



# CHAPTER 4

## Control Strategy

- The bulk of the emission reductions needed to attain the 2012 annual PM<sub>2.5</sub> standard will come from continued implementation of already adopted rules and regulations.
- The PM<sub>2.5</sub> Plan advocates for a control strategy aimed at expediting implementation of 2022 AQMP NO<sub>x</sub> measures, leveraging PM<sub>2.5</sub> co-benefits from these NO<sub>x</sub> measures, and reducing ammonia and direct PM<sub>2.5</sub> emissions through selected controls mandated by the U.S. EPA.
- The control strategy complies with U.S. EPA's requirements including Best Available Control Measures and Most Stringent Measures.

## Introduction

The control strategy in the South Coast Air Basin Attainment Plan for the 2012 Annual PM2.5 Standard provides the path to achieving the emission reductions needed to meet the 2012 annual PM2.5 NAAQS. Implementation of the PM2.5 Plan will be based on a series of control measures and strategies that vary by source type (i.e., stationary or mobile) as well as by pollutant, i.e., NOx, ammonia (NH3), or direct PM2.5. This chapter outlines the proposed control strategy and the schedules to adopt and implement the PM2.5 Plan to meet the 2012 annual PM2.5 standard in the South Coast Air Basin (Basin). The PM2.5 Plan control strategy includes a variety of implementation approaches such as regulation, accelerated deployment of available cleaner technologies, best management practices, co-benefits from existing programs (e.g., climate and energy efficiency), and incentives. Table 4-1 provides an overview of the criteria used in evaluating and selecting feasible control measures.

**TABLE 4-1**

**CRITERIA FOR EVALUATING THE PM2.5 PLAN CONTROL MEASURES (LISTED ALPHABETICALLY)**

Criteria	Description
Cost-Effectiveness	The cost of a control measure per reduction of emissions of a particular pollutant (cost includes purchasing, installing, operating, and maintaining the control technology).
Emission Reduction Potential	The total amount of pollution that a control measure can reduce.
Enforceability	The ability to ensure compliance with a control measure.
Legal Authority	Ability of the South Coast AQMD or other adopting agency to legally implement the measure.
Public Acceptability	The likelihood that the public will approve or cooperate in the implementation of a control measure.
Rate of Emission Reduction	The time it will take for a control measure to reduce a certain amount of air pollution.
Technological Feasibility	The likelihood that the technology for a control measure is or will be available.

## Overall Strategy

The PM<sub>2.5</sub> Plan relies primarily on previously adopted control measures from the 2022 AQMP and the 2022 State SIP Strategy. The Plan also relies on limited new controls for directly-emitted PM<sub>2.5</sub> and key precursor pollutants, including NO<sub>x</sub> and NH<sub>3</sub>. By 2030, directly-emitted PM<sub>2.5</sub> needs to be reduced by 6 percent from 2018 levels and NO<sub>x</sub> needs to be reduced by 54 percent. Although emissions of NH<sub>3</sub> will increase by 2 percent over this timeframe, the Basin is still expected to meet the standard by 2030.

NO<sub>x</sub> is the primary precursor that will have the most impact on reducing PM<sub>2.5</sub> levels in the Basin between 2018 and 2030. Approximately 383 tons per day of Basin total NO<sub>x</sub> emissions in 2018 need to be reduced to 176 tons per day by 2030. Continued implementation of adopted rules and regulations (i.e., baseline measures) are already projected to decrease emissions to 210 tons per day by the 2030 attainment year. Control measures included in this Plan are projected to reduce an additional 10 tons per day of NO<sub>x</sub> by 2030 and recently adopted regulations not included in the baseline will further reduce NO<sub>x</sub> emissions by 25 tons per day.

The 2022 AQMP and 2022 State SIP strategy were focused on reducing ozone levels, and its control measures therefore maximized NO<sub>x</sub> emission reductions. The overall approach of these plans requires broad adoption of zero emission technologies across all emission sources when cost-effective and feasible, and low NO<sub>x</sub> emission technologies where zero emission technologies are not yet feasible – all with a goal of achieving federal ozone standard by 2037. Selected 2022 AQMP and 2022 State SIP Strategy measures with potential NO<sub>x</sub> emission reductions that can be achieved by 2030 are included in the PM<sub>2.5</sub> Plan and directly-emitted PM<sub>2.5</sub> co-benefits have been quantified.

The PM<sub>2.5</sub> Plan also includes limited strategies to reduce directly-emitted PM<sub>2.5</sub> and NH<sub>3</sub> emissions to assist with attainment and to fulfill CAA requirements. If only baseline measures are considered, directly-emitted PM<sub>2.5</sub> emissions are projected to decrease from 56 tons per day in 2018 to 54 tons per day in 2030 while NH<sub>3</sub> emissions are projected to increase from 75 tons per day in 2018 to 79 tons per day in 2030. Recently adopted regulations not included in the baseline will reduce directly-emitted PM<sub>2.5</sub> and NH<sub>3</sub> emissions by 0.83 tons per day and 2.96 tons per day, respectively, by 2030. Control measures proposed in this Plan seek to lower directly-emitted PM<sub>2.5</sub> and NH<sub>3</sub> emissions by an additional 0.54 tons per day and 0.25 tons per day, respectively, by 2030.

In addition to implementing a control strategy for attainment, the PM<sub>2.5</sub> Plan is required to satisfy U.S. EPA's requirements including Best Available Control Measures (BACM) and Most Stringent Measures (MSM). Demonstrating compliance with BACM and MSM requirements is independent of attainment and therefore some control measures are included which are not needed for attaining the standard. For details on the BACM and MSM requirements and analysis, refer to Appendix III.

## South Coast AQMD Proposed Annual PM2.5 Strategy

South Coast AQMD’s proposed annual PM2.5 attainment strategy consists of two parts: stationary source measures and mobile source measures. In this PM2.5 Plan, the South Coast AQMD is proposing a total of 38 control measures. Only one of these measures is new and not carried over from the 2022 AQMP or the 2016 AQMP. Out of the 38 proposed control measures, 23 measures target reductions from stationary sources and the remaining 15 measures target reductions from mobile sources.

### South Coast AQMD Proposed Stationary Source Measures

A control measure is a set of specific technologies and methods identified for potential implementation to reduce emissions to attain an air quality standard. The proposed stationary source PM2.5 measures are designed to assist with attainment of the 2012 annual PM2.5 standard primarily through NOx emission reductions with concurrent NH3 and direct PM2.5 reductions. Co-benefits from GHG emission reduction policies and other measures are included as well.

Stationary source measures include Best Control Measures (BCM) that seek to reduce NOx emissions from residential and large industrial combustion sources, NH3 emissions from livestock waste and greenwaste disposal, and direct PM2.5 emissions from combustion and non-combustion sources. Some of the NOx measures pursue co-benefits from Energy and Climate Change Programs (ECC) measures and from other BCM measures. While all control measures seek to reduce emissions, not all measures have quantified reductions. The majority of stationary source measures are anticipated to be developed in the next several years and implemented in whole or in part prior to 2030.

Table 4-2 provides a list of the South Coast AQMD proposed PM2.5 measures for stationary sources along with anticipated emission reductions in 2030. The following sections provide a brief description of the proposed stationary source measures. Detailed descriptions of the measures are provided in Appendix IV-A.

**TABLE 4-2  
SOUTH COAST AQMD PROPOSED STATIONARY SOURCE MEASURES**

Number	Title [Pollutant]	Previous Plan Measure Was Included	Emission Reductions (2030) (tons per day)
<b>South Coast AQMD Stationary Source NOx Measures:</b>			
BCM-01	Emission Reductions from Replacement with Zero Emission or Low NOx Appliances – Residential Water Heating* [PM2.5, NOx]	2022 AQMP (R-CMB-01)	TBD

Number	Title [Pollutant]	Previous Plan Measure Was Included	Emission Reductions (2030) (tons per day)
BCM-02	Emission Reductions from Replacement with Zero Emission or Low NOx Appliances – Residential Space Heating* [PM2.5, NOx]	2022 AQMP (R-CMB-02)	TBD
BCM-03	Emission Reductions from Residential Cooking Devices [PM2.5, NOx]	2022 AQMP (R-CMB-03)	TBD
BCM-04	Emission Reductions from Replacement with Zero Emission or Low NOx Appliances – Residential Other Combustion Sources [PM2.5, NOx]	2022 AQMP (R-CMB-04)	TBD
BCM-05	Emission Reductions from Emergency Standby Engines [PM2.5, NOx]	2022 AQMP (L-CMB-04)	0.04 [PM2.5] 0.36 [NOx]
BCM-06	Emission Reductions from Diesel Electricity Generating Facilities [NOx]	2022 AQMP (L-CMB-06)	0.16
BCM-07	Emission Reductions from Incinerators [NOx]	2022 AQMP (L-CMB-09)	0.81
<b>Total Quantified PM2.5 and NOx Reductions</b>			<b>0.04 [PM2.5] 1.33 [NOx]</b>
<b>South Coast AQMD Co-Benefits from Energy and Climate Change Programs Measures:</b>			
ECC-01	Co-benefits from Existing and Future Greenhouse Gas Programs, Policies, and Incentives [All Pollutants]	2022 AQMP (ECC-01)	TBD
ECC-02	Co-benefits from Existing and Future Residential and Commercial Building Energy Efficiency Measures [All Pollutants]	2022 AQMP (ECC-02)	TBD
ECC-03	Additional Enhancements in Reducing Existing Residential Building Energy Use [All Pollutants]	2022 AQMP (ECC-03)	TBD
<b>South Coast AQMD NH3 Measures:</b>			
BCM-08	Emission Reductions from Livestock Waste at Confined Animal Facilities* [NH3]	2016 AQMP (BCM-04)	0.27
BCM-09	Ammonia Emission Reductions from NOx Controls [NH3]	2016 AQMP (BCM-05)	TBD

Number	Title [Pollutant]	Previous Plan Measure Was Included	Emission Reductions (2030) (tons per day)
BCM-10	Emission Reductions from Direct Land Application of Chipped and Ground Uncomposted Greenwaste* [NH3]	2016 AQMP (BCM-10)	0.08
BCM-11	Emission Reductions from Organic Waste Composting [NH3]	2016 AQMP (BCM-10)	TBD
	<b>Total Quantified NH3 Reductions</b>		<b>0.35</b>
<b>South Coast AQMD Direct PM2.5 Measures:</b>			
BCM-12	Further Emission Reductions from Commercial Cooking* [PM2.5]	2016 AQMP (BCM-01)	TBD
BCM-13	Emission Reductions from Cooling Towers [PM2.5]	2016 AQMP (BCM-02)	TBD
BCM-14	Further Emission Reductions from Paved Road Dust Sources [PM2.5]	2016 AQMP (BCM-03)	TBD
BCM-15	Emission Reductions from Abrasive Blasting Operations [PM2.5]	2016 AQMP (BCM-06)	TBD
BCM-16	Emission Reductions from Stone Grinding, Cutting and Polishing Operations [PM2.5]	2016 AQMP (BCM-07)	TBD
BCM-17	Emission Reductions from Prescribed Burning for Wildfire Prevention [PM2.5]	2022 AQMP (MCS-02)	TBD
BCM-18	Further Emission Reductions from Wood-Burning Fireplaces and Wood Stoves* [PM2.5]	2016 AQMP (BCM-09)	0.33
BCM-19	Emission Reductions from Unpaved Road Dust Sources [PM2.5]	New	TBD
	<b>Total Quantified Direct PM2.5 Reductions</b>		<b>0.33</b>
<b>South Coast AQMD Other Measures:</b>			
BCM-20	Application of All Feasible Measures [All Pollutants]	2022 AQMP (MCS-01)	TBD

\* These measures are included to satisfy MSM requirements.

Note: TBD are reductions to be determined once the measure is further evaluated, the technical assessment is complete, and inventories and cost-effective control approaches are identified, and are not relied upon for attainment demonstration purposes.

## *South Coast AQMD Stationary Source NOx Measures*

There are seven NOx measures as listed below:

- BCM-01: Emission Reductions from Replacement with Zero Emission or Low NOx Appliances – Residential Water Heating
- BCM-02: Emission Reductions from Replacement with Zero Emission or Low NOx Appliances – Residential Space Heating
- BCM-03: Emission Reductions from Residential Cooking Devices
- BCM-04: Emission Reductions from Replacement with Zero Emission or Low NOx Appliances – Residential Other Combustion Sources
- BCM-05: Emission Reductions from Emergency Standby Engines
- BCM-06: Emission Reductions from Diesel Electricity Generating Facilities
- BCM-07: Emission Reductions from Incinerators

**BCM-01: EMISSION REDUCTIONS FROM REPLACEMENT WITH ZERO EMISSION OR LOW NOX APPLIANCES – RESIDENTIAL WATER HEATING:** This control measure, based on 2022 AQMP control measure R-CMB-01, seeks to reduce NOx emissions from residential building water heating sources that are subject to Rule 1121 – Control of Oxides of Nitrogen (NOx) from Residential Type, Natural Gas-Fired Water Heaters. The measure proposes to: (1) develop a rule to require zero emission water heating units for installations in both new and existing residences; and (2) allow low NOx technologies as a transitional alternative when installing a zero emission unit is determined to be infeasible (e.g., colder climate zones, or architecture design obstacles). This control measure would include incentive funds to facilitate the transition to zero emission technologies and promote further emission reductions earlier than required.

