Preliminary Draft of the 2016 AQMP SCAQMD Mobile Source Measures
April 14, 2016

The following is a list of the preliminary Draft 2016 AQMP SCAQMD mobile source measures proposed as part of an overall strategy to reduce emissions to meet the ozone and PM2.5 standards. The overall strategy will also include stationary source measures implemented by the SCAQMD, proposed mobile source measures from the California Air Resources Board (CARB) that include federal and international sources. The proposed District mobile source measures complement CARB proposed mobile source measures. Several measures as provided in this release do not contain emission inventory and reduction estimates. The emission inventory and reduction estimates will be provided in future draft releases.

TITLE	EMISSION REDUCTIONS (tpd) (2023/2031)
SCAQMD Mobile Source Measures:	
MOB-01: Emission Reductions at Commercial Marine Ports [NOx, SOx, PM]	TBD
MOB-02: Emission Reductions at Rail Yards and Intermodal Facilities [NOx, PM]	TBD
MOB-03: Emission Reductions at Warehouse Distribution Centers [All Pollutants]	TBD
MOB-04: Emission Reductions at Commercial Airports [All Pollutants]	TBD
MOB-05: Accelerated Penetration of Partial Zero-Emission and Zero Emission Vehicles [VOC, NOx, CO]	TBD
MOB-06: Accelerated Retirement of Older Light-Duty and Medium-Duty Vehicles [VOC, NOx, CO]	TBD
MOB-07: Accelerated Penetration of Partial Zero-Emission and Zero-Emission Light-Heavy- and Medium-Heavy-Duty Vehicles [NOx, PM]	TBD
MOB-08: Accelerated Retirement of Older On-Road Heavy-Duty Vehicles [NOx, PM]	TBD
MOB-09: On-Road Mobile Source Emission Reduction Credit Generation Program [NOx, PM]	TBD
MOB-10: Extension of the SOON Provision for Construction/Industrial Equipment [NOx]	2.0 / 2.0
MOB-11: Extended Exchange Program [VOC, NOx, CO]	2.9 / 1.0
MOB-12: Further Emission Reductions from Passenger Locomotives [NOx, PM]	TBD
MOB-13: Off-Road Mobile Source Emission Reduction Credit Generation Program [NOx, SOx, PM]	TBD
MOB-14: Emission Reductions from Incentive Programs [NOx, PM]	9.5 / 5.6
EGM-01: Emission Reductions from New Development and Redevelopment Projects [All Pollutants]	TBD
TOTAL SCAQMD Mobile Source NOx REDUCTIONS (tpd)	**14.4 / 8.6**

MOB-01: EMISSION REDUCTIONS AT COMMERCIAL MARINE PORTS [ALL POLLUTANTS]

CONTROL MEASURE SUMMARY

SOURCE CATEGORY: PORTS AND PORT-RELATED SOURCES (I.E., OCEAN-GOING VESSELS, ON-ROAD HEAVY-DUTY TRUCKS, LOCOMOTIVES, HARBOR CRAFT, AND CARGO HANDLING EQUIPMENT)

CONTROL METHODS: EMISSION REDUCTION METHODS WOULD BE PROPOSED BY THE PORTS TO MEET SPECIFIED EMISSION REDUCTION TARGETS AND POTENTIALLY COULD INCLUDE CLEAN TECHNOLOGY FUNDING PROGRAMS, INCREASED EFFICIENCIES, AIR QUALITY IMPROVEMENT PROJECT OPTIONS, LEASE PROVISIONS, PORT TARIFFS, OR INCENTIVES/DISINCENTIVES TO IMPLEMENT MEASURES, TO THE EXTENT COST-EFFECTIVE AND FEASIBLE STRATEGIES ARE AVAILABLE

EMISSIONS (TONS/DAY):

ANNUAL AVERAGE	**2012**	**2022**	**2023**	**2031**
NOX INVENTORY	39.37	TBD	42.39	35.60
NOX REDUCTION		TBD	TBD	TBD
NOX REMAINING		TBD	TBD	TBD
SOX INVENTORY	4.04	TBD	1.23	1.47
SOX REDUCTION		TBD	TBD	TBD
SOX REMAINING		TBD	TBD	TBD
PM2.5 INVENTORY	1.06	TBD	0.81	0.93
PM2.5 REDUCTION		TBD	TBD	TBD
PM2.5 REMAINING		TBD	TBD	TBD

SUMMER PLANNING	**2012**	**2022**	**2023**	**2031**
NOX INVENTORY	39.37	TBD	42.39	35.60
NOX REDUCTION		TBD	TBD	TBD
NOX REMAINING		TBD	TBD	TBD

CONTROL COST: TO BE DETERMINED

IMPLEMENTING AGENCY: SCAQMD, PORTS OF LOS ANGELES AND LONG BEACH

NOTE: This control measure replaces CM #2007MOB-03 (2007 AQMP) and CM #2012IND-01 (2012 AQMP).

DESCRIPTION OF SOURCE CATEGORY

The goal of this measure is to ensure that criteria pollutant emissions of NOx, SOx, and PM2.5 from port-related sources are maximized to the greatest extent feasible to assist in the attainment

of the federal ozone and PM2.5 ambient air quality standards. This control measure seeks to quantify the emission reductions realized from the actions that the Ports of Los Angeles and Long Beach (San Pedro Bay Ports or Ports) are undertaking as part of the implementation of the Clean Air Action Plan (CAAP) and credit any surplus reductions (as defined by U.S. EPA) into the SIP. Affected sources would be proposed by the Ports and could include some or all port-related sources (on-road heavy-duty trucks, cargo handling equipment, harbor craft, marine vessels, locomotives, and stationary equipment), to the extent cost effective and feasible strategies are available.

Other sources—i.e. sources that are unrelated to the Ports—would not in any way be subject to emission reductions under this measure (including through funding of emission reduction measures, or purchase of emission credits, by the Ports or port tenants).

Background

Emissions and Progress. The Ports of Los Angeles and Long Beach are the largest in the nation in terms of container throughput, and collectively are the single largest fixed source of air pollution in Southern California. Emissions from port-related sources have been reduced significantly since 2006 through efforts by the Ports and a wide range of stakeholders. In large part, these emission reductions have resulted from programs developed and implemented by the Ports in collaboration with port tenants, marine carriers, trucking interests and railroads. Regulatory agencies, including U.S.EPA, CARB and SCAQMD, have participated in these collaborative efforts from the outset, and some measures adopted by the Ports have led the way for adoption of analogous regulatory requirements that are now applicable statewide. These port measures include the Clean Truck Program and actions to deploy shore-power and low emission cargo handling equipment. The Ports of Los Angeles and Long Beach have also established incentive programs, which have not subsequently been adopted as regulations. These include incentives for routing of vessels meeting IMO Tier 2 and 3 NOx standards, and vessel speed reduction. In addition, the Ports are, in collaboration with the regulatory agencies, implementing a Technology Advancement Program to develop and deploy clean technologies of the future.

Port sources such as marine vessels, locomotives, trucks, harbor craft and cargo handling equipment, continue to be among the largest sources of NOx in the region. Given the large magnitude of emissions from port-related sources, the substantial efforts described above play a critical part in the ability of the South Coast Air Basin to attain the national ozone and $PM_{2.5}$ ambient air standards by federal deadlines. This measure provides assurance that emissions from the Basin's largest fixed emission source will continue to support attainment of the federal 8-hour ozone and the 24-hour and annual PM2.5 standards. In addition, reductions in PM2.5 emissions will also reduce cancer risks from diesel particulate matter.

Clean Air Action Plan. The emission control efforts described above largely began in 2006 when the Ports of Los Angeles and Long Beach, with the participation and cooperation of the staff of the SCAQMD, CARB, and U.S. EPA, adopted the San Pedro Bay Ports Clean Air Action Plan (CAAP). The CAAP was further amended in 2010, updating many of the goals and implementation strategies to reduce air emissions and health risks associated with port operations while allowing port development to continue. In addition to addressing health risks from port-related sources, the CAAP sought the reduction of criteria pollutant emissions to the levels that

assure port-related sources decrease their "fair share" of regional emissions to enable the Basin to attain state and federal ambient air quality standards.

The CAAP focuses primarily on reducing diesel particulate matter (DPM), along with NOx and SOx. The CAAP includes proposed strategies on port-related sources that are implemented through new leases or port-wide tariffs, Memoranda of Understanding (MOU), voluntary action, grants or incentive programs.

In addition to the CAAP, the Ports have completed annual inventories of port-related sources since 2005. These inventories have been completed in conjunction with a technical working group composed of the SCAQMD, CARB, and U.S. EPA. Based on the latest inventories, emissions from port-related sources are continuing to decrease from 2005 emission levels. However, additional emission reductions will be need to help the region meet the ozone and PM2.5 ambient air quality standards by their applicable dates.

While many of the emission reduction targets in the CAAP result from implementation of federal and state regulations (either adopted prior to or after the CAAP), some are contingent upon the Ports taking and maintaining actions which are not required by air quality regulations. These actions include the Expanded Vessel Speed Reduction Incentive Program, lower-emission switching locomotives, and incentives for lower emission marine vessels. This AQMP control measure is designed to provide an ability for the Ports' actions to be credited in the State Implementation Plan and provides assurance that, if emissions do not continue to meet projections, the Ports will develop and implement plans to get back on track, to the extent that cost effective and feasible strategies are available.

The Ports are in the process of updating the CAAP. Commonly termed "CAAP 3.0", the Ports are seeking to develop strategies to improve operational efficiencies, while meeting long term sustainability goals through the deployment of zero- and near-zero emission technologies to the greatest extent feasible. As part of this effort, the Ports have developed roadmaps for the deployment of zero-emission technologies. District staff, CARB, and U.S. EPA have been in discussions with Port staff on the 2016 AQMP/SIP process.

Regulatory History

The CAAP sets out the emission control programs and plans that will help mitigate air quality impacts from port-related sources. The CAAP relies on a combination of regulatory requirements and voluntary control strategies which go beyond U.S. EPA or CARB requirements, or are implemented faster than regulatory rules. The regulations which the CAAP relies on include international, federal and state requirements controlling port-related sources such as marine vessels, harbor craft, cargo handling equipment, locomotives, and trucks. Key regulatory and other actions taken to date are as follows:

- *International Maritime Organization (IMO) Emissions and Fuel Standards.* The IMO MARPOL Annex VI, which came into force in May 2005, set new international NOx emission limits on Category 3 (>30 liters per cylinder displacement) marine engines installed on new vessels retroactive to the year 2000. In October 2008, the IMO adopted an amendment which places a global limit on marine fuel sulfur content of 0.1 percent by 2015

for specific areas known as Emission Control Areas (ECA). The ECA extends 200 nautical miles from the U.S. coast. The South Coast Air Basin off-coast waters are included in the ECA and ships calling at POLA and POLB have to meet this new fuel standard. In addition, the 2008 IMO amendment required new ships built after January 1, 2016 that enter an ECA to meet a Tier III NOx emission standard which is 80 percent lower than the Tier I emission standard.

- *EPA Marine Vessel Regulations.* In 2010, U.S. EPA adopted standards that apply to Category 3 (C3) engines installed on U.S. vessels and to marine diesel fuels produced and distributed in the United States. That rule added two new tiers of engine standards for C3 engines consistent with the IMO standards described above. It also includes a regulatory program to implement IMO MARPOL Annex VI in the United States, including engine and fuel sulfur limits, and extends the ECA engine and fuel requirements to U.S. internal waters (i.e., rivers, lakes, etc.). U.S. EPA is also a participating member of IMO and provided input to the fuel sulfur and NOx emission standards adopted by IMO and works within international organizations to establish global engine and fuel standards.
- *EPA Emission Standards for Locomotives.* To reduce emissions from switch and line-haul locomotives, the EPA in 2008 established a series of increasingly strict emission standards for new or remanufactured locomotive engines. The emission standards are implemented by "Tier" with Tier 0 as the least stringent and Tier 4 being the most stringent. EPA also established remanufacture standards for both line haul and switch engines. For Tiers 0, 1, and 2, the remanufacture standards are more stringent than the new manufacture standards for those engines for some pollutants.
- *EPA and CARB Emission Standards for New Trucks.* To reduce emissions from on-road, heavy-duty diesel trucks, EPA established a series of cleaner emission standards for new engines, starting in 1988. The EPA promulgated the final and cleanest standards with the 2007 Heavy-Duty Highway Rule. Starting with model year 2010, all new heavy-duty trucks have to meet the final emission standards specified in the rule.
- *CARB In-use Fleet Rules.* Between 2005 and 2010, CARB adopted several rules that reduce emissions at the Ports by requiring accelerated modernization of equipment by replacing or repowering old equipment with new equipment. These rules include: In-Use Truck and Bus Rule, In-use Off-road Equipment Rule, Cargo Handling Rule, Drayage Truck Rule, Commercial Harbor Craft Rule, and the At-Berth Auxiliary Engine (Shore power) Rule. The majority of marine vessel emissions are created by main propulsion engines, but auxiliary engines emissions are important, in part because they occur at dock in closer proximity to persons in and around the port.
- *CARB Marine Fuel Rule.* In December 2005, the CARB Board voted to adopt fuel sulfur standards for marine auxiliary engines, including those on foreign flag vessels, in waters out to 24 nautical miles. The rule limited sulfur content in marine diesel fuel to 5,000 to 15,000 ppm depending on fuel type beginning in 2009, decreasing to 5,000 to 10,000 ppm beginning in August 2012 and to 1,000 ppm sulfur content in January 1, 2014.
- *MOUs.* In 1998, CARB entered into an MOU with the Union Pacific and Burlington Northern Santa Fe railroads which established a fleet average emissions limit for locomotives operating in the Basin. The intended effect of this MOU is to accelerate introduction of Tier 2 locomotives (achieving an approximate 57% level of NOx control) in

this region. In June 2005, CARB entered into a second MOU with the same two railroads that is intended to reduce health risks near railyards and is projected by CARB to achieve a 20% reduction in diesel particulate emissions (DPM) emissions. Finally, several years ago, the ports, shipping interests, and regulatory agencies entered into a MOU seeking voluntary reductions in vessel speed to reduce NOx emissions.

- *SCAQMD Rules Governing Locomotive Idling and Risk Assessment.* In 2005 and 2006, the District adopted rules requiring railroads to minimize unnecessary locomotive idling, and to develop emissions inventories and health risk assessments and notify the public of health risks. A federal District Court decision prevents these rule from being implemented until they become federally enforceable. The SCAQMD has submitted the rules to the U.S. EPA for approval into the SIP.

Areas where the CAAP went beyond existing regulatory requirements or accelerated the implementation of current IMO, U.S. EPA, or CARB rules include emissions reductions from ocean-going vessels through lowering vessel speeds, accelerating the introduction of 2007/2010 on-road heavy-duty drayage trucks prior to the implementation of the CARB Drayage Truck Regulation, maximizing the use of shore-side power for ocean-going vessels while at berth, early use of low-sulfur fuel in ocean-going vessels, and the restriction of high-emitting locomotives on port property. In addition, the Ports have established policies for greater use of cleaner equipment such as construction equipment operating on port property and improving operational efficiencies that have potential co-benefits in reducing emissions.

The CAAP has included emission reduction targets similar to the emission reduction targets provided in the AQMP. Specifically, the CAAP included emission reduction targets associated with the short- and near-term measures provided in the 2007 AQMP to help the region meet air quality standards.

