Cooking mostly includes emissions from commercial charbroiling, deep fat frying, and general cooking.

The District analyzed contingency measure opportunities for rules within the miscellaneous processes category and did not identify a feasible measure. Notably, CARB plans to implement a zero-NOx regulation for both residential space heating and residential water heating, thus leaving no opportunities for a contingency measure. In addition, the District has committed to phase out ag burning which also eliminates open burning as a contingency option. All other emission sources were found to be infeasible and the analysis is provided below:

District Rule	Contingency Options	Technological and Economic Feasibility	Trigger Feasibility
Rule 4103 (Open Burning)	None; The District has already committed to phase out ag burning by January 1, 2025. ³²	-	-
Rule 4106 (Prescribed Burns)	Require mechanical removal, air curtain burners, and forest-specific biomass projects.	<p>No; As stated in Appendix C of the <i>2024 PM2.5 Plan</i>, alternative control methods are not feasible.</p> <p>The District reanalyzed various alternative control methods such as mechanical removal, air curtain burners, and forest-specific biomass projects, which are infeasible due to the vast number of acres that require management and lack of access to remote areas in the forest. Due to recent increase in wildfires, the District continues to support reductions of forest fire fuel through prescribed burns. Therefore, this source category is not suitable for a contingency measure.</p> <p>Rule 4106 meets or exceeds BACM requirements for this source category based upon evaluation of applicable federal regulations, state standards, and other air districts' rules. Therefore, the District concludes that this control measure is not an appropriate contingency measure because the most stringent feasible controls are already in place, and a contingency trigger is incompatible with the technologies involved in reducing emissions from this category.</p>	<p>No; Any new regulation would need approximately two years (or more) of rule development to allow for a robust public process with all affected industries, stakeholders, and public. Agencies would need long lead time to design, plan, and deploy technologies. In addition, land agencies also need to ensure that they have appropriate budgets in place, which could take significant time. The lead time required would not conform with the required trigger timeline. It also would be infeasible to implement new requirements within 60 days and achieve reductions within one to two years.</p>
Rule 4550 (Conservation Management Practices)	None; this measure is an "on-the-way" measure. The District has committed to evaluate emission reduction opportunities for this source category in the <i>2024 PM2.5 Plan</i> , including opportunities to reduce emissions from fallowed land and promote the selection of	-	-

³² SJVAPCD. *Final Supplemental Report and Recommendations on Agricultural Burning*. June 17, 2021. Retrieved from: <https://ww2.valleyair.org/media/aldmsd0b/final-supplemental-report-and-recommendations-on-agricultural-burning.pdf>

District Rule	Contingency Options	Technological and Economic Feasibility	Trigger Feasibility
	<p>conservation tillage as a CMP, in coordination with agricultural stakeholders, NRCS, and the District's AgTech committee. The District is currently conducting a robust rule development process and there is a significant amount of work needed to ensure that impacts of the Sustainable Groundwater Management Act (SGMA) are understood along with ensuring that measures are technologically feasible and cost-effective; therefore, this source category is not suitable for a contingency measure.</p>		
<p>Rule 4692 (Commercial Charbroiling)</p>	<p>Refer to the District's analysis in the <i>PM2.5 Contingency Measure SIP Revision</i> for Commercial Charbroiling.</p>	<p>The District concludes that this source category is not an appropriate contingency measure due to the following reasons:</p> <ul style="list-style-type: none"> • Installation cost of controls can be prohibitively expensive • Retrofitting controls on existing restaurants can be prohibitively expensive and technologically infeasible • Maintenance of controls can be prohibitively expensive • Maintenance requires specially trained staff that may not be accessible to all restaurants • Regenerative filters lack UL 8782 certification • Limited areas that have regulations in place do not enforce their rules or include exemptions <p>Rule 4692 meets or exceeds BACM requirements for this source category based upon evaluation of applicable federal regulations, state standards, and other air districts' rules. Therefore, the</p>	<p>No; Any new regulation would need approximately two years (or more) of rule development to allow for a robust public process with all affected industries, stakeholders, and public. Operations would need long lead time to design, plan, obtain operating permits, and install control technology. Lead time required would not conform with the required trigger timeline. It also would be infeasible to implement new requirements within 60 days and achieve reductions within one to two years.</p>

