

California Environmental Protection Agency



PUBLIC HEARING TO CONSIDER THE PROPOSED

2017 Revisions to the Carl Moyer Memorial Air Quality Standards Attainment Program Guidelines

STAFF REPORT

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EXECUTIVE SUMMARY

Since 1998, the Carl Moyer Memorial Air Quality Standards Attainment Program (Moyer Program or Program) has cost-effectively reduced smog-forming and toxic emissions. At its core, the Moyer Program is a statewide, locally-directed program to provide cost-effective emissions reductions creditable to the State Implementation Plan (SIP). Each year, Moyer Program grants help remove older, high-polluting engines that would have operated for years to come. The Program has successfully funded a wide breadth of project types including off-road equipment, on-road heavy duty vehicles, marine vessels, and locomotive projects. Moyer Program projects reduce criteria pollutant emissions, including oxides of nitrogen (NO_x) and reactive organic gases (ROG) that contribute to ozone formation, as well as particulate matter (PM). Particulate matter emission reductions are weighted by a factor of 20 due to diesel toxicity. Over the past 18 years the California Air Resources Board (CARB or Board) has worked alongside local air districts to clean up over 50,000 engines and reduce ozone precursors by 178,000 tons and particulates by 6,500 tons. These reductions have been achieved within Program cost-effectiveness limits adjusted each year for inflation; the current limit is \$18,260 per weighted ton of emissions reduced.

The regulatory, technological and incentives landscape has changed significantly since the creation of the Moyer Program, and to address evolving needs the Legislature has periodically modified the Program. Most recently, Senate Bill (SB) 513 (Beall, 2015) has provided an extraordinary opportunity to redesign the Moyer Program to realize a dual function: 1) to continue to support the highly sought after and successful conventional diesel-to-diesel projects, and 2) to provide the tools to persuade the purchase of the cleanest commercially available technologies in the marketplace. SB 513 requires the Board to adopt updated guidelines by July 1, 2017. This proposal addresses the implementation of SB 513 by CARB and California's air pollution control and air quality management districts (air districts) to better serve California's air quality goals.

California's strategic plans for air quality and mobility, including the SIP and the Sustainable Freight Action Plan, point to the need for combustion engines to transition to zero and near-zero emission alternatives. This move is critical to California's clean air mission, to the attainment of health-based air quality standards, and to meeting future transportation goals without harm to public health and the environment. Public incentive funds are an increasingly important part of this transition. Incentives both encourage customers to purchase cleaner technologies and stimulate the marketplace to manufacture cleaner technologies.

Collaboration is paramount to the Moyer Program's ongoing success. The changes made through SB 513 were supported and informed by a coalition that included air

districts, environmental organizations, industry stakeholders, equipment dealers, and consumers. Many different alternatives and approaches were considered. The result was a working group consensus on new program objectives and improvements essential to continuing program value. In developing this proposal, CARB staff has continued this collaborative approach and worked in close coordination with the air districts to design those program improvements.

Three key changes to the program are described below.

- 1) *Cost-effectiveness.* The original cost-effectiveness limit was set in 1998 at \$12,000 per ton, and prior to SB 513 it has only been updated to account for inflation. The current cost-effectiveness limit is \$18,260 per weighted ton of emission reduction. There still remain some very cost-effective opportunities to achieve near-term emissions reductions below this level, and air districts will continue to fund these projects, where available, moving forward. However, the Program must also provide support for the transformative technologies necessary to meet future SIP commitments. This changing landscape requires that the Program update today's limits.

SB 513 directed the Board to consider the cost of technology and the cost of regulations in establishing new cost-effectiveness values for the Program. Staff proposes a tiered cost-effectiveness approach that will allow the Program to more effectively incentivize deployment of cleaner technologies. This two-step approach would support both conventional diesel clean-up projects and emerging technologies at appropriate funding levels. First, staff proposes to increase the base cost-effectiveness limit to \$30,000 per weighted ton of emission reductions. This reflects the cost-effectiveness of more recent regulations and will enable more meaningful grants for cleaner engines at the required standard. For advanced technology projects that are zero-emission, or alternatively meet the cleanest certified optional standard applicable by source category, staff proposes that districts be given the option to apply a cost-effectiveness limit of up to \$100,000 per weighted ton, limited to the increment of emissions reductions beyond those achieved at the required standard. This higher limit would provide additional incentive to turn over engines and fleets to the cleanest certified technologies now emerging in the marketplace.

It should also be noted that SB 513 directed CARB to establish a cost-effectiveness limit for school bus projects that enabled consistency with the funding levels used in California's Lower-Emission School Bus Program. The new Moyer Program limit of \$276,230 per ton for school buses became effective January 1, 2016, and several

districts have already taken advantage of this additional opportunity to support children's health.

- 2) *Infrastructure.* Historically the Program has provided only limited opportunities to fund infrastructure projects which inhibited its ability to support transformative technology. SB 513 expanded the Program's ability to support infrastructure projects.

The staff proposes to provide air districts with the ability to fund infrastructure projects where the greatest penetration of commercially available advanced technology vehicles and equipment exists. These categories include commercial battery charging and alternative fueling stations for on-road and off-road vehicles and equipment, and continued support for marine shore power electrification and stationary agricultural projects. To provide project selection transparency for publicly accessible projects, staff proposes requiring a competitive bid process when the project includes public access. Air districts would retain the flexibility to select projects that meet their local needs and priorities. Per SB 513, infrastructure projects would not be required to meet a cost-effectiveness limit.

- 3) *Project Co-Funding.* Prior to SB 513 the statute effectively restricted the Program from co-funding with other incentive programs, by requiring that the co-funding be included in the cost-effectiveness calculation and co-funding grants to be subtracted from the Moyer grant amount.

SB 513 allows air districts to work with grant applicants to co-fund projects with other incentive programs, such as Low-Carbon Transportation investments, up to the cost of the project, without penalizing project cost-effectiveness. Project cost sharing supports the deployment of the cleanest technologies statewide by providing opportunities to co-fund private, local, State and federal funding to cover technology costs. Staff proposes the following safeguards consistent with SB 513: compliance with the program requirements of all contributing funding sources, incentives must not exceed the total project costs, there can be no double counting of emission reductions for SIP credit, and private sector applicants must provide a 15 percent cost share.

Even as the 2017 Guidelines would implement the program improvements directed by SB 513, they retain the Moyer Program's longstanding core objectives. The proposed Guidelines are intended to:

- Ensure continued program accountability and good stewardship of public funds;
- Ensure Moyer projects provide emission reductions that the United States Environmental Protection Agency (U.S. EPA) will find creditable in the SIP;

- Emphasize emission reductions in communities with higher pollutant exposure, including communities of minority and low-income populations;
- Provide sufficient incentive to encourage California businesses to participate in and benefit from the Program, getting surplus emission reductions within cost-effectiveness limits.

This report describes the Moyer Program's background, and explains how a renewed Moyer Program can support the changing landscape of clean air technology in and beyond California. Staff's proposed changes will ensure that Moyer can assist the technology shifts that bring California closer to the clean air future called for in our state's air pollution control strategies.

