



PUBLIC HEARING TO CONSIDER THE PROPOSED

# **2024 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. Over the last 25 years the Moyer Program has served as a model for many other successful incentive programs at the local, state, and federal levels. At its core, the Moyer Program is a statewide, locally-directed program that achieves cost-effective emission reductions creditable to the State Implementation Plan (SIP) and adheres to four integrity elements: surplus, enforceable, quantifiable, and permanent emission reductions. Incentive programs are a vital component to meeting the federal National Ambient Air Quality Standards, in addition, incentives are vital to achieving localized emission reductions in disadvantaged communities. They are particularly important for providing financial support to low-income consumers, to small businesses, and to sources that are outside of local or state regulatory authority.

Each year, grants through the Moyer Program help remove older, high-polluting engines that would have otherwise operated for years to come. The Moyer Program has successfully funded a wide breadth of project types including, but not limited to, off-road equipment, on-road light-duty and heavy-duty vehicles, marine vessels, infrastructure, and locomotive projects. Projects funded through the Moyer Program reduce criteria pollutant emissions, including oxides of nitrogen (NO<sub>x</sub>) and reactive organic gases (ROG) that contribute to ozone formation, as well as toxic particulate matter (PM). Over the past 25 years and counting, the California Air Resources Board (CARB or Board) has worked alongside California's air pollution control and air quality management districts (air districts) to invest over \$1.5 billion to clean up over 69,000 engines and reduce ozone precursors (i.e., NO<sub>x</sub> and ROG) by over 202,000 tons and particulates by over 7,400 tons.

As mentioned, the Moyer Program is a collaborative effort between CARB and air districts; CARB establishes the parameters of the Program through the Guidelines, and the air districts implement the Guidelines. While individual chapters have received revisions as needed, the Guidelines have not had a comprehensive review and revision since 2017. Collaboration is paramount to the Moyer Program's ongoing success. CARB staff and air districts closely reviewed the Guidelines in working groups assigned to individual categories or topics in a collective effort to update the Guidelines. Additionally, staff held three public meetings, a community meeting, and numerous one-on-one meetings with interested stakeholders to discuss the proposed changes. This proposal highlights the improvements to the Moyer Program

led by CARB in partnership with California’s air districts and is reflective of the feedback received from the public. These enhancements aim to modernize the Program and create Guidelines that better serve California’s air quality and align with CARB’s mission to protect public health, and our communities.

The Proposed 2024 Guidelines are intended to:

- Ensure continued program accountability and good stewardship of public funds;
- Ensure Moyer Program 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.

The enhancements described in more detail in this report include updates to:

- General Criteria. Updates to Chapter 2 of the Program Guidelines are proposed to provide clarification to the general criteria as well as updates to NOx reduction requirements for certain projects.
- Program Administration. Updates to Chapter 3 of the Program Guidelines for program administration are proposed to clarify the existing chapter and to expand on air district flexibility in implementing the Program. Changes include, but are not limited to, defining administrative funding, air district grantee liquidation timeframes, additional options for zero-emission technology, clarifying equity elements in project selection criteria, and fiscal tracking criteria of districts subject to Health & Saf. Code § 43023.5.
- On-Road. Chapter 4 of the Program Guidelines for on-road heavy-duty vehicles was last updated in 2022. Proposed updates include amendments to the cost effectiveness limits and funding caps for optional advanced technology and zero-emission replacement on-road projects; increasing baseline model year eligibility; and increasing flexibility for the required minimum annual usage in California, air district requirements, and dealership and dismantler requirements.

- *Off-Road.* Updates to Chapter 5 of the Program Guidelines are proposed to clarify the existing chapter, support recent off-road regulations and amendments, support the transition to zero-emission technology, and expand air district flexibility in implementing the Program to include, allowing Moyer funding of Moyer Program-eligible FARMER Program projects.
- *Locomotive.* Updates to Chapter 6 of the Program Guidelines are proposed to reflect the requirements of the In-Use Locomotive Regulation, which the Board adopted in April 2023 and became effective January 1, 2024. Updates include clarification on engine destruction requirements, two-step calculation for zero-emission projects, warranty requirements, increase in funding amounts, and updates on minimum project life and emission factors.
- *Marine.* Updates to Chapter 7 are proposed to clarify the existing chapter including updating funding amounts, eligible project types and project criteria, as well as updated eligible costs. Chapter 7 of the Program Guidelines for marine projects was last updated in 2023.
- *Light-Duty.* Updates to Chapter 8 of the Program Guidelines are proposed to increase the maximum grant amount of the Voluntary Accelerated Vehicle Retirement (VAVR) Program to \$3,000 and include new VAVR emission reduction tables for the next three years to reflect more accurate data.
- *Lawn and Garden Equipment.* Updates to Chapter 9 aim to clarify existing chapter requirements and expand on air district flexibility to implement the Program, including updating dismantling requirements. Chapter 9 of the Program Guidelines for Lawn and Garden Equipment was last updated in 2023.
- *Infrastructure.* Updates to Chapter 10 are to clarify the existing chapter and to expand on air district flexibility to implement the Program including, but not limited to, increased funding levels, updating project criteria for added flexibility, streamlining co-funding requirements, increasing types of eligible costs, and adding flexibility to pre-inspection requirements for new projects. Chapter 10 of the Program Guidelines for infrastructure was most recently updated in 2023.
- *On-Road Heavy-Duty Voucher Incentive Program (VIP).* Volume II of the Moyer Program On-Road Heavy-Duty VIP Guidelines is updated yearly. VIP proposed changes include, but are not limited to, clarifying eligible projects, updating

funding amounts, and overall clarification of program requirements, including requirements for air districts, dealerships, and dismantlers.