District Rule	Contingency Options	Technological and Economic Feasibility	Trigger Feasibility
		District concludes that this control measure is not an appropriate contingency measure because the most stringent feasible controls are already in place, and a contingency trigger is incompatible with the technologies involved in reducing emissions from this category.	
Rule 4902 (Residential Water Heaters)	Refer to the District's analysis above in Section G.3.4.1 for Fuel Combustion.		-
Rule 4905 (Natural Gas – Fired, Fan Type Residential Central Furnace)	Refer to the District's analysis above in Section G.3.4.1 for Fuel Combustion.		-
Rule 8071 (Unpaved Vehicle Traffic)	This Rule is part of the Regulation VIII (Fugitive PM10 Prohibitions) series of Rules. The District identified one opportunity for Open Areas in Rule 8051, as discussed in Section G.3.3.2 above.	The District has evaluated all potential requirements achieved in practice in other areas or included in other state implementation plans. As demonstrated in Appendix C of the <i>2024 PM2.5 Plan</i> , Regulation VIII currently has in place the most stringent measures feasible to implement in the Valley and therefore meets or exceeds RACM, BACM, and MSM requirements for this source category.	-
Rule 8081 (Ag Sources)	This Rule is part of the Regulation VIII (Fugitive PM10 Prohibitions) series of Rules. The District identified one opportunity for Open Areas in Rule 8051, as discussed in Section G.3.3.2 above.	The District has evaluated all potential requirements achieved in practice in other areas or included in other state implementation plans. As demonstrated in Appendix C of the <i>2024 PM2.5 Plan</i> , Regulation VIII currently has in place the most stringent measures feasible to implement in the Valley and therefore meets or exceeds RACM, BACM, and MSM requirements for this source category.	-

G.3.4.8 On-Road Mobile Vehicles

Table G-21 On-Road Mobile Vehicles Inventory Contributions

MSC	SUB CATEGORY	PM2.5 (tpd)	NOx (tpd)
710	LIGHT DUTY PASSENGER (LDA)	0.27	2.24
722	LIGHT DUTY TRUCKS - 1 (LDT1)	0.02	0.44
723	LIGHT DUTY TRUCKS - 2 (LDT2)	0.14	1.72
724	MEDIUM DUTY TRUCKS (MDV)	0.10	1.77
725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	0.15	2.68
726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	0.05	0.82
727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	0.04	1.46
728	HEAVY HEAVY DUTY TRUCKS (HHDT)	0.54	10.16
750	MOTORCYCLES (MCY)	0.00	0.20
775	BUSES	0.01	0.42
780	MOTOR HOMES (MH)	0.00	0.13
	Total	1.32	22.04

CARB analyzed opportunities to implement a contingency measure for on-road motor vehicles and identified the California Smog Check Contingency Measure. CARB did not identify any other feasible contingency measures. Please see CARB's discussion in their [California Smog Check Contingency Measure](#) document.

G.3.4.9 Other Mobile Sources

Table G-22 Other Mobile Sources Inventory Contributions

MSC	SUB CATEGORY	PM2.5 (tpd)	NOx (tpd)
810	AIRCRAFT	1.69	4.54
820	TRAINS	0.33	16.50
833	OCEAN GOING VESSELS	0.00	0.05
835	COMMERCIAL HARBOR CRAFT	0.00	0.03
840	RECREATIONAL BOATS	0.37	2.36
850	OFF-ROAD RECREATIONAL VEHICLES	0.02	0.14
860	OFF-ROAD EQUIPMENT	0.46	10.62
861	OFF-ROAD EQUIPMENT (PERP)	0.05	2.18
870	FARM EQUIPMENT	0.94	17.27
890	FUEL STORAGE AND HANDLING	0.00	0.00
	Total	3.87	53.69

CARB analyzed opportunities to implement a contingency measure for on-road motor vehicles and identified the California Smog Check Contingency Measure. CARB did not identify any other feasible contingency measures. Please see CARB's discussion in their [California Smog Check Contingency Measure](#) document.

G.3.4.10 Opportunities for Transportation Control Measures

In addition to CARB's mobile source control measures, vehicular emissions can be reduced through implementation of Transportation Control Measures (TCMs), which are strategies that reduce transportation-related air pollution and fuel use by reducing

vehicle miles traveled and improving roadway operations.³³ Vehicle use can be reduced through less-polluting transportation alternatives, such as public transit, strategies that decrease the need for vehicle trips, such as telecommuting, and through strategies to increase efficiency through management of the transportation system.

