

Chapter 6

Incremental Progress



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Chapter 6: Incremental Progress

Under the federal Clean Air Act (CAA) and consistent with U.S. Environmental Protection Agency (EPA) guidance for implementation of the 70 parts per billion (ppb) 8-hour ozone standard, attainment plans are required to show continued reasonable further progress (RFP) towards attainment of the National Ambient Air Quality Standards (NAAQS).^{1,2} This ensures that the public will experience improvements in air quality now and in the years to come as the projected attainment date of 2037 draws nearer. Additionally, pursuant to the federal CAA and EPA guidance, attainment plans must include contingency measures that provide for additional emission reductions if the area fails to attain or meet a milestone for RFP or attainment.^{3,4}

This Chapter shows how the District will make incremental progress towards attainment of the 2015 8-hour ozone standard, and details the complexity and strategy behind contingency measures for the Valley.

6.1 REASONABLE FURTHER PROGRESS (RFP)

[This section provided by California Air Resources Board]

Sections 172(c)(2) and 182(b)(1) of the Clean Air Act (Act) require ozone attainment plans to provide for Reasonable Further Progress (RFP). RFP is defined in section 171(1) of the Act as "...such annual incremental reductions in emissions of the relevant air pollutant as are required...for the purpose of ensuring attainment of the applicable national ambient air quality standard by the applicable date." This requirement to demonstrate steady progress in emission reductions between the baseline year and attainment date ensures that areas will begin lowering air pollution in a timely manner and not delay implementation of control programs until immediately before the attainment deadline.

There are two separate RFP requirements for ozone nonattainment areas depending upon their classification. For ozone nonattainment areas classified as Moderate or above, there is a one-time requirement for a 15 percent reduction in reactive organic gases (ROG) emissions over the first six years of the planning period (section 182(b)(1)). For ozone nonattainment areas classified as Serious or higher, section 182(c)(2)(B) of the Act has an additional requirement to demonstrate 3 percent per year cumulative reduction of ozone precursors averaged over each consecutive three-year period until attainment.

¹ CAA §172(c)(2)

² EPA. *Implementation of the 2015 National Ambient Air Quality Standards for Ozone: Nonattainment Area State Implementation Plan Requirements; Final Rule*. 83 Fed. Reg. 234. P. 63021. (2018, December 6), (to be codified at 40 CFR Part 51.) <https://www.govinfo.gov/content/pkg/FR-2018-12-06/pdf/2018-25424.pdf>

³ CAA §172(c)(9) and §182(c)(9)

⁴ EPA. *Implementation of the 2015 National Ambient Air Quality Standards for Ozone: Nonattainment Area State Implementation Plan Requirements; Final Rule*. 83 Fed. Reg. 234. P. 63026. (2018, December 6), (to be codified at 40 CFR Part 51.) <https://www.govinfo.gov/content/pkg/FR-2018-12-06/pdf/2018-25424.pdf>

In 1997, U.S. EPA approved a 15 percent ROG-only rate of progress demonstration for the San Joaquin Valley for the 1-hour ozone standard covering the entire nonattainment area for the 70 ppb 8-hour ozone standard.⁵ As such, the requirement under section 182(b)(1) of the Act to demonstrate a reduction in ROG in the first 6 years of the attainment planning period has been met for the San Joaquin Valley.

For the 182(c)(2)(B) RFP requirement for Serious and higher areas, U.S. EPA guidance allows for oxides of nitrogen (NOx) substitution to demonstrate the annual 3 percent reductions of ozone precursors if it can be demonstrated that substitution of NOx emission reductions (for ROG reductions) yields equivalent ozone reductions.⁶ Additional U.S. EPA guidance states that certain conditions are needed to use NOx substitution in an RFP demonstration.⁷ First, an equivalency demonstration must show that cumulative RFP emission reductions are consistent with the NOx and ROG emission reductions determined in the ozone attainment demonstration. Second, the reductions in NOx and ROG emissions should be consistent with the continuous RFP emission reduction requirement. The guidance states that “Any combination of VOC (ROG) and NOx emission reductions which totals 3 percent per year and meet other SIP consistency requirements described in this document are allowed.” Photochemical modeling included in the attainment demonstration shows that NOx reductions are critical for the Valley to reach attainment and yields more ozone reductions compared to the same percentage of ROG reductions (see Appendix F for more information).