Proposed Method of Control

This measure seeks to further reduce port-related emissions based on the percentage emission reduction targets in 2023 and 2031 to be established with the final adoption of the 2016 AQMP. In addition, this measure seeks to establish project-level performance standards to assure that approvals of port projects will implement all relevant measures needed to achieve the emission reduction targets and prevent significant increases in NOx, SOx, and PM emissions. The emission reduction targets (based on the 2012 base year) would be applied port-wide such that the overall emission reduction targets are achieved or alternatively, could be applied to the operators of port facilities (i.e., marine terminals and rail yards) individually. The Ports through its CAAP update can decide the most effective approaches to achieve the overall emission reduction targets. Emission reductions (to the extent that they are real, surplus, and quantifiable) that occurred through the identified actions as reported by the Ports on an annual basis will be incorporated in the revised baseline emissions as part of the SIP revision process (either as part of the Rate-of-Progress reporting requirements of the Clean Air Act or reflected in new baseline emissions inventory for future AQMP/SIP revisions). Since many of these actions are voluntary in nature, any emission reductions credited towards attainment of the federal air quality standards must contain an enforceable commitment that the emission reductions remain real and permanent (as

defined by U.S. EPA) if for some reason the emission reductions are not maintained after they are reported into the SIP.

This measure may be implemented in the form of a regulation by the District's within its existing legal authority, or by the state or federal government, or through other enforceable mechanisms. Through the rule development process, the District staff will establish a working group, hold a series of working group meetings, and hold public workshops. The purpose of the rule development process is to allow the District staff to work with a variety of stakeholders such as the Ports, potentially affected industries, other agencies, and environmental and community groups to provide input and comments. The rule development process will discuss the provisions of the proposed rule (or other enforceable mechanism) and, through an iterative public process, develop proposed language that could be developed into a proposed rule or other enforceable mechanisms for the SCAQMD Governing Board's consideration. This control measure applies to the Port of Los Angeles and the Port of Long Beach acting through their respective Boards of Harbor Commissioners, or alternatively, operators of port facilities (i.e., marine terminals and rail yards). The Ports may have the option to comply separately or jointly with provisions of the rule. As an alternative to a District rule, this measure could also be implemented through a legally enforceable mechanism or instrument that is equivalent in its effectiveness, is submitted for SIP inclusion with full public process, and due consideration to public comments.

EMISSIONS REDUCTION

The amount of emission reductions that can be achieved from this control measure will be dependent on the type and number of sources, pieces of equipment, and vehicles affected by the measure and the method of control to be implemented to reduce NOx, SOX, and PM2.5 emissions primarily from mobile sources.

RULE COMPLIANCE

Compliance with this control measure will depend on the type of control strategy implemented. Compliance will be verified through actual emissions reported, and enforced through submittal and review of records, reports, and emission inventories. Enforcement provisions will be discussed as part of the rule development process. If another enforceable mechanism is established as a result of the rule development process or the state or federal government implement actions that achieve equivalent emission reductions, compliance will be enforced through the provisions of those actions.

TEST METHODS

Approved emission quantification protocols by federal, state or local agencies will be used to track and report emission reductions for SIP purposes.

COST EFFECTIVENESS AND FEASIBILITY

The cost effectiveness of this measure will be based on the control option selected. A maximum cost-effectiveness threshold will be established for each pollutant during rule development. The rule will not require any additional control strategy to be implemented which exceeds the

threshold, or which is not feasible. In addition, the rule would not require any strategy to be implemented if the Ports lack authority to implement such strategy. If sufficient cost-effective and feasible measures with implementation authority are not available to achieve the emissions targets by the applicable date, the District may issue an extension of time to achieve the target. It is the District's intent that during such extension, the Ports and regulatory agencies would work collaboratively to develop technologies and implementation mechanisms to achieve the target at the earliest date feasible.

IMPLEMENTING AGENCY

The District will seek to work with the Ports and other stakeholders to identify strategies that will result in emission reductions from port-related sources to assist in the attainment of federal air quality standards and minimize to the greatest extent feasible public exposure to emissions from port-related sources as part of the development of CAAP 3.0 and potential future updates to the CAAP. The District staff and the Ports through a public process will identify an enforceable mechanism to ensure that CAAP actions beyond regulatory requirements to achieve the emission reduction targets and the reductions are credited in the SIP in a timely manner. The enforceable mechanism whether it be a rule adopted by the District or other enforceable means such as Memorandum of Understanding or Agreement will contain provisions to ensure that the emission reductions continue for the region to achieve and maintain federal air quality standards. The District and Ports will work with CARB to develop such provisions for approval by U.S. EPA.

REFERENCES

San Pedro Bay Ports (2010). San Pedro Bay Ports Clean Air Action Plan, 2010 Update, October 2010.

SCAQMD (2007). Air Quality Management Plan, Appendix IV-A, June 2007

SCAQMD (2012). Air Quality Management Plan, Appendix IV-A, December 2012

SCAQMD (2015). SCAQMD 2016 AQMP Control Strategy Symposium, June 2015

MOB-02: EMISSION REDUCTIONS AT RAIL YARDS AND INTERMODAL FACILITIES [NOX, PM2.5]

CONTROL MEASURE SUMMARY				
SOURCE CATEGORY:	RAILYARDS AND INTERMODAL FACILITIES			
CONTROL METHODS:	MOBILE SOURCE EMISSION REDUCTION EFFORTS INCLUDING DEPLOYMENT OF CLEANER TECHNOLOGIES, INCREASED EFFICIENCIES, OR AIR QUALITY IMPROVEMENT PROJECT OPTION			
EMISSIONS (TONS/DAY):				
ANNUAL AVERAGE	**2012**	**2022**	**2023**	**2031**
NOX INVENTORY	TBD	TBD	TBD	TBD
NOX REDUCTION		TBD	TBD	TBD
NOX REMAINING		TBD	TBD	TBD
PM2.5 INVENTORY	TBD	TBD	TBD	TBD
PM2.5 REDUCTION		TBD	TBD	TBD
PM2.5 REMAINING		TBD	TBD	TBD
SUMMER PLANNING	**2012**	**2022**	**2023**	**2031**
NOX INVENTORY	TBD	TBD	TBD	TBD
NOX REDUCTION		TBD	TBD	TBD
NOX REMAINING		TBD	TBD	TBD
PM2.5 INVENTORY	TBD	TBD	TBD	TBD
PM2.5 REDUCTION		TBD	TBD	TBD
PM2.5 REMAINING		TBD	TBD	TBD
CONTROL COST:	TO BE DETERMINED			
IMPLEMENTING AGENCY:	SCAQMD			

This measure seeks to further reduce emissions associated with railyard operations to help achieve federal ambient air quality standards.

DESCRIPTION OF SOURCE CATEGORY

There are 15 freight railyards and intermodal facilities (of which nine are considered major railyards) located within the jurisdiction of the South Coast Air Quality Management District. In addition, the South California Regional Rail Authority (SCRRA) and Amtrak provides commuter rail transportation in the SCAQMD. SCRRA (or Metrolink) maintain their passenger locomotives at two locations in the South Coast Air Basin. There are a variety of emission sources related to

railyard and intermodal facility operations including locomotives, on-road heavy-duty trucks, cargo-handling equipment, transportation refrigeration units (TRUs), and maintenance shops. This measure seeks to implement District Rules 3501 and 3502 if approved by U.S. EPA or correct deficiencies identified by U.S. EPA such that the rules will be approvable by U.S. EPA. In addition, this measure will assess and identify potential actions to further reduce emissions at rail yards and intermodal facilities.

Background

As mentioned above, there are nine major freight rail yards and intermodal facilities and two commuter rail maintenance facilities in the SCAQMD. Residential communities are located adjacent to many of these rail yards. The SCAQMD has received complaints from residents living near rail yards of emissions from locomotives, on-road trucks, and cargo handling equipment that operate at rail yards. During periods of routine locomotive maintenance, there have been concerns raised regarding excessive emissions from idling locomotives or during periods of routine locomotive maintenance. Due to projected economic and population growth, it is projected that freight and passenger locomotive activities will increase and potentially result in increased emissions.

Regulatory History

U.S. EPA Emission Standards for Locomotives

To reduce emissions from switch and line-haul locomotives, the U.S. EPA in 2008 established a series of increasingly strict emission standards for new or remanufactured locomotive engines. The emission standards are implemented by "Tier" with Tier 0 as the least stringent and Tier 4 being the most stringent. U.S. EPA also established remanufacture standards for both line haul and switch engines. For Tiers 0, 1, and 2, the remanufacture standards are more stringent than the new manufacture standards for those engines for some pollutants.

In 1998, the railroads and CARB entered into an MOU to accelerate the introduction of Tier 2 locomotives into the SCAB. The MOU includes provisions for a fleet average in the SCAB, equivalent to U.S. EPA's Tier 2 locomotive standard by 2010. The MOU addressed NOx emissions from locomotives. Under the MOU, NOx levels from locomotives are reduced by 67 percent.

On June 30, 2005, Union Pacific Railroad (UP) and Burlington Northern Santa Fe Railroad (BNSF) entered into a Statewide Rail Yard Agreement to Reduce Diesel PM at California Rail Yards with the CARB. The railroads committed to implementing certain actions from rail operations throughout the state. In addition, the railroads prepared equipment inventories and conducted dispersion modeling for diesel PM.

U.S. EPA and CARB Emission Standards for On-Road Heavy-Duty Engines and Trucks

To reduce emissions from on-road, heavy-duty diesel trucks, U.S. EPA established a series of cleaner emission standards for new engines, starting in 1988. The U.S. EPA promulgated the final and cleanest standards with the 2007 Heavy-Duty Highway Rule. Starting with model year 2010, all new heavy-duty trucks have to meet the final emission standards specified in the rule.

In December 2007, CARB adopted a regulation which applies to heavy-duty diesel trucks operating at California ports and intermodal rail yards. This regulation eventually required that all drayage trucks to meet 2007 on-road emission standards by 2014.

CARB Cargo Handling Equipment Regulation

On December 8, 2005, CARB approved the Regulation for Mobile Cargo-Handling Equipment (CHE) at Ports and Intermodal Rail Yards (Title 13, CCR, Section 2479), which is designed to use best available control technology (BACT) to reduce diesel PM and NO_X emissions from mobile cargo-handling equipment at ports and intermodal rail yards. The regulation became effective December 31, 2006. Since January 1, 2007, the regulation imposes emission performance standards on new and in-use terminal equipment that vary by equipment type.

SCAQMD Regulation XXXV – Railroads and Railroad Operations

The SCAQMD adopted Regulation XXXV – Railroads and Railroad Operations, which consists of three rules that address emissions from locomotives and rail yards. Rule 3501 – Recordkeeping for Locomotive Idling, requires recordkeeping of idling events in order to identify opportunities for reducing idling emissions and to assist in quantifying idling emissions. Rule 3502 – Minimization of Emissions from Locomotive Idling, requires railroads to minimize unnecessary locomotive idling. Rule 3503 – Emissions Inventory and Health Risk Assessment for Railyards, requires operators of railroads and rail yards to develop emissions inventories, prepare health risk assessments and notify the public of health risks. A federal District Court decision prevents these rule from being implemented until they become federally enforceable. Rules 3501 and 3502 have been submitted to U.S. EPA for inclusion into the state implementation plan (SIP).

Proposed Method of Control

To help achieve federal ambient air quality standards, percentage emission reduction targets as provided in the attainment demonstration for 2023 and 2031 will be established for each individual affected rail yard or alternatively, all affected rail yards owned by a railroad entity (e.g., SCRRA operates two maintenance yards in the South Coast Air Basin). If the percentage emission reductions targets are applied to all rail yards owned by a single entity, there must be assurance that emission reductions are occurring at some nominal rate to ensure that the overall emission reduction targets are met and to assure that there will not be increases in emissions as a result of one rail yard's emissions reducing greater to compensate for another rail yard's emissions.

In addition, this control measure seeks to implement Rules 3501 and 3502 if approved by the U.S. EPA and identify potential actions to further reduce emissions at rail yards and intermodal facilities. If Rules 3501 or 3502 are disapproved by U.S. EPA, the District will address the deficiencies identified by U.S. EPA such that the rule(s) can be approved by U.S. EPA. The District staff will convene a stakeholders working group to discuss and identify actions or approaches that can be implemented to further reduce emissions at rail and intermodal yards. The identified actions can be in the form of a regulation adopted by the District within its legal authority or other enforceable mechanism.

EMISSIONS REDUCTION

Percentage emission reduction targets based on the attainment demonstration for 2023 and 2031 will be established for each rail and intermodal yard or may be established for all rail and intermodal yards owned by a single entity. To the extent that a rail yard is located on marine port property, the rail yard may be considered as part of the efforts to reduce emissions at commercial marine ports (2016 AQMP Control Measure MOB-01) and not be affected by this control measure. The actual amount of emission reductions achieved from this control measure will be dependent on the type and number of rail yards and intermodal facilities affected by the measure and the method of control to be implemented to reduce NOx and PM2.5 emissions primarily from mobile sources operating at affected rail yards and intermodal facilities. Quantified emission reductions that are real, surplus, permanent, and enforceable will be reflected in future emissions inventories as part of the Rate-of-Progress reporting requirements or in baseline emissions inventories as part of future AQMP/SIP development.

RULE COMPLIANCE

The SCAQMD will adopt rules to implement this measure and Rule compliance will be verified via field inspection. If another enforceable mechanism is established as a result of the rule development process or the state or federal government implement actions that achieve equivalent emission reductions, compliance will be enforced through the provisions of those actions.

TEST METHODS

Approved emission quantification protocols by federal, state or local agencies will be used to track and report emission reductions for SIP purposes.

COST EFFECTIVENESS

The cost effectiveness of this measure will be based on the type and number of rail yards and intermodal facilities affected by the measure and the method of control to be implemented to reduce NOx, VOC and PM2.5 emissions.

IMPLEMENTING AGENCY

The SCAQMD is currently seeking U.S. EPA's approval to implement Rules 3501 and 3502. In addition, the SCAQMD will work with affected parties, the public, and other stakeholders to identify potential actions to meet the emission reduction targets.

REFERENCES

SCAQMD (2006). Regulation 35 – Railroads and Railroad Operations (2006)

SCAQMD (2015). SCAQMD 2016 AQMP Control Strategy Symposium, June 2015

U.S. EPA (2008). Control of Emissions of Air Pollution from Locomotive Engines and Marine Compression-Ignition Engines Less Than 30 Liters per Cylinder; Republication, June 30, 2008 (73FR37096).

MOB-03: EMISSION REDUCTIONS AT WAREHOUSE DISTRIBUTION CENTERS [ALL POLLUTANTS]

CONTROL MEASURE SUMMARY

SOURCE CATEGORY: WAREHOUSE DISTRIBUTION CENTERS

CONTROL METHODS: MOBILE SOURCE EMISSION REDUCTION EFFORTS INCLUDING DEPLOYMENT OF CLEANER TECHNOLOGIES, INCREASED EFFICIENCIES, OR AIR QUALITY IMPROVEMENT PROJECT OPTION

EMISSIONS (TONS/DAY):

ANNUAL AVERAGE	**2012**	**2022**	**2023**	**2031**
VOC INVENTORY	TBD	TBD	TBD	TBD
VOC REDUCTION		TBD	TBD	TBD
VOC REMAINING		TBD	TBD	TBD
NOX INVENTORY	TBD	TBD	TBD	TBD
NOX REDUCTION		TBD	TBD	TBD
NOX REMAINING		TBD	TBD	TBD
CO INVENTORY	TBD	TBD	TBD	TBD
CO REDUCTION		TBD	TBD	TBD
CO REMAINING		TBD	TBD	TBD

SUMMER PLANNING	**2012**	**2022**	**2023**	**2031**
VOC INVENTORY	TBD	TBD	TBD	TBD
VOC REDUCTION		TBD	TBD	TBD
VOC REMAINING		TBD	TBD	TBD
NOX INVENTORY	TBD	TBD	TBD	TBD
NOX REDUCTION		TBD	TBD	TBD
NOX REMAINING		TBD	TBD	TBD
CO INVENTORY	TBD	TBD	TBD	TBD
CO REDUCTION		TBD	TBD	TBD
CO REMAINING		TBD	TBD	TBD

CONTROL COST: TO BE DETERMINED

IMPLEMENTING AGENCY: SCAQMD

DESCRIPTION OF SOURCE CATEGORY

The purpose of this proposed control measure is to mitigate and where appropriate, reduce emissions from new and modified warehouse distribution centers. Innovative methods to achieve emission reductions would need to be implemented in order to allow continued development of warehouses in the region to meet the demands of economic and population growth. This measure could include reduction of emissions from high-cube warehouses which attract a large number of heavy duty diesel trucks on a daily basis. Emissions from these trucks produce local and regional air quality impacts. SCAQMD staff would develop either regulatory actions or other enforceable mechanisms which would establish applicability criteria for warehouse distribution centers and may involve the selection of actions from a menu of technically feasible options to mitigate and potentially further reduce emissions related to warehouse activities.