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I. PROGRAM BACKGROUND

California has some of the highest levels of air pollution in the nation, and the majority of our state's inhabitants live in communities that often exceed the federal ozone and fine particulate matter (PM 2.5) standards. Since 1998 the Carl Moyer Program (Moyer Program or Program) has demonstrated that supporting the economy and protecting public health are not mutually exclusive goals. The Moyer Program is authorized by Health and Safety Code (H&SC) sections 44275 – 44299.2. Within cost-effectiveness limits, Moyer Program projects reduce criteria pollutant emissions, including oxides of nitrogen (NOx) and reactive organic gases (ROG) that contribute to ozone formation, as well as particulate matter (PM). The Program funds up to the incremental cost of cleaner-than-required engines, equipment, and vehicles, yielding emission reductions beyond or before those required by regulation or otherwise occurring through usual fleet turnover.

Moyer is a statewide program that is implemented by the local air districts. Emission reductions produced by Moyer funded projects are creditable in the State Implementation Plan (SIP). Each year, Moyer Program grants help remove older, high-polluting engines that would have operated for years to come. Over the past 18 years the California Air Resources Board (CARB) has worked alongside local air districts to implement over \$900 million in Moyer projects, cleaning up over 50,000 engines and reducing ozone precursors by 178,000 tons and particulates by 6,500 tons.

Budgeted at \$69 million per year, the Moyer Program is funded through smog abatement fees collected by the Department of Motor Vehicles, and a tire purchase fee collected by the Board of Equalization. Air districts provide additional match funds of about \$8 million per year, mostly from local incentive funds provided through Assembly Bill (AB) 923 (Firebaugh, 2004). AB 8 (Perea, 2014) extended collection of the tire fees and local funds through 2023. Air districts further support the program with interest collected on the funds and, in some air districts, sale of salvage from scrapped old equipment.

Incentive programs are part of a multi-faceted approach to supporting California's transition to cleaner advanced technologies. In-use fleet rules and engine standards force technology transitions and manufacturer invention. Cleaner fuels, engine and emission control durability improvements, and processes for certifying and verifying new technologies are also essential to enabling fleet transformation through commercialization and mainstream market penetration. The Moyer Program complements these efforts by accelerating the deployment of proven emissions-reducing technologies.

The accelerated introduction of clean technologies serves multiple interrelated planning efforts that rely on Moyer Program benefits. California is required to attain health-based federal ambient air quality standards through measures specified in the SIP. The Sustainable Freight Action Plan outlines aggressive and inclusive approaches to improve the efficiency of goods movement in our state. The Climate Change Scoping Plan and Short Lived Climate Pollutant Reduction Strategy provide frameworks for climate action that will involve many of the same sources of air pollution. Incentive funds to hasten deployment of clean engine technologies are a component of each of these strategic plans. As California's most enduring incentive program, Moyer must address those needs.

In summary, the Moyer Program is a statewide, locally-directed program to provide cost-effective emissions reductions creditable to the SIP. Below is a review of the Program's guiding principles.

A. Program Design to Meet SIP Objectives

Statute requires that CARB and the air districts take all appropriate and necessary actions to ensure that emission reductions are creditable in the SIP (H&SC § 44286(g)). To be SIP creditable, emission reductions funded through the Moyer Program must be permanent, surplus, quantifiable, and enforceable. Funded projects must not be required by any rule or regulation and CARB establishes requirements in the Guidelines to ensure that projects are surplus. This means that Moyer funds cannot pay for regulatory compliance -- Moyer reductions must be "early or extra." The Moyer Program supports early emission reductions by funding projects that achieve reductions before they would be required by federal, State or local regulation. The Program also funds projects that go beyond required engine standards, such as optional low-NOx and zero-emission technologies. Emission control technologies must be certified or verified by CARB or by U.S. EPA for technologies at federally pre-empted emission sources. Robust administrative requirements are in place to ensure that emission reductions are properly quantified, enforceable, and achieved over the full term of a specified project life.

Proposed SIP strategies give incentives an important role in achieving ozone and PM2.5 emission reduction targets. The Moyer Program is specifically identified in proposed SIP measures needed to reach 2023 and 2031 NOx reduction targets, and U.S. EPA has pointed to the Moyer Program Guidelines as essential to demonstrating incentive measure integrity and public accountability. For these reasons, the Moyer Program will continue to support projects demonstrated to provide surplus, enforceable, quantifiable and permanent emission reductions.

B. Cost-Effective Projects

Under statute all eligible projects except for infrastructure must be cost-effective, meaning that the amount of money a project is eligible to receive from the Moyer Program is limited by the emissions reductions it provides. Moyer Program projects are evaluated in dollars per ton of emissions reduced on an annualized basis. This emphasis on cost-effectiveness not only helps Californians receive greater public health benefit and accountability for their tax dollar, but also ensures emission reductions are calculated in a manner that supports SIP quantification.

Originally, statute established the cost-effectiveness limit at \$12,000 per ton for NO_x. Later legislative action (AB 923) added ROG and PM emissions. The legislation also directed CARB to establish a “weighted” cost-effectiveness. Because PM from diesel combustion carries higher human health impacts and has a higher emission reduction cost than the other pollutants, the Board implemented a weighting factor of 20 for PM emissions. Today the cost-effectiveness limit is \$18,260 per weighted ton of emission reduced, which reflects annual adjustments to the cost-effectiveness limit due to inflation.

C. Air District Directed for Local Benefit

Every air district in the State has the opportunity to participate in and benefit from the Program. The Program allows local air districts to select and prioritize which projects are funded, and as such is uniquely suited to respond to local air quality concerns and priorities. For example, an air district with significant agricultural interests may choose to fund tractor replacements, while another air district with marine activity may choose to repower marine vessels. Local air districts also have the option to apply requirements more stringent than the Program Guidelines. This structure allows the Program to support both local priorities and statewide goals.

Moyer Program funds are allocated to California’s 35 air districts through a statutory formula that considers air pollution severity and population. About 75 percent of Program grant funds go to the five most populous air districts, which also have the most serious air pollution. The other districts receive about 15 percent of Program grant funds. California’s 22 rural air districts have a variety of unique challenges and local concerns; CARB and the California Air Pollution Control Officers Association work together to address these needs through mechanisms such as pooled funding. Ten percent of Program grant funds are designated as “State Reserve,” for projects that address statewide policy priorities or benefit multiple air districts.