Table 6-1 demonstrates that the cumulative ROG and NOx emission reductions in the San Joaquin Valley meets the RFP targets in the milestone years of 2023, 2026, 2029, 2032, and 2035 in addition to the attainment year, 2037. In accordance with U.S. EPA guidance for implementation of the 70 ppb 8-hour ozone standard attainment plans, *Implementation of the 2015 National Ambient Air Quality Standards for Ozone: Nonattainment Area State Implementation Plan Requirements*, the emissions reductions in the RFP demonstration occur inside the nonattainment area, are achieved through existing control regulations, and start from a baseline year of 2017.⁸

The San Joaquin Valley 70 ppb 8-hour ozone RFP demonstration is developed using CARB’s California Emissions Projection Analysis Model (CEPAM), 2019 Emission Projections, Version 1.04 (see Appendix B for more information on the planning emissions inventory). Emissions Reductions Credits (ERCs) banked prior to the RFP baseline year of 2017 must be accounted for in RFP demonstrations for the 70 ppb 8-hour ozone standard. For San Joaquin Valley, a majority of the pre-baseline year banked ERCs are accounted for in the growth projections in the CEPAM inventory; those that are above the amount projected in the CEPAM inventory are accounted for with an adjustment to the baseline emissions in the RFP demonstration (see Appendix I for more information on ERCs). Further, in order to demonstrate consistency between the RFP demonstration and the motor vehicle emissions budgets (MVEB), a line item

⁵ 62 FR 1150 <https://www.gpo.gov/fdsys/pkg/FR-1997-01-08/pdf/97-144.pdf>

⁶ [P1001E8Z.PDF \(epa.gov\)](https://www.epa.gov/p1001e8z.pdf)

⁷ https://www3.epa.gov/ttn/naaqs/aqmguidance/collection/cp2/19931201_oaqps_nox_substitution_guidance.pdf

⁸ 80 FR 12264 <http://www.gpo.gov/fdsys/pkg/FR-2015-03-06/pdf/2015-04012.pdf>

adjustment is made in the RFP demonstration to account for the differences in the on-road mobile source emissions projections in the CEPAM inventory and the total of the MVEBs which are individually rounded up to the nearest tenth of a ton (see Appendix D for more information on the MVEBs).

Table 6-1 RFP demonstration for the San Joaquin Valley 70 ppb ozone standard

Year	2017	2023	2026	2029	2032	2035	2037
ROG Emissions	325.68	305.81	296.77	291.98	290.13	290.00	290.95
Emissions Reduction Credits (ERCs)*		0.00	0.00	0.00	0.00	0.00	0.00
MVEB Rounding Margin		0.34	0.42	0.41	0.22	0.43	0.28
ROG Emissions + ERCs + MVEB Rounding Margin		306.14	297.19	292.40	290.34	290.43	291.23
Required % change since 2017		18%	27%	36%	45%	54%	60%
Target ROG Level		267.06	237.75	208.44	179.12	149.81	130.27
Shortfall (-)/ Surplus (+) in ROG		-39.08	-59.44	-83.96	-111.22	-140.62	-160.95
Shortfall (-)/ Surplus (+) in ROG, %		-12.0%	-18.3%	-25.8%	-34.1%	-43.2%	-49.4%
Year	2017	2023	2026	2029	2032	2035	2037
NOx Emissions	232.39	157.79	125.59	111.33	100.23	92.37	87.28
Emissions Reduction Credits (ERCs)*		2.43	2.43	2.43	2.43	2.43	2.43
MVEB Rounding Margin**		0.30	0.22	0.00	0.00	0.00	0.00
NOx Emissions + ERCs + MVEB Rounding Margin		160.52	128.24	113.76	102.66	94.80	89.71
Change in NOx since 2017		71.86	104.15	118.63	129.73	137.59	142.68
Change in NOx since 2017, %		30.9%	44.8%	51.0%	55.8%	59.2%	61.4%
NOx reductions since 2017 used for ROG substitution in this milestone year, %		12.0%	18.3%	25.8%	34.1%	43.2%	49.4%
NOx reductions since 2017 surplus after meeting ROG substitution needs in this milestone year, %		18.9%	26.6%	25.3%	21.7%	16.0%	12.0%
RFP shortfall (-), if any		0%	0%	0%	0%	0%	0%
RFP Met?		YES	YES	YES	YES	YES	YES

* Adjustment accounts for pre-baseline year ERCs above the amount projected in the CEPAM inventory

** In order to be most conservative, 0.00 values are used when the corresponding MVEB was lower than comparable emissions in CEPAM due to updated adjustment factors used in the MVEB at the direction of U.S. EPA

6.2 CONTINGENCY FOR ATTAINMENT

[This section drafted in collaboration with the California Air Resources Board]

6.2.1 What is a contingency measure?

Contingency measures are required by the CAA to be implemented should an area fail to make reasonable further progress or attain the NAAQS by the required date. Over the last few years, multiple court decisions in the 9th circuit and nation-wide have effectively disallowed the SIP-approved approach which CARB and the districts have historically used to meet contingency measure requirements. CARB and the District continue to strive to meet the requirements, but U.S. EPA has not yet released comprehensive and updated guidance encompassing the full scope of contingency measure requirements, in light of the results of the varying court decisions. Guidance is needed for CARB, the District, and other air agencies across California and the U.S., to ensure that any resources devoted to creating, adopting, and implementing a measure will result in one that meets the requirements and be approved into the SIP.