- *Appendices A through E.* Proposed changes to Appendices A-E reflect the changes to acronyms, definitions, cost-effectiveness calculation methodology, tables for emission reduction and cost-effectiveness calculations, and chapter references within the proposed 2024 Moyer Program Guidelines. While each chapter now contains relevant acronyms and definitions for the chapter, complete sets remain in Appendix A - Acronyms and Appendix B - Definitions.

This staff report provides a background of the Moyer Program before detailing how the Proposed 2024 Guidelines will continue to further support harmful air emission reductions in the evolving landscape of clean air technology within California and beyond. Staff's proposed changes will ensure that the Moyer Program can utilize 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<sub>2.5</sub>) standards. Since 1998, the Carl Moyer Memorial Air Quality Standards Attainment 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 (Health & Saf. Code) § 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 toxic diesel particulate matter (PM). The Program funds up to the incremental cost of cleaner-than-required engines, equipment, and vehicles. Incremental cost is the cost of the project less a baseline cost that would otherwise be incurred by the applicant in the normal course of business. Funding the incremental cost yields emission reductions beyond or before those required by any law or regulation or otherwise occurring through usual fleet turnover.

The Moyer Program is a statewide program that is implemented by California's 35 local air pollution control and air quality management districts (air districts). Emission reductions achieved by Moyer Program-funded projects are creditable in the State Implementation Plan (SIP). Each year, Moyer Program funding helps remove older, high-polluting engines that would have otherwise operated for years to come. Over the past 25 years and counting, the California Air Resources Board (CARB or Board) has worked alongside local air districts to implement over \$1.5 billion in Moyer Program funding, cleaning up over 69,000 engines and reducing ozone precursors by over 202,000 tons and particulates by over 7,400 tons. More Moyer Program statistics can be located here: <https://ww2.arb.ca.gov/carl-moyer-program-statistics-and-reports>.

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. These fees are directed to the Air Pollution Control Fund established pursuant to the Health & Saf. Code § 43015. Assembly Bill (AB) 8 (Perea, 2014) extended collection of the tire fees and local funds through 2023. The reauthorization of the Moyer Program through AB 2836 (Garcia, 2022) extended the funding to January 1, 2034. The Program is currently budgeted at \$130 million per year. Furthermore, air districts annually provide additional match funds, mostly from local incentive funds provided through AB 923 (Firebaugh, 2004). Air districts further

support the Program with interest collected on the funds and, in some air districts, sale of salvage from scrapped old equipment.

As the flagship incentive program at CARB, the Moyer Program provides a framework and inspiration to a portfolio of incentive programs. Incentive programs are part of a multi-faceted approach to supporting deployment of the cleanest advanced technologies. Each program has its own statutory and policy direction, but, collectively, they fit together to support California's multiple public health, air quality, climate change, and equity goals. Staff coordinates regularly with other state agencies and local air districts to ensure these investments are complementary. Additionally, funds are leveraged by investments made by the public throughout the state. Every person, community, and business that chooses to participate in CARB's incentive programs contributes toward California being able to achieve our clean transportation, air quality, and climate goals.

California is required to attain health-based federal national ambient air quality standards through measures specified in the SIP. CARB incentive programs complement in-use fleet rules and engine standards, which regulate technology deployment and manufacturer requirements, enabling commercialization and mainstream market penetration. Incentive funds encourage and hasten deployment of clean engine technologies and are a critical component of meeting California's climate goals and climate needs.

#### **A. PROGRAM DESIGNED TO MEET SIP OBJECTIVES**

Incentives are used in combination with regulations to achieve the federal National Ambient Air Quality Standards and the SIP. California statutes require CARB and air districts to take all appropriate and necessary actions to ensure that emission reductions are creditable in the SIP (Health & Saf. Code § 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 Program funds cannot pay for regulatory compliance; emission reductions achieved through the Moyer Program 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 the United States Environmental Protection Agency (U.S. EPA) for technologies at



federally preempted 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 PM<sub>2.5</sub> emission reduction targets. The Moyer Program is specifically identified in proposed SIP measures<sup>1</sup> needed to reach 2023 and 2031 NO<sub>x</sub> reduction targets, and U.S. EPA 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 Moyer 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 covered emission reductions it achieves in the State (Health & Saf. Code § 44283). Moyer Program projects are evaluated in dollars per ton of emissions reduced on an annualized basis. This emphasis on cost-effectiveness helps Californians receive greater public health benefit and accountability for their tax dollars and 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<sub>x</sub> (Health & Saf. Code § 44283(a)). Later, legislative action through AB 923 added ROG and PM emissions for cost-effectiveness evaluation (Health & Saf. Code § 44283(a)(1)(A)(ii)(II)). 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 2005 Guidelines implemented a weighting factor of 20 for PM emissions. The cost-effectiveness limit has increased significantly since 2017, reflecting adjustments due to inflation as well as the capital cost of emerging technologies. The cost-effectiveness limit is currently at \$34,000 for conventional projects and \$522,000 for zero-emission projects.