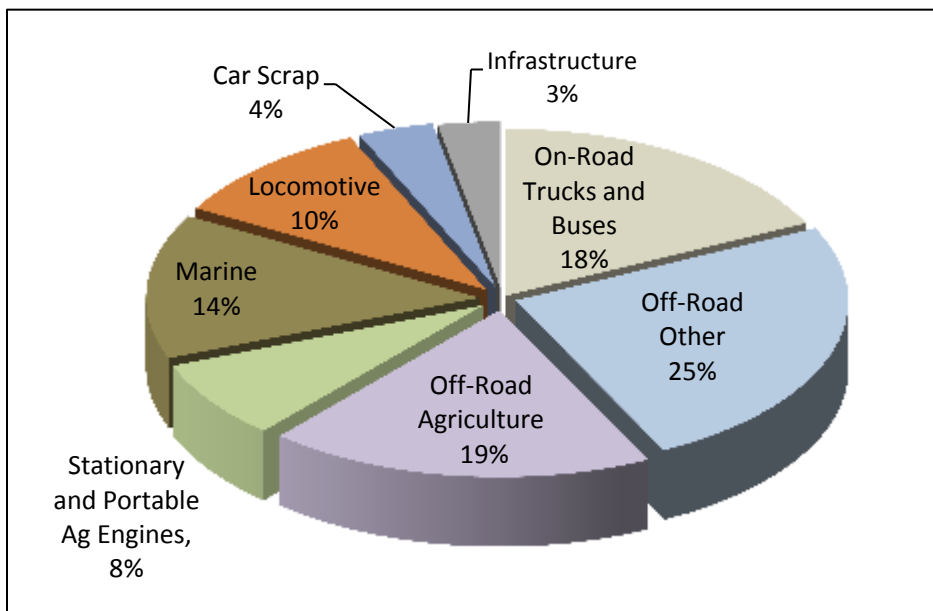
Because low income and minority communities often bear a disproportionately high burden of air pollution, it is critical that they receive greater consideration in the share of benefits from expenditure of public incentive funds; the Moyer Program has been an

early leader in this effort. Since passage of AB 1390 (Firebaugh, 2001), State law has required that each air district with a population of over 1 million inhabitants spend not less than 50 percent of its Moyer Program funds in a manner that reduces airborne toxics and other contaminants in communities with higher pollutant exposure, including communities of minority and low-income populations (H&SC § 43023.5). Each of California's five large air districts (South Coast, San Joaquin Valley, Bay Area, Sacramento, and San Diego) has implemented policies that address this environmental justice requirement and report such projects through the statewide Moyer database. The Moyer Program will continue to emphasize emission reduction benefits in the communities where they are most needed.

D. Project Diversity

Air districts apply Moyer Program funds to a broad variety of projects, including on-road heavy-duty vehicles, locomotives, marine vessels, agricultural water pumps, off-road construction and agricultural equipment, and light duty vehicle retirement. Although the Program has primarily focused on cleaner diesel powered engines, it also funds zero emission electrification, notably agricultural pumps and marine shore power, as well as some natural gas projects. Figure 1 below illustrates the distribution of Moyer Program funds by source category over the past 11 years.

Figure 1: Distribution of Moyer Program Funds by Source Category since Fiscal Year 2005-06



II. STAFF PROPOSAL

SB 513 enables new flexibility and opportunity for the Moyer Program so that it can more effectively support California’s commitment to transition to zero and near-zero emission technologies moving forward. Adoption of the staff proposal will allow the Moyer Program to help build the market for technologies that, while more costly than Moyer Program projects historically, are essential to attainment of the federal ambient air quality standards and other strategic goals. Attachment 1 contains the proposed 2017 Carl Moyer Program Guidelines. The major aspects of the staff proposal are described below.

A. Cost-Effectiveness Limits

Foremost among the changes enabled by SB 513 is delegation to the Board of the authority to set cost-effectiveness limits, taking into account both the cost-effectiveness values for adopted air district and CARB control measures and the cost of emission control technologies such as very low or zero-emission vehicles (H&SC § 44283(a)(1)(A)(ii)). Supporting technology transformation and further reducing emissions are both critically important to achieving and maintaining clean air. California’s ability to incentivize emerging technologies lies squarely on our ability to transform the Program so that it can provide grant amounts sufficient to encourage the purchase of the cleanest available vehicles, equipment and engines.

Cost-Effectiveness Values for Adopted Control Measures. Per SB 513, staff compiled and reviewed cost-effectiveness values for a variety of State and air district regulations for on-road, off-road and stationary source categories, as shown in Table 1. CARB’s Truck and Bus regulation has a cost-effectiveness value well below the current Moyer Program limit of \$18,260 per ton; however, other State regulations controlling emissions from ocean going vessels and solid waste collection, as well as local air district rules on commercial boilers, steam generators, and process heaters, have cost-effectiveness values significantly higher than the current limit.

Table 1: Examples of Regulatory Cost-Effectiveness

Regulation	NOx Cost-Effectiveness (\$/ton)
CARB – Truck and Bus	\$ 3,756
CARB – Solid Waste Collection Vehicle	\$ 43,760
CARB – Ocean Going Vessels	\$ 48,480
CARB – Light-Duty ZEV’s	\$ 56,700
Sacramento Metro AQMD – Boilers	\$ 34,160
South Coast AQMD – Small Commercial Boilers, Steam Generators, and Process Heaters	Up to \$ 33,500

Mobile source regulations can be grouped into those that are typically met using conventional technologies such as diesel engines, and those that are met through by use of advanced technologies such as zero and near-zero emission equipment. As shown, CARB has adopted a variety of regulations for conventional technologies up to about \$50,000 per ton, with even higher cost-effectiveness values for advanced technologies. Cost-effectiveness values of local air district rules have been somewhat lower, approaching \$35,000 per ton. It should be noted that the more costly regulations specifically address best available control technology (BACT) or advanced technology, typically in support of SIP requirements.

Costs of Emission Control Technology. Staff also investigated the costs of commercially available emission control technology as required by SB 513. Staff found that the cost of traditional diesel-to-diesel replacement or repower projects have not changed significantly over time. However, advanced zero-emission and alternative fuel technologies were found to have higher incremental costs than conventional technologies such as diesel engines.

There are several representative examples of the higher costs of advanced technologies. CARB's *Draft Technology Assessment: Low Emission Natural Gas and Other Alternative Fuel Heavy-Duty Engines (Technology Assessment)* found that the incremental cost of replacing an on-road diesel vehicle with natural gas engines ranged between \$30,000 and \$80,000, with the majority of cost related to the replacement of the fuel tank package. In addition, industry indicates that transit bus repowers using compressed natural gas engines meeting the 0.02 grams per brake horsepower-hour (g/bhp-hr) optional low NOx standard would cost an additional \$15,000 in low volume production.

The *Technology Assessment* also identified up front incremental costs of over \$200,000 for battery-electric buses, with even higher costs for fuel cell transit buses in low-volume production. In general, staff found substantially higher incremental costs for zero-emission vehicles and equipment in various applications and source categories due to lower volumes and high battery costs. Although many of these technologies provide in-use operational savings, the higher incremental costs of these technologies need to be taken into consideration when modifying the cost-effectiveness limit per SB 513.

Translating Higher Costs to Cost-Effectiveness. To determine the impact of the cost of conventional and advanced technology on cost-effectiveness, staff examined a series of on-road replacement and repower scenarios, as shown in Table 2 below. In each case, staff determined the funding target for a project by evaluating the incremental cost and amounts currently offered for similar types of projects.