Additionally, California faces the most difficult air quality challenges in the nation and, accordingly, leads the country with the most stringent air pollution control programs. Historically, U.S. EPA guidance required contingency measures to achieve approximately one year's worth of emission reductions. CARB and the District's control programs are advanced, and primarily-federally regulated sources contribute over half of the emissions. Thus, opportunities for a triggered contingency measure that can be implemented and result in one year's worth of emission reductions in the required time frame are not readily available. Further, if any measure that could achieve this level of emission reductions existed, it would be adopted to improve air quality and support attainment of NAAQS, and would not be withheld for contingency purposes. Even with recent court decisions, U.S. EPA has the opportunity to justify a revised approach for contingency measures recognizing the maturity of control programs or allow states to provide a reasoned justification for achieving less than the required amount. California continues to work towards meeting contingency measure requirements, but U.S. EPA must issue guidance to provide clarity and direction for states to move forward and pursue contingency measures that will meet the requirements.

Currently, EPA requires nonattainment areas to develop contingency measures within their attainment plans that are to be enacted only if the area fails to meet an attainment date or other plan milestones.⁹ This contingency framework creates several regulatory absurdities:

- Early implementation of potential contingency measures improves public health and contributes to progress towards attainment of more stringent NAAQS. Withholding emissions reductions for contingencies slows public health improvements in nonattainment and environmental justice areas. This is counter

⁹ CAA Sections 172(c)(9) and 182(c)(9), 42 U.S.C. 7502(c)(9) and 42 U.S.C. 7511a(c)(9)

to the CAA's stated purposes of "enhancing the quality of the Nation's air resources" and "promoting public health."¹⁰

- Regions that are nonattainment for multiple standards must meet different RFP milestones and attainment deadlines under each NAAQS. In many of these regions (like the Valley), NOx emissions reductions are critical to attaining all ozone and PM2.5 standards, since NOx is a precursor to both pollutants. If a region must withhold emissions reductions to satisfy a contingency measure need for one NAAQS, then that region will hinder its ability to meet milestones and attainment deadlines under more stringent standards.
- Under the CAA, states are not prohibited from adopting controls that are more stringent than the minimum required.¹¹ Implementing a contingency measure *before* it is mandated by federal law is more stringent than withholding implementation to a later date, and therefore should be legally permissible.
- CAA section 182(a)(2)(A) requires nonattainment areas to achieve attainment as "expeditiously as practicable," yet EPA's current contingency measure policy requires regions to withhold emissions reductions.
- There are multiple contingency years in each SIP (as discussed below), and areas like the Valley must identify contingencies for multiple SIPs and NAAQS. An agency may identify a contingency measure that could be triggered in any year there is a contingency need for multiple standards. However, once a contingency measure is triggered and implemented due to an RFP or attainment failure, it can no longer serve as a contingency measure for subsequent contingency years (depending on the amount of emissions reductions the measure achieves). The scarcity of available contingency measures is compounded if an area needs to identify replacement contingency measures in the future.
- The District surveyed over 60 EPA actions on contingencies from 2018 to present. The vast majority were disapprovals, or would be a disapproval post-*Bahr* and *Sierra Club* (further discussed below). The three actions that were final approvals pertained to individual contingency measures for residential wood burning measures. None of the approvals pertained to ozone, and none related to an areas' State Implementation Plan as a whole satisfying the contingency measure requirement. Thus, there are no examples of fully approved contingency measure demonstrations states can rely upon as a model of success. Although regions and states have been advocating for updated contingency guidance for years, such guidance is not available in time for this plan.
- Because the current baseline contingency requirement is practically impossible to satisfy (as discussed further below), the requirement significantly increases regions' risks of sanctions, even where the region otherwise meets all other applicable CAA requirements. CAA sanctions include the loss of transportation funds (billions of dollars and thousands of jobs), loss of local control through Federal Implementation Plans, and permitting barriers on new and modified sources.

¹⁰ CAA section 101, 42 U.S.C. §7401

¹¹ CAA section 116, 42 U.S.C. §7416

Beyond regulatory absurdities, there are a number of practical barriers described further below that render the ability to adopt approvable contingency measures virtually impossible.

6.2.2 Background

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.”¹² Legal interpretations of contingency measures have changed since EPA established the 2015 8-hour ozone standard, and even since EPA established its implementation rule for this standard in 2018.