CAA section 108(f) lists 16 types of TCMs, including:

- Programs for improved public transit;
- Restriction of certain roads or lanes to, or construction of such roads or lanes for use by, passenger buses or high occupancy vehicles;
- Employer-based transportation management plans, including incentives;
- Trip-reduction ordinances;
- Traffic flow improvement projects that achieve emission reductions;
- Fringe and transportation corridor parking facilities serving multiple occupancy vehicle programs or transit service;
- Programs to limit or restrict vehicle use in downtown areas or other areas of emission concentration particularly during period of peak use;
- Programs for the provision of all forms of high-occupancy, shared-ride services;
- Programs to limit portions of road surfaces or certain sections of the metropolitan area to the use of non-motorized vehicles or pedestrian use, both as to time and place;
- Programs for secure bicycle storage facilities and other facilities, including bicycle lanes, for the convenience and protection of bicyclists, in both public and private areas;
- Programs to control extended idling of vehicles;
- Programs to reduce motor vehicle emissions, consistent with title II of the CAA, which are caused by extreme cold start conditions;
- Employer-sponsored programs to permit flexible work schedules;
- Programs and ordinances to facilities non-automotive travel, provision and utilization of mass transit, and to generally reduce the need for single-occupant vehicle travel, as part of the transportation planning and development efforts of a locality, including programs and ordinances applicable to new shopping centers, special events, and other centers of vehicle activity;
- Programs for new construction and major reconstructions of paths, tracks or areas solely for the use by pedestrian or other non-motorized means of transportation when economically feasible and in the public interest; and
- Program to encourage the voluntary removal from use and the marketplace of pre-1980 model year light duty vehicles and pre-1980 model light duty trucks.

In the San Joaquin Valley, county planning and transportation agencies, transit districts, and local jurisdictions are responsible for identifying, adopting and implementing most types of TCMs. There are eight county-based planning and transportation agencies in the San Joaquin Valley, which include the metropolitan planning organizations (MPOs)

³³ EPA, "Transportation Control Measures - Information Document for Developing and Implementing Emissions Reductions Programs," EPA-430-R-09-040, March 2011.

for federal transportation planning purposes for their respective counties. The EPA's transportation conformity regulations require that the MPOs show timely implementation of all TCMs committed to in the applicable SIP, and the San Joaquin Valley MPOs are responsible for making the necessary demonstration of timely implementation when they determine conformity.

The Valley MPOs have identified and adopted a number of TCMs over the years through the District's attainment plans, including ongoing work with local transit agencies and local jurisdictions. The District's *2016 Ozone Plan* includes a list of TCMs implemented in the Valley to meet CAA requirements and to reduce vehicular emissions in support of the Valley's attainment plans for ozone and PM_{2.5}.³⁴ Through this effort, essentially all of the types of TCMs listed in CAA section 108(f) have been implemented in part or parts of the San Joaquin Valley. More recently, the District's *2022 Ozone Plan* identifies and includes new TCMs for implementation in the coming years. The new TCMs include new projects that facilitate and encourage bicycle and pedestrian travel modes in support of transit-oriented development, that provide for eco-driving educational programs, that promote transit service, and that promote rideshare and carpool programs.

In addition, in 2009, the District adopted District Rule 9410 (Employer Based Trip Reduction) to reduce VMT from private vehicles used by employees to commute to and from their worksites to reduce emissions of NO_x, VOC and PM. EPA approved District Rule 9410 on February 9, 2016.³⁵ The eTRIP Rule requires the Valley's larger employers, representing a wide range of locales and sectors, to select and implement workplace measures that make it easier for their employees to choose ridesharing and alternative transportation. Because of the diversity of employers covered by the eTRIP Rule, the rule was built with a flexible, menu-based approach. Employers choose from a list of measures, each contributing to a workplace that encourages employees to reduce their dependence on single-occupancy vehicles. Each eTRIP measure has a point value, and employer eTRIPs must reach specified point targets for each strategy over a phased-in compliance schedule (2010 – 2015). The District has continually provided employer assistance through training, guidance materials, promotional information, and online reporting options.

TCMs are not feasible contingency measures because TCMs have to be developed through the area's transportation planning process, which can take a significant amount of time and are funded to large degree by the Federal Highway Administration and Federal Transit Administration based on transportation improvement programs developed by the MPOs in the area. Therefore, given the time it would take to advance these projects through the planning and funding processes, TCMs are not feasible for a contingency measure.

³⁴ 2016 Ozone Plan, Attachment D ("Adopted Transportation Control Measures") to Appendix D ("Mobile Source Control Strategy"), Tables D-10 - D17. The EPA approved different portions of the 2016 Ozone Plan at different times - see 83 FR 41006 (August 17, 2018), 84 FR 3302 (February 12, 2019), and 84 FR 11198 (March 25, 2019).

