Public Workshop on Developing a Beneficiary Mitigation Plan for California's Allocation of the Volkswagen Environmental Mitigation Trust

DISCUSSION DOCUMENT

Public Workshop Dates and Locations:

SACRAMENTO LOCATION:
Date: Monday, February 26, 2018
Time: 1:00 pm to 3:00 pm (PST)
Place: CalEPA Headquarters
Coastal Hearing Room
1001 I Street
Sacramento, CA 95814

CENTRAL VALLEY LOCATION:
Date: Wednesday, February 28, 2018
Time: 10:00 am to 12:00 pm (PST)
Place: San Joaquin Valley Air Pollution Control District, Board Room
1990 E. Gettysburg Avenue
Fresno, CA 93704

BAY AREA LOCATION:
Date: Thursday, March 1, 2018
Time: 10:00 am to 12:00 pm (PST)
Place: Elihu M. Harris State Building
Auditorium
1515 Clay Street
Oakland, CA 94612

NORTHERN CALIFORNIA LOCATION:
Date: Monday, March 5, 2018
Time: 1:00 pm to 3:00 pm (PST)
Place: Shasta County Board of Supervisors, Board Chambers
1450 Court Street, #308B
Redding, CA 96001

SOUTH COAST LOCATION:
Date: Wednesday, March 7, 2018
Time: 10:00 am to 12:00 pm (PST)
Place: South Coast Air Quality Management District, Auditorium
21865 Copley Drive
Diamond Bar, CA 91765

INLAND EMPIRE LOCATION:
Date: Thursday, March 8, 2018
Time: 11:30 am to 1:30pm (PST)
Place: Fontana City Hall
Council Chambers
8353 Sierra Avenue
Fontana, CA 92335

Workshop Notice: Venue
Workshop presentation will be posted on the morning of the February 26th workshop at https://www.arb.ca.gov/msprog/vw_info/vsi/vw-mititrust/vw-mititrust.htm

Released: February 16, 2018

Workshop Agenda

Introduction and Overview	30 minutes
Recommended Eligible Mitigation Actions, Estimated Emission Reductions, and Implementation Options	30 minutes
Open discussion	1 hour

Time allocations above are approximate and subject to change.

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I. Discussion Document Introduction

This Discussion Document summarizes California Air Resources Board (CARB or Board) staff's work to date, with valuable public input, in developing a Beneficiary Mitigation Plan (Plan) for California's approximately $423 million allocation[1] from the Volkswagen (VW) Environmental Mitigation Trust (Trust or Mitigation Trust). This document represents CARB staff's initial recommendations for the Beneficiary Mitigation Plan. CARB is the designated Lead Agency to act on the State's behalf as a beneficiary of the Trust. As provided in two court-approved Partial Consent Decrees (Consent Decrees), the Trust is intended to fully mitigate the excess nitrogen oxides (NOx) emissions caused by Volkswagen's use of illegal defeat devices in approximately 85,000 2.0-liter and 3.0-liter diesel vehicles in California. Staff estimates the recommended mitigation action funding described in this document will result in about 10,000 tons of NOx reductions over a 10-year period, fully mitigating the excess NOx caused by the subject VW vehicles. Staff also estimates more than 50 percent of the total project funds invested will benefit disadvantaged or low-income communities that bear a disproportionate impact from air pollution in California. Lastly, staff's funding recommendations will help accelerate the transformation of the heavy-duty fleet to zero-emission technologies that are needed meet California's long-term air quality and climate change goals.

A. Volkswagen Settlement

In September 2015, following an ongoing investigation, Volkswagen Group of America, Inc. admitted to the United States Environmental Protection Agency (U.S. EPA) and CARB the use of illegal software "defeat devices" in model year 2009 through 2015 2.0-liter diesel passenger vehicles sold in the United States and California. Approximately 500,000 2.0-liter vehicles were affected nationwide, with about 70,000 of those in California. Continuing investigations found about another 87,000 model year 2009 through 2016 3.0-liter diesel vehicles were also affected throughout the country, with about 15,000 of those in California. The illegal software was specifically designed to detect when the car was being tested in the laboratory and operate to meet the rigorous certification standards for emissions. The software also detected when the car was on the open road, and then effectively bypassed emissions control equipment. As a result, the NOx emissions in normal, everyday driving reached levels up to 40 times the legal standard. NOx emissions in California are the most important contributor to ambient ozone and a key contributor to fine particulate matter pollution, which is associated with premature death, increased hospitalizations, emergency room visits due to exacerbation of chronic heart and lung diseases, and other serious health impacts.