Background

Over the past decade, warehouse and distribution centers have been steadily increasing in size and number throughout the region. The greatest growth in warehouses/distribution centers has been in the Riverside and San Bernardino areas. Based on the Southern California Association of Governments, by 2035 over 1 billion square feet of warehousing will be needed in the Southern California area to support goods movement activities (SCAG, 2010).

Distribution centers and/or warehouses are facilities that serve as a distribution point for the transfer of goods. A warehouse/distribution center can be comprised of multiple centers or warehouse/distribution centers within an area. The size can range from 100,000 square feet to well over a million square feet. As an example, at least eight new projects for warehouse projects totaling 17.75 million square feet have been reviewed by District staff since late 2008 in the vicinity of the city of Perris in Riverside County and more are currently being proposed. Such facilities include cold storage warehouses, goods transfer facilities, and transloading facilities, where imported goods are sorted, tagged, repackaged and prepared for retail distributions. These operations involve trucks, trailers, shipping containers, and other equipment with diesel engines. Depending on the size and type, a warehouse/distribution center may have hundreds of diesel trucks a day that deliver, load, and/or unload goods, generally operating seven days a week. To the extent that these trucks are transporting perishable goods, they are equipped with diesel-powered transport refrigeration units (TRUs) or TRU generator sets. The activities associated with delivering, storing, and loading freight produces NOx and PM emissions, including diesel particulate matter (DPM). Within the warehouse, there may be stationary source equipment such as refrigeration units. In addition, cargo handling equipment such as forklifts and yard tractors are used to move goods at warehouses. Lastly, warehouse employee commute trips contribute to the overall emissions associated with warehouse distribution activities.

Regulatory History

California Health and Safety Code Section 40716 states that “a District may adopt and implement regulations to reduce or mitigate emissions from indirect and areawide sources of air pollution”. Furthermore, a 1993 California Attorney General opinion states that “a District’s regulations may require the developer of an indirect source to submit the plans to the District for review and comment prior to the issuance of a permit for construction by a city or county. A District may

also require the owner of an indirect source to adopt reasonable post-construction measures to mitigate particular indirect effects of the facility's operation. Such regulations could be enforced through an action for civil penalties…" H & S Code 40716 also states that the authority of an air district to reduce or mitigate emissions from indirect and areawide sources of air pollution does not constitute an infringement on the existing authority of counties and cities to plan or control land use.

Proposed Method of Control

The District is currently working with industry stakeholders on conducting in-use truck trip and emissions information at various warehouse distribution types. This information along with emissions occurring in and around individual warehouse distribution centers will serve as the basis for developing actions that will seek opportunities to mitigate and potentially reduce emissions beyond existing levels. A stakeholders working group will be convened to discuss warehouse emissions related issues and provide input in the development of mechanisms to implement this measure.

There are three different emission reduction approaches – incentives, regulatory, or a hybrid. Incentives could involve reduction of fees, expedited services or regulatory relief. The regulatory approach involves rules, regulations, legal statutes, or other enforceable mechanisms. Finally, the hybrid approach is a mix or combination of both incentive and regulation. Some example actions include incentivizing cleaner trucks that are zero- or near zero-emissions to operate at warehouse centers, encouraging employees to increase rideshare activities or purchase zero-emission and plug-in hybrid vehicles, using zero- and near-zero equipment in and around the warehouse center. Reducing vehicle emissions may require the space and infrastructure to allow for the operation of electric or alternative fueled vehicles such as electric vehicle charging stations and refueling units.

EMISSIONS REDUCTION

Percentage emission reduction targets will be established based on the attainment demonstration for 2023 and 2031 to meet federal ambient air quality standards. The amount of emission reductions that can be achieved from this control measure will be dependent on the type and number of warehouse distribution centers affected by the measure and the method of control to be implemented to reduce NOx, VOC and PM2.5 emissions primarily from mobile sources.

RULE COMPLIANCE

The SCAQMD will adopt rules or other enforceable mechanisms to implement this measure and rule compliance will be verified via field inspection.

TEST METHODS

Approved emission quantification protocols by federal, state or local agencies will be used to track and report emission reductions for SIP purposes.

COST EFFECTIVENESS

The cost effectiveness of this measure will be based on the type and number of warehouse distribution centers affected by the measure and the method of control to be implemented to reduce NOx, VOC and PM2.5 emissions. A maximum cost-effectiveness threshold will be established for each pollutant during rule development.

IMPLEMENTING AGENCY

The SCAQMD has authority to adopt regulations to reduce or mitigate emissions from warehouse distribution centers that attract on- and off-road mobile sources. In addition, the SCAQMD will work with affected parties, the public, and other stakeholders to identify potential actions to help meet AQMP emission reduction targets.

REFERENCES

SCAQMD (2015). SCAQMD 2016 AQMP Control Strategy Symposium, June 2015.

MOB-04: EMISSION REDUCTIONS AT COMMERCIAL AIRPORTS [ALL POLLUTANTS]

CONTROL MEASURE SUMMARY

SOURCE CATEGORY: COMMERCIAL AIRPORTS

CONTROL METHODS: MOBILE SOURCE EMISSION REDUCTION EFFORTS INCLUDING DEPLOYMENT OF CLEANER TECHNOLOGIES, INCREASED EFFICIENCIES, OR AIR QUALITY IMPROVEMENT PROJECT OPTION

EMISSIONS (TONS/DAY):

ANNUAL AVERAGE	**2012**	**2022**	**2023**	**2031**
VOC INVENTORY	TBD	TBD	TBD	TBD
VOC REDUCTION		TBD	TBD	TBD
VOC REMAINING		TBD	TBD	TBD
NOX INVENTORY	TBD	TBD	TBD	TBD
NOX REDUCTION		TBD	TBD	TBD
NOX REMAINING		TBD	TBD	TBD
CO INVENTORY	TBD	TBD	TBD	TBD
CO REDUCTION		TBD	TBD	TBD
CO REMAINING		TBD	TBD	TBD

SUMMER PLANNING	**2012**	**2022**	**2023**	**2031**
VOC INVENTORY	TBD	TBD	TBD	TBD
VOC REDUCTION		TBD	TBD	TBD
VOC REMAINING		TBD	TBD	TBD
NOX INVENTORY	TBD	TBD	TBD	TBD
NOX REDUCTION		TBD	TBD	TBD
NOX REMAINING		TBD	TBD	TBD
CO INVENTORY	TBD	TBD	TBD	TBD
CO REDUCTION		TBD	TBD	TBD
CO REMAINING		TBD	TBD	TBD

CONTROL COST: TO BE DETERMINED

IMPLEMENTING AGENCY: SCAQMD

DESCRIPTION OF SOURCE CATEGORY

There are six major commercial airports located in the South Coast Air Basin and Coachella Valley. Due to projected increases in airline passenger transportation and expansion of operations at various commercial airports, potential increases in emissions impact may result unless the increased emissions are fully mitigated. Several airport authorities are implementing emissions mitigation measures as a result of environmental impact findings, while other airports have initiated actions that can lead to additional emission reductions. This measure seeks to quantify such actions and identify additional actions that can lead to additional emission reductions to assist in attainment of federal air quality standards and reduce local exposure to air toxic emissions.

Background

There are a variety of emission sources related to commercial airport operations. In addition to aircraft emissions, emissions from ground service equipment such as baggage handling equipment, food service trucks, fuel trucks, and aircraft tugs are contributors to airport related emissions. Emissions associated with passenger transportation to and from the airport, delivery of goods for aircraft transport, and stationary equipment contribute to the overall emissions at airports. Emissions as a result of construction of new or expansion of runways and terminal construction and renovations, are associated with short-term air quality impacts in the communities surrounding airports.

Historically, airport authorities have mitigated airport-related emissions to some extent and a large number of airport ground service equipment and on-road vehicles are regulated by CARB. However, aircraft emissions are primarily regulated by the federal government or by the International Civil Aviation Organization (ICAO). ICAO establishes new aircraft engine emission standards internationally, while the U.S. EPA establishes aircraft emission standards nationally.

Regulatory History

Aircraft

In 1973, the U.S. EPA published emissions standards and test procedures to regulate gaseous emissions, smoke, and fuel venting from aircraft engines. In 1997, the standards were revised to be more consistent with those of the ICAO Committee of Aviation Environmental Protection (CAEP) for turbo engines used in commercial aircraft. These standards (CAEP/2) included new CO, HC, and NOx emissions standards of 118 grams per kilonewtons (g/kN), 19.6 g/kN, and 40 g/kN, respectively. In 2005, the standards were harmonized with ICAO CAEP/4 requirements which tightened the CAEP/2 NOx standards by 32% for newly-certified commercial aircraft engines.

On June 1, 2012, the U.S. EPA Administrator signed a final rule to further revise the standards to be consistent with the current ICAO CAEP/6 and CAEP/8 requirements to further reduce NOx emissions. The first set of standards take effect 30 days after from the date the rule is published in the Federal Register and will require all new engines meet the ICAO CAEP/6 standards. The CAEP/6 standards represent approximately 12 percent emissions reduction from the ICAO Tier

4 levels. The second set of standards, Tier 8, take effect in 2014 and represents approximately a 15 percent from Tier 6 levels.

Ground Service Equipment

Ground service equipment (GSE) move and load baggage, tow aircraft, and provide electrical power, engine starting, air conditioning, fuel, food, and lavatory service for aircraft at airports. Due to their specialized design and use, GSEs have long useful lives. Most GSEs can be electrified to operate in battery electric configurations. In addition, new GSEs are available in diesel, propane, and natural gas configurations meeting Tier 4 emissions standards. Ground service equipment generally runs for short periods under load and is then shut off. GSEs are typically owned by individual airlines and may move from airport to airport depending on the service needs of individual airlines.

Ground service equipment is regulated by CARB under two separate regulations. GSEs that operate on gasoline are subject to CARB's Large Spark Ignition Engine Regulation, while diesel-powered GSEs are subject to CARB's In-Use Off-Road Diesel Fleet Regulation. In addition, the District has authority to implement the SOON (Surplus Off-Road Opt-In for NOx) provision of the In-Use Off-Road Diesel Fleet Regulation to provide funding for cleaner ground service equipment.

Passenger Transportation

Beside ground service equipment, passenger shuttle services are generally provided by the airport authority either through their own fleet of shuttles or through outside contracts with a independent shuttle service providers. In addition, taxicab pickup service is typically regulated by the airport authority. Airport shuttle services are subject to SCAQMD Rule 1194, which requires the purchase of alternative fuel shuttle buses. Almost every airport has been providing alternative fuel shuttle bus service.

Proposed Method of Control

The Los Angeles World Airport Authority has been implementing actions to further reduce landside emissions. Some of these actions go beyond state regulations and can serve as model strategies for other airport authorities to implement. District staff would convene a working group made up of affected stakeholders from the airline industry, airport authorities, local governments, community representatives, and other affected stakeholders to discussion airport emissions related issues and provide input in the development of mechanisms to implement this measure.

There are several emission reduction approaches that could be implemented to mitigate and potentially further reduce emissions at airports. Such approaches can be incentive based or regulatory based, or a combination of the two. Airport authorities may use its authority to implement strategies to further reduce emissions through the deployment of cleaner combustion or zero- and near-zero emission technologies during construction activities or develop mechanisms for the use of cleaner equipment. Airlines are constantly evaluating ways to improve passenger transportation and overall system efficiencies. Such strategies have the potential to further reduce criteria pollutant emissions. Any strategy that is considered for implementation will be evaluated for feasibility and authority to implement such strategy.

This measure could be implemented as a regulation developed by the District within its legal authority or through other enforceable mechanisms.

EMISSIONS REDUCTION

The amount of emission reductions that can be achieved from this control measure will be dependent on the type and number of commercial airports affected by the measure and the method of control to be implemented to reduce NOx, VOC and PM2.5 emissions primarily from mobile sources. Quantified emission reductions that are real, surplus, permanent, and enforceable will be reflected in future emissions inventories as part of the Rate-of-Progress reporting requirements or in baseline emissions inventories as part of future AQMP/SIP development.

RULE COMPLIANCE

The SCAQMD will adopt rules to implement this measure and Rule compliance will be verified via field inspection. In addition, the SCAQMD will work with affected parties, the public, and other stakeholders to identify potential actions to help meet AQMP emission reduction targets.

TEST METHODS

Approved emission quantification protocols by federal, state or local agencies will be used to track and report emission reductions for SIP purposes.

COST EFFECTIVENESS

The cost effectiveness of this measure will be based on the type and number of commercial airports affected by the measure and the method of control to be implemented to reduce NOx, VOC and PM2.5 emissions. A maximum cost-effectiveness threshold will be established during rule development.

IMPLEMENTING AGENCY

The SCAQMD has authority to adopt regulations to reduce or mitigate emissions from commercial airports, and has certain authorities to control emissions from on-road mobile sources themselves.

REFERENCES

SCAQMD (2015). SCAQMD 2016 AQMP Control Strategy Symposium, June 2015.

MOB-05: ACCELERATED PENETRATION OF PARTIAL ZERO-EMISSION AND ZERO EMISSION VEHICLES [VOC, NOX, CO]

CONTROL MEASURE SUMMARY

SOURCE CATEGORY: GASOLINE- AND DIESEL-POWERED ON-ROAD VEHICLES WITH GROSS VEHICLE WEIGHT RATING UP TO 8,500 LBS

CONTROL METHODS: INCENTIVES FOR PARTIAL ZERO EMISSIONS VEHICLES AND ZERO EMISSIONS VEHICLES

EMISSIONS (TONS/DAY):

ANNUAL AVERAGE	**2012**	**2022**	**2023**	**2031**
VOC INVENTORY	131.18	52.79	50.05	33.77
VOC REDUCTION		TBD*	TBD*	TBD*
VOC REMAINING		TBD	TBD	TBD
NOX INVENTORY	120.79	37.02	33.56	17.08
NOX REDUCTION		TBD*	TBD*	TBD*
NOX REMAINING		TBD	TBD	TBD
CO INVENTORY	1,173.46	417.78	388.43	235.78
CO REDUCTION		TBD*	TBD*	TBD*
CO REMAINING		TBD	TBD	TBD

SUMMER PLANNING	**2012**	**2022**	**2023**	**2031**
VOC INVENTORY	135.92	55.52	52.64	35.57
VOC REDUCTION		TBD*	TBD*	TBD*
VOC REMAINING		TBD	TBD	TBD
NOX INVENTORY	107.77	33.07	29.97	15.27
NOX REDUCTION		TBD*	TBD*	TBD*
NOX REMAINING		TBD	TBD	TBD
CO INVENTORY	1,156.31	409.88	380.96	230.92
CO REDUCTION		TBD*	TBD*	TBD*
CO REMAINING		TBD	TBD	TBD

CONTROL COST: TBD. MINIMUM INCENTIVES FUNDING - $75,000,000/YEAR

IMPLEMENTING AGENCY: CARB, SCAQMD

* Emission reductions will be determined after projects are identified and implemented.

DESCRIPTION OF SOURCE CATEGORY

The purpose of this early action measure is to seek emission reductions from existing passenger cars, sports utility vehicles, and other light- and medium-duty vehicles through the increased use of partial zero-emission and zero-emission vehicles that would provide substantial improvements in emissions performance beyond current conventional gasoline and diesel vehicle technologies. This measure would continue the use of voluntary incentive programs that would facilitate the commercial deployment of plug-in hybrid-electric, battery electric, and fuel cell vehicles.