³⁵ EPA. *Approval and Promulgation of Implementation Plans; California; San Joaquin Valley Unified Air Pollution Control District; Employer Based Trip Reduction Programs; Final Rule*. 81 Fed. Reg. 26. Pp. 6761-6763. (2016, February 9). Retrieved from: <https://www.govinfo.gov/content/pkg/FR-2016-02-09/pdf/2016-02411.pdf>

G.3.5 Contingency Emission Reductions

The total emission reductions achieved from both the District's adopted contingency measures within Rule 4901, Rule 8051, and CARB's Smog Check Measure are estimated at 0.70 tpd of PM_{2.5} and 0.19 tpd of NO_x. The District and CARB's contingency strategy meets the OYWP threshold for PM_{2.5}.

Table G-23 Reduction Targets and Selected Measures Emission Reductions

PM _{2.5} Standard	PM _{2.5} (tpd)		NO _x (tpd)	
	OYWP Approach	Selected Measures	OYWP Approach	Selected Measures
2012 Annual	0.70	0.70	3.94	0.19

The District examined the emissions that are under either District or CARB jurisdictional control, and found that federally regulated sources make up a significant portion of the Valley's emissions inventory. The District's proposed contingency commitments achieve significant emission reductions that fully address the direct PM_{2.5} OYWP targets, highlighting the need to achieve continued fair-share emissions reductions from mobile sources, particularly with respect to federally-regulated mobile sources.

Table G-24 Reduction Targets and Selected Measures Emission Reductions for Sources under District and CARB Regulatory Jurisdiction

PM _{2.5} Standard	PM _{2.5} (tpd)			NO _x (tpd)				
	OYWP Approach (A)	Selected Measures (B)	Balance (C: B-A)	OYWP Approach (D)	Selected Measures (E)	Initial Balance (F: E-D)	PM _{2.5} Surplus to NO _x (6:1 Plan ratio) (G: C*6)	Remaining Balance (F+G)
2012 Annual	0.65	0.70	0.05	3.44	0.19	(3.25)	0.30	(2.95)

G.3.6 Federal Contingency Measure Opportunities

The District has previously submitted petitions to the federal government requesting that they reduce their fair share of emissions in an equitable manner through more stringent national standards for light-duty trucks, medium-duty trucks, heavy-duty trucks and locomotives.³⁶ Similarly, in April 2017, CARB petitioned EPA to adopt more stringent emission standards for locomotives, in order to provide critical NO_x and PM_{2.5} reductions specifically for disadvantaged communities surrounding railyards.³⁷ CARB asked EPA to update standards, to take effect for remanufactured locomotives in 2023 and for newly built locomotives in 2025. In response to the District and similar petitions submitted by CARB and SCAQMD, on January 24, 2023, EPA finalized a rule to reduce

³⁶ SJVAPCD. *Petition Requesting that EPA Adopt New National Standards for On-Road Heavy-Duty Trucks and Locomotives under Federal Jurisdiction*. Retrieved from:

https://www.epa.gov/sites/default/files/2016-11/documents/san_joaquin_valley_petition_for_hd_and_locomotive.pdf

³⁷ CARB. *Petition for Rulemaking: Seeking the Amendment of the Locomotive Emission Standards*. April 13, 2017. Retrieved from: https://ww2.arb.ca.gov/sites/default/files/2020-07/final_locomotive_petition_and_cover_letter_4_3_17.pdf

emissions from new heavy-duty trucks nationwide.³⁸ Additionally on November 9, 2022, EPA committed to evaluating and identifying potential regulatory actions to address emissions from locomotives.³⁹

On November 8, 2023, EPA finalized changes to locomotive preemption regulations,⁴⁰ preserving the ability of California to adopt and enforce certain emission standards regulating non-new locomotives and engines if EPA has authorized such standards, and allowing other states to adopt those same California standards. EPA must continue to work towards addressing harmful emissions from new locomotives and new locomotive engines, which remain exclusively under federal authority. Most recently, on March 20, 2024, EPA announced a final rule for multi-pollutant emission standards for light-duty and medium-duty vehicles, to be phased in over model years 2027 through 2032.⁴¹ Soon after, on March 29, 2024, EPA announced a final rule for greenhouse gas emissions standards for heavy-duty vehicles, also phased in over model years 2027 through 2032.⁴² The District closely followed and participated in these rulemaking processes to advocate for the Valley's need for emissions reductions from this sector, and will continue to do so for future actions.