The emissions reductions and thus the cost-effectiveness of a project are highly dependent on the specifics of the project such as the emissions and usage of the engine being replaced, and the emissions and cost of the new engine or equipment. A likely scenario of a near-term advanced technology project is the repower of a 2007 model year transit bus in 2017 with an engine certified to the 0.02 g/bhp-hr optional low-NOx standard. In this example, staff assumed usage of 40,000 miles per year (based on reported transit bus projects) and a project life of 7 years. As shown in Table 2, the project cost-effectiveness would need to be just over \$90,000 per ton to support the aforementioned incremental cost of \$15,000. Under the current cost-effectiveness limit, the project would qualify for roughly \$3,000, an amount insufficient to encourage the project to proceed.

Table 2: On-Road Project Cost-Effectiveness Examples

	Conventional Technology			Advanced Technology		
	Truck Replacement Small Fleet	Truck Replacement NOx Exempt	Truck Replacement Ag Option	Truck Replacement Optional NOx	Transit Bus Repower	Refuse Repower
Replacement Engine (g/bhp-hr)	0.2	0.2	0.2	0.02	0.02	0.02
Funding Target	\$60,000	\$60,000	\$60,000	\$100,000	\$15,000	\$15,000
Cost-Effectiveness (per ton)	\$18,000	\$30,500	\$45,000	\$44,300	\$90,100	\$166,500

For the off-road category, staff looked at several usage and compliance scenarios that included electric replacement, limited and seasonal use agricultural equipment, and construction equipment subject to near-term compliance requirements of the In-Use Off-Road Diesel Fleet rule. The scenarios shown in Table 3 below include an excavator replacement project for a large fleet in full compliance with the rule, an early excavator replacement by a medium fleet that was not yet in final compliance, a low usage agricultural tractor, repower of an irrigation pump, and electric replacement of airport ground support equipment. These are all examples of projects that will need to be funded under proposed mobile source SIP strategies. As shown in Table 3 below, the cost-effectiveness values associated with funding amounts equal to 80 percent of equipment cost range from \$23,000 to \$45,000 per weighted ton of emissions reductions. Without an increase in the current cost-effectiveness limit, these types of projects may not receive funding amounts sufficient to move forward.

Table 3: Off-Road Project Cost-Effectiveness Examples

	Conventional Technology				Advanced Technology
	Excavator Replacement Large Fleet	Excavator Replacement Medium Fleet	Ag Tractor Replacement Low Usage	Irrigation Pump Repower	Electric GSE ² Replacement
Replacement Engine	Tier 4	Tier 4	Tier 4	Tier 4	Electric
Funding Target ¹	\$163,000	\$163,000	\$150,000	\$97,000	\$145,000
Cost-Effectiveness (per ton)	\$28,000	\$32,000	\$43,000	\$45,000	\$23,000

1. Funding target equal to 80 percent of equipment cost.

2. Ground support equipment.

Proposed Cost-Effectiveness Limits. Based on the discussion above, it is apparent that an increase in cost-effectiveness limits is needed to continue to fund conventional projects, and a larger increase is needed to fund the optional low NOx engines and zero-emission technologies identified in the SIP. This raises the concern of how best to support SIP mandates calling for a widespread increase in advanced technologies, while not offering more than is necessary for other projects. Staff concludes that this concern can best be addressed with the adoption of two cost-effectiveness limits: a base limit to support conventional projects and an optional second limit that air districts could apply to the additional reductions provided by the cleanest engines, including those needed for long-term SIP commitments.

- 1) *Base Limit.* Staff proposes to set a base cost-effectiveness limit at \$30,000 per weighted ton of emissions reductions. This level would allow for meaningful funding amounts for a wide range of currently typical projects, such as diesel replacement projects for early compliance with the Truck and Bus Regulation. The level is consistent with the cost of compliance with regulations and will enable grants of sufficient size to encourage off-road engines to be replaced or repowered sooner to a Tier 4 standard.
- 2) *Optional Advanced Technology Limit.* For advanced technology projects that are zero-emission, or alternatively meet the cleanest optional standard level certified, staff proposes that districts be given the option to apply a cost-effectiveness limit of up to \$100,000 per weighted ton for the emissions reductions beyond those achieved by the required standard. This higher limit would provide additional incentive to turn engines and fleets over to the cleanest certified technologies now emerging in the marketplace. To be eligible, the replacement must be:

- Certified or verified by CARB or U.S. EPA as zero-emission or the cleanest optional emission standard where applicable (0.02 g/bhp-hr in the case of on-road); and
- Commercially available and offered for sale.

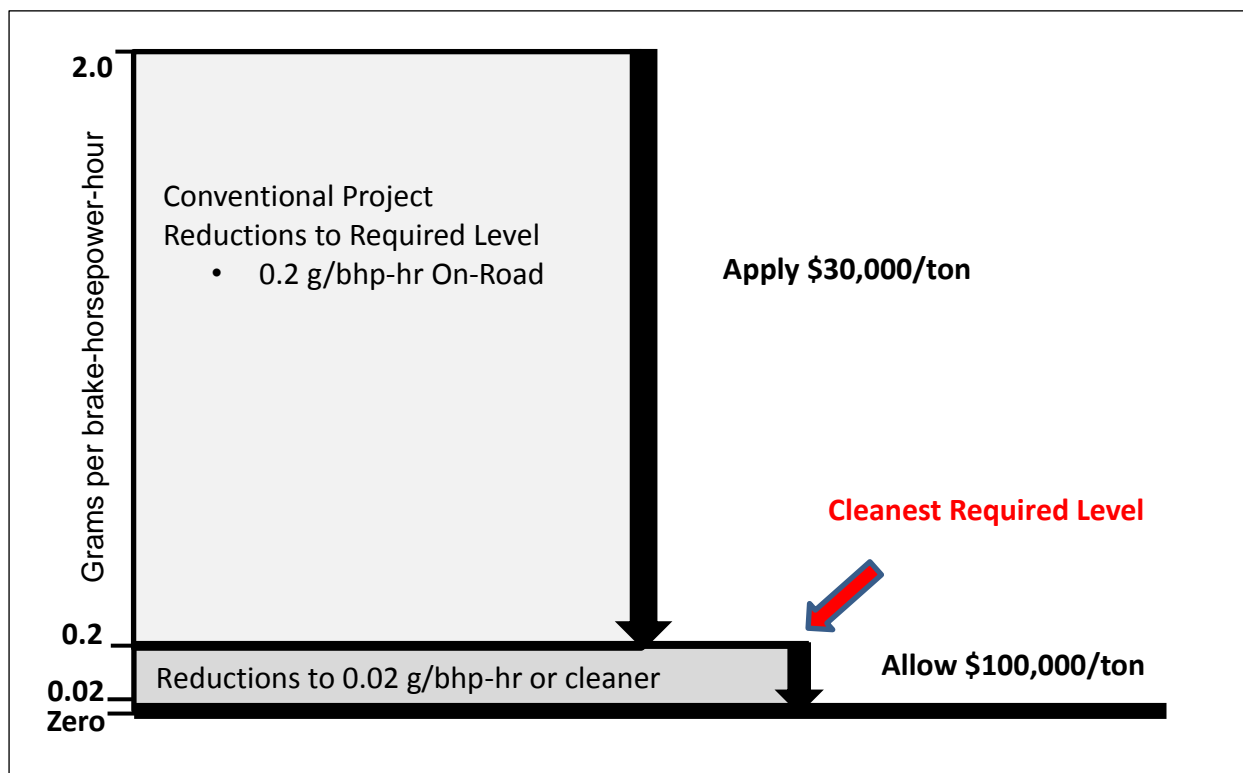
If the Board approves this concept, the application of the higher limit to advanced technology reductions would be subject to air district discretion. The air districts would retain the flexibility to apply a more stringent limit than the Guidelines allow.