Background

Emissions from passenger vehicles continue to represent a significant portion of the emissions inventory in the South Coast Air Basin, adversely affecting regional air quality. The intent of this measure is to specifically mitigate impacts associated with passenger car emissions through early deployment of partial-zero- and zero-emission vehicles that are currently available commercially or expected to be offered commercially in the coming years.

Regulatory History

To address California's acute air quality problems, the federal Clean Air Act provides California the authority to adopt and enforce rules to control mobile source emissions within California. The California Air Resources Board (CARB) is the responsible agency to adopt emissions standards that are as stringent or more stringent than federal requirements.

Significant strides have been made in reducing emissions from motor vehicles through CARB's mobile source regulations that apply predominately to new vehicles. As a result, a "new" vehicle today is approximately 99% less polluting compared to a vehicle manufactured a couple of decades ago. However, on-road and off-road mobile sources account for about 70 percent of ozone precursor emissions in the State. Because of the large emissions contribution, requiring the use of advanced technology such as plug-in hybrid electric vehicle technology capable of zero-emission transportation is essential if clean air standards are to be realized, especially for in-use vehicles. In January 2012, the CARB adopted amendments to the Low Emission Vehicle (LEV) program and the Zero-Emission Vehicle (ZEV) regulation.

In addition, CARB implements a "Clean Vehicle Rebate Project" (CVRP) that provides individual vehicle incentives of up to $5,000 for fuel cell vehicles, $2,500 for full zero-emission vehicles, $1,500 for plug-in hybrid vehicles, $900 for neighborhood electric vehicles, and $900 for zero-emission motorcycles. An additional $1,500 may be available to eligible lower income residents who purchase a fuel cell, full zero-emission, or plug-in hybrid vehicle. For the 2015/2016 fiscal year, a total of $160 million was allocated statewide.

PROPOSED METHOD OF CONTROL

This measure proposes to continue the CVRP through 2023 with a minimum number of 15,000 vehicles per year to be incentivized through the CVRP. The proposed incentives would be up to $5,000 per vehicle. As part of this action, additional funding opportunities will be sought.

EMISSIONS REDUCTION

Emission reductions are not estimated at this time and will depend on the actual number of vehicles participating in the program.

RULE COMPLIANCE AND TEST METHODS

Not applicable.

COST EFFECTIVENESS

This proposed control measure will affect light- and medium-duty vehicles with gross vehicle weight ratings up to 8,500 lbs. The estimated funding level is $75 million per year to incentivize a minimum of 15,000 vehicles per year.

The cost effectiveness of this control measure has not been estimated at this time. The cost effectiveness will be affected by any changes to the per vehicle incentive levels or if total funding levels are not realized.

IMPLEMENTING AGENCY

CARB is currently implementing the AB118 CVRP. This early action measure would continue the implementation of the CVRP.

REFERENCES

CARB (2012). Advanced Clean Cars Regulation, January 2012.

CARB (2014). Implementation Manual for the FY 2014-15 Clean Vehicle Rebate Project (CVRP), December 2014.

MOB-06: ACCELERATED RETIREMENT OF OLDER LIGHT-DUTY AND MEDIUM-DUTY VEHICLES [VOC, NOX, CO]

CONTROL MEASURE SUMMARY

SOURCE CATEGORY: GASOLINE- AND DIESEL-POWERED LIGHT- AND MEDIUM-DUTY VEHICLES UP TO 8,500 LBS GROSS VEHICLE WEIGHT

CONTROL METHODS: INCENTIVES PROGRAM FOR THE VOLUNTARY EARLY RETIREMENT OF OLDER LIGHT- AND MEDIUM-DUTY VEHICLES

EMISSIONS (TONS/DAY):

ANNUAL AVERAGE	**2012**	**2022**	**2023**	**2031**
VOC INVENTORY	131.18	52.79	50.05	33.77
VOC REDUCTION		TBD*	TBD*	TBD*
VOC REMAINING		TBD	TBD	TBD
NOX INVENTORY	120.79	32.04	33.56	17.08
NOX REDUCTION		TBD*	TBD*	TBD*
NOX REMAINING		TBD	TBD	TBD
CO INVENTORY	1,173.46	417.78	388.43	235.78
CO REDUCTION		TBD*	TBD*	TBD*
CO REMAINING		TBD	TBD	TBD

SUMMER PLANNING	**2012**	**2022**	**2023**	**2031**
VOC INVENTORY	135.92	55.52	52.64	35.57
VOC REDUCTION		TBD*	TBD*	TBD*
VOC REMAINING		TBD	TBD	TBD
NOX INVENTORY	107.77	33.07	29.97	15.27
NOX REDUCTION		TBD*	TBD*	TBD*
NOX REMAINING		TBD	TBD	TBD
CO INVENTORY	1156.31	409.88	380.96	230.92
CO REDUCTION		TBD*	TBD*	TBD*
CO REMAINING		TBD	TBD	TBD

CONTROL COST: UP TO $9,500 PER VEHICLE RETIRED INCLUDING INCENTIVE REPLACEMENT VOUCHER. ESTIMATED PUBLIC FUNDING – UP TO $20,000,000/YEAR

IMPLEMENTING AGENCY: CARB, BUREAU OF AUTOMOTIVE REPAIR, SCAQMD

* Emission reductions will be determined after projects are identified and implemented.

DESCRIPTION OF SOURCE CATEGORY

The purpose of this control measure is to implement a strategy to accelerate retirement of older gasoline- and diesel-powered vehicles up to 8,500 lbs. gross vehicle weight (GVW). These vehicles include passenger cars, sports utility vehicles, vans, and light-duty pick-up trucks.

Background

Light-duty vehicles are major contributors of air pollutants in the South Coast Air Basin. While vehicle miles traveled increased more than 50 percent over the last 20 years, vehicle emissions have dropped by a factor of almost three due to increasingly stringent vehicle emission standards. Yet, the light- and medium-duty vehicle fleet continues to contribute more than a third of the Basin's total emissions of ozone and particulate matter forming pollutants in part due to high emitting vehicles.

Motor vehicle emissions progressively increase as vehicles age and accumulate mileage. The causes of these emissions increases are numerous, but can be broadly categorized in terms of normal deterioration of properly functioning on-board emission control system components, emission control system malfunctions due to design flaws and/or lack of proper maintenance, and tampering. In recognition that emission reductions could occur through regular emission testing of vehicles and repair of those vehicles with high in-use emissions, Smog Check programs have been established in an attempt to ensure that vehicles stay clean as they age, but room for improvements in such programs exist. In addition, through the Bureau of Automotive Repairs (BAR) High Emitter profile, certain model year vehicles are considered inherently high emitters despite passing Smog Check.

Regulatory History

On September 23, 2004, the Governor signed AB 923 (Firebaugh) which resulted in a significant increase in incentive funding for programs that achieve emission reductions from vehicular sources and off-road engines. The legislation identified and emphasized that in-use higher emitting vehicles are sources that need additional scrutiny and control in part because of their large contribution to the fleet's total emissions. To address this, the District is implementing, under the AB923 program, pilot programs to identify and retire high emitting on-road vehicles. In addition, based on cost effectiveness guidelines, model year 1992 and older vehicles would be considered for early retirement.

CARB adopted the Enhanced Fleet Modernization Program (EFMP) Regulation in June 2009. The regulation implements the voluntary vehicle scrap and replacement voucher provisions of AB 118 (Nunez). The legislation includes $30 million annually statewide for an Enhanced Fleet Modernization Program (EFMP). The EFMP augments the State's existing voluntary accelerated vehicle retirement program, referred to as the Consumer Assistance Program (CAP). The focus of the EFMP is to augment existing retirement programs and provide funding through vehicle replacement vouchers to retire the highest polluting vehicles in the areas with the greatest air quality problems.

In 2014, the State Legislature passed two bills (SB 459 – Pavley and AB1365 – De Leon) that placed an emphasis on increasing the efficacy of the EFMP and encouraged opportunities for low

and moderate-income residents to purchase cleaner, more fuel efficient combustion vehicles and advanced technology vehicles such as full battery-electric and plug-in hybrid electric vehicles. The EFMP Regulation was revised by CARB in 2014 to reflect the legislative desire and a one-year pilot program was initiated in the South Coast Air Basin and Coachella Valley. The EFMP provided up to $4,500 to eligible low- and moderate-income residents for the replacement of older vehicles with newer or new vehicles. Under separate actions, CARB allocated funding under the Greenhouse Gas Reduction Funds to augment the EFMP for eligible low- and moderate-income residents living in disadvantaged communities for the purchase of cleaner, more fuel efficient combustion vehicles and advanced technology vehicles. Eligible residents may receive additional funding assistance of up to $5,000 augmenting the EFMP. The SCAQMD has been implementing the EFMP since July 2015.

PROPOSED METHODS OF CONTROL

This action is to retire at a minimum, 2,000 light- and medium-duty vehicles per year. The proposed incentives would be up to $9,500 which includes a replacement voucher under the AB 118 EFMP program and Greenhouse Gas Reduction Fund.

EMISSIONS REDUCTIONS

Emission reductions are not estimated at this time and will depend on the actual number of vehicles participating in the program.

COST EFFECTIVENESS

Since the EFMP guidelines are developed based on funding appropriated by the state legislature with the desire to provide sufficient funding for low- and moderate-income residents to access newer, cleaner, more fuel efficient combustion vehicles and advanced technology vehicles, no cost-effectiveness threshold has been established. After the completion of the initial pilot program, CARB will reassess the program efficacy and may report on the program's cost-effectiveness.

IMPLEMENTING AGENCY

The implementing agencies would be the South Coast Air Quality Management District under guidelines set forth by CARB for the EFMP. Funding would be available from CARB and BAR for the EFMP with the District's administration of the replacement voucher provisions of the EFMP regulation.

REFERENCES

CARB (2014). AB118 Enhanced Fleet Modernization Program Regulation, November 2014.

MOB-07: ACCELERATED PENETRATION OF PARTIAL ZERO-EMISSION AND ZERO-EMISSION LIGHT-HEAVY- AND MEDIUM-HEAVY-DUTY VEHICLES [NOX, PM]

CONTROL MEASURE SUMMARY

SOURCE CATEGORY: ON-ROAD LIGHT-HEAVY- AND MEDIUM-HEAVY-DUTY VEHICLES (8,501 LBS TO 26,001 GVWR)

CONTROL METHODS: ACCELERATED PENETRATION OF PARTIAL ZERO-EMISSION AND ZERO-EMISSION LIGHT-HEAVY- AND MEDIUM-HEAVY-DUTY VEHICLES

EMISSIONS (TONS/DAY):

ANNUAL AVERAGE	**2012**	**2022**	**2023**	**2031**
VOC INVENTORY	10.52	4.49	4.18	2.74
VOC REDUCTION		TBD*	TBD*	TBD*
VOC REMAINING		TBD	TBD	TBD
NOX INVENTORY	70.38	26.01	21.88	16.18
NOX REDUCTION		TBD*	TBD*	TBD*
NOX REMAINING		TBD	TBD	TBD
CO INVENTORY	67.77	21.28	19.33	11.63
CO REDUCTION		TBD*	TBD*	TBD*
CO REMAINING		TBD	TBD	TBD

SUMMER PLANNING	**2012**	**2022**	**2023**	**2031**
VOC INVENTORY	10.41	4.44	4.12	2.70
VOC REDUCTION		TBD*	TBD*	TBD*
VOC REMAINING		TBD	TBD	TBD
NOX INVENTORY	66.39	24.77	20.90	15.60
NOX REDUCTION		TBD*	TBD*	TBD*
NOX REMAINING		TBD	TBD	TBD
CO INVENTORY	67.94	21.40	19.44	11.75
CO REDUCTION		TBD*	TBD*	TBD*
CO REMAINING		TBD	TBD	TBD

CONTROL COST: TBD. ESTIMATED PUBLIC FUNDING – $350 MILLION PER YEAR

IMPLEMENTING AGENCY: CARB AND SCAQMD

* Emission reductions will be determined after projects are identified and implemented.

DESCRIPTION OF SOURCE CATEGORY

Background

Emissions from heavy-duty diesel mobile sources continue to represent a significant and increasing portion of the emissions inventory in the South Coast Air Basin, adversely affecting regional air quality. The two primary pollutants resulting from diesel fuel combustion are particulate matter (PM) and oxides of nitrogen (NOx). PM typically constitutes the visible emissions from diesel engine exhaust, and it contains over 40 known cancer-causing substances. In 1998, California identified diesel PM as a toxic air contaminant based on its potential to cause cancer. In May 2015, the District released a report titled, "The Multiple Air Toxic Exposure Study in the South Coast Air Basin." This report concluded that around 68 percent of the carcinogenic risk associated with breathing ambient air can be attributed to diesel particulate emissions. Diesel engines also emit significant quantities of NOx, which is a precursor to ozone and secondary particulate matter formation. Additional control on diesel engine emissions is essential for attainment of ozone and PM ambient air quality standards, as well as mitigating its toxic air quality impact.

The intent of this measure is to seek greater emission reduction benefits through the early deployment of partial zero-emission and zero-emission light-heavy- and medium-heavy-duty vehicles with gross vehicle weight ratings (GVWR) from 8,501 lbs to 26,000 lbs.

Regulatory History

The regulation of emissions from heavy-duty diesel mobile emission sources is the responsibility of CARB and U.S. EPA. Specifically, heavy-duty vehicle engines are subject to specific emission standards pursuant to state and/or federal requirements. Emission standards for new diesel engines powering heavy-duty vehicles were first established for the 1973 model-year and have gradually increased in stringency over time. The current most stringent set of heavy-duty engine emission standards has been established by CARB and U.S. EPA for 2010 and subsequent model-years, which includes a 0.2 g/bhp-hr NO_x emission standard.

In December 2010, CARB amended the Truck and Bus Regulation which applies to a significant number of heavy-duty vehicles with gross vehicle weight ratings of 14,001 lbs and greater. Heavier trucks (26,001 lbs and greater) must meet regulatory requirements beginning January 1, 2012. Lighter trucks (14,001 lbs to 26,000 lbs) must meet regulatory requirements beginning January 1, 2015.

Currently, heavy-duty diesel engine manufacturers are introducing electric-hybrid systems in medium-heavy-duty on-road vehicle applications. Such systems in conjunction with a 2010-compliant conventionally-fueled or alternative-fueled engine can potentially result in additional NOx emissions benefits. Many of the hybrid systems introduced to-date are for lighter vehicles with gross vehicle weight ratings from 8,501 to 26,000 lbs.

In addition to hybrid systems, there is currently one natural gas engine certified to the 0.02 g/bhp-hr optional NOx exhaust emissions standard. The integration of combustion engines at such a level with hybrid systems provides greater certainty that criteria pollutant emissions will be lowered when the vehicle is not utilizing the hybrid system.

PROPOSED METHOD OF CONTROL

This measure seeks additional emission reductions through the early introduction of electric hybrid vehicles. The proposed actions would continue the state hybrid truck and bus voucher incentive project (HVIP) which accelerates the deployment of hybrid and zero-emission medium-heavy-duty vehicles in the South Coast Air Basin.

Incentives of up to $35,000 per vehicle are proposed with a minimum target of 10,000 hybrid and zero-emission vehicles funded each year to 2023. The proposed funding would place the highest priority towards zero-emission vehicles and hybrid vehicles with a portion of their operation in an "all electric range" mode.

EMISSIONS REDUCTION

Emission reductions are not estimated at this time and will depend on the actual number of vehicles participating in the program.

RULE COMPLIANCE AND TEST METHODS

Not Applicable.