The CAA specifies that SIPs must provide for contingency measures, defined in section 172(c)(9) as “specific measures to be undertaken if the area fails to make reasonable further progress, or to attain the national primary ambient air quality standard by the attainment date....” The CAA is silent though on the specific level of emission reductions that must flow from contingency measures. In the absence of specific requirements for the amount of emission reductions required, in 1992, U.S. EPA conveyed that “contingency measures should, at a minimum, ensure that an appropriate level of emissions reduction progress continues to be made if attainment of RFP is not achieved and additional planning by the State is needed” (57 Federal Register 13510, 13512 (April 16, 1992)). Further, U.S. EPA ozone guidance states that “contingency measures should represent one year’s worth of progress amounting to reductions of 3 percent of the baseline emissions inventory for the nonattainment area”. U.S. EPA, though, has accepted contingency measures that have equal to or less than a year’s worth of progress when the circumstances fit under “U.S. EPA’s long-standing recommendation that states should consider ‘the potential nature and extent of any attainment shortfall for the area’ and that contingency measures ‘should represent a portion of the actual emissions reductions necessary to bring about attainment in the area.’”¹³

Prior to 2016, U.S. EPA allowed contingency measure requirements to be met via excess emission reductions from ongoing implementation of adopted emission reduction programs, a method that CARB has used for a contingency measure and U.S. EPA has approved in the past. In 2016, in *Bahr v. U.S. Environmental Protection Agency*¹⁴ (*Bahr*), the 9th Circuit Court of Appeals determined U.S. EPA erred in approving a contingency measure that relied on an already-implemented measure for a nonattainment area in Arizona, thereby rejecting EPA’s longstanding interpretation of section 172(c)(9). EPA staff interpreted this decision to mean that contingency measures must include a future action triggered by a failure to attain or failure to make reasonable further progress. This decision was applicable to the states covered by the 9th Circuit Court. In the rest of the country, EPA was still approving contingency

¹² EPA’s 2018 Ozone Implementation Rule, 83 FR 62,998, 63026

¹³ See, e.g. 78 Fed.Reg. 37741, 37750 (Jun. 24, 2013), approval finalized with 78 Fed.Reg. 64402 (Oct. 29, 2013).

¹⁴ *Bahr v. U.S. Environmental Protection Agency*, (9th Cir. 2016) 836 F.3d 1218.

measures using their pre-Bahr stance. In January 2021, in *Sierra Club v. Environmental Protection Agency*¹⁵, the United States Court of Appeals for the D.C. Circuit ruled that already implemented measures do not qualify as contingency measures for the rest of the country (*Sierra Club*).

In response to *Bahr* and as part of the 75 ppb 8-hour ozone SIPs 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 through a trigger action. CARB and the District worked closely with EPA regional staff in developing the contingency measure package that included the triggered Enforcement Contingency Measure, the District triggered measure and emission reductions from implementation of CARB's mobile source emissions program. However, as part of the *San Joaquin Valley 2016 Ozone Plan for 2008 8-hour Ozone Standard* SIP action, EPA wrote in their final approval that the Enforcement Contingency Measures did not satisfy requirements to be approved as a "standalone contingency measure" and approved it only as a "SIP strengthening" measure. U.S. EPA did approve the District triggered measure and the implementation of the mobile 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 the EPA for their approval of various elements within the *San Joaquin Valley 2016 Ozone Plan for 2008 8-hour Ozone Standard*, including the contingency measure. The 9th Circuit Court of Appeals issued its decision in *Association of Irrigated Residents v. EPA*¹⁶ (*AIR*) that EPA's approval of the contingency element was arbitrary and capricious and rejected the triggered contingency measure that achieves much less than one year's worth of emission reductions. Most importantly, the 9th Circuit Court said 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 need to come from the contingency measure itself and the amount of reductions needed for contingency should not be reduced by the fact of surplus emission reductions from ongoing programs absent EPA formally changing its historic stance on the amount of reductions required. EPA staff has interpreted *AIR* to mean that triggered contingency measures must achieve the entirety of the required one year's worth of emission reductions on their own. In addition, surplus emission reductions from ongoing programs cannot reduce the amount of reductions needed for contingency.