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

### **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 therefore is uniquely suited to respond to local air quality concerns and priorities. For example, an air district with significant agricultural activity 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 air districts through a statutorily defined formula that considers air pollution severity and population (Health & Saf. Code § 44299.2). About 75% of Program grant funds go to the five most populous air districts with a population of one million or more. These air districts have the most serious air pollution conditions and are South Coast Air Quality Management District, San Joaquin Valley Air Pollution Control District, Bay Area Air Quality Management District, Sacramento Metropolitan Air Quality Management District, and San Diego Air Pollution Control District. The other districts receive about 25% of Program grant funds.

California has 22 rural air districts that have a variety of unique challenges and local concerns. CARB and the California Air Pollution Control Officers Association (CAPCOA) work together to address these needs through mechanisms such as pooled funding. Through the Moyer Program's Rural Assistance Program (RAP), the grant administrative process is streamlined and encourages the pooling of financial and technical resources. The reduction in cost and staff resources lowers the threshold for participation in the Moyer Program and maximizes project funding in rural areas.

Section 44286(d) of the Health & Saf. Code additionally gives CARB the authority to reserve up to 10% of Moyer Program funding to directly fund any project that is a covered source and is described in Health & Saf. Code § 44281, this is referred to as the "State Reserve." The State Reserve is designated for projects to address statewide policy priorities or benefit multiple air districts. Air districts have the discretion to apply for State Reserve funds once CARB issues a solicitation to CAPCOA. Some of the past project types that have been funded with State Reserve funds are infrastructure supporting zero-emission technologies, on-road heavy duty vehicles through the On-Road Heavy-Duty Voucher Incentive Program (VIP), non-residential

lawn and garden equipment, and all zero-emission project types that fall under the Moyer Guidelines.

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% 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 (Health & Saf. Code § 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 Clean Air Reporting Log (CARL). Currently, the five large air districts have spent approximately 60%, over \$570 million, on Moyer Program projects that meet the requirements of AB 1390.

#### **D. PROJECT DIVERSITY**

Air districts can apply Moyer Program funds toward a broad spectrum of eligible projects, including on-road heavy-duty vehicle, off-road equipment, locomotive, marine, lawn and garden equipment, infrastructure, and light-duty vehicle retirement projects. These project types include an assortment of engines, equipment, and technologies. For example, on-road projects include, but are not limited to, drayage trucks, school buses, emergency vehicles, transit vehicles, and public agency and utility vehicles. Off-road project examples include, but are not limited to, forklifts, construction, cargo handling, ground support and agricultural equipment. The Program also funds zero-emission technologies, notably agricultural pumps and marine shore power, as well as natural gas projects. The array of project types is a menu of possibilities that air districts have the discretion to fund to meet their local air district needs and goals.

## **II. PROPOSED UPDATES COST-EFFECTIVENESS LIMITS**

Approval of the staff proposal will allow the Moyer Program to help build the market for technologies that are essential to attainment of the federal National Ambient Air Quality Standards and CARB's mission to promote and protect public health, welfare, and ecological resources through effective reduction of air pollutants while recognizing and considering effects on the economy. Considering the scope of changes to the Moyer Program Guidelines, staff is releasing the 2024 Moyer Program

Guidelines with all updates incorporated, without strikeouts (indicating removed language) and underlining (indicating new language) in comparison to the 2017 Moyer Program Guidelines. The major aspects of the staff proposal are described below.

Senate Bill (SB) 513 (Beall, 2015) gave the Board the authority to set cost-effectiveness limits, considering 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 and equipment (Health & Saf. Code § 44283(a)(1)(A)(ii)). Supporting criteria and toxic emission reductions is critically important to protecting public health through achieving and maintaining clean air. For the Program to incentivize emerging technologies it needs to continue to provide grant amounts sufficient to encourage the purchase of the cleanest available vehicles, equipment, and engines.

CARB staff proposes to sunset the dual cost-effectiveness limit approach that was introduced in the 2017 Guideline updates and adopt a single step, or one-step, cost-effectiveness approach for all project types, except infrastructure, which is not subject to a cost-effectiveness limit. In the Proposed 2024 Guidelines, a single cost-effectiveness limit would be applied to all the emission reductions gained for a project, consistent with calculations for grant amounts based on cost-effectiveness limits.

CARB has adopted regulations to achieve cost-effective and technically feasible emissions reductions using the cleanest available technology, such as zero-emission technology. A one-step approach streamlines the process and will continue to support conventional projects, engines, and equipment exempt from pertinent regulations, and advanced technologies. It also aligns with the approach proposed by the Funding Agricultural Replacement Measures for Emission Reductions (FARMER) Program, further simplifying the implementation of CARB's incentive portfolio.

Cost-effectiveness limits were assessed as part of the recommendation to sunset the two-step calculation, and as part of updating the Program's emission factors (EF) to align with what is currently in CARB's emission inventory. Proposed cost-effectiveness values for eligible technologies are shown in Table 1. The on-road advanced technology limit, the on-road zero-emission technology limit, and the off-road zero-emission technology limit would be applied as a single step calculation.