On October 25, 2016 and May 17, 2017, the United States District Court, Northern District of California, approved class action settlement programs for the 2.0-liter and 3.0-liter vehicles, respectively, to compensate vehicle owners and to provide

[1] California's total Trust allocation is $422,636,320.

environmental relief, as enumerated in the two Consent Decrees. The first Consent Decree describes the primary elements of the settlement in four separate appendices:

- Appendices A and B (the Buyback, Lease Termination, and Vehicle Modification Recall Program and the Vehicle Recall and Emissions Modification Program, respectively) describe the procedures that VW is using to offer its affected consumers the option of either: (1) a buyback or lease termination; or (2) the option of an emissions modification in accordance with the technical specifications prescribed in Appendix B. The Consent Decree also allows consumers to choose to do nothing.

- Appendix C (the Zero-Emission Vehicle or ZEV Investment Commitment) requires VW to invest $800 million in California over a ten-year period to support the increased use and availability of ZEVs. VW will implement these investments in four $200 million 30-month cycles, the first cycle for which was described in VW's ZEV Investment Plan that the Board approved in July 2017.

- **Appendix D (the Environmental Mitigation Trust) – the subject of this Discussion Document –** is intended to mitigate past and future excess NOx emissions from the subject vehicles. Under the terms of the two Consent Decrees, VW must pay about $3 billion into a national Environmental Mitigation Trust over a three-year period for specified eligible mitigation actions. California's allocation of the trust is about $423 million: about $381 million from the first Consent Decree and about $42 million from the second Consent Decree.[2] The 10 eligible mitigation actions listed in the first Consent Decree are mostly scrap-and-replace projects, including supportive infrastructure for zero- and near zero-emission advanced technology replacements, for the heavy-duty sector. The following are the eligible mitigation action categories:

    1. Class 8 Local Freight Trucks and Port Drayage Trucks: Trucks with 1992-2012 model year engines and gross vehicle weight rating (GVWR) greater than 33,000 pounds used for freight or cargo delivery, including waste haulers, dump trucks, and concrete mixers.

    2. Class 4-8 School Buses, Shuttle Buses, and Transit Buses: Buses with pre-2013 model year engines and GVWR greater than 14,001 pounds used for transporting people, including Class 4-8 school buses sold or introduced into interstate commerce for purposes that include carrying students to and from school or related events (may be Type A-D).

    3. Freight Switchers: Pre-Tier 4 engine switcher locomotives that move rail cars around a rail yard (as compared to line-haul engines that move freight long distances).

[2] First Consent Decree : https://www.cand.uscourts.gov/filelibrary/2869/Order-Granting-Entry-of-Consent-Decree.pdf second Consent Decree: https://www.cand.uscourts.gov/filelibrary/3074/3228-Order-Granting-the-United-States-Motion-f.pdf

4. Ferries and Tugs: Tier 2 or earlier marine engines used in ferries and dedicated tugboats and towboats.

5. Ocean-Going Vessels (OGV) Shorepower: Systems that enable a compatible vessel's main and auxiliary engines to remain off while the vessel is at berth.

6. Class 4-7 Local Freight Trucks: Trucks with 1992-2012 model year engines and GVWR between 14,001 and 33,000 pounds used to deliver cargo and freight, such as courier services, delivery trucks, box trucks moving freight, waste haulers, dump trucks, and concrete mixers.

7. Airport Ground Support Equipment (GSE): Tier 2 and earlier diesel engine GSE, and spark ignition engine GSE with uncertified or certified 3.0 gram per brake-horsepower-hour (g/bhp-hr) or higher engines.

8. Forklifts and Port Cargo Handling Equipment: Lift equipment, such as forklifts, reach stackers, side loaders, and top loaders, with greater than 8,000 pounds lift capacity; and port cargo handling equipment, such as rubber-tired gantry cranes, straddle carriers, shuttle carriers, and yard trucks that operate within ports.