COST EFFECTIVENESS

This proposed control measure will affect heavy-duty engine manufacturers, heavy-duty diesel truck owners, and heavy-duty diesel fleet operators. Costs of replacement engines vary depending on the specific model and vehicle application, and an evaluation would need to be conducted to determine the specific types of trucks and engine models that would be primarily affected by this measure, as well as prioritizing vehicle applications on a cost-effectiveness basis for engine or vehicle replacement. The proposed incentives of up to $35,000 per vehicle will help offset the capital cost of the vehicles.

IMPLEMENTING AGENCY

CARB, SCAQMD or U.S. EPA could jointly or separately implement incentive programs that would help offset the costs associated with new hybrid or zero-emission truck purchase, engine repower, and/or retrofit kit installation.

REFERENCES

SCAQMD (2015). Multiple Air Toxic Exposure Study, MATES-IV.

CARB (2014). Implementation Manual for the Fiscal Year 2013-14 Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project

MOB-08: ACCELERATED RETIREMENT OF OLDER ON-ROAD HEAVY-DUTY VEHICLES [NOX, PM]

CONTROL MEASURE SUMMARY				
SOURCE CATEGORY:	ON-ROAD HEAVY-HEAVY-DUTY VEHICLES (26,001 LBS AND GREATER GVWR)			
CONTROL METHODS:	ACCELERATED REPLACEMENT OF EXISTING HEAVY-DUTY VEHICLES WITH VEHICLES MEETING OPTIONAL NOX EMISSION STANDARDS AND RETROFITTING/REPOWERING EXISTING HEAVY-DUTY VEHICLES TO ACHIEVE LOWER EMISSION LEVELS			
EMISSIONS (TONS/DAY):				
ANNUAL AVERAGE	**2012**	**2022**	**2023**	**2031**
NOX INVENTORY	99.75	51.81	30.00	31.58
NOX REDUCTION		TBD*	TBD*	TBD*
NOX REMAINING		TBD	TBD	TBD
PM2.5 INVENTORY	3.17	0.64	0.54	0.68
PM2.5 REDUCTION		TBD*	TBD*	TBD*
PM2.5 REMAINING		TBD	TBD	TBD
SUMMER PLANNING	**2012**	**2022**	**2023**	**2031**
NOX INVENTORY	94.83	49.57	28.86	30.41
NOX REDUCTION		TBD*	TBD*	TBD*
NOX REMAINING		TBD	TBD	TBD
CONTROL COST:	TBD. ESTIMATED PUBLIC FUNDING – $200 MILLION PER YEAR			
IMPLEMENTING AGENCY:	SCAQMD			

* Emission reductions will be determined after projects are identified and implemented.

DESCRIPTION OF SOURCE CATEGORY

Background

Emissions from heavy-duty diesel mobile sources continue to represent a significant portion of the emissions inventory in the South Coast Air Basin, adversely affecting regional air quality.

The two primary pollutants resulting from diesel fuel combustion are particulate matter (PM) and oxides of nitrogen (NOx). PM typically constitutes the visible emissions from diesel engine exhaust, and it contains over 40 known cancer-causing substances. In 1998, California identified diesel PM as a toxic air contaminant based on its potential to cause cancer. In March 2015, the District released a report titled, "The Multiple Air Toxic Exposure Study in the South Coast Air Basin." This report concluded that around 68 percent of the carcinogenic risk associated with breathing ambient air can be attributed to diesel particulate emissions. Diesel engines also emit significant quantities of NOx, which is a precursor to ozone and secondary particulate matter formation. Additional control of diesel engine emissions is essential for attainment of ozone and PM ambient air quality standards, as well as mitigating its toxic air quality impact.

The intent of this control measure is to seek additional emission reductions from existing heavy heavy-duty vehicles with gross vehicle weight ratings (GVWR) greater than 26,000 lbs through an accelerated vehicle replacement program with new engines that meet the cleanest optional NOx emissions standard or through regulatory actions. In addition, for heavy-duty vehicles not replaced with new models, existing vehicle engines would be repowered with commercially available engines meeting one of the optional NOx exhaust emission standards established by CARB or modified with retrofit kits to achieve lowest possible emission levels.

Regulatory History

The regulation of emissions from heavy-duty diesel mobile emission sources is the primary responsibility of CARB and U.S. EPA. Specifically, heavy-duty vehicle engines are subject to specific emission standards pursuant to state and/or federal requirements. Emission standards for new diesel engines powering heavy-duty vehicles were first established for the 1973 model-year and have gradually increased in stringency over time. The current most stringent set of heavy-duty engine emission standards has been established by CARB and U.S. EPA for 2010 and subsequent model-years, which includes a 0.2 g/bhp-hr NO_x emission standard.

In December 2008, CARB adopted the Truck and Bus Regulation which applies to a significant number of heavy-duty vehicles with gross vehicle weight ratings of 14,001 lbs and greater. Heavier trucks (26,001 lbs and greater) must meet regulatory requirements beginning January 1, 2014. Lighter heavy-duty trucks (14,001 lbs to 26,000 lbs) must meet regulatory requirements beginning January 1, 2015.

In 2012, CARB adopted a new set of optional NOx emission standards for on-road heavy-duty engines. Engines certified to one of the optional NOx emission standards (0.1, 0.05, and 0.02 g/bhp-hr) not only provide greater emission reductions than engines simply meeting the current mandatory standard but also the ability to access incentives funding.

The Carl Moyer Memorial Air Quality Standards Attainment Program is in its 16th year. The Carl Moyer Program was placed into state law and is the enabling mechanism to fund the cleanup of older diesel vehicles and equipment. At its initial inception, the Carl Moyer Program was funded annually through a state budget line item that must be approved by the state legislature. In 2004, the state legislature approved Senate Bill (SB) 1107, which allowed for the funding of the Carl Moyer Program. In addition, the state legislature passed Assembly Bill (AB) 923, which provides funding until 2015 and allowed California local air districts to opt into a local Moyer Program.

The SB1107 funds are generated from new vehicle sales. In lieu of having Smog Check inspections in the first four years, new vehicles are now subject to their first Smog Check inspection after six years. A fee of $48 is assessed at the time of vehicle purchase, which is typically less expensive than the Smog Check inspection and certificate. Half of the $48 is directed to CARB, who distributes the funds among local air districts for implementation of the Carl Moyer Program.

The AB923 program has two components. One is a tire disposal fee which generates about $10 million a year and is distributed by CARB among the local air districts. The other is a $2 Department of Motor Vehicle registration fee that each local air district's Board has the authority to approve independently and generate funds from vehicles registered within their respective district boundaries. Fees generated are used for both the Carl Moyer and the School Bus Programs.

The California Alternative and Renewable Fuel, Vehicle Technology, Clean Air, and Carbon Reduction Act of 2007 (AB 118, Statutes of 2007, Chapter 750), established two key programs administered by the California Energy Commission (CEC) and CARB. CEC has been administering the Alternative and Renewable Fuel and Vehicle Technology Program, to provide to specified entities, upon appropriation by the Legislature, grants, loans, loan guarantees, revolving loans, or other appropriate measures, for the development and deployment of innovative technologies that would transform California's fuel and vehicle types to help attain the state's climate change goals. Many of the innovative technologies provide criteria pollutant reduction co-benefits. CARB administers the Air Quality Investment Program, which is a voluntary incentive program to fund clean vehicle and equipment projects, research of biofuels production and the air quality impacts of alternative fuels, and workforce training.

In 2013, the state legislature approved AB 8, which extended the Carl Moyer Memorial Air Quality Standards Attainment Program and the AB 118 Alternative and Renewable Fuel and Vehicle Technology Program and Air Quality Investment Program to January 1, 2024.

In 2006, California voters approved a bond measure called Proposition 1B. The bond measure would generate $19 billion of which $2 billion would go towards improving California's freight transportation infrastructure, $1 billion towards the cleaning up older diesel vehicles, and $200 million to school bus retrofits. The funding is predicated on bond sales. To-date, over 6,000 older diesel trucks have been replaced with either newer diesel trucks or alternative fuel trucks.

In 2000 and 2001, the SCAQMD adopted a series of clean fleet vehicle rules which require public fleets and certain private fleets to purchase alternative fuel powered vehicles at the time the fleet is expanding or replacing existing vehicles in its fleet. Rules 1193, 1194, and 1196 affect waste collection vehicles, heavy-duty vehicles operating at commercial airports, and heavy-duty vehicles operated by public entities.

PROPOSED METHOD OF CONTROL

While the Truck and Bus Regulation will ultimately require a majority of the heavy-duty trucks to meet 2010 heavy-duty exhaust emission standards by 2023, there is a need to deploy on-road heavy-duty trucks that have engines that are considered "near-zero" or have "zero-emission mile" capability. For the purposes of this control measure, "near-zero" is defined as 0.02 g/bhp-hr NOx

emissions. This measure seeks additional emission reductions from on-road heavy-duty vehicles beyond the emission reductions targeted in CARB's Truck and Bus Regulation. In addition, the proposed action is to direct a portion of available public funding to assist in replacing older diesel trucks serving warehouse and distribution centers to a truck with an engine meeting one of the optional NOx heavy-duty exhaust emission standards. The incentive programs will place the highest priority on on-road vehicles that meet the cleanest optional NOx emission standard and provide their service to warehouse and distribution centers in the region and have gross vehicle weight ratings of 26,001 lbs or greater. As private fleets affected by the Truck and Bus Regulation begin compliance with the Regulation, those fleets will be encouraged to procure new vehicles with engines meeting the cleanest optional NOx emissions standard. Incentives funding could potentially be available for the procurement of the vehicles.

In addition, this measure would seek to develop: 1) a regulation that is within the District's legal authority to implement; 2) a provision from the State for the District to implement a SOON-like (Surplus Off-Road Option for NOx) provision for the largest on-road truck fleets operating in the South Coast Air Basin; or 3) any other enforceable mechanism to accelerate deployment of on-road heavy-duty trucks with engines meeting one of the optional NOx emission standards or have some "zero-emission" mile or "all electric range" capability. The District staff will convene a stakeholders working group to discuss and identify actions or approaches that can be implemented to further reduce emissions from on-road heavy-duty trucks as part of the rule development process. The identified actions can be in the form of a regulation adopted by the District within its legal authority or other enforceable mechanism. Other local actions, state or federal government actions that achieve equivalent or greater emission reductions than this control measure can be considered in lieu of this control measure.

EMISSIONS REDUCTION

Emission reductions are not estimated at this time and will depend on the actual number of vehicles participating in the incentives program. Depending on the rule development process, additional emission reductions will be quantified.

RULE COMPLIANCE AND TEST METHODS

CARB, subject to existing and future waiver decisions by U.S. EPA, has the authority to establish emission standards and certification requirements, and verify compliance with these requirements, for on-road vehicles and engines sold in California. In addition, CARB has the authority to establish requirements for the verification of retrofit kits that would be used to modify heavy-duty diesel engines. Compliance with requirements of an incentive program(s) used to offset the costs of new heavy-duty vehicles, engines, or retrofit kits could be jointly or separately administered by SCAQMD or CARB.

COST EFFECTIVENESS

The cost effectiveness of the proposed action is not estimated. Recent funding for goods movement related vehicles under the Proposition 1B Air Quality Improvement Funds provided at least $50,000 per truck replaced. There are diesel-powered engines currently certified at levels below 0.1 g/bhp-hr and close to 0.05 g/bhp-hr. Funding levels may potentially be up to $25,000 for such engines if the engines are certified to the 0.1 or 0.05 g/bhp-hr optional NOx standard.

However, for trucks with engines that meet the cleanest optional NOx emission standard (0.02 g/bhp-hr) or trucks that have zero-emission mile capability, greater funding incentives may be needed.

IMPLEMENTING AGENCY

CARB, SCAQMD or U.S. EPA could jointly or separately implement incentive programs that would help offset the costs associated with new truck purchase, engine repower, and/or retrofit kit installation. In particular, there is a need to incentivize emission reductions from interstate trucks registered outside of California, but operating substantially within California. SCAQMD has certain authority to implement clean fleet vehicle rules under state law.

REFERENCES

CARB (2010). Amendments to the On-Road Truck and Bus Regulation.

CARB (2010). Proposition 1B Goods Movement Emissions Reduction Program: Final Guidelines for Implementation.

MOB-09: ON-ROAD MOBILE SOURCE EMISSION REDUCTION CREDIT GENERATION PROGRAM [NOX, PM]

CONTROL MEASURE SUMMARY				
SOURCE CATEGORY:	ON-ROAD HEAVY -DUTY VEHICLES (14,001 LBS AND GREATER GVWR)			
CONTROL METHODS:	ACCELERATED DEPLOYMENT OF NEAR-ZERO AND ZERO-EMISSION TRUCKS			
EMISSIONS (TONS/DAY):				
ANNUAL AVERAGE	**2012**	**2022**	**2023**	**2031**
NOX INVENTORY	139.92	64.63	40.03	42.65
NOX REDUCTION		TBD*	TBD*	TBD*
NOX REMAINING		TBD	TBD	TBD
PM2.5 INVENTORY	4.91	1.17	1.06	1.3
PM2.5 REDUCTION		TBD*	TBD*	TBD*
PM2.5 REMAINING		TBD	TBD	TBD
SUMMER PLANNING	**2012**	**2022**	**2023**	**2031**
NOX INVENTORY	132.78	61.87	38.54	41.16
NOX REDUCTION		TBD*	TBD*	TBD*
NOX REMAINING		TBD	TBD	TBD
CONTROL COST:	TBD			
IMPLEMENTING AGENCY:	SCAQMD			

* Emission reductions will be determined after projects are identified and implemented.

DESCRIPTION OF SOURCE CATEGORY

Background

This measure seeks to develop mechanisms to incentivize the early deployment of zero- and near-zero emission trucks through the generation of mobile source emission reduction credits that can be used by other entities for compliance with other District rules. The mobile source emission reduction credits will be discounted to provide additional emission reductions to help meet air quality standards.

Regulatory History

In 1995, the District adopted Rule 1612 – Credits for Clean On-Road Vehicles, which provides a quantification protocol for entities to generate mobile source emission reduction credits that could be used for compliance with other District rules. Rule 1612 establishes a mechanism for the quantification of emission benefits as a result of implementation of projects that deployed on-road vehicles meeting optional NOx emission standards or are not otherwise required by a regulation or other enforceable mechanism. Mobile source emission reductions associated with the project are converted to credits that could be used by the project proponent or sold to other entities to meet other District rules as allowed by those regulations.

In March 2001, the District adopted Rule 1612.1 – Mobile Source Credit Generation Pilot Program, which sets forth credit generating mechanisms for mobile sources to generate mobile source emission reduction credits (MSERCs) through the voluntary replacement of specific categories of diesel-fueled heavy-duty vehicles or yard hostlers with clean technologies. NOx MSERCs would then be available for use in the District's Regional Clean Air Incentives Market (RECLAIM). Rule 1612.1 is expected to provide local air quality benefits to community members who live in and around areas where participating vehicles operate. These benefits include reductions in particulates, carbon monoxide (CO), and toxic air contaminant emissions associated with the use of heavy-duty diesel engines. Regional air quality benefits would accrue from: 1) the rule provision that automatically retires nine percent of MSERCs generated for the benefit of the environment, 2) the non-credited reduction of diesel emissions components other than NOx, and 3) the accelerated and increased replacement of heavy-duty diesel vehicles with alternative clean fuel vehicles. Rule 1612.1 was approved by U.S. EPA into the SIP. However, given the time since approval, the rule needs to be updated.

PROPOSED METHOD OF CONTROL

This measure seeks to amend Rule 1612.1 and/or 1612 to provide greater flexibility for entities to initiate projects to accelerate the deployment of zero- and near-zero emission trucks in the South Coast Air Basin and Coachella Valley. The focus of the amendment will be to encourage the deployment of commercially available zero- and near-zero emission trucks that do not receive or cannot receive public funding assistance. Mobile source emission reduction credits must be real, surplus, quantifiable, permanent, and enforceable as defined by U.S. EPA. As such, any project considered for generation of emission reduction credits must go beyond regulatory requirements such as the provisions of the Truck and Bus Regulation.