**BCM-02: EMISSION REDUCTIONS FROM REPLACEMENT WITH ZERO EMISSION OR LOW NOX APPLIANCES – RESIDENTIAL SPACE HEATING:** This control measure, based on 2022 AQMP control measure R-CMB-02, seeks to reduce NOx emissions from residential space heating sources regulated by Rule 1111 – Reduction of NOx Emissions from Natural-Gas-Fired, Fan-Type Central Furnaces. The measure proposes to: (1) develop a rule to require zero emission space heating units for installations in both new and existing residences; and (2) allow low NOx technologies as a transitional alternative when installing a zero emission unit is determined to be infeasible. This control measure would also provide incentive funds to facilitate adoption of zero emission technologies that would promote further emission reductions earlier than required.

**BCM-03: EMISSION REDUCTIONS FROM RESIDENTIAL COOKING DEVICES:** This control measure, based on 2022 AQMP control measure R-CMB-03, seeks to reduce NOx emissions from residential cooking devices including stoves, ovens, griddles, broilers, and others in new and existing buildings. Replacing the

existing gas burners with electric cooking devices, induction cooktops, or low NOx gas burner technologies will reduce NOx emissions. NOx reductions will be pursued through a combination of regulatory approaches and incentives, and/or efficiency standards. Proposed method of control consists of two steps. Step one includes a technology assessment of emissions testing of various cooking devices to establish emissions rates. Once emissions rates are defined, step two supports future rule development and incentive programs. The rule would apply to manufacturers, distributors, and installers establishing emission limits. The incentive programs would provide funds to encourage and promote adoption of zero and low NOx emission technologies.

**BCM-04: EMISSION REDUCTIONS FROM REPLACEMENT WITH ZERO EMISSION OR LOW NOX APPLIANCES – RESIDENTIAL OTHER COMBUSTION SOURCES:** This control measure, based on 2022 AQMP control measure R-CMB-04, seeks to reduce NOx emissions from residential combustion sources that are not water heating (See BCM-01), space heating (See BCM-02) and cooking equipment (See BCM-03). BCM-04 sources are miscellaneous, but primarily comprised of natural gas and liquified petroleum gas (LPG) fired swimming pool heaters, laundry dryers, and barbecue grills. The measure proposes to: (1) develop a rule to require zero emission technologies for some emission sources in both new and existing residences; and (2) allow low NOx technologies as an alternative for the rest of emission sources. Mitigation fees may be required for certain lower NOx technology applications which will be evaluated during the future rulemaking process. During the rulemaking, staff will assess the universe of equipment. Incentive funds will be considered to facilitate adoption of zero emission technologies that would promote further emission reductions earlier than required.

**BCM-05: EMISSION REDUCTIONS FROM EMERGENCY STANDBY ENGINES:** South Coast AQMD regulations require permits for stationary Internal Combustion Engines (ICEs) rated over 50 brake horsepower. The permits currently limit emergency standby ICE usage to less than 200 hours per year which includes a limit of 20 to 50 hours for maintenance and testing purposes. Rule 1470 requires the use of CARB diesel fuel for all diesel-fueled ICEs rated over 50 brake horsepower. This control measure, based on 2022 AQMP control measure L-CMB-04, seeks to maximize PM2.5 and NOx emission reductions by requiring the use of renewable diesel as a drop-in replacement for CARB diesel fuel for all emergency standby ICEs that are not equipped with Tier 4 Final controls.

**BCM-06: EMISSION REDUCTIONS FROM DIESEL ELECTRICITY GENERATING FACILITIES:** This control measure, based on 2022 AQMP control measure L-CMB-06, seeks to reduce NOx emissions from electric generating units regulated by Rule 1135 – Emissions of Oxides of Nitrogen from Electricity Generating Facilities. This measure proposes to implement low NOx and zero emission technologies and to require the use of renewable diesel in engines used for backup power. The target of this approach is to replace existing diesel internal combustion engines with lower-emitting technologies and utilize renewable diesel for fueling the remaining diesel engines used for backup power.

**BCM-07: EMISSION REDUCTIONS FROM INCINERATORS:** This control measure, based on 2022 AQMP control measure L-CMB-09, seeks emission reductions of NOx by replacement or retrofits with low NOx emission technologies on incinerators and other combustion equipment associated with incinerators and



better control of NH<sub>3</sub> injection used to control NO<sub>x</sub>. The South Coast AQMD has adopted a series of rules to promote clean, lower emission technologies, while encouraging economic growth and providing compliance flexibility. Burner technologies and combustion controls are utilized to reduce NO<sub>x</sub> emissions. The target of this approach is to reduce ammonia emissions by utilizing a closed loop feed-forward control system and reduce NO<sub>x</sub> emissions with improved burner technologies.

### *South Coast AQMD Co-Benefits from Energy and Climate Change Programs Measures*

There are three energy and climate change programs co-benefit measures as listed below:

- ECC-01: Co-Benefits from Existing and Future Greenhouse Gas Programs, Policies, and Incentives
- ECC-02: Co-Benefits from Existing and Future Residential and Commercial Building Energy Efficiency Measures
- ECC-03: Additional Enhancements in Reducing Existing Residential Building Energy Use

**ECC-01: CO-BENEFITS FROM EXISTING AND FUTURE GREENHOUSE GAS PROGRAMS, POLICIES, AND INCENTIVES:** This control measure, based on 2022 AQMP control measure ECC-01, seeks to quantify and take credit for the criteria pollutant co-benefits associated with programs to reduce GHG emissions. The processes that emit criteria pollutants and their precursors also typically emit GHGs. Mandates and programs that reduce GHG emissions will therefore also reduce criteria pollutant emissions. Significant efforts are currently being planned and implemented to reduce GHG emissions under State programs such as California Governor Executive Order B-55-18 and SB 100 (California Renewables Portfolio Standard Program: Emissions of Greenhouse Gases), which established reduction goals for 2030, 2045, and 2050.

**ECC-02: CO-BENEFITS FROM EXISTING AND FUTURE RESIDENTIAL AND COMMERCIAL BUILDING ENERGY EFFICIENCY MEASURES:** This control measure, based on 2022 AQMP control measure ECC-02, seeks to quantify and take credit for criteria pollutant co-benefits resulting from the implementation of energy efficiency mandates such as California's Title 24 program. In addition, there are multiple programs that provide incentives, rebates, and loans for residential and commercial building efficiency projects. Improvements in weatherization and other efficiency measures provide emission reductions through reduced energy use for heating, cooling, lighting, cooking, and other needs. South Coast AQMD staff will work with agencies, utilities, and other stakeholders to implement innovative measures that provide energy savings along with emission reductions.

**ECC-03: ADDITIONAL ENHANCEMENTS IN REDUCING EXISTING RESIDENTIAL BUILDING ENERGY USE:** This control measure, based on 2022 AQMP control measure ECC-03, seeks to provide incentive funding to enhance the objectives of ECC-02. Incentives will be used to further promote programs reducing energy use associated with space heating, water heating, and other large residential energy sources, achieving emission reductions beyond the levels expected from program mandates. Residential incentive programs would be developed to facilitate weatherization, replace older appliances with highly efficient

technologies and encourage renewable energy adoption. Incorporating efficient appliance technologies, improving weatherization, and encouraging renewables such as solar thermal and photovoltaics will reduce energy demand and provide additional emission reductions within the residential sector. The South Coast AQMD will collaborate with utilities, agencies, and organizations to help leverage funding and coordinate incentives with existing programs.

### *South Coast AQMD Stationary Source NH3 Measures*

There are four NH3 measures as listed below:

- BCM-08: Emission Reductions from Livestock Waste at Confined Animal Facilities
- BCM-09: Ammonia Emission Reductions from NOx Controls
- BCM-10: Emission Reductions from Direct Land Application of Chipped and Ground Uncomposted Greenwaste
- BCM-11: Emission Reductions from Organic Waste Composting

**BCM-08: EMISSION REDUCTIONS FROM LIVESTOCK WASTE AT CONFINED ANIMAL FACILITIES:** This control measure seeks to reduce NH3 emissions from livestock waste at large Confined Animal Facilities (CAFs). The first approach aims to lower the applicability thresholds in South Coast AQMD Rule 223 to align with the more stringent thresholds in San Joaquin Valley Air Pollution Control District (SJVAPCD) Rule 4570 – Confined Animal Facilities. The second approach aims to introduce additional mitigation measures to reduce ammonia emissions at CAFs.

**BCM-09: AMMONIA EMISSION REDUCTIONS FROM NOX CONTROLS:** This control measure seeks to reduce NH3 emissions from NOx controls such as Selective Catalytic Reduction (SCR) and Selective Non-Catalytic Reduction (SNCR). These systems are capable of effectively reducing NOx emissions from combustion sources. However, their use also results in potential emissions of NH3 that “slip” past the control equipment and into the atmosphere. Upgraded SCRs can be tuned/optimized by improving the Ammonia Injection Grid (AIG) to achieve the required NOx limits and simultaneously reduce the NH3 slip.

**BCM-10: EMISSION REDUCTIONS FROM DIRECT LAND APPLICATION OF CHIPPED AND GROUND UNCOMPOSTED GREENWASTE:** This control measure seeks reductions in NH3 emissions from direct land application (DLA) of chipped and ground uncomposted greenwaste to agricultural land, public land for erosion control or roadway management, and consumers’ properties for gardening or landscaping purposes. This control measure proposes to require composting of chipped and ground greenwaste, in accordance with the Best Management Practices (BMP) requirements of Rule 1133.3, prior to DLA.

**BCM-11: EMISSION REDUCTIONS FROM ORGANIC WASTE COMPOSTING:** This control measure seeks emission reductions of NH3 from the processing of organic waste materials including foodwaste, greenwaste, and agricultural waste. Control approaches include foodwaste co-digestion and integration

of anaerobic digestion (AD) with composting. If foodwaste is the only feedstock input to AD, the resulting digestate could be included into greenwaste composting where emission control is governed by Rule 1133.3. This control measure proposes to expand the applicability of Rules 1133.2 and 1133.3 to regulate the co-digestion of foodwaste with biosolids and the integration of foodwaste digestate with greenwaste composting for further emission reductions. An integrated AD-composting system will result in less overall waste and a more useful product.

### *South Coast AQMD Stationary Source Direct PM<sub>2.5</sub> Measures*

There are eight direct PM<sub>2.5</sub> measures as listed below:

- BCM-12: Further Emission Reductions from Commercial Cooking
- BCM-13: Emission Reductions from Cooling Towers
- BCM-14: Further Emission Reductions from Paved Road Dust Sources
- BCM-15: Emission Reductions from Abrasive Blasting Operations
- BCM-16: Emission Reductions from Stone Grinding, Cutting and Polishing Operations
- BCM-17: Emission Reductions from Prescribed Burning for Wildfire Prevention
- BCM-18: Further Emission Reductions from Wood-Burning Fireplaces and Wood Stoves
- BCM-19: Emission Reductions from Unpaved Road Dust Sources

**BCM-12: FURTHER EMISSION REDUCTIONS FROM COMMERCIAL COOKING:** This control measure seeks emission reductions from commercial cooking by lowering the applicability threshold for chain-driven charbroilers in Rule 1138. Other actions may be pursued such as revising the emissions inventory for charbroilers and evaluating the feasibility of under-fired control technology. The current emissions inventory for this category is based on a restaurant survey conducted in 1998, indicating the need for an update. A charbroiler registration program and/or survey may be considered to assist with revising the inventory. Additionally, projects to develop economically viable under-fired charbroiler control technology and pilot studies to test the efficacy of such control technologies will be considered.

**BCM-13: EMISSION REDUCTIONS FROM INDUSTRIAL COOLING TOWERS:** This control measure seeks reductions of PM emissions from industrial process cooling towers with drift eliminator technologies used for a variety of industrial operations including power plants, petroleum refineries, petrochemical plants, and natural gas processing plants. Prior to developing a policy to implement controls, an emissions inventory and an equipment universe must be established. Registration submittals collected through Rule 222 – Filing Requirements for Specific Emission Sources Not Requiring a Written Permit Pursuant to Regulation II, may be used as a starting point to develop an equipment universe.

**BCM-14: FURTHER EMISSION REDUCTIONS FROM PAVED ROAD DUST SOURCES:** Existing South Coast AQMD regulations implement paved road dust controls based on U.S. EPA guidance through both preventative and mitigative controls such as street sweeping. Mandating increased street sweeping frequencies has unknown impacts on PM2.5 levels and studies that examine the effect of street sweeping on ambient PM2.5 levels are scarce. A pilot project along with a comprehensive atmospheric measurement campaign would be needed to assess the effectiveness of street sweeping as a method to reduce ambient PM2.5.

**BCM-15: EMISSION REDUCTIONS FROM ABRASIVE BLASTING OPERATIONS:** This control measure seeks to reduce PM2.5 emissions from abrasive blasting operations. This control measure proposes voluntary applications of a portable blasting enclosure/booth with a dust collection system by providing incentives, primarily focusing on dry abrasive blasting operations conducted in open areas using portable blasting equipment with or without a South Coast AQMD permit.