Implementation of the Proposed Cost-Effectiveness Limits. Staff proposes that the advanced technology cost-effectiveness limit be applied *only* to the increment of emission reductions beyond what the conventional project would achieve. Thus, a district would apply the base limit for costs associated with getting engines to the cleanest required standard, and could then choose to apply the advanced technology limit to the additional costs of getting emissions down to or below the cleanest optional standard.

Figure 2 illustrates how the proposal would apply to the example of on-road heavy-duty engines, for which the required standard is 0.2 g/bhp-hr NO_x, and the cleanest certified optional standard is 0.02 g/bhp-hr. Districts would apply the base cost-effectiveness limit of \$30,000 per weighted ton to all “early” reductions down to the required standard. Districts could then choose to apply the higher limit of \$100,000 per weighted ton to the increment of “extra” reductions beyond the required standard, as long as the new engine is certified to the cleanest optional standard -- or is zero-emitting. The higher cost-effectiveness limit would thus also be available for incremental reductions down to zero. This would apply to all source categories; some do not have engines certified to optional cleaner standards at this time, but where those become available the same limits would apply to the incremental reductions below the required standard for that category.¹

¹ Currently there are no certified optional low-NO_x engines available for off-road categories, but there are commercially available zero-emission applications for electric ground support equipment and agricultural pumps. Staff intends to follow both conventional technology development and electrification options in the off-road sector.

Figure 2: Illustration of Dual Cost-Effective Limit for On-Road Engines



Establishing a second limit based on cost of advanced technologies is a significant change to the Program. While the Program has remained technology neutral to date, providing incentives to advanced engines and vehicles that are critical to our long-term air quality goals is necessary and responds to the legislative direction that we use cost of technology to set cost-effectiveness limits (H&SC § 44283(a)(1)(A)(ii)(I)).

To protect against overpayment, additional safeguards would apply, including incremental cost limits and funding amounts consistent with maximum grant amounts in other CARB incentive programs, such as the Goods Movement Emission Reduction Program. This becomes more important as project co-funding is pursued, based on Program changes discussed in the next section.

Including a second limit only for advanced technologies is important in preventing the Moyer Program from overpaying for conventional technologies, while still providing meaningful incentives for cleaner, more expensive long-term technologies. The Program's ability to help compensate for higher technology costs now would help fully commercialize those technologies, which should lead to lower costs in the future. Thus, the Moyer Program will complement and build on the progress of other incentive programs, such as the Air Quality Improvement Program which focuses on development and demonstration of advanced technologies.

School Buses. Although it is not part of the current proposal, for completeness it should also be noted that SB 513 enabled CARB to establish a cost-effectiveness limit for school bus projects that enables consistency with the funding levels used in California's Lower-Emission School Bus Program (H&SC § 44283(a)(1)(A)(iii)). That cost-effectiveness limit of \$276,230 per ton for school buses became effective January 1, 2016, providing an avenue for the Moyer Program to provide cleaner transportation for their school children. This is especially important for smaller air districts for which the Moyer Program may be the largest source of funds they have to address air quality issues. To date, four districts have taken advantage of this expanded opportunity and we expect more will do so in the future. Staff is currently in discussions with districts regarding use of this year's State Reserve funds for school bus projects.

Future Modifications to the Cost-Effectiveness Limits. Staff believes that this proposal to increase the base level to \$30,000 per ton and include an optional \$100,000 per ton limit for incremental reductions from advanced technologies is an appropriate initial step in implementing the cost-effectiveness provisions of SB 513. In addition to these changes, staff proposes to continue the practice of annually adjusting the cost-effectiveness limits to take into account inflation, via authority delegated to the Executive Officer.

Staff would also closely track the impacts on project selection in coming years and propose adjustment if subsequent data show it is needed. Such adjustment could include identification of other technologies that would be allowed the use of the advanced technology limit, as well as potentially reclassifying technologies to the base limit if they become more firmly established. Any adjustment of this nature would be brought to the Board for action.

B. Co-funding with other Programs

SB 513 now enables the Moyer Program to work with other programs to co-fund projects without a penalty in the cost-effectiveness calculation. Previously statutory language required that the Moyer Program include any co-funding into the cost-effectiveness calculation, thereby reducing the award to the applicant. Co-funding provides a tremendous opportunity for air districts to use Moyer Program funds as a magnet to attract federal funds, local funds, other State funds, utility rebates and other incentives to leverage cost-sharing for emission reduction projects. Sharing of costs enables multiple programs to meet their goals and extend their reach. For example, combining State or federal greenhouse gas (GHG) reduction grants with Moyer Program grants to co-fund an electric school bus will achieve both GHG and criteria pollutant emission reductions. SB 513 specifies safeguards to ensure no double counting of emission reductions and no overpayment (H&SC § 44287.2(b)). Staff's proposal contains ground rules for co-funding that provide flexibility, maintain program

efficiency and accountability, and comply with statutory requirements. The proposal includes the following elements:

- Co-funded projects would need to be eligible under all participating programs and meet all criteria associated with each program (H&SC § 44287.2(a)).
- To ensure that the total public funds do not exceed the overall cost of a project and that all funds pay for creditable emission reductions, applicants would be required to disclose all incentive funds applied for and received, and the air district to check for project overpayment according to specified terms prior to issuing a Moyer grant (H&SC § 44287.2(b)).
- To provide maximum project cost sharing opportunities necessary for high cost projects like advanced technology or infrastructure, the Program Guidelines would not limit the number of funding sources to be pooled together.
- Except for infrastructure projects, criteria pollutant emission reductions would need to be SIP creditable (H&SC § 44286(g)).
- To ensure no double counting of emission reductions for SIP accounting, CARB would report all NOx, ROG and PM emission reductions to the SIP as Moyer Program reductions (H&SC § 44287.2(b)).
- Staff would evaluate possible use of environmental mitigation funds on a case-by-case basis. Case-specific evaluation will permit careful consideration of unique conditions and requirements, such as specific restrictions tied to compensation monies received as mitigation.

The Moyer Program would continue to require private grantees to help invest in their projects' success. Co-funded projects will require a minimum 15 percent applicant cost share, as a portion of Moyer eligible project costs, for non-public entities. (Public entities could receive 100 percent co-funding.) Staff gave much consideration to the cost share requirement for private applicants. Although it is not specifically required by statute, applicant sharing in the cost of projects has long been a Moyer Program element. It gives applicants a vested interest in project success and avoids a perception of State funds being used to provide "free" equipment for private parties. Staff proposes this approach be retained for co-funded projects.