**Table 1: Proposed Cost-Effectiveness (C/E) Limits Summary**

<b>Year</b>	<b>Project</b>	<b>Applicable Categories</b>	<b>Description</b>	<b>Proposed C/E Limit</b>
2024	Base Limit	Ch.4 On-Road Ch.5 Off-Road Ch.6 Locomotives Ch.7 Marine, Ch.8 Light-Duty Vehicles	New base C/E limit for conventional projects.	\$60,000
2024	On-Road Advanced Technology Limit	Ch.4 On-Road	C/E limit retained from 2017 Guidelines for reductions from on-road advanced technologies. This limit is intended to be applied to all emission reductions that a project achieves.	\$209,000
2024	School Bus	Ch.4 On-Road	C/E limit retained from 2017 Guidelines for reductions from school bus projects. This limit is intended to be applied to all emission reductions that a project achieves.	\$313,000
2024	On-Road Zero-Emission Technology Limit	Ch.4 On-Road	C/E limit retained from 2017 Guidelines for reductions from on-road zero-emission technologies. This limit is intended to be applied to all emission reductions that a project achieves.	\$522,000
2024	Off-Road and Marine Zero-Emission Technology Limit	Ch.5 Off-Road Ch.7 Marine	New C/E limit for reductions from off-road zero-emission technologies. This limit is intended to be applied to all emission reductions that a project achieves.	\$120,000
2024	Locomotive Zero-Emission Technology Limit	Ch.6 Locomotives	New C/E Limit for reductions from off-road zero-emission technologies. This limit is intended to be applied to all emission reductions that a project achieves.	\$200,000

Cost-effectiveness limits were evaluated based on project and cost data reported by the air districts as part of administering the Program. The Moyer Program project data is reported into the CARL database where equipment, engine, cost, and emissions data are stored. Staff chose to evaluate CARL data that represents real projects funded through the Program and is a reliable source of cost and emission information. Staff also included the Community Air Protection (CAP) Incentives Program as a source of data because CAP incentives have been used to fund Moyer Program eligible project types. Similar project data from both the Moyer Program and the CAP Incentives Program starting from fiscal year 2017-18 through 2022-23 were analyzed for the various source categories.

For off-road, marine, and locomotive source categories, the scope of CARL project data was reduced to focus on the most representative and anticipated project types going forward. The Moyer Program often implements an applicant cost-share requirement of 15-20%, so project cost-effectiveness was evaluated taking into account this requirement. The analysis involved utilizing newly developed emission factors to evaluate the cumulative impacts of transitioning to a one-step calculation methodology for advanced technology projects, along with updated emission factors.

An examination of the results for conventional off-road diesel, marine, and locomotive projects is shown in Table 2 and highlights the differences between emission reductions and cost-effectiveness when using the emission factors utilized in the 2017 Guidelines and in the 2024 Guidelines. An emission factor is a category specific estimate of emissions per unit of activity that is used in combination with activity hours to quantify annual emissions. The amount of money spent per ton of emission reductions will give the cost-effectiveness of the project.

**Table 2: Comparison of Emission Reductions and Cost-Effectiveness Limits for Off-Road Diesel, Marine, and Locomotive Projects**

Source Category	Project Count	2017 Guidelines EF: Annualized Weighted Emission Reductions (tons/year)	2017 Guidelines EF: Cost-Effectiveness at Cost-Share Limit (\$/ton)	Proposed 2024 Guidelines EF: Annualized Weighted Emission Reductions (tons/year)	Proposed 2024 Guidelines EF: Cost-Effectiveness at Cost-Share Limit (\$/ton)
Off-Road Diesel	395	647	\$66,965	735	\$58,992
Marine	235	996	\$34,907	706	\$57,349
Locomotive	23	265	\$28,577	240	\$36,312

Staff also examined the impact of shorter project lives coupled with the proposed emission factors as the current regulatory landscape would suggest that surplus emission reduction windows are shorter for some source categories when compared to the past. Results of this evaluation are shown in Table 3.

**Table 3: Average Cost-Effectiveness at Proposed Cost-Share Limit (\$/ton)**

Source Category	5-Year Project Life	3-Year Project Life	1-Year Project Life
Off-Road Diesel	\$48,222/ton	\$76,987/ton	\$222,041/ton
Marine	\$78,543/ton	\$126,000/ton	\$363,647/ton
Locomotive	\$74,551/ton	\$119,596/ton	\$345,165/ton

Staff recommends adopting a baseline cost-effectiveness limit of \$60,000/ton determined by the above analysis to retain an incentive amount that encourages a new purchase when a new purchase isn't required. A baseline cost-effectiveness limit of \$60,000/ton will generate meaningful grant amounts by offsetting the loss of emission reductions due to updated emission factors and better reflect the average cost-effectiveness of actual projects. Additionally, the anticipation of shorter project lives due to regulation would support an increase in the base cost-effectiveness limit to encourage equipment turnover prior to regulatory deadlines. Additionally, the proposed limit would align with the base cost-effectiveness limit that the FARMER Program is proposing as part of its guideline update. This is important, as the Moyer

Guidelines will be pointing to FARMER for off-road agricultural projects moving forward.

For purposes of consistency, this base cost-effectiveness limit of \$60,000/ton would also be adopted for conventional on-road heavy-duty vehicle projects. The base cost-effectiveness limit only applies to on-road heavy-duty vehicle projects that are NOx exempt and other potential exempt vehicles such as emergency vehicles were going to a 2010 engine model year standard would still be considered surplus. As these project types are less common than others, an increase in grant amounts is expected for these project types, further incentivizing them to turn over equipment they otherwise would not have incentive to turn over.