**BCM-16: EMISSION REDUCTIONS FROM STONE GRINDING, CUTTING AND POLISHING OPERATIONS:** South Coast AQMD Rule 401 – Visible Emissions, prohibits from discharging of air contaminant that exceeds Ringelmann Chart No. 1 (equivalent to a 20 percent opacity) and Rule 403 – Fugitive Dust, prohibits fugitive dust emissions from any onsite mechanical activities such as cutting from being visible beyond the property line of the emission source. Various control measures to reduce the fugitive emissions are required as well. Rule 403 also prohibits the dust emissions from exceeding a 20 percent opacity limit, if dust emissions are the result of movement of a motorized vehicle. This control measure seeks to reduce PM emissions from stone grinding, cutting and polishing operations which are not regulated in Rule 401 or Rule 403. Moreover, Rule 219 – Equipment Not Requiring a Written Permit Pursuant to Regulation II, does not require permits for machining equipment exclusively used for polishing, cutting, surface grinding, etc. Both dry and wet dust control options are available to reduce dust emissions from such operations. Wet systems involve spraying water onto the rotating cutting disc to reduce dust emissions. Dry cutting emissions can be controlled at the point of operation using a portable dust collector, air scrubber and negative air machine to prevent dust from being released into the atmosphere. Financial incentives will be considered to exchange existing dry/wet equipment with new equipment that includes integrated add-on controls.

**BCM-17: EMISSION REDUCTIONS FROM PRESCRIBED BURNING FOR WILDFIRE PREVENTION:** This control measure, based on 2022 AQMP control measure MCS-02, seeks particulate matter emission reductions and property defensible space enhancements from fuel reduction efforts via hand-thinning, mechanical thinning, and the use of chipping equipment (chipping) to mitigate excess fuels at properties located in the residential urban-wild-interface (UWI) areas of the San Bernardino National Forest (SBNF). The proposed method of control is to coordinate with other agencies to provide funding for chipping operations for the remaining untreated area in the Mountain Rim Fire Safe Council's UWI. With the chipping program in place, homeowners in the UWI are much more compliant and engaged with assisting with fuel load reduction by trimming and removing excess hazardous vegetation, such as dead trees and leaf litter, for chipping than without the program.

**BCM-18: FURTHER EMISSION REDUCTIONS FROM WOOD-BURNING FIREPLACES AND WOOD STOVES:**

This control measure seeks additional emission reductions from residential wood burning activities. Staff analysis determined that the wood burning curtailment program in Rule 445 is potentially less stringent compared to similar programs in other districts. In order to satisfy U.S. EPA's stringency requirements, this control measure proposes to lower the curtailment threshold from 29  $\mu\text{g}/\text{m}^3$  to 25  $\mu\text{g}/\text{m}^3$  and remove the low-income exemption in Rule 445. The sole-source of heat exemption in Rule 445 would be retained.

**BCM-19: EMISSION REDUCTIONS FROM UNPAVED ROAD DUST SOURCES:** This control measure seeks to evaluate the potential to reduce PM<sub>2.5</sub> emissions from well-traveled unpaved lots, roads, shoulders, and other surfaces by applying paving materials. There are approximately 1,900 miles of unpaved roads in the Basin. However, not all of these roads are well-traveled or highly used and therefore, the suitability for paving will be determined on a case-by-case basis. Vehicle miles traveled, proximity to AB 617 communities, whether the road exists in natural or protected lands, and the effects of paving on climate-related drought conditions and heatwaves will be taken into account in determining the suitability for paving.

### *South Coast AQMD Stationary Source Other Measures*

There is one proposed measure in this category, BCM-20: Application of All Feasible Measures.

**BCM-20: APPLICATION OF ALL FEASIBLE MEASURES:** This control measure, based on 2022 AQMP control measure MCS-01, seeks to explore all feasible measures that achieve criteria pollutant reductions. Existing rules and regulations reflect current Best Available Retrofit Control Technology (BARCT). However, BARCT continually evolves as new technology becomes available that is feasible and cost-effective. South Coast AQMD staff would continue to review new emission limits or controls introduced through federal, State or local regulations to determine if South Coast AQMD regulations remain equivalent or more stringent than rules in other regions. If not, a rulemaking process will be initiated to perform a BARCT analysis and potential rule amendments if deemed feasible. In addition, the South Coast AQMD will consider adopting and implementing new retrofit technology control standards, based on research and development and other information, that are feasible and cost-effective.

### *South Coast AQMD Proposed Mobile Source Measures*

While the bulk of the authority to regulate mobile sources rests with CARB and the federal government, the South Coast AQMD also has a role in achieving emission reductions from these sources. The proposed South Coast AQMD mobile source measures are based on a variety of control technologies that are commercially available and/or technologically feasible to implement prior to the attainment year of 2030. The focus of these measures includes accelerated retrofits or replacement of existing vehicles or equipment, acceleration of vehicle turnover through voluntary vehicle retirement programs, and greater use of cleaner fuels in the near-term. The measures will encourage greater deployment of low NO<sub>x</sub> and zero emission vehicle and equipment technologies such as plug-in hybrids, battery-electric, and fuel cells to the maximum extent feasible as such technologies are commercialized and become available.

The South Coast AQMD proposes a total of 15 mobile source measures which are categorized into five groups – emission growth management, facility-based mobile sources, on-road and off-road, incentives, and other (see Table 4-3). Two emission growth management measures (EGM-01 and EGM-02) are proposed to identify actions to help mitigate and potentially provide emission reductions due to new development and redevelopment projects. Four facility-based mobile source measures (FBMSMs) (MOB-01 to MOB-04) seek to identify actions that will result in additional emission reductions at commercial marine ports, rail yards, warehouse distribution centers, and commercial airports. FBMSMs for marine ports and rail yards are currently undergoing a process to develop Indirect Source Rules. Six on-road and off-road mobile measures focus on on-road light/medium/heavy-duty vehicles, international shipping vessels, passenger locomotives and small off-road engines. Additionally, incentive-based measures such as MOB-11 will use established protocols such as Carl Moyer Program guidelines and report to the Governing Board periodically. MOB-12, Pacific Rim Initiative for Maritime Emission Reductions (PRIMER) seeks NOx emission reductions from partnership with local, State, federal and international entities. One other measure (MOB-13) focuses on fleet vehicle mitigation options and the development of a work plan to support and accelerate the deployment of zero emission infrastructure needed for the widespread adoption of zero emission vehicles and equipment that is described in more detail in Appendix IV-A.

**TABLE 4-3  
SOUTH COAST AQMD PROPOSED MOBILE SOURCE MEASURES**

Number	Title [Pollutant]	Previous Plan Measure Was Included	Emission Reductions by 2030 (tons per day)
<b>South Coast AQMD Emission Growth Management Measures:</b>			
EGM-01	Emission Reductions from New Development and Redevelopment [All Pollutants]	2022 AQMP (EGM-01)	TBD
EGM-02	Emission Reductions from Clean Construction Policy [All Pollutants]	2022 AQMP (EGM-03)	TBD
<b>South Coast AQMD Facility-Based Measures:</b>			
MOB-01	Emission Reductions at Commercial Marine Ports [NOx, PM]	2022 AQMP (MOB-01)	TBD
MOB-02	Emission Reductions at New and Existing Rail Yards [NOx, PM]	2022 AQMP (MOB-02A & B)	TBD
MOB-03	Emission Reductions at Warehouse Distribution Centers [NOx, PM2.5]	2022 AQMP (MOB-03)	TBD
MOB-04	Emission Reductions at Commercial Airports	2022 AQMP (MOB-04)	TBD

Number	Title [Pollutant]	Previous Plan Measure Was Included	Emission Reductions by 2030 (tons per day)
<b>South Coast AQMD On-Road and Off-Road Measures:</b>			
MOB-05	Accelerated Retirement of Light-Duty and Medium-Duty Vehicles [NOx, PM]	2022 AQMP (MOB-05)	TBD
MOB-06	Accelerated Retirement of On-Road Heavy-Duty Vehicles [NOx, PM]	2022 AQMP (MOB-06)	TBD
MOB-07	On-Road Mobile Source Emission Reduction Credit Generation Program [NOx, PM]	2022 AQMP (MOB-07)	TBD
MOB-08	Small Off-Road Engine Equipment Exchange Program [VOCs, NOx, PM]	2022 AQMP (MOB-08)	TBD
MOB-09	Further Emission Reductions from Passenger Locomotives [NOx, PM]	2022 AQMP (MOB-09)	TBD
MOB-10	Off-Road Mobile Source Emission Reduction Credit Generation Program [NOx, PM]	2022 AQMP (MOB-10)	TBD
<b>South Coast AQMD Incentive-Based Measures:</b>			
MOB-11	Emission Reductions from Incentive Programs [NOx, PM]	2022 AQMP (MOB-11)	TBD
MOB-12	Pacific Rim Initiative for Maritime Emission Reductions [NOx, PM]	2022 AQMP (MOB-12)	TBD
<b>South Coast AQMD Other Mobile Source Measures:</b>			
MOB-13	Rule 2202 – On-Road Motor Vehicle Mitigation Options [NOx, PM2.5]	2022 AQMP (MOB-14)	TBD

### *South Coast AQMD Mobile Source Emission Growth Management Measures*

There are two proposed control measures within this category:

- EGM-01: Emission Growth Management from New Development and Redevelopment
- EGM-02: Emission Reductions from Clean Construction Policy

**EGM-01: EMISSION GROWTH MANAGEMENT FROM NEW DEVELOPMENT AND REDEVELOPMENT:** The goal of this measure is to identify emission reduction opportunities and to mitigate and, where appropriate, reduce emissions from new development or redevelopment projects such as residential, commercial, and industrial projects that are otherwise not included in other FBMSMs identified in the 2022 AQMP. This proposed control measure, based on 2022 AQMP control measure EGM-01, seeks PM2.5 co-benefit emission reductions primarily from project construction activities by increasing the deployment of zero emission and low NOx emission technologies for on-road and off-road mobile sources. South Coast AQMD staff has held three Working Group meetings for the development of EGM-01. South Coast AQMD staff will continue soliciting stakeholders' input towards the development of a method of control for EGM-01. Emission reductions and their SIP creditability will be determined dependent on the final method of control to be implemented.

**EGM-02: EMISSION REDUCTIONS FROM CLEAN CONSTRUCTION POLICY:** The purpose of this control measure is to identify potential approaches to mitigate and control emissions from construction activities in the South Coast Air Basin. This control measure, based on 2022 AQMP control measure EGM-03, will seek to develop a Clean Construction Policy (CCP) which can be utilized for reference and voluntary implementation by local municipalities and public agencies. The South Coast AQMD will work in collaboration with local municipalities, construction industry, and other affected stakeholders to develop such a policy and will consider existing control measures and best management practices that are currently being implemented by entities throughout California.

### *South Coast AQMD Facility-Based Measures*

FBMSMs are derived from the 2022 AQMP and are included in the PM2.5 Plan for the purpose of evaluating whether their implementation can be accelerated. FBMSMs are aimed at reducing the emissions from indirect sources – facilities that do not emit much air pollution directly, but instead attract mobile sources which contribute significant emissions. There are four proposed control measures within this category:

- MOB-01: Emission Reductions at Commercial Marine Ports
- MOB-02: Emission Reductions at New and Existing Rail Yards
- MOB-03: Emission Reductions at Warehouse Distribution Centers
- MOB-04: Emission Reductions at Commercial Airports

**MOB-01: EMISSION REDUCTIONS AT COMMERCIAL MARINE PORTS:** This measure seeks to reduce NOx, VOC, and PM emissions related to on-road heavy-duty vehicles, ocean going vessels, cargo handling equipment, locomotives, and harbor craft that go to and from the Ports of Los Angeles and Long Beach (Ports). As a follow up to implementation of MOB-01 from the 2016 AQMP, the South Coast AQMD is working on a variety of measures, including Proposed Rule 2304, to address emissions from marine ports. Through a public process, rule concepts and other measures will be proposed to address emissions from



these sources. Rule development will continue to focus on deploying the cleanest technologies possible and supporting zero emissions fueling charging infrastructure as quickly as feasible. Incentive funding that supports the transition to cleaner technologies will also continue to be pursued to assist in implementing this measure.

**MOB-02: EMISSION REDUCTIONS AT NEW AND EXISTING RAIL YARDS:** This measure seeks to reduce NOx and PM emissions related to on-road heavy-duty vehicles, off-road equipment, and locomotives at new and existing rail yards. Through a public process, the South Coast AQMD will assess and identify potential actions that could result in further emission reductions at new facilities. This measure may include voluntary measures as well as additional actions which could include development of a rule as well as pursuit of incentive funding that can achieve and/or facilitate additional emission reductions. Emission reductions may also be achieved if new regulations are developed and implemented at the state or federal level.

**MOB-03: EMISSION REDUCTIONS AT WAREHOUSE DISTRIBUTION CENTERS:** The goal of this measure to reduce NOx and PM emissions related to mobile sources and other equipment associated with warehouses. The strategy utilizes a menu-based point system in Rule 2305 (adopted in May 2021) to implement MOB-03 from the 2016 AQMP, where warehouses subject to the rule must annually earn points based on the amount of truck traffic at their facility. The menu includes actions that warehouse operators can take to reduce emissions, or to facilitate emission reductions from their operations. Required actions result in emission reductions when compared to conventional diesel technology, assist in implementation of other related measures, promote the demand for zero emission and low NOx technology, foster early action of compliance, and infrastructure installation to support new or emerging zero emission technologies. Implementation of this measure will include ensuring that applicable warehouses comply with Rule 2305, quantifying the air quality benefits of Rule 2305 as they occur and seeking to incorporate those benefits as SIP-creditable emission reductions, evaluating the state of technology every five years and recommending if Rule 2305 should potentially be amended.