The District continues to participate in EPA's regulatory processes to communicate the Valley's need for emissions reductions from these sectors. While the above strategies would reduce emissions in the long-term, they do not assist the District and CARB in addressing needed contingency measures for the following reasons:

- Emissions reductions from these measures will be realized in the long-term over an extended period, and not in the rapid, trigger-based, and short-term fashion required for contingency measures.
- EPA's recently finalized mobile source emissions standards are not designed to serve as contingency measures. Without meeting all of the requirements for contingency measures (held in reserve, triggered upon various CAA findings, etc.), federal mobile source regulatory measures recently adopted and currently under development will not assist in addressing contingency measure requirements.

³⁸ EPA. *Control of Air Pollution from New Motor Vehicles: Heavy Duty Engine and Vehicle Standards*; Final Rule. 88 Fed. Reg. 15, pp. 4296–4718. (Jan. 24, 2023). Retrieved from: <https://www.govinfo.gov/content/pkg/FR-2023-01-24/pdf/2022-27957.pdf>

³⁹ EPA. *Regulations for Emissions from Vehicles and Engines – Petitions to Address Harmful Emissions from Locomotives*. Retrieved from: <https://www.epa.gov/regulations-emissions-vehicles-and-engines/petitions-address-harmful-emissions-locomotives>

⁴⁰ EPA. *Locomotives and Locomotive Engines; Preemption of State and Local Regulations*. 88 Fed. Reg. 215, pp. 77004-77009. (Nov. 8, 2023). Retrieved from: <https://www.govinfo.gov/content/pkg/FR-2023-11-08/pdf/2023-24513.pdf>

⁴¹ EPA. *Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles; Final Rule*. 89 Fed. Reg. 76, pp. 27842-28215. (April 18, 2024). Retrieved from: <https://www.govinfo.gov/content/pkg/FR-2024-04-18/pdf/2024-06214.pdf>

⁴² EPA. *Greenhouse Gas Emissions Standards for Heavy-Duty Vehicles—Phase 3; Final Rule*. 89 Fed. Reg. 78, pp. 29440-29831. (April 22, 2024). Retrieved from: <https://www.govinfo.gov/content/pkg/FR-2024-04-22/pdf/2024-06809.pdf>

Significant State and Federal Funding Opportunities

Through strong collaboration with state agencies and residents, businesses, public agencies, community-based organizations, and other stakeholders, the San Joaquin Valley has served as a center of innovation for many of the state's recent transformative clean air, low carbon strategies. As a related important opportunity that could play a major role in assisting the San Joaquin Valley and other Extreme ozone and Serious PM_{2.5} nonattainment areas, recent state and federal budget and funding actions have created unprecedented opportunities for investing in transformational clean technology changes across the mobile source sector. At the federal level, recent authorizations under the Infrastructure Investment Jobs Act and Inflation Reduction Act (IRA) provide wide-ranging funding for a variety of important clean technology and infrastructure programs. Notably, IRA includes an estimated \$369 billion in funding for climate and energy-related programs, and over \$20 billion in new funding for sustainable agriculture and programs of importance to the San Joaquin Valley. Given the Valley's air quality challenges, EPA and other federal agencies must prioritize these new funding opportunities for Serious and Extreme nonattainment areas, and provide opportunities for incentive-based contingency measures, taking into consideration that areas such as the Valley have limited additional opportunities for regulatory strategies given the level of stringency of District rules.

G.3.7 Conclusion

As demonstrated above, the District and CARB are currently implementing the most stringent measures feasible for all PM_{2.5} and NO_x rules, and no opportunities exist for additional contingency measures beyond the adopted measure in District Rule 4901, Rule 8051, and CARB's Smog Check Measure. This supports a reasoned justification for achieving less than OYW_P of NO_x.

Both the District and CARB have decades of experience developing stringent regulations and, as a result, have robust control programs which limit the ability to identify potential contingency measures that achieve surplus reductions. At this time, CARB and the District are including zero-emission and near-zero emission components in most of their regulations, both those already adopted and those that are in development. Beyond the wide array of sources the District and CARB have been regulating over the last few decades, and especially considering those they are driving to zero-emission, there are few sources of emissions left for the District and CARB to implement additional controls upon under its authorities. The few source categories that do not have control measures are primarily-federally and internationally regulated.

To fulfill contingency measure requirements, the District has amended Rule 4901 and Rule 8051 as part of the *PM_{2.5} Contingency Measure SIP Revision*, and CARB has included contingency provisions as part of the *California Smog Check Contingency Measure State Implementation Plan Revision*. EPA recently proposed approval and found that the District and CARB implemented all feasible contingency measure opportunities. As shown above, the District and CARB are implementing the most

stringent measures available and have analyzed all emission sources able to satisfy contingency requirements as outlined in EPA's *Draft Guidance*.

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