For the purposes of this measure, a near-zero emission engine is one that meets the CARB optional NOx emissions standard of 0.02 g/bhp-hr. Zero-emission trucks include, but are not limited to, commercially available battery-electric trucks, fuel cell trucks, hybrid-electric trucks with all-electric range (AER) and zero-emission hybrid or battery-electric trucks with "wayside" power (such as electricity from overhead wires). Zero-emission trucks can be powered by grid electricity stored in a battery, by electricity produced onboard the vehicle through a fuel cell, or by "wayside" electricity from outside sources such as overhead catenary wires, as is currently used for transit buses and heavy mining trucks. All technologies eliminate fuel combustion and utilize electric drive as the means to achieve zero-emission and higher system efficiency compared to conventional fossil fuel combustion technology. Hybrid-electric trucks with all electric range can

provide zero emission in certain corridors and flexibility to travel extended distances (e.g. outside the region) powered by alternative fuels, conventional fuels, or fuel cells.

EMISSIONS REDUCTION

Emission reductions are not estimated at this time and will depend on the actual number of vehicles participating in the program.

RULE COMPLIANCE AND TEST METHODS

Compliance would be based on monitoring, recordkeeping, and reporting requirements that have been established in existing regulations. In addition, compliance would be verified through inspections and other recordkeeping and reporting requirements.

COST EFFECTIVENESS

Not determined.

IMPLEMENTING AGENCY

SCAQMD

REFERENCES

SCAQMD (1998). SCAQMD Rule 1612 – Clean On-Road Vehicles

SCAQMD (2001). SCAQMD Rule 1612.1 – Mobile Source Credit Generation Pilot Program

MOB-10: EXTENSION OF THE SOON PROVISION FOR CONSTRUCTION/INDUSTRIAL EQUIPMENT [NOx]

CONTROL MEASURE SUMMARY				
SOURCE CATEGORY:	OFF-ROAD DIESEL-FUELED CONSTRUCTION, INDUSTRIAL EQUIPMENT, AIRPORT GROUND SUPPORT EQUIPMENT, AND DRILLING EQUIPMENT			
CONTROL METHODS:	ACCELERATED TURNOVER OR RETROFIT OF OLDER EQUIPMENT AND ENGINES			
EMISSIONS (TONS/DAY):				
ANNUAL AVERAGE	**2012**	**2022**	**2023**	**2031**
NOX INVENTORY	TBD	TBD	TBD	TBD
NOX REDUCTION		TBD*	TBD*	TBD*
NOX REMAINING		TBD	TBD	TBD
SUMMER PLANNING	**2012**	**2022**	**2023**	**2031**
NOX INVENTORY	TBD	TBD	TBD	TBD
NOX REDUCTION		TBD*	TBD*	TBD*
NOX REMAINING		TBD	TBD	TBD
CONTROL COST:	TBD. FUNDING FROM SOON – UP TO $10 MILLION PER YEAR			
IMPLEMENTING AGENCY:	SCAQMD			

DESCRIPTION OF SOURCE CATEGORY

The purpose of this measure is to promote faster turnover of older in-use construction and industrial diesel engines.

Background

In 2023 and 2031, off-road equipment is the second largest source category of NOx emissions and accounts for 14 percent of the total NO_x emissions in the South Coast Air Basin. Heavy-duty construction, industrial, airport ground support (GSE), and drilling equipment are eligible for participation in the District's Surplus Off-road Opt-in for NOx (SOON) program and represent almost 40 percent of the off-road equipment category NOx emissions. In 2007, CARB adopted the In-Use Off-Road Diesel-Fueled Fleets Regulation that reduces primarily PM and secondarily NOx emissions through retrofit controls, engine repowers, equipment replacement and fleet

reduction. NOx emissions reduction of about 17 percent is expected to be achieved with full implementation of the regulation by 2023.

Regulatory History

The Federal Clean Air Act prohibits states from regulating emissions from new engines used in construction and farming equipment less than 175 horsepower. Diesel engines greater than 175 horsepower are regulated by CARB. In September 1996, CARB, U.S. EPA, and the diesel engine manufacturers signed a statement of principles, which called for a cooperative effort to reduce NO_x, VOC, and PM emissions by more than 60 percent. In August 1998, U.S. EPA adopted new emission standards pertaining to off-road diesel engines. Subsequently, in January 2000 and in December 2004, CARB adopted amendments to existing California emission standards to harmonize with the federal requirement. These amendments included a tiered approach starting from 1996 for Tier 1 and concluding in 2015 with all engines required to meet Tier 4 standards.

In order to accelerate the introduction of new low emission equipment, CARB adopted the In-Use Off-Road Diesel-Fueled Fleets Regulation (Off-Road rule) in 2007. The rule applies to diesel fueled construction, mining, industrial, airport ground support equipment, and mobile oil drilling equipment and established annual fleet average emission targets. Fleets that do not meet the fleet average in any year are required to "turnover," (i.e., retire, replace, retrofit, or repower) a specified percentage of their horsepower. The Off-Road rule was amended in 2011 which relaxed the target emission reductions and set the initial date for vehicle compliance to 2014.

As part of the statewide regulation, CARB adopted the SOON provision that allows air districts to opt-in to additional NOx emissions reductions from the largest off-road fleets subject to the regulation. The District has been implementing the SOON provision since 2008. The District Governing Board set aside up to $30 million per year to implement the SOON provision.

PROPOSED METHOD OF CONTROL

New off-road diesel engines are now required to meet Tier 4 emission standards. Tier 4 includes optional phase-in provisions (Interim Tier 4 standards) with relaxed standards from 2008 to 2014, depending on horsepower category. Beginning in 2015, all new off-road diesel engines between 75 hp and 750 hp, which represent most off-road construction equipment, will be required to meet exhaust emissions standards of 0.3 g/bhp-hr NOx and 0.015 g/bhp-hr PM. To comply with these standards, advanced fuel injection, air induction, and after-treatment technologies are required. The emission reductions from Tier 4 engines compared to Tier 0 engines is at least 95 percent for NOx and PM.

The long life of off-road equipment means that older, high emitting engines will remain in the off-road equipment population beyond 2020. District staff believes that using incentive programs, such as the Carl Moyer Program and the SOON Provision of the Off-Road rule, significant emission reductions could be realized by accelerating fleet turnover through equipment replacement and engine repowers.

During the last eight years, the SOON program has funded 477 engine repowers or replacements at an average cost effectiveness of approximately $12,750/ton NOx reduction. The District Governing Board has allocated up to $30,000,000 per year for the program. However, more

recently, the Governing Board has allocated up to $10 million per year. This measure proposes to extend the current SOON Program beyond 2023 to 2031 with a minimum allocation of $10,000,000 and potentially higher levels upon the Governing Board's approval.

EMISSIONS REDUCTION

While the NOx emissions from the off-road category are projected to be around 43 tpd in 2023 and 33 tpd in 2031, emissions from vehicles eligible to participate in the SOON program are around 18.5 and 12 tpd in 2023 and 2031, respectively. Reductions from this proposed measure are estimated to be 2 tpd for NOx assuming $30,000,000 per year is available.

COST EFFECTIVENESS

The SOON program has funded approximately 477 engine repowers during the last eight years at an average cost effectiveness of approximately $12,750/ton NOx reduced. While the cost of Tier 4i and Tier 4 engine repowers are expected to be higher, the cost effectiveness is expected to remain the same because of the lower NOx emission standards of the Tier 4 engines. This measure proposes to extend the SOON program with proposed funding of at least $10,000,000 per year. Historically, the SCAQMD Governing Board has allocated up to $30,000,000 per year, which results in around 2 tpd of NOx reductions.

IMPLEMENTING AGENCY AND ISSUES

The District would implement the SOON provision of the In-Use Off-Road Diesel-Fueled Fleets Regulation.

REFERENCES

CARB (2010). Emissions Inventory Model for Baseline and Final Proposal (Access database) – OSM vehicle scenario table; total population adjusted for 2012 Growth Factor of 1.046. Database available at http://www.arb.ca.gov/msprog/ordiesel/offroad_1085.htm

CARB (2010). Initial Statement of Reasons – Proposed Amendments to the Regulation for In-Use Off-road Diesel Fueled Fleets.

CARB (2011). Final Regulation Order Dec 2011- Regulation for In-Use Off-Road Diesel-Fueled Fleets.

MOB-11: EXTENDED EXCHANGE PROGRAM [VOC, NOX, CO]

CONTROL MEASURE SUMMARY				
SOURCE CATEGORY:	SMALL OFF-ROAD ENGINES (SORE)			
CONTROL METHODS:	EXCHANGE EXISTING IN-USE SORE FOR ELECTRICAL EQUIPMENT, OR NEW LOW-EMITTING ENGINES			
EMISSIONS (TONS/DAY):				
ANNUAL AVERAGE	**2012**	**2022**	**2023**	**2031**
VOC INVENTORY	TBD	TBD		TBD
VOC REDUCTION		TBD*	TBD*	TBD*
VOC REMAINING		TBD	TBD	TBD
NOX INVENTORY	TBD	TBD	TBD	TBD
NOX REDUCTION		TBD*	2.91*	1.00*
NOX REMAINING		TBD	TBD	TBD
CO INVENTORY	TBD	TBD	TBD	TBD
CO REDUCTION		TBD*	TBD*	TBD*
CO REMAINING		TBD	TBD	TBD
SUMMER PLANNING	**2012**	**2022**	**2023**	**2031**
VOC INVENTORY	TBD	TBD	TBD	TBD
VOC REDUCTION		TBD*	TBD*	TBD*
VOC REMAINING		TBD	TBD	TBD
NOX INVENTORY	TBD	TBD	TBD	TBD
NOX REDUCTION		TBD*	2.91*	1.00*
NOX REMAINING		TBD	TBD	TBD
CO INVENTORY	TBD	TBD	TBD	TBD
CO REDUCTION		TBD*	TBD*	TBD*
CO REMAINING		TBD	TBD	TBD
CONTROL COST:	THE COST-EFFECTIVENESS OF THIS CONTROL MEASURE WILL VARY DEPENDING ON THE TYPE OF EQUIPMENT BUT HAS RANGED FROM $800/TON FOR LEAF BLOWERS TO $10,000/TON FOR LAWN MOWER EQUIPMENT			
IMPLEMENTING AGENCY:	SCAQMD			

DESCRIPTION OF SOURCE CATEGORY

The purpose of this control measure is to promote accelerated turn-over of in-use small off-road engines (SORE) and other engines such as recreational outboard engines through expanded voluntary exchange programs.

Background

The small off-road engines (SORE) category consists of spark ignition engines run on gasoline or alternative fuel such as liquefied petroleum gas (LPG) or compressed natural gas (CNG), and are rated at below 25 horsepower (19 kW). The SORE equipment category includes handheld and non-handheld lawn and garden equipment such as string trimmers, leaf blowers, lawn mowers, generators, and lawn tractors, as well as other commercial/industrial equipment. This category does not include compression ignition engines or recreational vehicles. The vast majority of SORE equipment use gasoline.

Since 2003, the District has sponsored lawn mower buyback programs for residential users of old lawn mowers. This program has resulted in over 55,000 high polluting gasoline-powered lawn mowers taken out of service in from 2003 to the present. The program is designed so that an individual turns in their old lawn mower in exchange for paying up to $100 towards a new electric-powered lawn mower. In addition to the lawn mower exchange program, the District has recently sponsored a gasoline-powered leaf blower exchange program targeted at commercial operators. In this program, an individual turns in their old gasoline-powered two-stroke leaf blower in exchange for paying $200 towards a new four-stroke gasoline-powered leaf blower certified to the CARB new engine emission standards. The new four-stroke units are less polluting than the two-stroke units. The leaf blower buyback program has resulted in over 12,000 older leaf blowers being exchanged for cleaner combustion leaf blowers.

While the residential lawnmower and commercial hand-held leaf blower programs are important programs, additional emission reductions will be needed from larger commercial lawn and garden equipment such as riding lawnmowers. Zero-emission commercial lawn and garden equipment are currently commercially available from a number of vendors. The District is currently sponsoring a zero-emission commercial lawn and garden equipment loaner program to test and evaluate equipment performance in a various commercial applications.

Regulatory History

Since September 2003, CARB has established emission standards (exhaust and evaporative) for new SORE engines. However, CARB regulations do not impact existing equipment. As part of its commitment in the 2003 AQMP, in September 2003, the CARB Board also directed CARB staff to conduct research for potential increased use of electric equipment for small off-road engines. In April 2004, CARB staff reported to the Board that there is a high possibility of increasing the penetration for electric equipment through voluntary measures, incentive programs, and other consumer awareness programs.

The Small Off-Road Engines Regulation is undergoing review with potential amendments that may result in additional emission reductions.

PROPOSED METHOD OF CONTROL

In order to increase the penetration of electric equipment or new low emission gasoline-powered and zero-emission equipment, this measure is proposing to expand the District's existing lawn mower/leaf blower exchange program to cover larger commercial lawn and garden equipment that are subject to federal preemption. This expansion will be accomplished by increasing the number of exchange events and available funding for these programs. In addition, other SORE equipment may also be considered for exchange programs for accelerating the turnover of existing engines.

EMISSIONS REDUCTION

This control measure promotes faster turnover rate of in-use engines to electric versions of the same equipment type or engines that meet the new low-emission standards. The expected emission reductions for this control measure would depend on the number and types of engines participating in the program. It is estimated that around 32,000 existing larger commercial lawn and garden equipment could be replaced with zero-emission or cleaner low-emission gasoline-powered or alternative fuel-powered equipment resulting in around 2.9 tons/day of NOx reduction in 2023. The estimates for other type of equipment targeted in an exchange program would vary and are not estimated for this control measure.

COST EFFECTIVENESS

The cost effectiveness will depend on the types of engines or equipment participating in the exchange program. In the District's leaf blower exchange program, low emission units were offered at a cost of $200 instead of a typical retail price of $460. The total cost of this program was $225,000 funded through the District's Air Quality Investment Program (AQIP). The cost effectiveness of this leaf blower exchange program is reported to be $1,060 per ton.

IMPLEMENTING AGENCY

The District has successfully implemented voluntary exchange programs for leaf blowers and lawn mowers since 2003. The extended exchange program is expected to be implemented by the District.

REFERENCES

CARB (2003). Staff Report – Initial Statement of Reasons for Proposed Rulemaking Public Hearing to Consider the Adoption of Exhaust and Evaporative Emission Control Requirements for Small Off-Road Equipment and Engines Less Than or Equal to 19 Kilowatts, August 8, 2003.

CARB (2004). Staff Report – Potential Electrification Programs for Small Off-Road Engines, April 2, 2004.

MOB-12: FURTHER EMISSION REDUCTIONS FROM PASSENGER LOCOMOTIVES [NOX, PM]

CONTROL MEASURE SUMMARY				
SOURCE CATEGORY:	LOCOMOTIVE ENGINES (PASSENGER)			
CONTROL METHODS:	ACCELERATED REPLACEMENT OF EXISTING LOCOMOTIVE ENGINES MEETING TIER 4 OR CLEANER EXHAUST STANDARDS			
EMISSIONS (TONS/DAY):				
ANNUAL AVERAGE	**2012**	**2022**	**2023**	**2031**
NOX INVENTORY	TBD	TBD	TBD	TBD
NOX REDUCTION		TBD*	TBD*	TBD*
NOX REMAINING		TBD	TBD	TBD
PM2.5 INVENTORY	TBD	TBD	TBD	TBD
PM2.5 REDUCTION		TBD*	TBD*	TBD*
PM2.5 REMAINING		TBD	TBD	TBD
SUMMER PLANNING	**2012**	**2022**	**2023**	**2031**
NOX INVENTORY	TBD	TBD	TBD	TBD
NOX REDUCTION		TBD*	TBD*	TBD*
NOX REMAINING		TBD	TBD	TBD
CONTROL COST:	THE COST-EFFECTIVENESS OF THIS MEASURE WILL VARY DEPENDING ON THE TYPE OF CONTROL EQUIPMENT. THE AVERAGE COST-EFFECTIVENESS IS ESTIMATED TO BE AROUND $5,000/TON.			
IMPLEMENTING AGENCY:	SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY (METROLINK)			

DESCRIPTION OF SOURCE CATEGORY

The purpose of this control measure is to promote earlier and cleaner replacement or upgrade of existing passenger locomotives to meet Tier 4 locomotive emission standards by 2023. If new locomotive engine emission standards beyond the current Tier 4 standards are established, this measure will seek the procurement of cleaner locomotives as the older locomotives are replaced or remanufactured.