Additionally, on-road heavy-duty vehicle projects will continue to have access to higher cost-effectiveness limits by adopting advanced optionally-certified engine standards or by going to zero-emission. As mentioned earlier, on-road projects will also apply a one-step calculation for advanced technology projects going forward, and there is no change proposed to the cost-effectiveness limits for on-road heavy-duty advanced technology combustion projects or zero-emission projects.

For off-road and marine advanced technology projects, staff proposes an updated cost-effectiveness limit of \$120,000/ton, which aligns with the zero-emission technology cost-effectiveness limit proposed by the FARMER Program staff. The \$120,000/ton limit was analyzed against the limited off-road zero-emission data that had been reported previously by the air districts and determined to offer a meaningful incentive when implemented as a single-step calculation. For locomotive advanced technology projects, staff proposes an updated cost-effectiveness limit of \$200,000/ton. These limits are significantly reduced from the previous limit of \$522,000/ton but will be applied to all emission reductions going forward as opposed to only the incremental emission reductions. Because all the emission reductions will be captured in a single calculation, a meaningful grant amount is still anticipated with the change in methodology that will continue to incentivize emerging zero-emission technologies for these source categories.

In addition to these changes, staff proposes to continue the practice of annually adjusting the cost-effectiveness limits to account for inflation, via authority 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 allow the use of the advanced technology limit, as well as potentially reclassifying technologies to the base limit if they become more firmly established.



### **III. PROPOSED UPDATES TO IMPROVE IMPLEMENTATION OF THE MOYER PROGRAM**

Staff proposes changes throughout the Guidelines to better support air districts and implementation of the Program, encourage Program participation, and further modernize the Moyer Program. The 2024 Moyer Program Guidelines will continue to reduce pollution, provide cleaner air for Californians, and be an integral part in reaching clean air goals. These changes are described below.

#### **A. ON-ROAD HEAVY-DUTY VEHICLES**

Chapter 4 of the Program guidelines for On-Road Heavy-Duty Vehicles, along with the On-Road Voucher Incentive Program and Chapter 10 on Infrastructure, were last updated in 2022 through the Incentives Program Advisory Group (IPAG). Updates included amendments to the cost-effectiveness limits and funding caps for optional advanced technology and zero-emission replacement on-road projects; increasing baseline model year eligibility; and increasing flexibility for the required minimum annual usage in California, air district requirements, and dealerships and dismantler requirements. The proposed 2024 updates to Chapter 4 encompass general administrative and compliance related updates, equitable considerations for small fleets and small business, and air district flexibility in implementing the Program.

Staff proposes general administrative and compliance-related updates to reflect current and new legislation and regulations, such as AB 794 (Carrillo, Wendy, 2021), Advanced Clean Fleets (ACF) Regulation,<sup>2</sup> Advanced Clean Trucks (ACT) Regulation,<sup>3</sup> and Clean Truck Check (Heavy-Duty Vehicle Inspection and Maintenance Program),<sup>4</sup> to name a few. For example, the compliance check process was updated in consideration of these regulations; the definition of “Optional Low NOx” is updated to reflect the changing NOx and PM emission standards set by the Heavy-Duty Engine and Vehicle Omnibus Regulation and Amendments;<sup>5</sup> and the warranty requirements were bolstered to align with the Zero-Emission Powertrain Certification (ZEP Cert) Regulation.<sup>6</sup> Aligning with ZEP Cert helps ensure zero-emission

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<sup>2</sup> Advanced Clean Fleets (ACF) Regulation.

<https://ww2.arb.ca.gov/our-work/programs/advanced-clean-fleets>

<sup>3</sup> Advanced Clean Trucks (ACT) Regulation.

<https://ww2.arb.ca.gov/our-work/programs/advanced-clean-trucks>

<sup>4</sup> Clean Truck Check (Heavy-Duty Vehicle Inspection and Maintenance Program).

<https://ww2.arb.ca.gov/our-work/programs/CTC>

<sup>5</sup> Heavy-Duty Engine and Vehicle Omnibus Regulation and Amendments.

<https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2020/hdomnibuslownox/froa-1.pdf>

<sup>6</sup> Zero-Emission Powertrain Certification Regulation.

<https://ww2.arb.ca.gov/our-work/programs/zero-emission-powertrain-certification>

technologies being deployed meet the reliability and performance expectations of California fleets, as well as provide a safeguard that protects on-road heavy-duty vehicle consumers.

Changes are also proposed to reduce the frequency of case-by-case determinations by updating and clarifying the mismatch of the intended service class on Executive Orders with gross vehicle weight rating (GVWR) weight class range, especially for school buses. Numerous case-by-case determinations for these topics were approved and repeated since 2017, supporting the proposal to allow proceeding with these projects without further need for case-by-case determination consideration. This increases efficiency within the Program and implementation by air districts.

Staff also proposes to update the warranty requirements to meet the ZEP Cert Regulation warranty requirements, which include, but are not limited to, the warranty period beginning on the date that the vehicle is delivered to the Moyer participant and the service timeframe, not to exceed 30 days from the time the vehicle or powertrain is initially presented to the warranty station for repair. Staff proposes to allow up to 6 months for destruction of existing engine for zero-emission on-road heavy-duty vehicles projects. This would alleviate the difficulties with purchasers experiencing delivery delays, as well as delays caused by zero-emission vehicle integration into fleet operations. The annual usage requirement is also clarified so that it is an average, rather than a minimum, for two 12-month periods, which is more representative of a vehicle's usage. Also, while the requirement in Chapter 2 of the Moyer Program Guidelines for General Criteria removes the requirement for 15% NOx emission reductions for retrofit projects, Chapter 4 retains this requirement to comply with statute.