The baseline emissions inventory year for this attainment plan is 2017. For the *2022 Ozone Plan*, the 2017 emissions inventory for the District is 232.39 tpd of NOx and

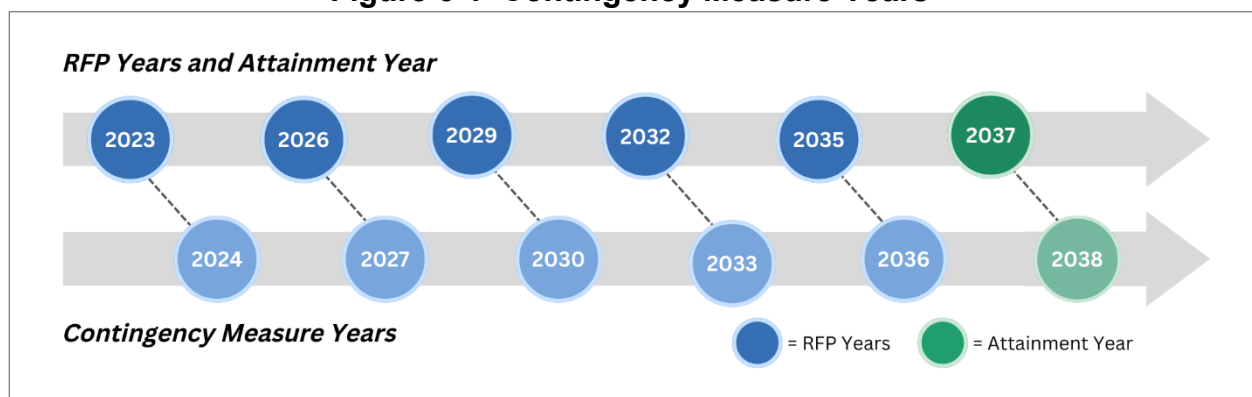
¹⁵ *Sierra Club v. Environmental Protection Agency*, (D.C. Cir. 2021) 985 F.3d 1055.

¹⁶ *Association of Irrigated Residents v. U.S. Environmental Protection Agency*, (9th Cir. 2021) 10 F.4th 937

325.85 tpd of VOC.¹⁷ A three percent reduction from 2017 emissions equals 9.78 tpd of VOC emissions. An equivalent percent reduction of NOx for this plan, based on the RFP analysis, is 6.97 tpd of NOx. The baseline contingency target can be satisfied with a combination of VOC and NOx reductions equivalent to 9.78 tpd of VOC annually.¹⁸ This is consistent with the RFP demonstration presented in Section 6.1 of this chapter.

The contingency reductions would need to be achieved in the year following that in which the failure was identified.¹⁹ The applicable RFP and attainment years for this Plan are 2023, 2026, 2029, 2032, 2035, and 2037. The corresponding contingency measure years are therefore 2024, 2027, 2030, 2033, 2036, and 2038, as shown in Figure 6-1.

Figure 6-1 Contingency Measure Years



In response to *Bahr* and *Sierra Club*, in 2021, EPA convened a nation-wide internal task force to develop guidance to support states in their development of contingency measures. That task force is now also considering the impact of *AIR*. EPA has indicated that the contingency measure guidance may be released fall 2022. The SIPs for the 70 ppb 8-hour ozone standard are due to EPA August 3, 2022. In their updated guidance, EPA needs to recognize that many state control programs are mature and opportunities to withhold measures for contingency are scarce.

Since *Bahr*, the District and CARB have worked closely with our EPA regional office in developing contingency measures with little success. The District and CARB are committed to meeting the CAA requirements for contingency measures, but without finalized national guidance on this complex issue, it is not a good use of resources to pursue contingency measures that may not ultimately coincide with the upcoming new guidance.

¹⁷ SJVAPCD. 2022 Ozone Plan Chapter 6, Table 1.

¹⁸ EPA. *Implementation of the 2015 National Ambient Air Quality Standards for Ozone: Nonattainment Area State Implementation Plan Requirements*; Final Rule. 83 Fed. Reg. 234. P. 63034. (2018, December 6), (to be codified at 40 CFR Part 51.) <https://www.govinfo.gov/content/pkg/FR-2018-12-06/pdf/2018-25424.pdf>

¹⁹ "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/aqmguide/collection/cp2/19930823_shapiro_15pct_rop_guidance.pdf

6.2.3 CARB's Opportunities for Contingency Measures

Much has changed since EPA's 1992 guidance on contingency measures. Control programs across the country have matured, as have the health-based standards. Ozone standards have strengthened in 2008 and 2015 with attainment dates out to 2037. California has the only two extreme areas in the country. Control measures identified for these areas must be implemented for meeting the standard and not held in reserve. To address contingency measure requirements given the courts' decisions and current EPA guidance, CARB and local air districts would need to develop a measure or measures that, when triggered by a failure to attain or failure to meet RFP, will achieve one year's worth of emissions reductions for the given nonattainment area, or approximately 3 percent of total baseline emissions.

Given CARB's wide array of mobile source control programs, the relatively limited portion of emissions primarily regulated by the local air district, and the fact that primarily-federally regulated sources are expected to account for approximately 56 percent of statewide NO_x emissions by 2037²⁰, finding a single triggered measure that will achieve the required reductions would be nearly impossible. That said, even discounting the amount to reflect the proportion that is primarily-federally regulated, approximately 1.3 percent of total baseline emissions would still be needed. Even targeting a lower percentage, additional control measures that can be identified by CARB are scarce or nonexistent that would achieve the required emissions reductions needed for a contingency measure.