The Program Guidelines will include calculation procedures for co-funded projects to ensure statutory requirements are met. Staff will track the success of co-funding and propose future changes when appropriate.

C. Infrastructure Projects

SB 513 gives the Moyer Program an opportunity to fund the installation of fueling or energy infrastructure to fuel or power covered sources (H&SC 44281(c)). Infrastructure enables emission reductions, but does not directly result in emission reductions; for this reason statute does not require that infrastructure projects meet the cost-effectiveness thresholds of the Moyer Program.

Traditionally the Moyer program has not funded infrastructure directly, though districts have funded infrastructure projects *associated* with the Moyer Program using local funds eligible as Moyer match. These infrastructure projects include natural gas fueling stations using local funds, or minimal electric infrastructure provided in conjunction with electrification of agricultural pumps. The opportunities provided by SB 513 open new avenues for Moyer Program-funded projects to support State and local air quality goals, and allow more focused clean-up of specific areas, such as environmental justice communities near ports burdened by disproportionate air pollution impacts.

Moyer Program staff proposes to fund infrastructure projects where the greatest penetration of commercially available cleaner, advanced technology vehicles and equipment exists. The categories proposed for funding include commercial battery charging and alternative fueling stations for on-road and off-road vehicles. The Moyer Program would also continue to support electrification projects for both marine shore power and stationary agricultural projects.

While this initial proposal is relatively modest in scope, the changing technology landscape opens up many different possibilities for future expansion. These include hydrogen infrastructure and light-duty and heavy-duty electric vehicle charging stations. Currently there are other funding programs that provide opportunities for these types of infrastructure projects; staff intends to closely follow the implementation of infrastructure projects and work with air districts to identify where Moyer may be able to fill gaps not covered by those other programs. For example, residential charging stations for low-income housing or multi-unit dwellings could be considered on a case-by-case basis.

For consistency with other incentive programs and to support the SIP and other policy needs, Staff proposes funding limits for infrastructure projects as follows:

- Up to 50 percent of eligible costs for could be paid with Moyer Program funds.
- Up to an additional 10 percent could be paid for publicly accessible stations.
- Up to an additional 15 percent could be paid for projects that include on-site solar or wind power generation.

- Up to 100 percent could be paid for electric charging stations and alternative fueling stations for school buses. This is consistent with recent Board direction to broaden funding opportunities for cleaner public school buses and reduced toxic exposure for children.

III. OTHER UPDATES TO IMPROVE IMPLEMENTATION OF THE MOYER PROGRAM

Staff is proposing additional changes through the 2017 Guidelines to support successful implementation of SB 513 and further modernize the Moyer Program. These further changes are described below.

A. Improved Estimation of Emission Reductions

Staff proposes to update the methods to calculate both on-road and off-road emission reductions to use updated emission factors and to reflect real-world engine deterioration over time. This will align Moyer calculation methods with those used in CARB planning inventories and SIP air quality modeling.

Historically, the Moyer Program has applied zero-mile or zero-hour emission factors to calculate emission reductions over the life of Moyer projects. This was done to reduce the complexity of calculations and to provide more conservative estimates of Program benefits. However, as verified by test programs and reflected in planning estimates, engine exhaust emissions often increase over time due to wear and tear on emission controls and other variables such as incomplete maintenance and tampering. Accounting for this deterioration would enable a better estimate of the emissions benefits over a project's life. Given the increasing importance of the Moyer Program emission reductions in SIP strategies, consistent emissions accounting becomes more important. Staff is proposing that deterioration factors consistent with CARB inventories be applied to both old and new engines in future Moyer projects.

B. On-Road Heavy Duty Vehicles

To reach clean air targets California must make a fundamental shift in the heavy duty diesel on-road sector – a transition to zero and near-zero technologies. For this reason the Program Guidelines expand funding opportunities that drive cleaner technologies and accelerate fleet turnover. Guideline changes for truck and bus projects will help California implement the mobile source strategies key to our air quality goals. To date, approximately 18 percent of Moyer Program funds have been directed to truck and bus projects.

Staff proposes three major changes to current on-road heavy-duty requirements: 1) ensure sufficient incentive funding amounts for new technologies, 2) increase the incentive available through the Voucher Incentive Program (VIP) for conventional

projects, and 3) expand eligibility to include all fleet sizes for cleaner technology projects.

Staff also proposes that any diesel replacement engine be model year 2013 or newer. These engines are equipped with on-board diagnostics systems that can monitor proper functioning of the engine and after-treatment emission control components, and include mechanisms to help reduce the occurrence of increased emissions beyond the current standards for the full life of the vehicle.

Funding for New Cleaner Technologies. New technologies are breaking through to market in the heavy-duty on-road sector. These technologies are either meeting CARB's optional low NOx standard or emitting zero tailpipe emissions. Particularly for the *larger* vehicles in the heavy heavy-duty weight class, staff believes it is important to propose funding amounts that consider actual costs, signal to industry a strong need for broad penetration of cleaner technologies, and provide the opportunity for more projects to help those technologies become established in the heavy-duty on-road marketplace.

The following tables show proposed funding caps for the various types of on-road projects in support of those objectives. Similar to cost-effectiveness limits, funding caps help establish grant amounts sufficient to incentivize cleaner projects while ensuring the prudent and proper use of State funds to prevent project overpayment.

Table 4 (below) shows proposed funding caps for light heavy-duty (LHD), medium heavy-duty (MHD) and heavy heavy-duty (HHD) conventional diesel or alternative fuel replacements.

Table 4: Proposed Funding Caps for Conventional Diesel or Alternative Fuel Replacements (2013+ engine model year; 0.2 g/bhp-hr NOx or cleaner standard)

Weight Class	Funding Caps
Heavy Heavy-Duty	\$60,000
Medium Heavy-Duty	\$40,000
Light Heavy-Duty	\$30,000

Table 5 gives the proposed funding caps for optional low NOx replacements. This newer technology is more costly and cleaner than conventional diesel or alternative fuel replacements.

Table 5: Proposed Funding Caps for Optional Low NOx Replacements

Optional Low NOx Standard (g/bhp-hr)	HHD	MHD	LHD
0.02	\$100,000	\$80,000	\$70,000
0.05	\$80,000	\$60,000	\$50,000
0.1	\$70,000	\$50,000	\$40,000
Transit Buses		\$25,000	

Table 6 presents the proposed funding caps for optional low NOx repowers. These projects will primarily be repowers of dirtier compressed natural gas (CNG) engines to cleaner CNG engines.

Table 6: Proposed Funding Caps for Optional Low NOx Repowers

Weight Class/Vocation Type	Funding Caps
Transit Bus	\$20,000
Other trucks and Buses	\$30,000

Table 7 provides the proposed funding caps for zero emission replacements or conversions, which involve more costly advanced technologies.

Table 7: Proposed Funding Caps for Zero Emission Replacements or Conversions

Weight Class/Vocation Type	Funding Caps
Transit Bus	\$ 80,000
HHD Truck or Bus	\$200,000
MHD Truck or Bus (>19.5-33k lbs.)	\$150,000
LHD Truck or Bus (14-19.5k lbs.)	\$ 80,000

For replacement projects the maximum funding percentage would be no more than 80 percent of the equipment replacement cost for fleets with 10 or less vehicles, and no more than 50 percent of the equipment replacement cost for larger fleets.