**MOB-04: EMISSION REDUCTIONS AT COMMERCIAL AIRPORTS:** The Facility-Based Mobile Source Measure for Commercial Airports, which controls non-aircraft mobile sources at commercial airports, was adopted by the South Coast AQMD on December 6, 2019. The measure consists of Memoranda of Understanding (MOUs) between the South Coast AQMD and five commercial airports in the Basin to develop and implement air quality improvement plans. The MOUs were executed with Los Angeles International Airport, John Wayne Orange County Airport, Hollywood Burbank Airport, Ontario International Airport, and Long Beach Airport. Each MOU contains performance targets for cleaner ground support equipment, airport shuttle buses, and heavy-duty trucks. Based on the measures in the MOUs, the South Coast AQMD committed to achieve 0.52 and 0.37 tons per day NOx reductions in 2023 and 2031, respectively. Implementation of this measure will include ensuring that applicable airports comply with the performance targets in the MOUs. South Coast AQMD will encourage airports to accelerate implementation of the MOU measures ahead of 2031 so that emission reductions in 2030 can be quantified.

### *South Coast AQMD On-Road and Off-Road Measures*

A total of six on-road and off-road mobile source measures derived from the 2022 AQMP are proposed to be included in the PM2.5 Plan as listed below.

- MOB-05: Accelerated Retirement of Light-Duty and Medium-Duty Vehicles
- MOB-06: Accelerated Retirement of On-Road Heavy-Duty Vehicles
- MOB-07: On-Road Mobile Source Emission Reduction Credit Generation Program
- MOB-08: Small Off-Road Engine Equipment Exchange Program
- MOB-09: Further Emission Reductions from Passenger Locomotives
- MOB-10: Off-Road Mobile Source Emission Reduction Credit Generation Program

**MOB-05: ACCELERATED RETIREMENT OF LIGHT-DUTY AND MEDIUM-DUTY VEHICLES:** The purpose of this control measure is to achieve emission reductions by accelerating retirement of older gasoline- and diesel-powered vehicles with up to 8,500 lbs. gross vehicle weight rating (GVWR). These vehicles include passenger cars, sports utility vehicles, vans, and light-duty pick-up trucks. The South Coast AQMD has been implementing the Replace Your Ride (RYR) Program since 2015 which provides a rebate to low- and moderate-income applicants for replacing their existing cars with newer, cleaner conventionally powered vehicles, plug-in hybrid electric vehicles or dedicated zero emission vehicles. This measure seeks to retire up to 2,000 light- and medium-duty vehicles annually through continued implementation of the RYR Program with incentives up to \$12,000 for residents in a Disadvantaged Community (DAC) zip code. For plug-in hybrid and battery electric vehicles, an additional incentive of up to \$2,000 is also provided for the installation of electric vehicle charging equipment.

**MOB-06: ACCELERATED RETIREMENT OF ON-ROAD HEAVY-DUTY VEHICLES:** This proposed control measure seeks additional emission reductions from existing heavy-duty vehicles with GVWR greater than 8,500 lbs through an accelerated vehicle replacement program with zero or low NOx emission vehicles. One of the options being considered is a plus-up program to leverage existing incentive programs such as Carl Moyer and Prop 1B or other grant funding opportunities by providing supplemental funding to help truck owners and fleets with the purchase of cleaner engine vehicles, including zero emission trucks. This type of program would be especially helpful for individual operators and owners with limited financial resources to purchase or lease zero emission trucks which are still relatively costly compared to conventional vehicles.

**MOB-07: ON-ROAD MOBILE SOURCE EMISSION REDUCTION CREDIT GENERATION PROGRAM:** This proposed measure seeks to develop mechanisms to incentivize the early deployment of low NOx and zero emission on-road heavy-duty trucks through the generation of mobile source emission reduction credits (MSERCs) which can be used as an alternative means of compliance with certain South Coast AQMD

regulations. These MSERCs will be used only by entities affected by the 2022 AQMP control measures MOB-01 through MOB-04, EGM-01, and EGM-03. South Coast AQMD staff will develop amendments to South Coast AQMD Rules 1612 and/or 1612.1 to provide greater flexibility, such as expanding the eligibility of vehicle types and projects as well as providing more flexibility in the application and use of MSERCs, for accelerated deployment of low NO<sub>x</sub> and zero emission heavy-duty vehicles in the Basin and Coachella Valley.

**MOB-08: SMALL OFF-ROAD ENGINE EQUIPMENT EXCHANGE PROGRAM:** This measure seeks to reduce NO<sub>x</sub> emissions by promoting the accelerated turn-over of in-use small off-road engines and other engines, such as those used in larger diesel-powered lawn and garden equipment, through expanded voluntary exchange programs. Since 2003, the South Coast AQMD has sponsored a lawn mower exchange programs for residential users of old lawn mowers which is now known as the Electric Lawn Mower Rebate Program. Since its inception, this program has replaced approximately 59,000 high polluting gasoline-powered lawn mowers with electric lawn mowers. The South Coast AQMD also launched the Commercial Electric Lawn and Garden Equipment Incentive and Exchange Program (Commercial L&G Equipment Program) in 2018 to accelerate the replacement of old gasoline- or diesel-powered commercial lawn and garden equipment with zero emission, battery electric technology. This program provides a point-of-sale discount of up to 75 percent off the purchase price of a variety of new electric equipment including lawn mowers (ride-on, stand-on and walk-behind mowers), handheld trimmers, chainsaws, and pruners in addition to backpack and handheld leaf blowers. More recently, the South Coast AQMD has also started a new battery rebate program for commercial lawn and garden equipment that funds up to 75 percent of the rechargeable battery cost with a maximum limit of three batteries per equipment. Moving forward, the South Coast AQMD will increase the number of outreach and exchange events as well as continue to seek additional funding opportunities and resources to expand the scope and types of equipment and engines that can be funded by these programs.

**MOB-09: FURTHER EMISSION REDUCTIONS FROM PASSENGER LOCOMOTIVES:** This measure seeks to promote earlier and cleaner replacement or upgrade of existing passenger locomotives with Tier 4 or cleaner locomotives. The South Coast AQMD is continuing to work collaboratively with other stakeholders to explore the feasibility of zero and low NO<sub>x</sub> emission locomotive technologies such as battery electric or fuel cell engine-driven systems. For example, the South Coast AQMD has been actively participating in the development and demonstration of zero emission battery-operated switcher locomotives in CARB-funded projects in the San Pedro Bay Ports since 2018. Through this measure, the South Coast AQMD will continue to not only promote earlier replacement or upgrade of existing passenger trains with Tier 4 locomotives, but also support the development and adoption of zero or low NO<sub>x</sub> emission technologies.

**MOB-10: OFF-ROAD MOBILE SOURCE EMISSION REDUCTION CREDIT GENERATION PROGRAM:** This measure seeks to develop mechanisms to incentivize the early deployment of Tier 4, low NO<sub>x</sub>, and zero off-road mobile combustion equipment, where applicable, through the generation of MSERCs. These MSERCs will be used only by entities affected by the 2022 AQMP control measures MOB-01 through MOB-04, EGM-01, and EGM-02; and cannot be used to offset emissions from stationary sources. These MSERCs will be discounted to provide additional emission reductions to help meet air quality standards. South

Coast AQMD staff seeks to amend Rule 1620 to provide greater flexibility for entities to initiate projects to accelerate the deployment of zero and low NOx emission off-road mobile equipment in the South Coast Air Basin and Coachella Valley.

### *South Coast AQMD Incentive-Based Measures*

Two incentive-based mobile source measures are also included:

- MOB-11: Emission Reductions from Incentive Programs
- MOB-12: Pacific Rim Initiative for Maritime Emission Reductions

**MOB-11: EMISSION REDUCTIONS FROM INCENTIVE PROGRAMS:** This control measure seeks to apply the administrative mechanism, as initially proposed in the 2016 AQMP and revisited in the 2022 AQMP, to quantify and take credit for the emission reductions achieved through the implementation of South Coast AQMD-administered incentive programs for SIP purposes. The South Coast AQMD has been implementing a variety of incentive programs including, but not limited to, Carl Moyer Memorial Air Quality Standards Attainment Program, Proposition 1B, Lower Emission School Bus, Community Air Protection Program, and Volkswagen Environmental Mitigation Trust. Examples of projects funded by these programs include heavy-duty vehicle/equipment replacements, installation of retrofit units, and engine repowers. The emission reductions from these incentive programs will be calculated in two parts. First, the actual emission reductions associated with existing projects that were funded by 2021 with the remaining project life through 2030 are quantified. Second, potential reductions that are projected from the implementation of future projects to be funded through these incentive programs are quantified. These reductions will be estimated based on the projected level of funding for the programs and average emission reductions achieved by past projects, discounted by control factors for future years.

**MOB-12: PACIFIC RIM INITIATIVE FOR MARITIME EMISSION REDUCTIONS:** This measure, initially developed in the 2022 AQMP, seeks to reduce emissions from OGV through an incentive-based program to encourage the deployment of cleaner OGV to the Ports. This approach includes collaborating with international port authorities and shipping lines to establish common goals to reduce criteria pollutants from OGV. Incentives could be monetary (e.g., a per-visit payment for cleaner ships) or non-monetary (e.g., preferred berthing for cleaner ships). The cleanest commercially available OGV currently meet Tier III emission standards, however this class of vessels is not expected to be widely deployed for many years, in part due to the high cost of constructing new vessels and the difficulty in retrofitting existing vessels to Tier III standards. This measure would quicken the return on investment for these cleaner vessels by ensuring that shipping lines receive a benefit for every clean ship visit to a port with an incentive program. Clean ships could include Tier III vessels, retrofitted vessels that surpass Tier II standards, and eventually zero emissions shipping when it becomes available.

## South Coast AQMD Other Mobile Source Measures

There is one proposed other mobile source measure, MOB-13: Rule 2202 – On-Road Motor Vehicle Mitigation Options, which is based on 2022 AQMP control measure MOB-14.

**MOB-13: RULE 2202 – ON-ROAD MOTOR VEHICLE MITIGATION OPTIONS:** This control measure proposes to reduce emissions by evaluating potential amendments to Rule 2202. Rule 2202 has been developed to reduce emissions associated with work commute trips. Specifically, larger employers in the region with more than 250 employees are required to mitigate employee commute trips into the worksite. Rule 2202 provides employers with a menu of options to select from to implement a combination of emission reduction strategies to meet an emission reduction target (ERT) for their worksite. During the Coronavirus (COVID-19) pandemic in 2020 and 2021, many Rule 2202 regulated employers (where applicable) incorporated widespread telecommuting practices which further reduced emissions by reducing commute trips into the worksite. Based on conditions observed and reported during the time-period, Rule 2202 was amended on August 4, 2023. The amended Rule 2202 includes two phases. The first phase (adopted August 4, 2023) focused on data collection and reporting that will be used to inform a potential second phase of rulemaking. Specifically, the first phase requires new limited reporting for all regulated worksites, including the reporting of telecommute activity, VMT data, and business type/classification for all worksites. The second phase will consider using VMT as an option to evaluate travel patterns, re-assess rule targets, explore multiple compliance options for zero emission vehicles and infrastructure, evaluate options to continue the use of credit, and consider modifying rideshare options. The new option will include placing a larger focus on telecommuting strategies.

## Summary of South Coast AQMD Control Strategy

The PM<sub>2.5</sub> Plan primarily requires NO<sub>x</sub> emission reductions to meet the 2012 annual PM<sub>2.5</sub> standard. The pathway to achieving the standard involves accelerated implementation of the 2022 AQMP and 2022 State SIP Strategy, with a limited control strategy for NH<sub>3</sub> and direct PM<sub>2.5</sub> sources.

The control strategies in the PM<sub>2.5</sub> Plan include both regulations and incentive programs. The control strategy is described in greater detail in Appendix IV-A. Tables 4-4 and 4-5 list emission reductions by 2030 and proposed adoption/implementation dates of the stationary source control measures and mobile source control measures, respectively. South Coast AQMD will develop, adopt, submit, and implement the control measures in Tables 4-4 and 4-5 as expeditiously as possible in order to meet or exceed the commitments needed to attain the 2012 annual PM<sub>2.5</sub> standard, and to substitute any other measures as necessary to make up any emission reduction shortfall.