Adding to the difficulty of identifying available control measures, not only does a suite of contingency measures need to achieve a large amount of reductions, but it will also need to achieve these reductions in the year following the year in which the failure to attain or meet RFP has been identified. Control measures achieving the level of reductions required may take years to implement and will likely not result in immediate reductions. In the 2022 State SIP Strategy, CARB's three largest NO_x reduction measures, In-Use Locomotive Regulation, Zero-Emission Standards for Space and Water Heaters, and Advanced Clean Fleets, rely on accelerated turnover of older engines/trucks. Buildup of infrastructure and equipment options limits the availability to have significant emission reductions in a short amount of time. Unless EPA changes its historic stance or finds a reasoned justification for requiring less than the stated amount, adopting a single triggered measure that can be implemented and achieve the necessary reductions in the time frame required is scarce in California and may not be possible.

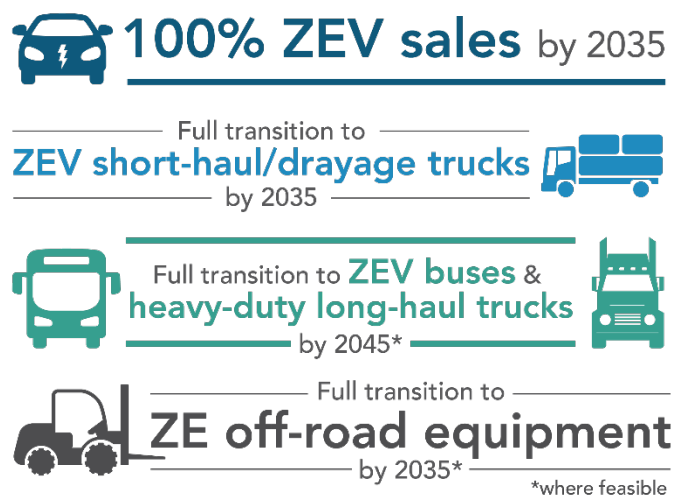
CARB has over 50 years of experience reducing emissions from mobile and other sources of pollution under State authority. The Reasonably Available Control Measures for State Sources analysis illustrates the reach of CARB's current programs and regulations, many of which set the standard nationally for other states to follow. Few sources CARB has primary regulatory authority over remain without a control measure, and all control measures that are in place support the attainment of the NAAQS. There

²⁰ Source: CARB 2019 CEPAM v1.03; based on 2037 emissions totals.

is a lack of additional control measures that would be able to achieve the necessary reductions for a contingency measure. Due to the unique air quality challenges California faces, should such additional measures exist, CARB would pursue those measures to support expeditious attainment of the NAAQS and would not reserve such measures for contingency purposes. Nonetheless, CARB continues to explore options for potential statewide contingency measures utilizing its authorities in anticipation of EPA's written guidance. CARB anticipates that EPA's guidance will allow an assessment of viability of such a state-wide measure.

A central issue in considering a statewide contingency measure under CARB's authority, is that CARB is already fully committed to the "drive to zero" effort. In 2020, Governor Newsom signed Executive Order N-79-20 (Figure 6-2) that established a first-in-the-nation goal for 100 percent of California sales of new passenger cars and trucks to be zero-emission by 2035. The Governor's order set a goal to transition 100 percent of the drayage truck fleet to zero-emission by 2035, all off-road equipment where feasible to zero-emission by 2035, and the remainder of the medium- and heavy-duty vehicles to zero-emission where feasible by 2045.