CARB's mission is to promote and protect public health, while considering effects on the local economies and small businesses. The Moyer Program addresses equitable considerations for small fleets and small business. A lease-to-own option for zero-emission technology is included as part of this proposal to provide an alternate means for small fleets and small businesses to participate in the Program. Staff is proposing fleet size updates consistent with applicable regulations that will align the Moyer Program with other incentive programs to enable more co-funding opportunities. This will allow small fleets and small businesses to co-fund with other incentive programs, like the Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP). Staff also proposes to adopt language from Chapter 5: Off-Road Equipment of the Moyer Program Guidelines for off-road equipment that requires the contract to specify that a small fleet certifies that they will meet the minimum annual usage if unable to produce records at the time of application.

## B. OFF-ROAD EQUIPMENT

Chapter 5 of the Moyer Program Guidelines was last updated in 2017. The off-road sector boasts highly cost-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. Staff proposes updates to the chapter to support the recent In-Use Off-Road Diesel-Fueled Fleets Regulation (Off-Road Regulation) amendments, support deployment of zero-emission technology, and provide air district flexibility in implementing the Program.

In consideration of the Off-Road Regulation amendments<sup>7</sup>, and the Zero-Emission Forklift Fleet Requirements Regulation<sup>8</sup>, staff proposes a minimum 1-year project life so that projects may continue to demonstrate being surplus to applicable regulations. Clarification to the chapter is made to address these regulations, as well as the Portable Engine Airborne Toxic Control Measure (ATCM),<sup>9</sup> Stationary Diesel ATCM,<sup>10</sup> and Truck and Bus Regulation.<sup>11</sup> Staff proposes that applicants demonstrate compliance with the Portable Engine ATCM and that projects subject to Stationary ATCM are surplus to applicable regulations and local rules. Agriculture projects subject to Portable or Stationary ATCMs are referred to the FARMER Program Guidelines. Districts must verify applicant applicability to the Advanced Clean Fleets regulation when determining eligibility for projects subject to the Truck and Bus regulation. Transportation refrigeration units are added as eligible off-road equipment projects.

A notable proposed change is that Moyer Program eligible off-road agricultural projects will continue to be funded through the Moyer Program but will refer to the FARMER Program Guidelines for funding criteria. Chapter 5 of the Moyer Program for all other off-road equipment aligns with the FARMER Program Guidelines, including the 80% replacement engine maximum cost percentage, the 90-day destruction and salvage requirements with an option to extend to 6 months for zero-emission equipment, and zero-emission utility terrain vehicles as an eligible project. Moyer

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<sup>7</sup> In-Use Off-Road Diesel-Fueled Fleets Regulation (Off-Road Regulation) Amendments.  
<https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/off-roaddiesel/froa-1.pdf>

<sup>8</sup> Zero-Emission Forklift Fleet Requirements Regulation.  
<https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2024/zeforklifts/finala1.pdf>

<sup>9</sup> Portable Engine Airborne Toxic Control Measure (ATCM).  
[https://ww2.arb.ca.gov/sites/default/files/2020-03/PERP\\_ATCM\\_12.5.18R.pdf](https://ww2.arb.ca.gov/sites/default/files/2020-03/PERP_ATCM_12.5.18R.pdf)

<sup>10</sup> Stationary Diesel ATCM.  
<https://ww2.arb.ca.gov/sites/default/files/classic/diesel/documents/finalreg2011.pdf>

<sup>11</sup> Truck and Bus Regulation.  
[https://ww2.arb.ca.gov/sites/default/files/classic/msprog/onrdiesel/documents/tbfinalreg.pdf?\\_ga=2.249431438.824637349.1722271305-908291997.1636393141](https://ww2.arb.ca.gov/sites/default/files/classic/msprog/onrdiesel/documents/tbfinalreg.pdf?_ga=2.249431438.824637349.1722271305-908291997.1636393141)

staff proposes to not require a case-by-case determination process to fund zero-emission equipment, consistent with the FARMER Program Guidelines. These updates are a testament to CARB’s dedication to streamlining and modernizing the Moyer Program by further bolstering the harmonization between CARB’s incentive programs and streamlining the process to fund zero-emission technology.

### **C. MARINE VESSELS**

Chapter 7 of the Moyer Program Guidelines was last updated in 2023, supporting the recent Commercial Harbor Craft (CHC) Regulation amendments.<sup>12</sup> Staff proposes updates that clarify the funding amounts for regulated vessels and vessels not regulated by the regulation, a maximum percentage based on the baseline and reduced engine standards, and the criteria for zero-emission and zero-emission capable hybrid system repowers (Chapter 7, Tables 7-2 through 7-5). The chapter includes updated guidance for vessels subject to the 2020 Control Measure for Ocean-Going Vessels at Berth Regulation.<sup>13</sup>

### **D. LOCOMOTIVES**

Staff proposes changes to Chapter 6 of the Moyer Program Guidelines for Locomotives to add clarity the existing chapter and increase air district flexibility in implementing the program. The proposal also includes updates to account for the In-Use Locomotive Regulation<sup>14</sup>, which became effective January 1, 2024. Staff proposes updating the minimum project life to 1 year and allowing for partial project years (i.e., 1 year and 6 months). To ensure applicant confidence when deploying zero-emission technology, staff is proposing to allow delayed destruction of the equipment or engine consistent with Chapter 3 for Program Administration, adding a 3-year warranty requirement for parts and labor, and allowing for equipment leasing. Staff also proposes to add retrofit and conversion projects as eligible projects, as well as allow new or used equipment replacements and repowers.