**TABLE 4-4  
EMISSION REDUCTIONS AND ADOPTION AND IMPLEMENTATION SCHEDULE OF STATIONARY  
SOURCE CONTROL MEASURES**

Number	Title [Pollutant]	Emission Reductions by 2030 (tons per day)	Proposed Adoption Date	Proposed Implementation Timeframe
<b>South Coast AQMD NOx Measures:</b>				
BCM-01	Emission Reductions from Replacement with Zero Emission or Low NOx Appliances – Residential Water Heating [PM2.5, NOx]	TBD	2024	2029
BCM-02	Emission Reductions from Replacement with Zero Emission or Low NOx Appliances – Residential Space Heating [PM2.5, NOx]	TBD	2024	2029
BCM-03	Emission Reductions from Residential Cooking Devices [PM2.5, NOx]	TBD	2027	2029
BCM-04	Emission Reductions from Replacement with Zero Emission or Low NOx Appliances – Residential Other Combustion Sources [PM2.5, NOx]	TBD	2027	2029
BCM-05	Emission Reductions from Emergency Standby Engines [PM2.5, NOx]	0.04 [PM2.5] 0.36 [NOx]	2025	2030
BCM-06	Emission Reductions from Diesel Electricity Generating Facilities [NOx]	0.16	2027	2030
BCM-07	Emission Reductions from Incinerators [NOx]	0.81	2024	2029
<b>South Coast AQMD Co-Benefits from Energy and Climate Change Programs Measures:</b>				
ECC-01	Co-benefits from Existing and Future Greenhouse Gas Programs, Policies, and Incentives [PM2.5, NOx]	TBD	N/A	N/A
ECC-02	Co-benefits from Existing and Future Residential and Commercial Building Energy Efficiency Measures [PM2.5, NOx]	TBD	N/A	N/A

Number	Title [Pollutant]	Emission Reductions by 2030 (tons per day)	Proposed Adoption Date	Proposed Implementation Timeframe
ECC-03	Additional Enhancements in Reducing Existing Residential Building Energy Use [PM2.5, NOx]	TBD	N/A	N/A
<b>South Coast AQMD NH3 Measures:</b>				
BCM-08	Emission Reductions from Livestock Waste at Confined Animal Facilities* [NH3]	0.27	2025	2030
BCM-09	Ammonia Emission Reductions from NOx Controls [NH3]	TBD	N/A	N/A
BCM-10	Emission Reductions from Direct Land Application of Chipped and Ground Uncomposted Greenwaste* [NH3]	0.08	2026	2030
BCM-11	Emission Reductions from Organic Waste Composting [NH3]	TBD	N/A	N/A
<b>South Coast AQMD Direct PM2.5 Measures:</b>				
BCM-12	Further Emission Reductions from Commercial Cooking* [PM2.5]	TBD	2027	2030
BCM-13	Emission Reductions from Cooling Towers [PM2.5]	TBD	N/A	N/A
BCM-14	Further Emission Reductions from Paved Road Dust Sources [PM2.5]	TBD	N/A	N/A
BCM-15	Emission Reductions from Abrasive Blasting Operations [PM2.5]	TBD	N/A	N/A
BCM-16	Emission Reductions from Stone Grinding, Cutting and Polishing Operations [PM2.5]	TBD	N/A	N/A
BCM-17	Emission Reductions from Prescribed Burning for Wildfire Prevention [PM2.5, NOx]	TBD	N/A	N/A
BCM-18	Further Emission Reductions from Wood-Burning Fireplaces and Wood Stoves* [PM2.5]	0.33	2026	2030

Number	Title [Pollutant]	Emission Reductions by 2030 (tons per day)	Proposed Adoption Date	Proposed Implementation Timeframe
BCM-19	Emission Reductions from Unpaved Road Dust Sources [PM2.5]	TBD	N/A	N/A
<b>South Coast AQMD Other Measures:</b>				
BCM-20	Application of All Feasible Measures [PM2.5, NOx]	TBD	N/A	N/A

\* These measures are included to satisfy MSM requirements.



**TABLE 4-5  
EMISSION REDUCTIONS AND ADOPTION AND IMPLEMENTATION SCHEDULE OF MOBILE  
SOURCE CONTROL MEASURES**

Number	Title [Pollutant]	Emission Reductions by 2030 (tpd)	Proposed Adoption Date	Proposed Implementation Timeframe
<b>South Coast AQMD Emission Growth Management Measures:</b>				
EGM-01	Emission Reductions from New Development and Redevelopment [All Pollutants]	TBD	2025	2025-2030
EGM-02	Emission Reductions from Clean Construction Policy [All Pollutants]	TBD	2025	2025-2030
<b>South Coast AQMD Facility-Based Measures:</b>				
MOB-01	Emission Reductions at Commercial Marine Ports [PM2.5, NOx]	TBD	2024	2025-2030
MOB-02	Emission Reductions at New and Existing Rail Yards [PM2.5, NOx]	TBD	2024	2025-2030
MOB-03	Emission Reductions at Warehouse Distribution Centers [PM2.5, NOx]	TBD	Adopted 2021 (Reassess every three years)	2022-2030
MOB-04	Emission Reductions at Commercial Airports [PM2.5, NOx]	TBD	Adopted 2019	2020-2030
<b>South Coast AQMD On-Road and Off-Road Measures:</b>				
MOB-05	Accelerated Retirement of Light-Duty and Medium-Duty Vehicles [PM2.5, NOx]	TBD	N/A	Ongoing
MOB-06	Accelerated Retirement of On-Road Heavy-Duty Vehicles [PM2.5, NOx]	TBD	N/A	Ongoing
MOB-07	On-Road Mobile Source Emission Reduction Credit Generation Program [PM2.5, NOx]	TBD	TBD	TBD
MOB-08	Small Off-Road Engine Equipment Exchange Program [PM2.5, NOx]	TBD	N/A	Ongoing

Number	Title [Pollutant]	Emission Reductions by 2030 (tpd)	Proposed Adoption Date	Proposed Implementation Timeframe
MOB-09	Further Emission Reductions from Passenger Locomotives [PM2.5, NOx]	TBD	N/A	Ongoing
MOB-10	Off-Road Mobile Source Emission Reduction Credit Generation Program [PM2.5, NOx]	TBD	TBD	TBD
<b>South Coast AQMD Incentive-Based Measures:</b>				
MOB-11	Emission Reductions from Incentive Programs [PM2.5, NOx]	TBD	N/A	Ongoing
MOB-12	Pacific Rim Initiative for Maritime Emission Reductions [PM2.5, NOx]	TBD	N/A	Ongoing
<b>South Coast AQMD Other Mobile Source Measures:</b>				
MOB-13	Rule 2202 – On-Road Motor Vehicle Mitigation Options [PM2.5, NOx]	TBD	2023	2023-2030

## Proposed CARB Commitment for the South Coast

### Overview of Commitment

SIPs may contain enforceable commitments to achieve the level of emissions necessary to meet federal air quality standards, as defined by the attainment demonstration. CARB’s 2022 State Strategy for the State Implementation Plan<sup>1</sup> (2022 State SIP Strategy) lists new SIP measures for which potential emissions reduction SIP commitments for the South Coast in 2030 are now estimated based on the measures identified and quantified to date. Adoption of the 2022 State SIP Strategy and the measure schedule by the CARB Board on September 22, 2022, formed the basis of the commitments for emission reductions by the 2030 attainment deadline for South Coast that will be proposed for CARB Board consideration alongside the 2024 South Coast PM2.5 SIP.

<sup>1</sup> [https://ww2.arb.ca.gov/sites/default/files/2022-08/2022\\_State\\_SIP\\_Strategy.pdf](https://ww2.arb.ca.gov/sites/default/files/2022-08/2022_State_SIP_Strategy.pdf)

The commitments consist of two components:

1. A commitment to bring an item to the CARB Board for defined new measures or take other specified actions within CARB's authority; and
2. A commitment to achieve aggregate emission reductions by specific dates.

As part of each SIP needing emission reductions from the State, the total aggregate emission reductions and the obligation to make certain proposals to the CARB Board or take other actions within CARB's authority specified in the 2022 State SIP Strategy would become enforceable upon approval by U.S. EPA. While the 2022 State SIP Strategy discusses a range of measures and actions, those measures and actions are still subject to CARB's formal approval process and would not be final until the CARB Board takes action.

### *Commitment to Act on Measures*

For each of the SIP measures shown in Table 4-6, CARB committed in the 2022 State SIP Strategy to address each measure as described. For each measure committed to, CARB staff would undertake the actions detailed for each measure. In the instance of measures that involve the development of a rule under CARB's regulatory authority, CARB committed to bring a publicly noticed item before the CARB Board that is either a proposed rule, or is a recommendation that the CARB Board direct staff to not pursue a rule covering that subject matter at that time. This recommendation would be based on an explanation of why such a rule is unlikely to achieve the relevant emission reductions in the relevant timeframe, and would include a demonstration that the overall aggregate commitment will be achieved despite that rule not being pursued. This public process and CARB hearing would provide additional opportunity for public and stakeholder input, as well as ongoing technology review, and assessments of costs and environmental impacts.

The measures, as proposed by staff to the CARB Board or adopted by the CARB Board, may provide more or less than the initial emission reduction estimates. In addition, action by the CARB Board may include any action within its discretion.

**TABLE 4-6  
2022 STATE SIP STRATEGY MEASURES AND SCHEDULE**

Measure	Agency	Action	Implementation Begins
<b>On-Road Heavy-Duty</b>			
Advanced Clean Fleets Regulation	CARB	2023	2024
Zero Emissions Trucks Measure	CARB	2028	2030
<b>On-Road Light-Duty</b>			
Clean Miles Standard	CARB	2021	2023
<b>Off-Road Equipment</b>			
Tier 5 Off-Road Vehicles and Equipment	CARB	2025	2029
Amendments to the In-Use Off-Road Diesel-Fueled Fleets Regulation	CARB	2022	2024
Transport Refrigeration Unit Regulation Part 2	CARB	2026	2028
Commercial Harbor Craft Amendments	CARB	2022	2023
Cargo Handling Equipment Amendments	CARB	2027	2030
<b>Other</b>			
Zero Emission Standard for Space and Water Heaters	CARB	2025	2030
<b>Primarily-Federally and Internationally Regulated Sources – CARB Measures</b>			
In-Use Locomotive Regulation	CARB	2023	2024

*Commitment to Achieve Emission Reductions*

The following section describes the estimated emission reduction and potential commitment from the SIP measures identified and quantified to date for the South Coast. The aggregate commitment of emissions reductions from State sources to be proposed for CARB Board consideration will be found in CARB’s staff report for the 2024 South Coast PM2.5 SIP when it is brought to the CARB Board and is summarized below.

While CARB includes estimates of the emission reductions in 2030 from each of the individual new measures, CARB’s overall commitment is to achieve the total emission reductions necessary from State-regulated sources to attain the federal air quality standards, reflecting the combined reductions from the existing control strategy and new measures. Therefore, if a particular measure does not get its expected emission reductions, the State’s overall commitment to achieving the total aggregate emission reductions still exists. If actual emission decreases occur that exceed the projections reflected in the current emission

inventory, CARB will submit an updated emissions inventory to U.S. EPA as part of a SIP revision. The SIP revision would outline the changes that have occurred and provide appropriate tracking to demonstrate that aggregate emission reductions sufficient for attainment are being achieved through enforceable emission reduction measures. CARB's emission reduction commitments may be achieved through a combination of actions including but not limited to the implementation of control measures; the expenditure of local, State or federal incentive funds; or through other enforceable measures.

## Emission Reductions

CARB's control programs, including the measures in the 2022 State SIP Strategy provide emission reduction benefits throughout the State. Although the existing control program will provide mobile source emission reductions necessary to meet the attainment needs of many areas of the State, the new measures in the 2022 State SIP Strategy are needed to provide further reductions to achieve the 12  $\mu\text{g}/\text{m}^3$  PM2.5 annual standard in the South Coast and enhance statewide air quality progress towards the 9  $\mu\text{g}/\text{m}^3$  annual PM2.5 standard promulgated in 2024.

### *Emission Reductions from Current Programs*

Table 4-7 provides the mobile source emissions under CARB and district current programs for the South Coast. Ongoing implementation of current control programs is projected to reduce mobile source emissions of direct PM2.5 and NOx by 3.3 tpd and 160.6 tpd in the South Coast in 2030 compared to 2018 levels, respectively. Although the current mobile source baseline shows an increase in ammonia (NH3) emissions in 2030 compared to 2018 levels, this baseline does not reflect emissions reductions from a number of recently-adopted CARB regulations identified in Table 4-5. When taking these reductions taken into account, NH3 emissions are projected to only increase by 1.8 tpd in 2030 compared to 2018 levels. Achieving the benefits projected from the current control program will continue to require significant efforts for implementation and enforcement and thus represents an important element of the overall strategy.

**TABLE 4-7  
SOUTH COAST BASELINE MOBILE SOURCE EMISSIONS<sup>2</sup>**

Pollutant	2018 Emissions (tpd)	2030 Emissions (tpd)	Change
PM2.5	10.8	7.4	-31%
NOx	323.3	162.6	-50%
NH3	16.5	21.3	29%

<sup>2</sup> Source: MSC\_NAA\_CEPAM\_v101B; does not reflect emissions reductions from recently adopted CARB regulations identified in Table 5

Although most of the 2016 State SIP Strategy measure commitments have been adopted, there remains the Zero Emission Forklift measure which will be acted upon by the CARB Board in 2024. Table 4-8 below shows the timeline and anticipated emission reductions for this measure.

**TABLE 4-8  
SOUTH COAST REDUCTIONS FROM REMAINING 2016 STATE SIP STRATEGY MEASURE<sup>3</sup>**

Measure	Action	Implementation Begins	2030 NOx (tpd)	2030 PM2.5 (tpd)	2030 NH3 (tpd)
Zero Emission Forklift	2024	2026	0.8	<0.1	NYQ*

\* Not yet quantified.

### *Emission Reductions from 2022 State SIP Strategy Measures*

In addition to controlling direct PM2.5, air quality modeling has determined that NOx and ammonia are significant precursors for the 12 µg/m<sup>3</sup> annual PM2.5 standard in the South Coast, and that ammonium nitrate contributes 20 to 35 percent of total PM2.5 in the region, varying by season and location. Further, modeling indicates that total NOx emissions from all sources in the South Coast will need to decrease by approximately 55 percent from 2018 levels in order to attain the 12 µg/m<sup>3</sup> annual PM2.5 standard in 2030. A significant fraction of the needed reductions will come from the existing control program already in the baseline emission inventory. In addition, as described above, one measure commitment included in the 2016 State SIP Strategy has not yet been acted upon, and a number of measure commitments included in both the 2016 and 2022 State SIP Strategies were very recently adopted and are thus not yet in the baseline emissions inventory, as outlined in Table 4-8 above and Table 4-9 below.