Figure 6-2 Governor Newsom Executive Order N-79-20



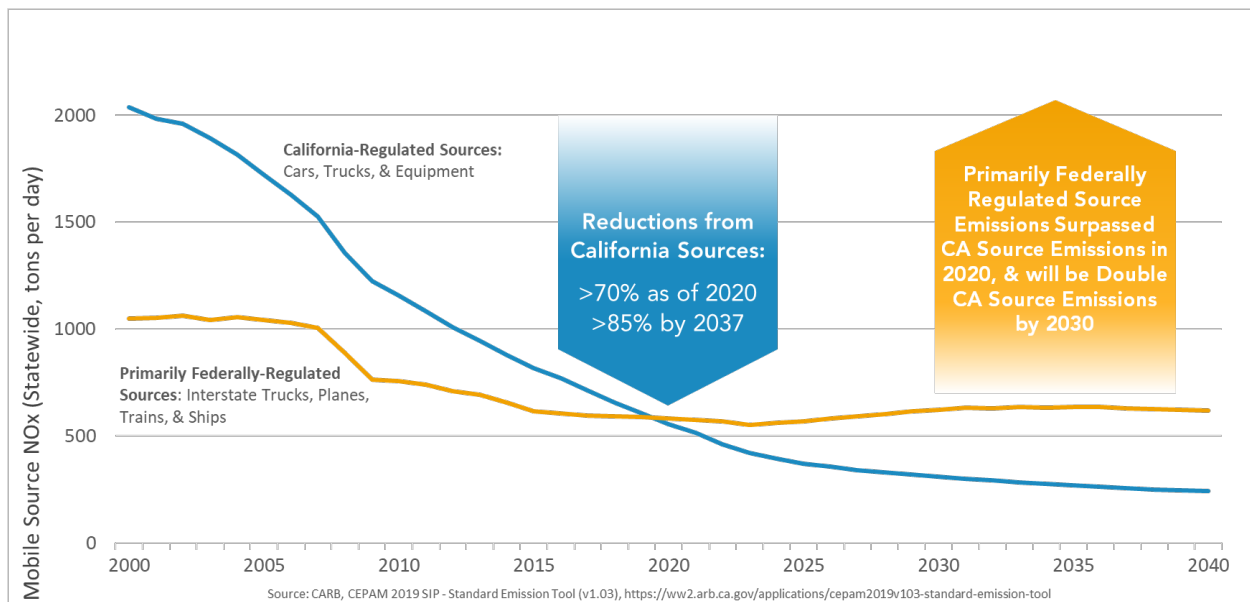
CARB is committed to achieving these goals. Thus, CARB's programs not only go beyond emissions standards and programs set at the federal level, but many include zero-emissions requirements or otherwise, through incentives and voluntary programs, drive mobile sources to zero-emissions, as listed in Table 6-2 below. CARB is also exploring and developing a variety of new measures to drive more source categories to zero-emissions and reduce emissions even further, as detailed in the 2022 State Strategy for the State Implementation Plan. With most source categories being driven to zero-emissions, opportunities for which a triggered measure that could reduce emissions by the amount required for contingency measures are scarce.

Table 6-2 Emissions Sources and Respective CARB Programs with a Zero-Emissions Requirement/Component

Emission Source	Regulatory Programs
Light-Duty Passenger Vehicles and Light-Duty Trucks	<ul style="list-style-type: none"> • Advanced Clean Cars Program (I and II*), including the Zero Emission Vehicle Regulation • Clean Miles Standard *
Motorcycles	<ul style="list-style-type: none"> • On-Road Motorcycle Regulation*
Medium Duty-Trucks	<ul style="list-style-type: none"> • Advanced Clean Cars Program (I and II*), including the Zero Emission Vehicle Regulation • Zero-Emission Powertrain Certification Regulation • Advanced Clean Trucks Regulation • Advanced Clean Fleets Regulation*
Heavy-Duty Trucks	<ul style="list-style-type: none"> • Zero-Emission Powertrain Certification Regulation • Advanced Clean Trucks Regulation • Advanced Clean Fleets Regulation*
Heavy-Duty Urban Buses	<ul style="list-style-type: none"> • Innovative Clean Transit • Advanced Clean Fleets Regulation*
Other Buses, Other Buses – Motor Coach	<ul style="list-style-type: none"> • Zero-Emission Airport Shuttle Regulation • Advanced Clean Fleets Regulation*
Commercial Harbor Craft	<ul style="list-style-type: none"> • Commercial Harbor Craft Regulation
Recreational Boats	<ul style="list-style-type: none"> • Spark-Ignition Marine Engine Standards*
Transport Refrigeration Units	<ul style="list-style-type: none"> • Airborne Toxic Control Measure for In-Use Diesel-Fueled Transport Refrigeration Units (Parts I and II*)
Industrial Equipment	<ul style="list-style-type: none"> • Zero-Emission Forklifts* • Off-Road Zero-Emission Targeted Manufacturer Rule*
Construction and Mining	<ul style="list-style-type: none"> • Off-Road Zero-Emission Targeted Manufacturer Rule*
Airport Ground Support Equipment	<ul style="list-style-type: none"> • Zero-Emission Forklifts*
Port Operations and Rail Operations	<ul style="list-style-type: none"> • Cargo Handling Equipment Regulation • Off-Road Zero-Emission Targeted Manufacturer Rule*
Lawn and Garden	<ul style="list-style-type: none"> • Small Off-Road Engine Regulation • Off-Road Zero-Emission Targeted Manufacturer Rule*
Ocean-Going Vessels	<ul style="list-style-type: none"> • At Berth Regulation
Locomotives	<ul style="list-style-type: none"> • In-Use Locomotive Regulation*

*Indicates program or regulation is in development

There are few sources remaining without a control measure implemented by CARB, and those that do remain are primarily-federally regulated sources. This includes interstate trucks, ships, locomotives, aircraft, and certain categories of off-road equipment, constituting a large source of potential emissions reductions. Since these are primarily regulated at the federal and, in some cases, international level, options to implement a contingency measure with reductions approximately equivalent to one year's worth of emission reductions are limited.