Increased Incentive for VIP Projects. Additionally, staff recognizes the importance of continuing to use the Moyer Program to assist small fleet owners taking early action to replace their vehicles with conventional vehicles that comply with the Statewide Truck and Bus Regulation. The primary path for those truck owners to access funding is through the VIP. VIP offers a faster, more streamlined process for its participants than a traditional Moyer project. Staff proposes to increase the maximum amount offered through VIP from \$45,000 to \$60,000, aligning with the maximum amount offered through other replacement projects. This will provide greater opportunity for small fleets to take advantage of the Moyer Program.

Expansion of Eligible Fleets and Project Types. Over the past several years, on-road Moyer eligibility has been limited to smaller fleets of 10 or less seeking early compliance with the Statewide Truck and Bus Regulation. However, the opportunity to achieve significant surplus emissions reductions from those fleets has shrunk as deadlines are reached and districts need additional flexibility. While staff will continue to support and prioritize small fleets, staff also proposes to expand eligibility to fleets of any size to increase the demand for and development of even cleaner technologies such as those identified in the SIP. Larger fleets typically have more resources to purchase more expensive cleaner technologies and with the help of incentives, can become a significant consumer base that helps stabilize these new technologies in the market. To help drive cleaner technologies, staff proposes that larger fleets be required to purchase engines certified to the 0.1 g/bhp-hr optional low NOx and cleaner standards. Exceptions would be vocations and locations that have specific compliance options under the Statewide Truck and Bus Regulation recognizing their unique operating characteristics (i.e., log trucks, agricultural vehicles, low mileage work trucks, and trucks operating in NOx Exempt areas).

It has historically been and continues to be CARB's intent that small fleets have access to public funding, including the Moyer Program. Proposed language reflects that intent by directing districts to reserve or prioritize funding for smaller fleets in a way that works best with their programs. Air districts are familiar with this type of safeguard since they are currently required to reserve funds for small fleets through VIP.

C. Off-Road and Portable/Stationary Equipment

The off-road sector boasts highly effective funding opportunities to replace and repower dirty old equipment and engines with cleaner technology. These projects often improve air quality in California's most vulnerable communities, so are also important to our environmental justice concerns. Approximately 50 percent of Moyer funds are currently spent on off-road equipment projects, including portable and stationary agricultural equipment. Primarily in the agricultural and construction sectors, these projects have yielded more than 112,500 tons of NOx + ROG reductions and 4,000 tons of PM reductions since the Program began.

Several changes to the off-road category provide additional funding opportunities for off-road projects and would also make the Program clearer and more applicant-friendly. Staff proposes two key changes to the off-road category: 1) extend eligibility to large fleets subject to the In-Use Off-Road Diesel-Fueled Fleets Regulation (Off-Road Regulation), and 2) expand the off-road equipment replacement program.

Extended Eligibility for Large Fleets Subject to Off-Road Regulation. As with on-road, staff believes that this is an appropriate time to allow larger fleets to participate to a

greater extent in the Moyer Program. Large fleets (more than 5,000 horsepower) became ineligible for Moyer Program funding January 1, 2017, because the Program was changing focus to medium fleets (2,500-5,000 horsepower) whose compliance requirements started in 2017. However, during our public outreach process stakeholders expressed frustration about the lack of availability of Tier 4 final off-road diesel equipment leading up to that deadline.

To ensure that large fleets can indeed use the Moyer Program to help them replace their equipment with Tier 4 final equipment, staff proposes to extend Moyer funding eligibility for large fleets for three years, through December 31, 2019. This will align the large fleet eligibility period with that of the medium fleets. However, to ensure medium fleets also have access to funding opportunities during this period, staff proposes that a large fleet be restricted to receiving funding for Tier 4 final equipment only once after January 1, 2017. This will provide large fleets one additional opportunity to add Tier 4 final equipment, while retaining opportunity for medium fleets. After 2019, to encourage penetration of zero-emission off-road technology, large fleets would still be eligible to receive funding for zero-emission equipment projects that are surplus to the Off-Road Regulation.

In addition, staff proposes to clarify that all fleets meeting their final fleet average requirements, regardless of size, would be eligible for funding. This will encourage those fleets that have made early investments and updated their fleets beyond the compliance requirements to continue to reduce emissions.

Equipment Replacement and Portable Engines. Staff's proposal also expands the off-road equipment replacement program. These changes include allowing equipment with Tier 3 engines and portable equipment to be eligible for replacement. The additions will increase funding opportunities and open the program to fleets that may not have previously participated in the program.

Portable equipment eligibility will be consistent with and are contingent on adoption of the proposed changes to the portable air toxic control measure (ATCM). Depending on the final approved amendments to the ATCM and its timing relative to CARB's adoption of the 2017 Guidelines, we may need to adjust the Program to support the final action. As proposed at recent ATCM workshops, the potential rule amendments will allow for additional funding opportunities that do not currently exist.

Additional Off-Road Changes. Staff proposes other changes to the off-road chapter intended to expand project types, add funding opportunities and clarify, streamline, and simplify the Program. Notable among these:

- Eliminate the requirement to retrofit with a particulate filter when repowering an engine.

- Provide opportunity for zero-emission off-road repower projects.
- Focus the Off-Road VIP program on agricultural tractor replacement projects.
- Revise the available maximum project life for certain equipment types to be consistent with the available surplus emission reductions based on the applicable in-use regulation.

D. Marine Vessels

Marine projects are an important project type in coastal communities, comprising about 14 percent of the total Moyer Program funds spent on average. Moyer primarily funds engine repowers on commercial and charter fishing boats, ferry and excursion craft, as well as work and tug boats. Staff proposes updates to account for emerging technologies such as Tier 4 engines and hybrid systems. These would achieve greater reductions than Tier 3 technologies and go beyond what is required by the Commercial Harbor Craft (CHC) regulation. While Tier 3 repowers would remain eligible for funding, the cleanest available technologies would be eligible for the highest maximum funding percentages. This would provide added incentive for program participants to choose the newest and least-polluting options when considering a vessel repower.

Staff also proposes to include vessels that have been repowered with Tier 2 engines in order to comply with the CHC regulation. These compliant vessels represent an opportunity to achieve further reductions by repowering to Tier 3, Tier 4, or a hybrid system. Expanding funding opportunities to these vessels will provide incentive for the owners to repower the current engines with cleaner technologies rather than simply rebuilding the existing units.

E. Locomotives

The Moyer Program has funded a variety of locomotive projects including engine repowers, installation of idle limiting devices, remanufacture kits and new purchases. Since the program began, approximately \$78 million in Moyer funds have been spent to reduce more than 8,000 tons of covered emission reductions. SB 513 provides air districts a new ability to use AB 923 to fund locomotive projects to meet Moyer match requirements. This allows air districts increased flexibility when selecting match projects and provides additional incentive to fund locomotive projects. This new opportunity not only supports local air quality priorities, but it also helps the communities near rail yards and ports who bear a disproportionate burden of air pollution. Staff proposes the following programmatic changes for locomotive projects:

- Require all new equipment to be Tier 4 or cleaner, to improve support for the cleanest technology and align with other CARB incentive programs.