The measures contained in the 2022 State SIP Strategy commitment reflect a variety of State actions across on-road and off-road vehicle and appliance sectors. Collectively, emissions reductions from CARB’s current control program, reductions from the 2016 and 2022 State SIP Strategy measures adopted but not yet in the baseline, reductions from the remaining 2016 State SIP Strategy measure, and reductions estimated from the future measures identified in the 2022 State SIP Strategy and quantified below will provide the reductions needed from State sources to support attainment of the 12 µg/m<sup>3</sup> annual PM2.5 standard in the South Coast. Table 4-9, 4-10, and 4-11 summarize the reductions from the identified and quantified measures. In Table 4-9, the reductions estimated from the remaining 2016 State SIP Strategy measure and future measures identified in the 2022 State SIP Strategy are described as the “potential CARB aggregate emissions reductions commitment” until staff proposes and the CARB Board adopts the aggregate emissions reductions commitment for the year 2030. The reductions in Table 4-9 are needed

<sup>3</sup> Numbers may not add up due to rounding

to demonstrate reasonable further progress (RFP) towards attainment. More details can be found in Chapter 6 of this Plan.

**TABLE 4-9**  
**2030 SOUTH COAST EMISSIONS REDUCTIONS FROM CARB PROGRAMS<sup>4</sup>**

CARB Programs in South Coast	NOx (tpd)	PM2.5 (tpd)	NH3 (tpd)
Current Control Program <sup>5</sup>	172.8	1.9	-4.7 <sup>6</sup>
2016 and 2022 State SIP Strategy Measures Adopted (Not yet in baseline inventory)	20.5	0.8	2.9
Potential CARB Aggregate Emissions Reductions Commitment	9.1	0.5	0.2
2016 State SIP Strategy Measure Remaining	0.8	<0.1	NYQ*
2022 State SIP Strategy Measures Remaining	8.2	0.5	0.2
<b>Total Reductions</b>	<b>202.4</b>	<b>3.2</b>	<b>-1.4</b>

\* Not yet quantified.

Table 4-10 reflects the 2016 and 2022 State SIP Strategy measure commitments that the CARB Board has recently adopted. The associated emissions reductions from these recently adopted measures are not yet all accounted for in the baseline emissions inventory. Nonetheless, CARB measure commitments are achieving emissions reductions and will contribute towards attainment of the 12 µg/m<sup>3</sup> annual PM2.5 standard in South Coast in 2030.

<sup>4</sup> Numbers may not add up due to rounding

<sup>5</sup> Current Control Program represents the current baseline emissions out to 100 nautical miles with adopted CARB and district measures excluding those recently-adopted CARB regulations identified in Table 5 (Source: MSC\_NAA\_CEPAM\_v101B)

<sup>6</sup> Negative number indicates growth in emissions

**TABLE 4-10  
SOUTH COAST EXPECTED EMISSIONS REDUCTIONS FROM 2016 AND 2022 STATE SIP  
STRATEGY RECENTLY ADOPTED MEASURES**

2016 and 2022 State SIP Strategy Measures	2030 NOx (tpd)	2030 PM2.5 (tpd)	2030 NH3 (tpd)
<b>On-Road Heavy-Duty</b>			
Advanced Clean Fleets Regulation	4.7	<0.1	0.8
Total On-Road Heavy-Duty Reductions	4.7	<0.1	0.8
<b>On-Road Light-Duty</b>			
Advanced Clean Cars II	1.4	0.1	2.1
Clean Miles Standard	<0.1	<0.1	<0.1
Total On-Road Light-Duty Reductions	1.5	0.1	2.1
<b>Off-Road Equipment</b>			
Amendments to the In-Use Off-Road Diesel-Fueled Fleets Regulation	1.9	0.1	NYQ*
Commercial Harbor Craft Amendments	2.0	<0.1	NYQ
Transport Refrigeration Unit Part I	0.3	<0.1	NYQ
Total Off-Road Equipment Reductions	4.3	0.3	NYQ
<b>Primarily-Federally and Internationally Regulated Sources – CARB Measures</b>			
In-Use Locomotive Regulation	9.9	0.2	NYQ
Total Primarily-Federally and Internationally Regulated Sources – CARB Measures Reductions	9.9	0.2	NYQ
<b>Emissions Reductions</b>	<b>20.5</b>	<b>0.8</b>	<b>2.9</b>

\* Not yet quantified.



**TABLE 4-11**  
**SOUTH COAST EXPECTED EMISSIONS REDUCTIONS FROM THE REMAINING 2022 STATE SIP**  
**STRATEGY MEASURES<sup>7</sup>**

2022 State SIP Strategy Measures	2030 NO <sub>x</sub> (tpd)	2030 PM <sub>2.5</sub> (tpd)	2030 NH <sub>3</sub> (tpd)
<b>On-Road Heavy-Duty</b>			
Zero Emissions Trucks Measure	2.9	<0.1	0.2
Total On-Road Heavy-Duty Reductions	2.9	<0.1	0.2
<b>Off-Road Equipment</b>			
Tier 5 Off-Road Vehicles and Equipment	0.2	<0.1	NYQ*
Transport Refrigeration Unit Regulation Part 2	1.7	<0.1	NYQ
Cargo Handling Equipment Amendments	0.7	<0.1	NYQ
Total Off-Road Equipment Reductions	2.7	<0.1	
<b>Other</b>			
Zero Emission Standard for Space and Water Heaters <sup>8</sup>	2.5	0.4	<0.1
Total Other Reductions	2.5	0.4	<0.1
<b>Emissions Reductions</b>	<b>8.2</b>	<b>0.5</b>	<b>0.2</b>

\* Not yet quantified.

## Title VI of the Civil Rights Act of 1964

Title VI of the Civil Rights Act of 1964 (Title VI) provides that no person in the United States shall, on the basis of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance. As a recipient of federal funds, CARB must ensure it complies with Title VI and U.S. EPA's Title VI implementation regulations in its relevant programs and policies. In developing the 2022 State SIP Strategy's robust suite of control measures, CARB staff engaged in a thorough public process that addresses the requirements of Title VI. CARB will continue to address the requirements of Title VI in

<sup>7</sup> Numbers may not add up due to rounding

<sup>8</sup> Reductions may be achieved through CARB and/or complementary South Coast AQMD control measures for this sector

implementation of the 2022 State SIP Strategy and related Clean Air Act implementation activities. Written guidance from U.S. EPA is needed to provide additional detail on Title VI requirements and expectations and support for effective implementation efforts.

Many low-income and disadvantaged communities in nonattainment areas, and across the State, continue to experience disproportionately high levels of air pollution and the resulting detrimental impacts to their health. Research shows large disparities in exposure to pollution between disadvantaged communities and other communities. There are disparities between white and non-white populations in California, with Black and Latino populations experiencing significantly greater air pollution impacts than white populations. Mobile source pollution exposures show some of the highest disparities. Mobile sources are the largest sources of pollution exposure disparity for Black populations and disadvantaged community residents, when compared to the average population in California. Specifically, mobile sources accounted for 45 percent of exposure disparity for the Black population, and 37 % of exposure disparity for people in disadvantaged communities. While significant progress has been made in reducing mobile and stationary source pollution in California through regulatory and other program activities, disparities in the location of pollution and cumulative exposures continue.

In 2023, CARB adopted the following Vision for Racial Equity to guide our external work, including the implementation of the Community Air Protection Program: CARB commits to just social change by working at all levels within the organization and externally to address environmental injustices and advance racial equity in the achievement of its mission. CARB works toward a future where all Californians breathe healthy and clean air, benefit from actions to address climate change, and where race is no longer a predictor of life outcomes. In working to realize this vision, CARB prioritizes environmental justice, uses tools to operationalize racial equity, and conducts meaningful community engagement in its policy and planning efforts and programs to address the longstanding environmental and health inequities from elevated levels of toxic air contaminants, criteria pollutants, and secondary impacts of climate change. It is imperative to optimize California's control programs to maximize emissions reductions and provide targeted near-term benefits in those communities that continue to bear the brunt of poor air quality. Specific efforts include a commitment to apply a racial equity lens in considering benefits and burdens of CARB's programs and policies, including regulatory actions. A racial equity lens is a set of questions to estimate impacts and benefits on the basis of race, ethnicity or other relevant categories, and considering alternatives.

Using a racial equity lens also requires a commitment to meaningful community engagement. In support of this commitment, CARB recently contracted with a number of community experts to vet and refine a model framework for community engagement. As noted above, while significant progress has been made to address air pollution statewide and in local communities, ensuring all Californians have access to healthy air quality is imperative.

In addition to these important efforts, the 2022 State SIP Strategy measures such as the Advanced Clean Fleets and In-Use Locomotive Regulations will reduce mobile source emissions from heavy-duty trucks

and other sources around warehouses, railyards, and ports, as well as reducing other emissions, which in turn will reduce corresponding health risk in California's most impacted communities.

CARB prioritized public participation as an essential part of developing the measures included in the 2022 State SIP Strategy. CARB initiated the public process with a workshop in July 2021. After the workshop, CARB staff reached out to and met with a number of community-based organizations who provided input on the potential control measures. CARB released the 2022 State SIP Strategy: Draft Measures document which considered the input from the community-based organizations and comments during the first workshop.

CARB staff held a second workshop discussing the Draft Measures document in October 2021 and received additional input from a broad array of interested parties. The workshop presented a detailed discussion on the potential measures and allowed for the public and interested parties to comment on every facet of each potential measure. CARB staff also participated in the South Coast measure workshops as part of their SIP development process. CARB staff released the Draft 2022 State SIP Strategy in January 2022, prior to a third workshop, and presented an informational update to the Board at the Board Meeting in February 2022 to discuss and obtain public feedback. The input from numerous interested parties and community-based organizations framed the control measures in the Strategy such as the Zero Emissions Trucks and Pesticide Measures.

These workshops and Board updates provided forums in both English and Spanish and afforded any special accommodations if requested to facilitate discussing the proposed measures in a public setting and to provide additional opportunity for public feedback, input, and ideas. And finally, CARB released the Proposed 2022 State SIP Strategy and hosted our 4th workshop in August 2022, prior to the CARB Board adopting the 2022 State SIP Strategy in September 2022. The workshops were well attended by a wide range of interested parties including community-based organizations. CARB staff listened to interested parties, evaluated their recommendations, and included some of these recommendations as measures that were appropriate for the 2022 State SIP Strategy. In order for a public suggestion to be included as a SIP measure, it needed to meet U.S. EPA-required integrity elements. SIP measures are required to be quantifiable, enforceable, surplus, and permanent. Measures suggested by the public that were ultimately adopted in the 2022 State SIP Strategy include a regulation to reduce emissions of reactive organic gas from pesticides in collaboration with the California Department of Pesticide Regulation and a zero emission truck measure to help ensure that smaller trucking companies have more consistent access to zero emission truck incentives.

Following the Board's approval of the 2022 State SIP Strategy, the public processes continue as each measure within the strategy goes through its own public process to engage with impacted communities and interested parties to further develop the measures prior to being brought to the Board for consideration as a regulation or other program. As development and implementation of these measures progress, CARB staff will continue to identify and implement opportunities to mitigate air pollution associated with racial inequities and meaningfully engage and partner with communities most impacted to address long standing disparities and challenges. As CARB cannot do this alone, CARB will also continue

to partner with other authorities such as air districts including the South Coast AQMD, other State agencies, and the federal government to ensure emissions reduction are achieved.

These connected efforts, as well as interagency efforts, will provide additional pathways to address Title VI requirements and support achieving the goal where zip code or race does not predict air pollution exposures. CARB has reviewed U.S. EPA and U.S. Department of Justice resources for Title VI and environmental justice policies, and looks forward to written guidance from U.S. EPA to address Clean Air Act section 110(a)(2)(E) as the State develops future clean air plans.

#### Civil Rights Policy and Discrimination Complaint Process

Under CARB's written Civil Rights Policy and Discrimination Complaint process (Civil Rights Policy), CARB has a policy of nondiscrimination in its programs and activities and implements a process for discrimination complaints filed with CARB, which is available on CARB's website. The Civil Rights Officer coordinates implementation of CARB's nondiscrimination activities, including as the Equal Employment Opportunity (EEO) Officer for employment purposes, and who can be reached at [EEOP@arb.ca.gov](mailto:EEOP@arb.ca.gov), or (279) 208-7110.<sup>9</sup>

The Civil Rights Policy and Discrimination Complaint Process provides the following information about the nondiscrimination policy and its applicability:

It is CARB policy to provide fair and equal access to the benefits of a program or activity administered by CARB. CARB will not tolerate discrimination against any person(s) seeking to participate in, or receive the benefits of, any program or activity offered or conducted by CARB. Members of the public who believe they were unlawfully denied full and equal access to a CARB program or activity may file a civil rights complaint with CARB under this policy. This non-discrimination policy also applies to people or entities, including contractors, subcontractors, or grantees that CARB utilizes to provide benefits and services to members of the public. [ . . . ]

As described in the Civil Rights Policy and Discrimination Complaint Process, the Civil Rights Officer coordinates implementation of nondiscrimination activities:

CARB's Executive Officer will have final authority and responsibility for compliance with this policy. CARB's Civil Rights Officer, on behalf of the Executive Officer, will coordinate this policy's implementation within CARB, including work with the Ombudsman's Office, Office of Communications, and the staff and managers within a program or activity offered by CARB. The Civil Rights Officer coordinates compliance efforts, receives inquiries concerning non-discrimination requirements, and ensures CARB is complying with state and federal reporting

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<sup>9</sup> CARB. California Air Resources Board and Civil Rights. <https://ww2.arb.ca.gov/california-air-resources-board-and-civil-rights>, Civil Rights Policy and Discrimination Compliant Process. November 1, 2016. <https://ww2.arb.ca.gov/sites/default/files/2023-01/2016-11-03%20CARB%20Civil%20Rights%20Policy%20Revised%20Final.pdf>

and record retention requirements, including those required by Code of Federal Regulations, Title 40, Section 7.10 et seq.