6.2.4 San Joaquin Valley's Opportunities for Contingency Measures

Over the past decades, under the District's numerous attainment plans, the District has implemented generations of emissions control measures for stationary and area sources under its jurisdiction. These control measures, coupled with stringent regulations on mobile sources from CARB, represent the nation's toughest air pollution emissions controls. The District's current rules and regulations reflect technologies and methods that are far beyond minimum required control levels. EPA supported this in their February 2020 evaluation of Best Available Control Measures (BACM) and Most Stringent Measures (MSM) for the 2006 PM_{2.5} NAAQS, when they determined that most District rules for stationary and area sources provide for implementation of BACM and MSM in the Valley.²¹ The following table identifies many of the adopted District rules achieving new emissions reductions in and after 2017, the base year for this plan.

²¹ EPA. *Technical Support Document, Evaluation of BACM/MSM, San Joaquin Valley PM_{2.5} Plan for the 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>

However, even pre-2017 emissions reductions contribute to the Valley's progress toward attainment.

Table 6-3 Adopted District Rules Achieving Reductions from Stationary Sources in and After 2017

<i>District Rules</i>		<i>Date Adopted or Last Amended</i>
4103	Open Burning	6/17/2021
4308	Boilers, Steam Generators, and Process Heaters 0.075 to <2 MMBtu/hr	11/14/2013
4311	Flares	12/17/2020
4306/ 4320	Boilers, Steam Generators, and Process Heaters >5 MMBtu/hr	12/17/2020
4352	Solid Fuel Fired Boilers, Steam Generators and Process Heaters	12/16/2021
4354	Glass Melting Furnaces	12/16/2021
4601	Architectural Coatings	4/16/2020
4702	Internal Combustion Engines	8/19/2021
4901	Wood Burning Fireplaces and Wood Burning Heaters	6/20/2019
4902	Residential Water Heaters	3/19/2009
4905	Natural Gas-Fired, Fan-Type Residential Central Furnaces	12/16/2021
9410	Employer Based Trip Reduction	12/17/2009
9510	Indirect Source Review	12/21/2017
9610	State Implementation Plan Credit for Emission Reductions Generated Through Incentive Programs	6/20/2013

In the Appendix C control measure analysis, the District evaluated all control measures under the District's regulatory authority for a potential contingency component. The District concluded that all District control measures are inappropriate as contingency measures because either the most stringent feasible controls are already in place for that category, or a contingency trigger is incompatible with the technologies involved in reducing emissions from the source category. Control technologies are transformative and often costly, requiring certainty and an opportunity to plan for implementation. In many cases, both of these conditions were met.

CARB also evaluated contingency measure opportunities for sources under their regulatory authority. The regulatory absurdities and practical barriers that apply to District sources also apply to state sources. That said, because CARB has authority over 47% of the Valley's NOx emissions in 2037, the District will continue to advocate for CARB to actively identify contingency measures for emissions under its control. The District will continue to work with CARB to advocate for effective contingency measure policies and contingency reductions from EPA.

6.2.5 Summary

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 reduction. 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 CARB and the District 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 CARB or the District to implement additional controls upon under its authorities. The few source categories that do not have control measures are primarily-federally and internationally regulated.

Given the courts' decisions over the last few years, CARB and local air districts will need to implement contingency measures that, when triggered, would achieve one year's worth of emissions reductions, or at least the relevant portion equivalent to the contribution of sources primarily regulated at the State and local level, unless a reasoned rationale for achieving less emission reductions can be provided. Considering the air quality challenges California and local air districts face, CARB and the District would implement the measure to support expeditious attainment of the NAAQS as the CAA requires rather than withhold it for contingency measure purposes. Should there be a measure achieving the required emission reductions, the measure would likely take more than one year to reduce the necessary emissions.

CARB and the District fully intend to meet the contingency requirement as required by the CAA, but written EPA guidance that addresses the dilemma California faces is needed to provide direction and clarity to develop and adopt approvable contingency measures. CARB and the District continue to explore potential contingency measures while awaiting EPA's revised written guidance. Considering that 30 years have lapsed since EPA developed the guidance, this may be the time for EPA to update the guidance by formally changing its historic stance on the amount of reductions required to meet the contingency measure requirement and allowing states with mature control programs to demonstrate that contingency measure opportunities are scarce.