- Allow reuse and/or recycling of the baseline locomotive chassis while still requiring grantees to fulfill the Moyer scrap requirements by destroying the main engine from the baseline locomotive. If ever repowered, the locomotive body would need to be repowered with a Tier 4 or cleaner engine. CARB recognizes the broader environmental benefits of recycling and re-use.
- Allow air districts to fund the latest and cleanest technology available and encourage earlier development and production by contracting to commence work, at the grantee's risk, prior to U.S. EPA locomotive certification and/or CARB verification. Payment could only be made after certification and verification have been completed.
- Provide greater incentive to Class I railroads to turn over to the latest and cleanest technologies by increasing the maximum funding percentages for Class I railroads to 75 percent, to more closely align with current funding percentages for Class III railroads as well as other incentive programs.
- Eliminate funding for idle limiting devices and retrofits, to steer funding toward more beneficial projects.

F. Agricultural Assistance Program

The Agricultural Assistance Program (AAP) provides funds for “the new purchase, retrofit, repower, or add-on of previously unregulated equipment for agricultural sources.” Unlike the Moyer Program, the AAP does not require the emission reductions achieved to be surplus. Therefore, these funds can be used to pay for compliance in certain categories. However, the AAP does follow the Moyer Program Guidelines for project selection and grant awards.

Staff proposes no changes to the AAP provisions, except for improved text to provide clarity. Air districts are able to use local AB 923 funds towards AAP projects and these projects are not required to be surplus to regulations; thus most AAP projects have not been SIP creditable.

Most of the equipment funded through the AAP is subject to the Stationary Air Toxic Control Measure (ATCM), and funding opportunities are limited because most compliance dates under the ATCM have passed. New opportunities may arise to repower Tier 3 engines to zero emission technology such as electric motors, and to repower older tier engines that were originally installed within twelve years of funding regulatory emission compliance deadline. AAP projects that are remotely located will also remain eligible for funding.

G. Light Duty Cars and Trucks

The Voluntary Accelerated Vehicle Retirement Program, commonly called car scrap, funds the early retirement of light duty vehicles in California. These projects scrap

older, more-polluting vehicles before the end of their useful life. This program will continue without any major program changes. However, the voluntary repair of vehicles piece of the program will no longer be supported due to insufficient interest.

H. Lawn and Garden

Staff proposes no major changes to the Lawn and Garden Replacement Program, which provides funding to replace gasoline lawn mowers with cordless, zero-emission, electric lawn mowers. Minor changes added flexibility to co-fund projects with other funding sources, consistent with the proposed Guidelines, as well as the additional requirement for applicants to provide the engine family name of the baseline engine to be scrapped.

I. Program Administration

Program administration describes the requirements air districts must follow when implementing the Moyer Program. Administrative procedures are intended to ensure SIP creditable early or additional reductions of emissions and full accountability for the public dollar, while minimizing obstacles to implementing the projects that achieve cost-effective reductions. Since these procedures apply to all air districts, they must help ensure that the program is implemented in a way that is fiscally sound, but within the resources of air districts of all sizes with individual needs. As part of the Program update staff took the opportunity to work with air districts to re-examine the administrative requirements. Here are several of the changes proposed:

- SB 513 changed the previous two year expenditure deadline for grant funds to a four year liquidation deadline. Guideline changes to reflect this provide additional time to complete more complex projects, while contract execution will serve as an interim milestone for progress tracking.
- The requirements for air district policies and procedures are specified more clearly and focused on matters of local implementation.
- Formal procedures have been added for air district redirection of unallocated grant funds to other air districts with ready projects.
- Additional provisions support procedures and safeguards for co-funded projects as directed by SB 513; other language changes include provisions for infrastructure projects.

Program Accounting Principles. In addition, Moyer Program staff enlisted the California Department of Finance and CARB accounting staff to provide recommendations to strengthen Moyer Program accounting guidelines consistent with generally accepted accounting principles, to help ensure consistent and proper handling of program resources and to lower the cost of program audits. Under the proposal all air districts

will complete within two years any procedural changes needed to implement separate funds accounting, and will provide to CARB annual Statements of Revenues, Expenditures, and Changes in Fund Balance, including the interest and equipment salvage revenues that are directed as additional resources to Moyer projects. These recommendations will help ensure the Moyer Program is implemented in a fiscally sound and transparent manner by all air districts.

CARB staff will continue to implement administrative processes in a manner that allows for collaboration, communication, support and assistance to air districts, with the aim of maximizing program success in support of both State and local objectives.

IV. CALIFORNIA ENVIRONMENTAL QUALITY ACT

CARB conducts any environmental review required by the California Environmental Quality Act (CEQA) under its program certified by the Secretary of Natural Resources Agency (title 17, California Code of Regulations, §§ 60001-60007). Staff has determined that the proposed revisions to the Moyer Guidelines are not a “project” subject to CEQA review because the Moyer Guidelines are a government funding mechanism or other government fiscal activity that does not involve any commitment to any specific project which may result in a potentially significant physical impact on the environment (title 14, California Code of Regulations, § 15738(b)(4)). Even if the Moyer Guidelines constituted a CEQA “project,” CARB’s approval of the Moyer Guidelines would be exempt from CEQA review under title 14, California Code of Regulations, § 15061(b)(3) because it can be seen with certainty that there is no possibility that the proposed revisions may have a significant adverse impact on the environment. Modifications to the Moyer Guidelines are primarily to project eligibility and funding opportunities that achieve emission reductions or enable emission reductions beyond what is required by existing regulations. The revisions do not result in any significant adverse impacts on the environment; rather, they have the potential to result in beneficial air quality impacts by reducing emissions of criteria and toxic air pollutants.

V. SUMMARY AND RECOMMENDATIONS

Staff recommends the Board approve the proposed Carl Moyer Program 2017 Guidelines. Changes to the Moyer Program will support significant emission reductions under a changing landscape of clean air technology, helping California to meet the objectives of its strategic plans. Since 1998 the Program has proven highly successful in cleaning up the equipment and vehicles that help power California’s economy, helping consumers to purchase cleaner technology, and stimulated manufacturers to produce lower-emitting engines. The Board and air districts have identified the increasing role that incentives will play in achieving our health based air quality

standards. The Moyer Program is a key part of bridging California's transformation to the zero and near-zero technologies of the future.

Moyer is a dynamic program, adapting with time to stay viable and effective. The Legislature has recently recognized the Program's success, first by re-authorizing full funding through AB 8 in 2014, then by enabling the new directions proposed here through SB 513 in 2015. The success of the Program lies in the partnership between CARB and the air districts who implement the program alternatives. The staff's proposal is the culmination of a multi-year effort with the air districts and with our joint stakeholders to modernize the Moyer Program. With the support of the Board, CARB staff will continue to work with the air districts and others to adjust and update the course of the Program as needed to ensure its continued success.