The Civil Rights Policy and Discrimination Complaint Process also describes in detail the complaint procedure, as follows:

A Civil rights complaint may be filed against CARB or other people or entities affiliated with CARB, including contractors, subcontractors, or grantees that CARB utilizes to provide benefits and services to members of the public. The complainant must file his or her complaint within one year of the alleged discrimination. This one-year time limit may be extended up to, but no more than, an additional 90 days if the complainant first obtained knowledge of the facts of the alleged violation after the expiration of the one-year time limit. [. . .]

The Civil Rights Officer will review the facts presented and collected and reach a determination on the merits of the complaint based on a preponderance of the evidence. The Civil Rights Officer will inform the complainant in writing when CARB has reached a determination on the merits of the discrimination complaint. Where the complainant has articulated facts that do not appear discriminatory but warrants further review, the Civil Rights Officer, in his or her discretion, may forward the complaint to a party within CARB for action. The Civil Rights Officer will inform the complainant, either verbally or in writing, before facilitating the transfer. [. . .]

CARB will not tolerate retaliation against a complainant or a participant in the complaint process. Anyone who believes that they have been subject to retaliation in violation of this policy may file a complaint of retaliation with CARB following the procedures outlined in this policy.

There is a Civil Rights Complaint Form available<sup>10</sup> on the webpage, which should be used by members of the public to file a complaint of discrimination against CARB that an individual believes occurred during the administration of its programs and services offered to the public. As described on CARB's webpage, for all complaints submitted, the Civil Rights Officer will review the complaint to determine if there is a prima facie complaint (which means, if all facts alleged were true, would a violation of the applicable policy exist). If the Civil Rights Officer identifies a prima facie complaint in the jurisdiction of the Civil Rights Office, the Civil Rights Office will investigate and determine whether there is a violation of the policy.

The laws and regulations that CARB implements through this policy include:

- Code of Federal Regulations, Title 40 Parts 5 and 7;
- Title VI of the U.S. Civil Rights Act of 1964, as amended;
- Section 504 of the Rehabilitation Act of 1973;

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<sup>10</sup> CARB. Civil Rights Complaint Form. July 2019. [https://ww2.arb.ca.gov/sites/default/files/2023-01/eo\\_eo\\_033\\_civil\\_rights\\_complaints\\_form.pdf](https://ww2.arb.ca.gov/sites/default/files/2023-01/eo_eo_033_civil_rights_complaints_form.pdf)

- Age Discrimination Act of 1975;
- Title IX of the Education Amendments of 1972;
- California Government Code, Title 2, Division 3, Part 1, Chapter 2, Article 9.5, *Discrimination*, Section 11135 et seq.; and
- California Code of Regulations, Title 2, Section 10000 et seq.

As part of its overarching civil rights and environmental justice efforts, CARB is in the process of updating its Civil Rights Policy and will make those publicly available once complete. These updates will reflect available U.S. EPA and U.S. Department of Justice resources for Title VI and environmental justice policies. CARB encourages U.S. EPA to issue additional guidance to further clarify Title VI requirements and expectations to assist state implementation efforts.

## CARB's Mobile Source Measures

### On-Road Heavy-Duty

#### *Advanced Clean Fleets Regulation*

The Advanced Clean Fleets Regulation was adopted by CARB on April 27, 2023. This measure accelerates zero emission vehicle (ZEV) adoption in the medium- and heavy-duty sectors by setting zero emission requirements for fleets and a 100 percent ZEV sales requirement in California for manufacturers of Class 2b through 8 vehicles starting in 2036. The Advanced Clean Fleets Regulation focuses on strategies that ensure the cleanest vehicles are deployed by government, business, and other entities in California while meeting their transportation needs. The requirements are phased-in on varying schedules for different fleets including drayage trucks, high priority private and federal fleets, and state and local government fleets. All drayage trucks operating at seaports and intermodal railyards are required to be zero emission by 2035. Drayage trucks also have new registration and reporting requirements, starting in 2023. High priority private and federal fleets must only add ZEVs or near-zero emission vehicles with minimum all electric range to the California fleet starting January 1, 2024. However, to provide flexibility, these fleets may opt into the ZEV milestone schedule which is a ZEV phase-in as a percentage of the California fleet and targets vehicles that are well suited for electrification starting in 2025. State and local government fleets are required to phase-in a ZEV purchase requirement starting at 50 percent of new purchases in 2024 and 100 percent starting in 2027 or these fleets may opt into the ZEV milestone schedule.

#### *Zero Emission Trucks Measure*

This measure would increase the number of ZEVs and require cleaner engines to achieve emissions reductions from fleets that are not affected by the Advanced Clean Fleets Regulation. This would include potential zero emissions zone concepts around warehouses and sensitive communities if CARB is given

new authority to enact indirect source rules in combination with strategies to upgrade older trucks to newer and cleaner engines. This would be a transitional strategy to achieve zero emissions medium- and heavy-duty vehicles everywhere feasible by 2045.

## On-Road Light-Duty

### *Clean Miles Standard*

The Clean Miles Standard was adopted by CARB on May 20, 2021. The primary goals of this measure are to reduce GHG emissions from ride-hailing services offered by transportation network companies (TNCs) and promote electrification of the fleet by setting an electric vehicle mile target, while achieving criteria pollutant co-benefits. TNCs would be required to achieve zero grams CO<sub>2</sub> emissions per passenger mile traveled and 90 percent electric VMT by 2030.

## Off-Road Equipment

### *Tier 5 Off-Road Vehicles and Equipment*

This measure would reduce NO<sub>x</sub> and particulate matter (PM) emissions from new off-road compression-ignition (CI) engines by adopting more stringent exhaust standards for all power categories, including those that do not currently utilize exhaust aftertreatment such as diesel particulate filters and selective catalytic reduction. This measure would be more stringent than required by current CARB, U.S. EPA and European Stage V nonroad regulations and would require the latest generations of emission control technologies.

For this measure, CARB staff would develop and propose standards for new off-road CI engines including the following: lower PM standards for engines less than 19 kilowatt (kW) (25 horsepower [hp]), lower NO<sub>x</sub> and PM standards for engines greater than or equal to 19 kW (25 hp) and less than 56 kW (75 hp), and more stringent aftertreatment-based PM and NO<sub>x</sub> standards for engines greater than or equal to 56 kW (75 hp). Other possible elements include new manufacturer-based in-use testing requirements, proposing more representative useful life periods, and developing a low load certification test cycle. It is expected that this comprehensive offroad Tier 5 regulation would rely heavily on technologies that manufacturers are developing to meet the recently approved low NO<sub>x</sub> standards and enhanced in-use requirements for on-road heavy-duty engines.

### *Amendments to the In-Use Off-Road Diesel-Fueled Fleets Regulation*

The amendments to the In-Use Off-Road Diesel-Fueled Fleets Regulation were adopted by CARB on November 17, 2022. This measure further reduces NO<sub>x</sub> and PM emissions from the in-use off-road diesel equipment sector by adopting more stringent requirements that target the oldest and dirtiest equipment that were previously allowed to operate indefinitely.

The amendments include a phase out schedule for most Tier 0, 1, and 2 engines between 2024 and 2036. This will allow a 12-year phase out of these oldest engines. Along with the engine tier phase out, adding vehicle provisions in the current regulation are extended to phase in a restriction on the adding of vehicles with Tier 3 and Tier 4 interim engines to fleets. The amendments also include new requirements for fleets to use renewable diesel (with some limited exemptions), new contracting requirements for prime contractors and public works awarding bodies to increase the enforceability and awareness of the regulation, and two optional flexibility provisions for fleet adoption of zero emission vehicles. Additional modifications include clarifications to implementation, sunset of year-by-year low use, the addition of flexibility to permanent low-use, and the sunset of a provision that would have allowed small fleets to continue to operate vehicles that could not be retrofitted with a verified diesel emission control strategy indefinitely.

### *Transport Refrigeration Unit Regulation Part 2 (Non-Truck TRUs)*

This measure is the second part of a two-part rulemaking to transition diesel-powered transport refrigeration units (TRUs) to zero emission technologies. This measure would require zero emission equipment for non-truck TRUs (trailer TRUs, domestic shipping container TRUs, railcar TRUs, and TRU generator sets).

### *Commercial Harbor Craft Amendments*

The amendments to the Commercial Harbor Craft Regulation were adopted by CARB on March 24, 2022. The amended regulation requires that starting in 2023 and phasing in through 2031, most commercial harbor crafts (CHCs) (except for commercial fishing vessels and categories listed below) are required to meet the cleanest possible standard (Tier 3 or 4) and retrofit with diesel particulate filters (DPFs) based on a compliance schedule. The prior regulated CHC categories are ferries, excursion, crew and supply, tug/tow boats, barges, and dredges. The amendments impose in-use requirements on the rest of vessel categories except for commercial fishing vessels, including workboats, pilot vessels, commercial passenger fishing, and all barges over 400 feet in length or otherwise meeting the definition of an ocean-going vessel. The amendments require engines on new build commercial fishing vessels to meet the most stringent marine standards (Tier 3 or Tier 4) or Tier 4 Final off-road emission standards. The amendments also remove the exemption for engines less than 50 hp.

The regulation also requires that, starting in 2025, all new and newly acquired excursion vessels to be plug-in hybrid vessels that are capable of deriving 30 percent or more of combined propulsion and auxiliary power from a zero emission tailpipe emission source. Starting in 2026, all new, newly acquired and in-use short run ferries are required to be zero emission; and starting in 2030 and 2032, all in-use commercial fishing vessels would need to meet a Tier 2 standard at minimum.

### *Cargo Handling Equipment Amendments*

This measure would start transitioning Cargo Handling Equipment (CHE) to full zero emission by 2030, with over 90 percent penetration of ZE equipment by 2036. Based on the current state of zero emission



CHE technological developments, the transition to zero emission would most likely be achieved largely through the electrification of CHE. This assumption about aggressive electrification is supported by the fact that currently some electric RTG cranes, electric forklifts, and electric yard tractors are already commercially available. The zero emission phase-in schedule will be determined by technology feasibility determinations and discussions with public stakeholders during the rulemaking process.

## Other

### *Zero Emission Standard for Space and Water Heaters*

For this measure, CARB would develop and propose zero emission GHG standards for new space and water heaters sold in California; CARB could also work with air districts to further tighten district rules to drive zero emission technologies. This measure would not mandate retrofits in existing buildings, but some buildings would require retrofits to be able to use the zero emission technology that this measure would require. Beginning in 2030, 100 percent of sales of new space and water heaters (for either new construction or replacement of burned-out equipment in existing buildings) would need to meet zero emission standards. It is expected that this regulation would rely heavily on heat pump technologies currently being sold to electrify new and existing buildings.

## Primarily-Federally and Internationally Regulated Sources – CARB Measures

In addition to reducing emissions from the above sources, it is critical to achieve emissions reductions from sources that are primarily regulated at the federal and international level. It is imperative that the federal government and other relevant regulatory entities act decisively to reduce emissions from these primarily-federally and internationally regulated sources of air pollution. CARB and the air districts in California have taken actions to not only petition federal agencies for action, but also to directly reduce emissions using programmatic mechanisms within our respective authorities. CARB continues to explore additional actions, many of which may require a waiver or authorization under the Clean Air Act, as described below.

### *In-Use Locomotive Regulation*

The In-Use Locomotive Regulation was adopted by CARB April 27, 2023. This measure uses mechanisms available under CARB's regulatory authority to accelerate the adoption of advanced, cleaner technologies, and include zero emission technologies, for locomotive operations. The In-Use Locomotive Regulation applies to all locomotives operating in the State of California with engines that have a total rated power of greater than 1,006 horsepower, excluding locomotive engines used in training of mechanics, equipment designed to operate both on roads and rails, and military locomotives. The measure reduces emissions by increasing use of cleaner diesel locomotives and zero emission locomotives through a spending account, in-use operational requirements, and by an idling limit. By July 1, 2024, a spending account is established for each locomotive operator. Funds in the account is only to be used toward Tier 4 or cleaner locomotives

until 2030, and at any time toward zero emission locomotives, zero emission pilot or demonstration projects, or zero emission infrastructure.

For the in-use operational requirements, beginning January 1, 2030, only locomotives built after January 1, 2007, may operate in California. Each year after January 1, 2030, only locomotives less than 23 years old may operate in California. Additionally, under the in-use operational requirements, starting January 1, 2030, all switch, industrial, and passenger locomotives operating in California with an original engine build date 2030 or newer will be required to be zero emission. Starting January 1, 2035, all freight line haul locomotives operating in California with an original engine build date 2035 or newer must be zero emission. Locomotives equipped with automatic engine stop/start systems are to idle no more than 30 minutes unless an exemption applies. Also, locomotive operators would report locomotive engine emissions levels and activity on an annual basis.