Background

Diesel-electric locomotives have a large diesel engine (main traction engine) for generating electric power which in turn drives electric motors in each axle. Passenger locomotives have engines with about 3,800 horsepower and four drive axles. U.S. EPA emission standards affect 1973-2001 locomotives upon engine rebuild and new 2002 and later locomotives. Locomotives remain in commercial service from 25 to 40 years.

Two passenger railroads, Metrolink and Amtrak, operate passenger train service in the South Coast Air Basin and the surrounding counties. Metrolink operates seven service lines, 57 stations, and moves approximately 40,000 passengers daily over a 512 track-mile network located almost exclusively within the South Coast Air Basin. Amtrak operates three interstate routes and one intrastate route that travel through the Basin. Metrolink locomotives contribute approximately 77 percent of the emissions of NOx and PM2.5, with Amtrak locomotives responsible for the remainder. Metrolink's fleet consists of approximately 60 percent older Tier 0 locomotives with the remainder being locomotives that meet the Tier 2 emissions standards. Metrolink is in the process of upgrading their fleet so that all locomotives will meet the cleanest (Tier 4) emission standards from 2016 through 2020 which will result in a fleet with at least 85 percent lower emissions. Amtrak's fleet that travels in the South Coast Air Basin is almost exclusively locomotives meeting the Tier 0 emission standards and plans are being made to upgrade them to Tier 0+ emission standards.

Regulatory History

U.S. EPA promulgated regulations for the control of emission from locomotives in 1998 and 2008. The regulations require locomotives to meet increasingly more stringent emission levels (Tier 0 thru Tier 4) when they are manufactured and in some cases additional emissions improvements when they are remanufactured at the end of their useful life. For newly manufactured passenger locomotives the cleanest emission standard (Tier 4) is required beginning in 2015 and will result in emissions that are over 90 percent cleaner than those from unregulated locomotive engines. For passenger locomotives manufactured before 2012 (i.e., meeting Tier 0, 1 or 2 emission standards), modest emissions improvements (referred to as "plus" standards) are required at the date of remanufacture which usually occurs seven to 10 years after the new locomotive is put into service.

Locomotives by design remain in operation for a long time (typically over 30 years). As such, emission reductions from natural turnover of the passenger locomotive fleet will take many years to be realized. Additionally, as most of the passenger locomotives operating in the Basin meet the Tier 0 or Tier 2 standards, they are only required to meet the more modest Tier 0 plus and Tier 2 plus standards on remanufacture unless they are replaced with new locomotives.

PROPOSED METHOD OF CONTROL

Metrolink's Board (Southern California Regional Rail Authority) has adopted a locomotive replacement plan which includes the procurement of Tier 4 locomotive engines to replace its 30 Tier 0 locomotives over the next five years. In addition, the replacement plans calls for repowering the existing Tier 2 locomotives to Tier 4 emissions levels. These actions will result in 100% Tier 4 passenger locomotives by 2023.

In addition, the District will encourage Amtrak to replace or repower their Tier 0 locomotives to meet Tier 4 locomotive emission standards starting in 2015 rather than remanufacturing these engines.

EMISSIONS REDUCTION

Emission reductions are estimated to be *TBD* tons/day for NO_x and *TBD* tons/day PM2.5 in 2023.

COST EFFECTIVENESS

Metrolink staff estimates that upgrading their oldest locomotives will cost approximately $3.4 million per locomotive, and for their newer locomotives, approximately $2.4 million each. Total cost to upgrade the fleet will be approximately $150 million. Assuming a 20 year locomotive life, the cost effectiveness of the upgrades will be in the range of $5,000 per ton of emissions reduced.

IMPLEMENTING AGENCY

The Southern California Regional Rail Authority will be considering the procurement of Tier 4 locomotive engines.

REFERENCES

Southern California Regional Rail Authority (2012). Adoption of Locomotive and Equipment Fleet Plan.

MOB-13: OFF-ROAD MOBILE SOURCE EMISSION REDUCTION CREDIT GENERATION PROGRAM [NOX, SOX, PM]

CONTROL MEASURE SUMMARY				
SOURCE CATEGORY:	OFF-ROAD DIESEL-FUELED CONSTRUCTION, INDUSTRIAL EQUIPMENT, AIRPORT GROUND SUPPORT EQUIPMENT, AND DRILLING EQUIPMENT			
CONTROL METHODS:	ACCELERATED DEPLOYMENT OF TIER 4 EQUIPMENT AND NEAR-ZERO AND ZERO-EMISSION EQUIPMENT WHERE APPLICABLE			
EMISSIONS (TONS/DAY):				
ANNUAL AVERAGE	**2012**	**2022**	**2023**	**2031**
NOX INVENTORY	TBD	TBD	TBD	TBD
NOX REDUCTION		TBD*	TBD*	TBD*
NOX REMAINING		TBD	TBD	TBD
PM2.5 INVENTORY	TBD	TBD	TBD	TBD
PM2.5 REDUCTION		TBD*	TBD*	TBD*
PM2.5 REMAINING		TBD	TBD	TBD
SUMMER PLANNING	**2012**	**2022**	**2023**	**2031**
NOX INVENTORY	TBD	TBD	TBD	TBD
NOX REDUCTION		TBD*	TBD*	TBD*
NOX REMAINING		TBD	TBD	TBD
CONTROL COST:	TBD			
IMPLEMENTING AGENCY:	SCAQMD			

* Emission reductions will be determined after projects are identified and implemented.

DESCRIPTION OF SOURCE CATEGORY

Background

This measure seeks to develop mechanisms to incentivize the early deployment of zero- and near-zero emission off-road mobile equipment where applicable or the early deployment of Tier 4 or cleaner combustion equipment where applicable through the generation of mobile source emission reduction credits that can be used by other entities for compliance with District rules

where such crediting is allowed. The mobile source emission reduction credits will be discounted to provide additional emission reductions to help meet air quality standards.

Regulatory History

In 1995, the District adopted Rule 1620 – Credits for Clean Off-Road Mobile Equipment, which provides a protocol for entities to generate mobile source emission reduction credits that could be used for compliance with other District rules. Rule 1620 established a mechanism for the quantification of emission benefits as a result of implementation of projects that deployed cleaner off-road mobile equipment meeting the cleanest tier NOx emission standards (currently Tier 4) or were not otherwise required by a regulation or other enforceable mechanism. Mobile source emission reductions associated with the project are converted to credits that could be used by the project proponent or sold to other entities to meet other District rules as allowed by those regulations.

In May 1996, the District adopted an emissions reduction credit generation rule for lawn and garden equipment. Rule 1623 – Credits for Clean Lawn and Garden Equipment focused on projects that replaced older gasoline powered lawn and garden equipment with new zero-emission models. Similar to Rule 1620, emission reduction credits generated under Rule 1623 can be used for compliance with other District rules if allowed by those rules.

PROPOSED METHOD OF CONTROL

This measure seeks to amend Rule 1620 to provide greater flexibility for entities to initiate projects to accelerate the deployment of zero- and near-zero emission off-road mobile equipment in the South Coast Air Basin and Coachella Valley. The focus of the amendment will be to encourage the deployment of commercially available zero- and near-zero emission off-road mobile equipment that do not receive or cannot receive public funding assistance. Mobile source emission reduction credits must be real, surplus, quantifiable, permanent, and enforceable as defined by U.S. EPA. As such, any project considered for generation of emission reduction credits must go beyond regulatory requirements.

For the purposes of this measure, a near-zero emission engine is one that is certified to be at least 90 percent cleaner than the current Tier 4 off-road emission standard for the horsepower specification of the off-road engine or meets the lowest optional NOx emission standard for on-road heavy-duty engines if the on-road engine is used in an off-road application. Zero-emission mobile equipment include, but are not limited to, commercially available battery-electric or fuel cell operated equipment.

EMISSIONS REDUCTION

Emission reductions are not estimated at this time and will depend on the actual number of vehicles participating in the program.

RULE COMPLIANCE AND TEST METHODS

Compliance would be based on monitoring, recordkeeping, and reporting requirements that have been established in existing regulations. In addition, compliance would be verified through inspections and other recordkeeping and reporting requirements.

COST EFFECTIVENESS

Not determined.

IMPLEMENTING AGENCY

SCAQMD

REFERENCES

SCAQMD (1995). SCAQMD Rule 1620 – Clean Off-Road Mobile Equipment

SCAQMD (1996). SCAQMD Rule 1623 – Credits for Clean Lawn and Garden Equipment

MOB-14: EMISSION REDUCTIONS FROM INCENTIVE PROGRAMS [NOX, PM]

CONTROL MEASURE SUMMARY

SOURCE CATEGORY: ON-ROAD AND OFF-ROAD MOBILE SOURCE VEHICLES AND EQUIPMENT

CONTROL METHODS: IMPLEMENTATION OF FUNDING INCENTIVE PROGRAMS SUCH AS CARL MOYER MEMORIAL AIR QUALITY STANDARDS ATTAINMENT PROGRAM, PROPOSITION 1B, ETC.

EMISSIONS (TONS/DAY):

ANNUAL AVERAGE	**2012**	**2022**	**2023**	**2031**
NOX INVENTORY	TBD	TBD	TBD	TBD
NOX REDUCTION		TBD*	9.47*	5.62*
NOX REMAINING		TBD	TBD	TBD
PM2.5 INVENTORY	TBD	TBD	TBD	TBD
PM2.5 REDUCTION		TBD*	0.21*	0.11*
PM2.5 REMAINING		TBD	TBD	TBD

SUMMER PLANNING	**2012**	**2022**	**2023**	**2031**
NOX INVENTORY	TBD	TBD	TBD	TBD
NOX REDUCTION		TBD*	9.47*	5.62*
NOX REMAINING		TBD	TBD	TBD

CONTROL COST: $18,260 PER TON (BASED ON THE MOST CURRENT CARL MOYER GUIDELINES)

IMPLEMENTING AGENCY: SCAQMD

* Emission reductions reflect reductions associated with existing projects and future projects based on anticipated funding under the Carl Moyer Program and Proposition 1B. Specific reductions are provided in Tables 1 through 4 below.

DESCRIPTION OF SOURCE CATEGORY

The purpose of this measure is to develop a rule similar to San Joaquin Valley Air Pollution Control District Rule 9610 – State Implementation Plan Credit for Emission Reductions Generated through Incentive Programs such that emission reductions generated through incentive programs can be credited in State Implementation Plan (SIP) emission inventories. Such emission reductions have been accounted in the development of historic base year emissions inventories where actual emission reductions have occurred. Future emission reductions from adopted

regulations can be credited towards attainment of air quality standards. However, future emissions reductions as a result of incentive-based programs cannot be credited towards attainment prospectively without a demonstration and commitment that the reductions are real, surplus, enforceable, and permanent (for mobile sources to the extent of their useful life). The lack of a SIP-creditability mechanism is now a major deficit in developing future AQMPs since the reductions cannot be counted in the future year emissions baseline. This proposed measure would provide a new administrative mechanism to credit towards SIP requirements for future emission reductions achieved in the South Coast Air Basin through incentive programs administered by the District, CARB, or U.S. EPA.

Background

The District has a long history of successful implementation of incentive programs that help fund the accelerated deployment of cleaner on-road heavy-duty vehicles and off-road mobile equipment. Such accelerated deployment not only result in early emission reductions, but also provides a signal for technology providers, engine and automobile manufacturers, academic researchers to develop and commercialize the cleanest combustion engines possible and further the efforts to commercialize zero-emission technologies into a wider market. Some of the major incentive programs are discussed below.

Carl Moyer Memorial Air Quality Standards Attainment Program

In fiscal year 1998-99, the California State Legislature created the Carl Moyer Memorial Air Quality Standards Attainment Program, named in honor of a key figure in developing state air quality measures, to facilitate the move to cleaners-burning engines, which otherwise would have taken decades. The program continues to drive early introduction of clean air technologies, and includes funding for measures that reduce NOx, VOC, and PM caused by the combustion of diesel fuel and gasoline in on-road vehicles and off-road engines. The program also funds after-treatment devices such as diesel oxidation catalyst and PM filters.

A variety of vehicle classes and types are funded under the Carl Moyer Program to help purchase new vehicles or new engines/repowers and for installation of retrofit units on older engines. New vehicles and engines must achieve a least 30 percent reduction, and repowered vehicles and retrofits must achieve a 15% reduction of NOx emissions compared to current emission standards. New on-road engines should be CARB-certified to meet an optional NOx emissions standard and retrofits should be CARB-verified. Projects reducing PM and/or VOC are also eligible for funding provided they are cost-effective. Alternative fuel engines, such as those using compressed natural gas, liquefied natural gas, propane and electricity will be given preference for funding if less polluting. Cleaner diesel engines may also be considered in the off-road category.

Vehicles and equipment funded must remain in operation for at least three years, and 75 percent of their use must be within the South Coast Air Basin. All potential projects must meet cost-effectiveness requirements to be eligible for funding consideration.

The Carl Moyer Program under its new guidelines also includes “Fleet Modernization” and “Light-Duty Vehicle Repair and Scrapping” programs. The fleet modernization Program replaces older heavy-duty diesel vehicles with 2007 and newer diesel or 2010 and newer natural gas

vehicles. The Light-Duty Vehicle Repair and Scrapping Program identifies high polluting light-duty vehicles with remote sensing and offers repair or scrapping options.

Proposition 1B – Air Quality Improvement Fund

In 2006, California voters approved a bond measure called Proposition 1B. The bond measure would generate $19 billion of which $2 billion would go towards improving California's freight transportation infrastructure, $1 billion towards the cleaning up older diesel vehicles, and $200 million to school bus retrofits. The funding is predicated on bond sales. To-date, over 6,000 older diesel trucks have been replaced with either newer diesel trucks or alternative fuel trucks. In addition, Proposition 1B funding has helped with installation of shore side power for marine vessels and assisted in the purchase of cleaner locomotives. Proposition is in its final year and the last round of funding is anticipated to help cover the cost for the replacement of 1,000 older trucks, a number of cargo handling equipment and locomotives.

Emission reductions in 2023 and 2031 associated with projects awards to-date and projected emission reductions as a result of future awards are provided in Tables 1 through 4, respectively.