Updates to the chapter that aim to improve the ease for air district implementation include clarification on engine destruction; allowance for projects to proceed with either certification, verification, or CARB approval; and two-for-one calculation clarification. Additionally, the funding amounts and eligible engine and equipment

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<sup>12</sup> Commercial Harbor Craft (CHC) Regulation.

<https://ww2.arb.ca.gov/our-work/programs/commercial-harbor-craft>

<sup>13</sup> 2020 Control Measure for Ocean-Going Vessels At Berth Regulation.

<https://ww2.arb.ca.gov/our-work/programs/ocean-going-vessels-berth-regulation>

<sup>14</sup> In-Use Locomotive Regulation.

<https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/locomotive22/fro.pdf>

were reevaluated and reflect higher funding amounts for Class 1 line-haul locomotives, Class 2 line-haul locomotives, and switcher locomotives (Chapter 6, Table 6-2).

### **E. LIGHT-DUTY VEHICLES**

The Voluntary Accelerated Vehicle Retirement (VAVR) 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. Staff proposes no major changes. Minor changes proposed by staff to Chapter 8 of the Moyer Program Guidelines for Light-Duty Vehicles include updates to the new VAVR emission reduction tables for the next three years to reflect more accurate data. After performing cost-effectiveness emission reduction calculations, staff proposes increasing the grant amount from \$1,500 to \$3,000.

### **F. LAWN AND GARDEN EQUIPMENT REPLACEMENT**

Chapter 9 of the Moyer Program Guidelines for Lawn and Garden Equipment was last updated in 2023 to expand to commercial applicants and to expand eligible project types beyond residential lawn mowers to include, chainsaws, trimmers, edgers, brush cutters, leaf blowers, vacuums, and ride-on or stand or sit mowers. Staff is proposing minor changes to clarify the existing chapter and to increase flexibility for the air districts that improve implementation of the Program. Staff proposes no major changes to the Lawn and Garden Replacement Program.

### **G. INFRASTRUCTURE**

Chapter 10 of the Program guidelines for infrastructure, along with the On-Road Voucher Incentive Program and Chapter 4, were last updated in 2022 through IPAG. Changes then included increasing funding to applicants of heavy-duty truck parking facilities that provide communal charging opportunities, clarifying projects receiving funding from other programs, clarifying the competitive bidding requirement, and providing guidance for project pre-inspection.

Staff proposes changes to Chapter 10 that will support more efficient implementation of the Program for infrastructure projects. Projects for transportation refrigeration unit infrastructure, truck stop electrification, off-grid on-site power generation systems, microgrid, mobile refuelers, and portable infrastructure may proceed without a case-by-case determination. Reducing the need for case-by-case determinations will improve air district implementation and encourage Program participation.

Air districts implementing the Program and funding infrastructure projects provided valuable feedback to CARB that highlighted the need to reevaluate some requirements in the chapter. Infrastructure projects require more lead time before entering into a contract. For example, local utility companies advise applicants to engage with them years in advance. To mitigate this, staff is proposing to streamline co-funding requirements, add flexibility for the competitive bidding requirement, and update pre-inspection requirements for new infrastructure projects. Staff also proposes giving the air districts the discretion to approve instances for equipment to be ordered and for down payments placed.

Staff proposes updating funding limits, increasing funding levels for key project types, and adding increased funding limits for specific project types (i.e., public entities, sensitive receptors, and renewable hydrogen) that may increase the eligible grant amount for a project. The proposal adds warranties, consulting, and employee training to the list of eligible costs; language for shore power considering CARB's Control Measure for Ocean-Going Vessels At-Berth and CARB's Commercial Harbor Craft Regulation; and guidance for stationary agricultural pump projects.

Staff is proposing to add flexibility for publicly accessible stations with restricted access to operate during their regular business hours. Additionally, staff proposes to include additional charging protocols, and to require that equipment may be either certified or field labeled to ensure that equipment is meeting safety and performance standards.

## **H. 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 public dollars, while minimizing obstacles to implementing the projects that achieve cost-effective solutions. These procedures apply to all air districts, ensuring that the Program is implemented in a way that is fiscally sound and plausible given their unique individual needs and resources. As part of the Program update, staff had the opportunity to work with air districts to reexamine the administrative requirements. Proposed changes to the Chapter 3 of the Moyer Program Guidelines include reorganization of the sections, clarifying guidance and terminology, updating timelines and processes, and adding administrative elements to improve the implementation of the Program and funding projects.

In 2019, the Moyer Program shifted to more electronic and digital methods for some administrative procedures. Staff proposes to update the chapter to memorialize

continued use of practices such as allowing electronic signatures and remote inspections.