## U.S. EPA's Clean Trucks Rule

Effective March 27, 2023, the U.S. EPA adopted a final rule titled “Control of Air Pollution from New Motor Vehicles: Heavy-Duty Engine and Vehicle Standards.”<sup>11</sup> This rule is part of the U.S. EPA’s Clean Trucks Plan (CTP) that aims to reduce ozone and PM2.5 air pollution from heavy-duty trucks and buses. The rule applies to manufacturers of heavy-duty engines and vehicles. It will result in lower NOx emissions from new heavy-duty vehicles beginning in model year (MY) 2027 by setting more stringent emission standards that cover a wider range of heavy-duty engine operating conditions and require those standards to be met for a longer period of time of when these engines operate on the road. The rule also changes key provisions of the existing heavy-duty vehicle emission control program, such as the test procedures, regulatory useful life, emission-related warranty, and other requirements. U.S. EPA’s CTP will result in emission benefits by 2030 and South Coast AQMD includes those benefits as a line item adjustment to the baseline emissions in this PM2.5 Plan (see Table 4-12).

## SCAG's Regional Transportation Plan/Sustainable Communities Strategy and Transportation Control Measures

The PM2.5 Plan includes Transportation Control Measures (TCMs) from Southern California Association of Government’s (SCAG) Regional Transportation Plan/Sustainable Communities Strategy to address attainment of the 2012 annual PM2.5 standard in the South Coast Air Basin. The TCMs are based on SCAG’s Final 2020–2045 Regional Transportation Plan/Sustainable Communities Strategy (2020 RTP/SCS, also known as Connect SoCal) and 2023 Federal Transportation Improvement Program (FTIP), as amended.

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<sup>11</sup> Control of Air Pollution From New Motor Vehicles: Heavy-Duty Engine and Vehicle Standards, 88 Fed. Reg. 4296 (January 24, 2023)

The RTP/SCS and FTIP were developed in consultation with federal, state and local transportation and air quality planning agencies and other stakeholders. The four County Transportation Commissions (CTCs) in the South Coast Air Basin, namely Los Angeles County Metropolitan Transportation Authority, Riverside County Transportation Commission, Orange County Transportation Authority and the San Bernardino County Transportation Authority, were actively involved in the development of the regional transportation measures of this Appendix. While SCAG will soon adopt the 2024 RTP/SCS, this PM2.5 Plan is based on the 2020 RTP/SCS as it was the latest approved RTP/SCS at the time of plan development. Refer to Appendix IV-B for more details.

## SIP Emission Reduction Commitment

The SIP emission reduction commitment in the PM2.5 Plan reflects the estimated emission reductions from adopted rules and proposed measures. These are the emission reductions that we use to show progress in reducing emissions in an expeditious manner, and how the region will be able to meet the 2012 annual PM2.5 standard. Not all emission reductions that occur are SIP-creditable – meaning they do not count for purposes of showing how an area will be able to meet federal air quality standards. To be SIP-creditable, emission reductions must meet specific U.S. EPA criteria (e.g., integrity elements) to provide confidence that the emission reductions relied upon to meet the standards will occur. The following sections first describe the methodology for calculating SIP emissions and SIP-creditable reductions, then describe what procedures will be followed to ensure fulfillment of the commitment.

### SIP Emission Reduction Tracking

For purposes of tracking progress in emission reductions, the baseline annual average emissions for the year 2030 will be used, regardless of any subsequent new inventory information that may reflect more recent knowledge. This is to ensure that the same “currency” is used in measuring progress as was used in designing the AQMP and that there is an “apples to apples” comparison in evaluating emissions.

Any emission reductions achieved beyond the existing South Coast AQMD regulations are creditable only if there is also a mechanism to ensure that the commitments to achieve those emission reductions are enforceable. Therefore, in certain instances, the South Coast AQMD may have to adopt regulations to reflect the existing industry practices in order to claim SIP reduction credit, with the understanding that there may not be additional reductions beyond what has already occurred. Exceptions can be made where reductions are real, quantifiable, surplus to the baseline inventory, and enforceable through other State and/or federal regulations. Further, any emission inventory revisions, which have gone through a peer review and public review process, can also be SIP creditable.

The PM2.5 Plan includes emission reductions from voluntary incentive measures to help meet the 2012 annual PM2.5 standard. With reliance on voluntary incentive measures to achieve attainment of the federal PM2.5 standard and for those measures to be SIP-approved, the South Coast AQMD must design programs such that the emission reductions from these incentive measures are proven to be real, quantifiable, surplus, enforceable, and permanent.

There are key components required of a SIP submittal in order to rely on discretionary incentive programs to satisfy the CAA emission reduction requirements. These components include a demonstration addressing the “integrity elements” (the five requirements listed above), federally enforceable “backstop” commitments, technical support, funding, legal authority, public disclosure and provisions to track results that are common among the various voluntary incentive programs. The “backstop” commitments include a requirement to monitor emission reductions achieved by the voluntary incentive measures and to report annually to the U.S. EPA the amount of reductions achieved. If the U.S. EPA determines that insufficient progress has been made, then substitute measures must be implemented to rectify the shortfall prior to the statutory implementation deadline. The South Coast AQMD is committed to developing detailed guidelines for voluntary incentive programs for individual incentive measures in accordance with the U.S. EPA’s economic incentive programs guidelines. The following section describes the necessary criteria that will be included in each of the incentive measures.

### *Integrity Elements to Ensure Emission Reductions from Incentive Programs*

To be SIP-creditable, emission reductions from voluntary incentive measures must meet the U.S. EPA’s integrity elements. The emission reductions must be real, quantifiable, surplus, enforceable, and permanent. This demonstration must include project type(s); project life; applicable incentive program guidelines by title and year; and analysis of applicable incentive program guidelines for consistency with the integrity elements. For the purposes of this demonstration, the following defines and provides examples of the key elements:

#### Quantifiable

Emission reductions are quantitatively measurable, supported by existing and acceptable technical data. The quantification should use well-established, publicly available, and approved emission factors and accepted calculation methodology. There must be procedures to evaluate and verify over time the level of emission reductions that are actually achieved.

#### Surplus

Emission reductions must be above and beyond all current and known future District, State, or federal regulations already included in the SIP. Annual tracking will account for any potential overlapping future regulations that could conflict with the surplus reductions. Emission reductions used to meet air quality attainment requirements are surplus as long as they are not otherwise relied on in the SIP, SIP-related requirements, and other State air quality programs adopted but not in the SIP, a consent decree, or federal rules that focus on reducing criteria pollutants or their precursors. In the event that a voluntary incentive program’s emission reductions are already relied on to meet air quality-related program requirements, they are no longer surplus. In addition, the emission reductions are available only for the remaining useful life of the equipment being replaced (e.g., if the equipment being replaced had a remaining useful life of five years, the additional emission reductions from the new equipment are available for SIP or conformity purposes under this guidance only for five years).

### Enforceable

The South Coast AQMD will be responsible for assuring that the emission reductions credited in the SIP will occur. Emission reductions and other required actions are enforceable if:

- a. They are independently verifiable;
- b. Program violations are defined;
- c. Those liable for emission reductions can be identified;
- d. The South Coast AQMD and the U.S. EPA maintain the ability to apply penalties and secure appropriate corrective action where applicable;
- e. The general public has access to the emissions-related information obtained from the source;
- f. The general public can file suits against sources for violations (with the exception of those owned and operated by Tribes); and
- g. They are practically enforceable in accordance with other U.S. EPA guidance on practicable enforceability.

Actual emission reductions, for example, can be assured through replacement equipment registration, recordkeeping and reporting, and inspections (initial inspection after installation and subsequent inspections on a regular basis thereafter, if needed) throughout the term of project. Specific enforcement mechanisms will be addressed in the guidelines for the individual incentive measures.

### Permanent

The emission reductions are permanent if they occur over the duration of the voluntary incentive program, and for as long as they are relied on in the SIP. For example, those awarded incentives would need to ensure the projects are properly implemented and the reductions are occurring and will continue to occur. Recipients of the incentive awards would therefore agree to contract provisions, such as recordkeeping and reporting to track reductions and agreements that newly installed equipment would not be removed without concurrence of the South Coast AQMD (i.e., permanent placement) and the proof that the replaced equipment would be destroyed or at least not be operated in the Basin (e.g., pictures, certification). Detailed procedures to ensure permanent reductions will be described in the guidelines for the individual incentive measures.

## Reductions from South Coast AQMD Control Measures

For purposes of implementing an approved SIP, the South Coast AQMD is committed to adopt and implement control measures that will achieve, in aggregate, emission reductions to demonstrate expeditious progress toward meeting the federal 2012 annual PM<sub>2.5</sub> standard. The South Coast AQMD is

committed to adopt the control measures in Tables 4-2 and 4-3 unless these measures or a portion thereof are found infeasible, and other substitute measures that can achieve equivalent reductions in the same adoption or implementation timeframes are adopted. Findings of infeasibility will be made at a regularly scheduled meeting of the South Coast AQMD Governing Board with proper public notification. For purposes of the SIP commitment, infeasibility means that the proposed control technology is not reasonably likely to be available by the implementation date in question, or achievement of the emission reductions by that date is not technically or economically feasible. The reductions in Tables 4-2 and 4-3 are committed only to the extent needed to achieve attainment by the 2030 attainment deadline. If any substitution is needed, the alternative measures will need to achieve the same emission reductions or air quality benefit. The aggregate emission reduction commitments, along with the anticipated specific control measures to meet that reduction commitment are made with the understanding that if there is a shortfall in the individual measures for a particular year, emission reductions from other control measures could be substituted. The South Coast AQMD acknowledges that this commitment is enforceable under CAA section 304(f). The U.S. EPA will not credit SIP reductions unless the control measures are adopted and approved into the SIP at the time the U.S. EPA takes action on the plan.<sup>12</sup>

## Reductions from CARB Control Measures

The CARB proposed control measures presented in Table 4-6, combined with ongoing implementation of current control programs, will provide further reductions to enhance air quality progress and achieve the 2012 annual PM2.5 standard.

## Overall Emission Reductions

Table 4-12 identifies projected reductions for the South Coast Air Basin based on the annual inventory for NOx and direct PM2.5 emissions for 2030 and Table 4-13 summarizes total reductions from 2018 base year to 2030 attainment. These reductions reflect the emission reductions associated with implementation of control measures under State and local jurisdiction. Table 4-12 also includes emission reductions from recently adopted regulations as line item adjustments. South Coast AQMD and CARB commit to reduce NOx and PM2.5 emissions by 9.99\* tpd and 0.53 tpd, respectively, beyond the 2030 baseline emissions through control measures proposed in this PM2.5 Plan. This enforceable commitment represents 5 percent and 16 percent, respectively, of the overall NOx and PM2.5 reductions that will occur between 2018 and 2030. Both the enforceable commitment and attainment demonstration exclude

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<sup>12</sup> U.S. EPA has in the past allowed about 10 percent of required reductions to be in the form of “enforceable commitments”

\* A typo was made in the emission reductions tally in Table 4-12 and Table 4-13. South Coast AQMD and CARB NOx enforceable commitment should be 10.44 tons per day.

emission reductions from control measures that are needed to satisfy MSM requirements, as these requirements are independent of attainment.

**TABLE 4-12**  
**EMISSION REDUCTIONS FOR 2030 BASED ON ANNUAL EMISSIONS INVENTORY**  
**(TONS PER DAY)**

	NO <sub>x</sub>	PM <sub>2.5</sub>
<b>Year 2030 Baseline</b>	210.31	54.05
<b>Emission Reductions:</b>		
South Coast AQMD Stationary Source Measures	1.33	0.04
CARB Stationary Source Measure	2.58	0.41
CARB Mobile Source Measures	6.08*	0.09
U.S. EPA's Clean Trucks Plan <sup>^</sup>	0.61*	-
Stationary Source Line Item Adjustments <sup>^</sup>	3.20	0.00
Mobile Source Line Item Adjustments <sup>^</sup>	21.14	0.83
<b>Total Reductions</b>	<b>34.94*</b>	<b>1.36</b>
<b>2030 Remaining Emissions</b>	<b>175.37*</b>	<b>52.69</b>

<sup>^</sup> Includes stationary and mobile source baseline emissions inventory line item adjustments. For a complete list of adopted regulations included as line item adjustments, refer to Appendix I.

\* Mobile Source Line Item Adjustments include regulations adopted by both CARB and the U.S. EPA. The U.S. EPA's Clean Trucks Plan is a subcategory of these adjustments, not a standalone item. The figure for 'Mobile Source Measures' should be corrected to 6.53 tons per day. Consequently, the 'Total Reductions' and '2030 Remaining Emissions' for NO<sub>x</sub> should be updated to 34.78 and 175.53 tons per day, respectively.

**TABLE 4-13  
EMISSION REDUCTIONS FROM 2018 TO 2030 ATTAINMENT BASED ON ANNUAL EMISSIONS  
INVENTORY (TONS PER DAY)**

	NOx	PM2.5
2018 Base Year Emissions	383.02	56.04
2030 Baseline Emissions	210.31	54.05
2030 Attainment Scenario Emissions	175.37*	52.69
Baseline Reductions from 2018 to 2030	172.71	1.99
Line Item Adjustments^	24.95*	0.83
Reductions from the Proposed Control Measures	9.99*	0.53
<b>Total Reductions from 2018 to Attainment</b>	<b>207.65*</b>	<b>3.35</b>

^ Includes reductions from stationary and mobile source line item adjustments as well as reductions from U.S. EPA's Clean Trucks Plan

\* NOx Reductions from U.S. EPA's Clean Trucks Plan was double counted in the 'Line Item Adjustments'. NOx for '2030 Attainment Scenario Emissions', 'Line Item Adjustments', 'Reductions from the Proposed Control Measures' and 'Total Reductions from 2018 to Attainment' should be corrected to 175.53, 24.34, 10.44 and 207.09 tons per day, respectively.