Table 1. NOx and PM Emission Reductions in 2023 Associated with Existing Project Awards

Funding Source	Implementation Status	Project Types	No. of Units	NOx tons/day	PM tons/day
AB923	2013	School Bus Replacement	264	0.15	0.01
Prop 1B	Projects implemented since 2013 and still operational in 2023	Freight Locomotives	10	0.14	0.01
SB1107 & AB923	In operation since 2013 and still operational in 2023	Off-road Equipment Harbor Craft (Fishing Vessels) Freight Locomotives		1.71 1.96 0.87	0.05 0.07 0.02
Total				**4.84**	**0.16**

Table 2. Projected NOx and PM Emission Reductions in 2023 Associated with Future Funding

Funding Source	Implementation Status	Project Types	No. of Units	NOx tons/day	PM tons/day
AB923	Future Projects from 2017 to 2023	School Bus Replacement	600	0.22	0.01
Prop 1B	Future Projects to be implemented by end of 2016 through 2019	Cargo Handling Equipment Freight Locomotives	29 10	0.16 0.14	0.00 0.01
SB1107 & AB923	Projected from 2017 through 2023	On-road		4.11	0.03
Total				**4.63**	**0.05**

Table 3. NOx and PM Emission Reductions in 2031 Associated with Existing Project Awards

Funding Source	Implementation Status	Project Types	No. of Units	NOx tons/day	PM tons/day
AB923	2016	School Bus Replacement	144	0.05	0.00
Prop 1B	Projects implemented since 2013 and still operational in 2031	--	--	--	--
SB1107 & AB923	In operation since 2013 and still operational in 2031	Off-Road Freight Locomotives		1.71 0.87	0.05 0.02
Total				**2.63**	**0.07**

Table 4. Projected NOx and PM Emission Reductions in 2031 Associated with Future Funding

Funding Source	Implementation Status	Project Types	No. of Units	NOx tons/day	PM tons/day
AB923	Future Projects from 2017 to 2031	School Bus Replacement	600	0.22	0.01
Prop 1B	Future Projects to be implemented by end of 2016 through 2019	Cargo Handling Equipment Freight Locomotives	29 10	0.16 0.14	0.00 0.01
SB1107 & AB923	Projected from 2017 through 2031	On-road Heavy-Duty Trucks		2.47	0.02
Total				**2.99**	**0.04**

Regulatory History

In addition to the legislature introducing the Carl Moyer Program, SB 1107 and AB 923 were passed with support from the business community, environmental groups, and public agencies which provide a long-term source of funding for the expansion of the Carl Moyer Program.

PROPOSED METHOD OF CONTROL

The proposed control measure is based on the implementation of the Carl Moyer Program by the District. The measure proposes to take credit for the emission reductions achieved through past and future projects funded under this program for SIP purposes, in two phases. Examples of projects include on-road heavy-duty vehicle modernization, installation of retrofit units, and engine repowers. The emission reductions are provided in two parts. The first part of the control measure is the actual emission reductions associated with current projects that will have remaining useful life in 2023 and 2031. The second part of this measure is based on future reductions to be achieved from the implementation of new projects under the Carl Moyer Program and other incentive programs such as Proposition 1B. These reductions were estimated based on the committed level of funding for this Program and a conservative cost-effectiveness assumption of $18,260 per ton specified in the Carl Moyer Program guidelines (although existing projects have

substantially lower cost-effectiveness). Emission reductions associated with both parts are shown in Tables 1 through 4.

Every three to five years, emission reductions from projects funded under the Carl Moyer Program will be quantified, verified, and incorporated in the revised baseline emissions as part of SIP Revision process.

EMISSIONS REDUCTION

The emission reductions from existing projects that will have remaining useful life and projected future projects based on current funding levels of the control measure are reflected in the Control Measure Summary Table. In addition, the implementation of Light-Duty Vehicle Repair and Scrapping will start generating VOC emission reductions.

RULE COMPLIANCE AND TEST METHODS

The District has developed policies and procedures to ensure that this control measure is successfully implemented. In addition to the District's requirements for program implementation, the District adheres to CARB's Carl Moyer Guidelines. Because the Carl Moyer Program is implemented by a partnership of CARB and the District, CARB has oversight authority to ensure that funds are expended as required by the Health and Safety Code and to ensure that the Carl Moyer Program Guidelines are met. CARB is required to audit the District's program by reviewing the District's solicitation, evaluation, selection, contract, and invoicing process. CARB staff also visits a sample of funded projects to ensure that public funds are used to pay for qualifying projects that are operating and obtaining emission reductions.

COST EFFECTIVENESS

The cost effectiveness of this control measure is based on the Carl Moyer Program guidelines which establish an upper limit of $18,260 per ton.

IMPLEMENTING AGENCY

CARB

REFERENCES

EMISSION REDUCTIONS FROM NEW DEVELOPMENT AND REDEVELOPMENT PROJECTS [ALL POLLUTANTS]

CONTROL MEASURE SUMMARY

SOURCE CATEGORY: NEW DEVELOPMENT OR REDEVELOPMENT PROJECTS

CONTROL METHODS: MOBILE SOURCE EMISSION REDUCTION ACTIONS WHICH MAY INCLUDE MITIGATION FEE OPTIONS

EMISSIONS (TONS/DAY):

ANNUAL AVERAGE	**2012**	**2022**	**2023**	**2031**
VOC INVENTORY	TBD	TBD	TBD	TBD
VOC REDUCTION	TBD	TBD	TBD	TBD
VOC REMAINING	TBD	TBD	TBD	TBD
NOX INVENTORY	TBD	TBD	TBD	TBD
NOX REDUCTION	TBD	TBD	TBD	TBD
NOX REMAINING	TBD	TBD	TBD	TBD
CO INVENTORY	TBD	TBD	TBD	TBD
CO REDUCTION	TBD	TBD	TBD	TBD
CO REMAINING	TBD	TBD	TBD	TBD

SUMMER PLANNING	**2012**	**2022**	**2023**	**2031**
VOC INVENTORY	TBD	TBD	TBD	TBD
VOC REDUCTION	TBD	TBD	TBD	TBD
VOC REMAINING	TBD	TBD	TBD	TBD
NOX INVENTORY	TBD	TBD	TBD	TBD
NOX REDUCTION	TBD	TBD	TBD	TBD
NOX REMAINING	TBD	TBD	TBD	TBD
CO INVENTORY	TBD	TBD	TBD	TBD
CO REDUCTION	TBD	TBD	TBD	TBD
CO REMAINING	TBD	TBD	TBD	TBD

CONTROL COST: TO BE DETERMINED

IMPLEMENTING AGENCY: SCAQMD/LOCAL OR REGIONAL AGENCIES

DESCRIPTION OF SOURCE CATEGORY

The purpose of this control measure is to mitigate and where appropriate, reduce emissions from new development and redevelopment projects. The measure is designed to reduce emissions related to new residential, commercial, industrial and institutional development, including redevelopment, required to meet the needs of the Basin's future residents and economy. These projects are considered indirect sources. An indirect source is any facility, building, structure, or installation, or combination thereof, which generates or attracts mobile source activity that results in emissions of any pollutant (or precursor) for which there is a State Ambient Air Quality Standard. Examples of indirect sources include residential housing, entertainment centers, shopping malls, historical tourist attractions, amusement parks, parking lots, commercial office facilities, airports, ports, warehouse/distribution centers, schools, etc. For the purposes of this control measure, indirect sources include all facilities not covered by another 2016 AQMP Control Measure. In addition, during the rule development process, additional indirect sources may be included or excluded.

Background

New development projects produce new sources of air pollution from new vehicle trips, use of consumer products, landscape maintenance, new stationary source processes such as fuel combustion, as well as emissions generated during construction activities. Each day millions of vehicles travel the roads in the South Coast Air Basin and the length of vehicle trips is expected to increase as outlying areas continue to be developed. In addition, older residential, commercial and industrial areas may undergo major redevelopment involving construction activities, with emissions comparable to new development projects. Redevelopment projects may also generate additional vehicular traffic compared to the projects they replace because redevelopment projects often involve increasing population density compared to the previous use. Redevelopment includes demolishing existing buildings, increasing overall floor area or building additional capacity on an existing property. For example, the conversion of an industrial warehouse to an office building could create as much emissions as constructing a new building because it would be a complete remodel.

Lead agencies for projects subject to California Environmental Quality Act (CEQA) currently prepare air quality analysis as part of their environmental documents, including emissions during construction and operations. Typical emissions during construction phase of development projects include, but are not limited to, fugitive dust emissions, combustion emissions from off-road mobile sources (construction equipment) and on-road mobile sources, and coating and asphalt evaporative emissions. Operational emissions include, but are not limited to: area sources (e.g., water heater emissions), on-road mobile source emissions (worker commute trips, delivery truck trips, etc.), consumer products and other emissions sources depending on the specific type of land use.

Regulatory History

California Health and Safety Code (H&SC) Section 40716 states that "a District may adopt and implement regulations to reduce or mitigate emissions from indirect and areawide sources of air pollution". Furthermore, a 1993 California Attorney General opinion states that "a District's

regulations may require the developer of an indirect source to submit the plans to the District for review and comment prior to the issuance of a permit for construction by a city or county. A District may also require the owner of an indirect source to adopt reasonable post-construction measures to mitigate particular indirect effects of the facility's operation. Such regulations could be enforced through an action for civil penalties…" H&SC Section 40716 also states that the authority of an air district to reduce or mitigate emissions from indirect and areawide sources of air pollution does not constitute an infringement on the existing authority of counties and cities to plan or control land use.

Seven air districts in California have already adopted and implemented indirect source rules, policies, and/or the collection of mitigation fees.

In December 2005, the San Joaquin Valley Air Pollution Control District (SJVAPCD) adopted Rule 9510 – Indirect Source Review, which was recently approved by U.S. EPA. The purpose of the rule is to reduce emissions of NOx and PM10 from new development projects that seek to gain a discretionary approval (*upon full build-out*) of any one of the following: 50 residential units, 2,000 square feet (SF) of commercial space, 25,000 SF of industrial space, 20,000 SF of medical office space, 39,000 SF of general office space, 9,000 SF of educational space, 10,000 SF of government space, 20,000 SF of recreational space, or 9,000 SF of uncategorized space. The rule also applies to transportation projects whose construction exhaust emissions will result in a total of two tons per year of NOx and PM10 combined. The rule is designed to reduce the impact of the development projects to the extent needed for the SJVAPCD region to reach attainment of ozone and PM standards by determining the level of reduction needed on a per-project basis that would achieve the emission reduction committed to in the PM and ozone attainment plans.

The rule requires applicants of new development projects to provide documents necessary to perform an emissions generation analysis. The SJVAPCD calculates a required emission reduction amount based on total emissions and identify credits for specific on-site emission reduction measures included in the project. Required reductions not achieved by voluntary on-site measures would be achieved off-site through a mitigation fee. Offsite reductions would be subject to criteria including (but not limited to) being quantifiable and surplus that is analyzed annually to ensure the effectiveness.

Mendocino County AQMD (MCAQMD) requires an "Authority to Construct" prior to starting construction, modification, operation or use of any stationary, portable, or indirect source. It further defines in Rule 1-130 an indirect source as "a facility, building, structure or installation, or combination thereof, that indirectly results in, or is projected to result in unmitigated emissions in excess of the following: ROG – 180 lbs/day, NOx – 42 lbs/day, CO – 690 lbs/day, PM10 – 80 lbs/day." Furthermore, projects with an annual combined stationary source release of 25 tons or more of any air contaminant are subject to emissions assessment fees.

Great Basin Unified Air Pollution Control District's (GBUAPCD) "New Source Review Requirements for Determining Impact on Air Quality Secondary Sources" define indirect sources as a secondary source, which is any structure, building, facility, equipment, installation, operation, or aggregation thereof. General provisions include, "A person shall not initiate, modify, construct or operate any secondary source which will cause the emission of any manmade air pollutant for

which there is a state or national ambient air quality standard without first obtaining a permit from the Air Pollution Control Officer." The GBUAPCD, through Rule 301, imposes fees on secondary sources. The fees are based on the size of the commercial unit and the number of parking spaces, or the number of residential dwelling units.

Colusa County Air Pollution Control District's "Rule 4.8 – Indirect Source Review Fee" defines indirect source as any facility, building, structure, installation, real property, road or highway which may cause mobile source emissions. The fee is based on commercial or industrial square footage or by the number of residential units.

Placer County Air Pollution Control District's "Policy Regarding Land Use Air Quality Mitigation Funds" assesses emissions estimated to occur during the ozone season of May to October from a particular project; and if sufficient permanent on-site mitigation measures cannot be implemented to adequately reduce emissions, the air district will apply a cost effectiveness factor to calculate funds required to attain offsite emission reductions.

Imperial County Air Pollution Control District's "Rule 310 - Operational Development Fee" requires new commercial and residential (greater than four units) developments to submit a written Mitigation Project Report that must meet minimum rule requirements, includes descriptions of project mitigation measures and an operational fee based on per unit of single family, multiple family, or commercial square footage. Fees are placed into a fund for projects to reduce ozone precursors and PM.

Shasta County Air Quality Management District's "Rule 3:16 – Fugitive, Indirect, or Non-Traditional Sources" authorizes the air district to place conditions upon indirect sources to mitigate emissions to a level which will not constitute a violation of H&SC Sections 41700 or 41701. Resolution No. 84-2, "Resolution of the Shasta County Air Pollution Control Board Amending the Rules of the Shasta County Air Pollution Control District", authorizes an in-lieu buy out schedule for road paving, per parcel below 1,000 feet in elevation.

Sacramento Metropolitan Air Quality Management District is working on proposed Rule 1051 – "Indirect Source Rule for New Land Use Projects" requiring new residential, commercial and industrial land uses to mitigate construction NOx emissions by 20% and operational emissions to a percentage of the project's NOx emissions. Mitigation fees to fund an offsite mitigation account and a fee rate have yet to be determined.

Proposed Method of Control

The South Coast Air Quality Management District (District) is required by state law to consider all feasible control measures (H&SC Sections 40913, 40914 40920.5), which would include a measure that is considered at least equivalent to the programs implemented by other air districts. Under this requirement, the District will consider adopting a rule similar to SJVAPCD Rule 9510. The District would re-convene working groups made up of affected stakeholders from industry, local governments, and community representatives to explore approaches to mitigate and potentially reduce emissions from new or redevelopment projects using the SJCAPCD rule as a model framework for crafting a proposed rule for the District Governing Board's consideration.

The control measure would require the District to develop a rule to establish applicability criteria for emissions or other equivalent parameters for new development and redevelopment projects. All discretionary permit applications filed with local jurisdictions pursuant to CEQA would be required to submit an Air Quality Analysis application per District methodology along with their CEQA documents prior to issuance of a building permit if the projects meet the applicability criteria. Projects meeting the established criteria would be required to mitigate and potentially further reduce their emissions by selecting actions from a menu of options provided in the rule. Any additional equivalent mitigation measures submitted by the project proponent will be considered. Compliance with the rule will be done in such a manner that with not unduly restrict local or regional jurisdictions' prerogatives respecting land use approvals. During rule development, special consideration will be given to the need to assure that any rule adopted will integrate with and enhance the CEQA process and not impede the project approval process in light of CEQA timelines. The District will conduct outreach and field audits to ensure rule compliance.

As part of the District's streamlining of the process, the rule will include a local delegation component in which a local or regional jurisdiction may elect to implement a program comparable to the District's for reviewing applications or by adopting an ordinance equal to or more stringent than the rule. Coachella Valley Association of Government's PM10 mitigation measures in Rule 403 – Fugitive Dust are good examples of how local ordinances can be implemented in a District rule. This delegation will include technical training and field auditing to be conducted by the District.

An EGM-01 working group consisting of stakeholders from local governments, building industry, developers, realtors, other business representatives, environmental/community organizations, and other stakeholders, was established as part of the 2007 AQMP. The District will reconvene the working group as part of the rule development process to provide comments and input on the draft rule.

EMISSIONS REDUCTION

The amount of emission reductions that can be achieved from this control measure will be dependent on the type and number of new and redevelopment projects affected by the measure and the method of control to be implemented to reduce VOC, NOx, and PM2.5 emissions.

RULE COMPLIANCE

The District will adopt rules to implement this measure and Rule compliance will be verified via field inspection.

TEST METHODS

Approved emission quantification protocols by federal, state or local agencies will be used to track and report emission reductions for SIP purposes. If a protocol does not exist for a specific project, a protocol will be developed for the District Governing Board's consideration for adoption.

COST EFFECTIVENESS

The cost effectiveness will be developed during the rulemaking process based on the mitigation measures included in the menu of options.

IMPLEMENTING AGENCY

The District has authority to adopt regulations to reduce or mitigate emissions from indirect sources under H&SC Section 40716.

REFERENCES

Control Strategy Symposium, SCAQMD, June 2015

SCAQMD, 2012 Air Quality Management Plan, Appendix IV-A, December 2012

SCAQMD, 2007 Air Quality Management Plan, Appendix IV-A, June 2007