A significant proposed update to Chapter 3 is the option to allow lease-to-own zero-emission technology projects. The lease-to-own zero-emission technology option encourages the public to transition and adopt new technology in a more fiscally achievable manner. Language and guidance would be added to the chapter for lease-to-own financing, contract requirements, and documentation.

In 2021, staff contracted with a third-party to conduct incentive program reviews. Staff proposes memorializing this transition in the guidelines. Incentive program reviews will no longer be conducted by CARB's Moyer Program staff, instead they will oversee the process while another party conducts the review. Revamping this process is an important part of retaining the strong partnership between CARB and air districts. Staff is also proposing to introduce desk reviews as part of the Program in Chapter 3, which allow air districts and CARB to evaluate their implementation of the Program. Additional clarification and guidance on nonperforming projects and recapture of funds is proposed.

CARB received feedback from air districts that greater support for the cost of implementation was needed. In response to this feedback, staff reassessed the percentage values for air districts' administrative funds. For air districts with a population of one million or more inhabitants, staff is proposing the total administration funding be increased from 6.25% to 12.5% of the total allocation. For air districts with a population of less than one million inhabitants, staff proposes the total administration funding to be increased from 12.5% to 15%. If an air district does not use the maximum available amount of administrative funds, the remaining funds may be used toward projects. This increase of administrative funds demonstrates CARB's support for air districts and the strong partnership between both entities.

Program administration is paramount to successful implementation of the Moyer Program. Extensive updates to the chapter strive to reflect the modernization of the Program, adaptation to the changing landscape of incentives, and the ongoing need for incentives. This lays the building blocks for projects to be executed in conjunction with the foundations of each of the source category chapters. 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.

## **I. ON-ROAD HEAVY DUTY VOUCHER INCENTIVE PROGRAM**

The On-Road Heavy-Duty Voucher Incentive Program (VIP), part of Volume II of the Moyer Program Guidelines, is updated annually and provides a simple and streamlined process for the replacement of on-road heavy-duty vehicles. However, the VIP Guidelines were updated more extensively in 2022 through the IPAG Process, alongside the updates to Chapter 4: On-Road Heavy Duty Vehicles and Chapter 10: Infrastructure.

Staff proposes updates to the VIP Guidelines to reflect more stringent emission standards for on-road medium- and heavy-duty vehicles, as well as deployments of zero-emission vehicles supporting Executive Order N-79-20. Fleets of up to 10 vehicles over 14,000 pounds have historically been eligible for VIP. Staff proposes expanding the fleet size eligibility limit from 10 vehicles over 14,000 pounds to include 20 vehicles over 8,500 pounds. Staff proposes the maximum number of replacement trucks eligible for funding through VIP would remain at 10 trucks. This update to eligibility would make co-funding feasible with HVIP and increase program participation.

Program requirements are updated to reflect recent approved regulations and legislation. Fleet compliance information is updated to account for AB 794 that calls for labor law attestations and renewal requirements, documentation of compliance for Clean Truck Check, and documentation of compliance for Advanced Clean Fleets. A compliance check is essential to the Program and ensures funding goes toward fleets who participate in good faith and upholds the spirit of the Program.

Though VIP is a standalone guideline in the Moyer Program, proposed updates to Chapter 4 of the Moyer Program Guidelines for on-road heavy-duty vehicles are also mirrored in VIP. Elements such as the ZEP Cert requirements, flexibility for small fleets lacking fuel usage documentation, warranty requirements, and destruction delay flexibility are included in this proposal.

#### **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 2024 Moyer Guidelines are not a “project” subject to CEQA review because the Proposed 2024 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)). The Moyer Program provides incentive funding to air districts to administer grants to eligible projects that reduce air emissions from covered sources, and the Proposed 2024 Guidelines provide project administration direction for the grant program, a fiscal activity. 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 2024 Moyer Program Guidelines. Changes to the Moyer Program will support significant emission reductions under a changing landscape of technology, helping California to meet the objectives of its strategic plans. For the past 25 years and counting, the Program has proven highly successful in cleaning up equipment and vehicles that help power California’s economy, helping consumers purchase cleaner technology, and protecting public health. 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 realizing air emission reductions using zero-emission technologies and meeting the on- and off-road zero-emission deployment targets set by the Governor’s Executive Order N-79-20.

The Moyer Program is a dynamic program, adapting with time to maintain its effectiveness while meeting its statutory requirements. The Legislature recognizes the Program’s success, as evident by the reauthorization of the Program in 2022 through AB 2836. The success of the Program is made possible with the partnership between CARB and the air districts who implement the Program. Staff’s proposal is the culmination of an ongoing effort with the air districts and with joint stakeholders to modernize the Moyer Program. Moving forward, CARB staff will continue to work with California’s local air districts, stakeholders, and the community to adjust and update the course of the Program as needed to ensure its continued success. The Board has

delegated to the Executive Officer, in Board Resolution 22-20<sup>15</sup>, the authority to interpret or clarify, and to adopt changes to, the Carl Moyer Guidelines, provided that such changes are consistent with statute and the goals established by the Board.

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<sup>15</sup> Resolution 22-20 for the Proposed Fiscal Year 2022-23 Funding Plan for Clean Transportation Incentives Accompanied by Proposed Carl Moyer Program Changes.  
<https://ww2.arb.ca.gov/sites/default/files/barcu/board/res/2022/res22-20.pdf>