9. Light-Duty Zero-Emission Vehicle Supply Equipment: Acquisition, installation, operation, and maintenance of new light-duty zero-emission vehicle supply equipment (Level 1, Level 2, or fast charging) located in a public place, workplace, or multi-unit dwelling; or light-duty hydrogen fuel cell vehicle supply equipment dispensing at a pressure of 70 megapascals (MPa) located in a public place. The State may use no more than 15 percent of its total allocation for this category.

10. Diesel Emissions Reduction Act (DERA) Option: Non-federal voluntary match for projects not enumerated above but are otherwise eligible for DERA funds.

Excluding the OGV shorepower and light-duty zero-emission vehicle supply equipment categories, eligible vehicles or engines in the above projects must be scrapped. Zero-emission vehicle infrastructure is also an allowable expenditure when accompanying funded zero-emission vehicles or repowers. The recommended per vehicle or equipment maximum funding in this document is intended to incorporate, but not fully offset, infrastructure costs. The Consent Decree specifies the maximum eligible funding amounts (percentages of cost) for each category, based on the type of replacement engine, motive power system, or vehicle or equipment and whether or not the eligible vehicle or equipment is government owned. These amounts vary from up to 25 percent to up to 100 percent of the cost of the new vehicle or equipment. CARB must decide the

appropriate level of funding and cost-share requirements for each recommended project category, while not exceeding the maximum funding amounts allowed by the Consent Decree.

This Discussion Document pertains only to Appendix D as described above. CARB's responsibilities as the Lead Agency implementing California's allocation of the VW Mitigation Trust include developing a Beneficiary Mitigation Plan (Plan), as required by the Consent Decree, describing the State's overall goals for the use of the funds, the categories of eligible mitigation actions to be funded, and the estimated percentages of funds to be allocated to each of those categories. The Plan will also consider potential benefits of the eligible mitigation actions on air quality in areas that bear a disproportionate share of the air pollution burden and the estimated ranges of expected emission benefits of those actions.

B. Environmental Mitigation Trust Current Status

In March 2017, the Court appointed Wilmington Trust, N.A. as Trustee, and in October 2017, the Court approved two Trust Agreements: one for the 50 states, the District of Columbia, and the Commonwealth of Puerto Rico, and one for the separate $55 million allocation for federally recognized Indian tribes in the U.S. The State of California officially became a beneficiary of the Trust on January 29, 2018,[3] allowing the State to fund eligible mitigation actions, as defined in the Consent Decree, that it proposes in the State's Beneficiary Mitigation Plan. To date, Volkswagen has funded two-thirds of the national Trust, including an allocation for California; the Trust will be fully funded in November 2018.

Public input has been essential in determining the recommendations outlined in this Discussion Document. Since September 2017, stakeholders and other members of the public have submitted about 40 individual comments and more than 4,000 form letter comments to an online comment docket[4] created to help inform CARB staff in developing a Beneficiary Mitigation Plan for the VW Mitigation Trust for California. The California Legislature also provided input and direction in passing Senate Bill (SB) 92, which is discussed more in the following section. This input, along with comments received at two public meetings in October 2017 and multiple individual meetings, have aided staff in determining its initial recommendations in this document. The comment docket will remain open throughout the Plan development process in order to provide the public a forum, and CARB staff a resource, for additional public input. Staff anticipates presenting a proposed Beneficiary Mitigation Plan to the Board at a public meeting in late spring 2018.

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[3] Wilmington Trust filed the Notice of Beneficiary Designation with the court on January 29, 2018: https://www.vwenvironmentalmitigationtrust.com/pdfs/Dkt%204700%20Notice%20of%20Beneficial%20Designation%20(State%20Trust).pdf

[4] Comments received are viewable at https://www.arb.ca.gov/lispub/comm2/bccommlog.php?listname=vw-mititrust-pl-ws; comments may be submitted to the docket at https://www.arb.ca.gov/lispub/comm2/bcsubform.php?listname=vw-mititrust-pl-ws&comm_period=1

II. Goals for California's Allocation of the Trust

A. Mitigating Excess NOx

CARB's intent, and the intent of the Mitigation Trust in the Consent Decree, is to fully mitigate the excess lifetime NOx caused by the subject VW diesel vehicles. CARB staff estimates the excess NOx in California is about 7,300 to 10,000 tons. This estimate assumes 85 percent of the subject vehicles will meet recall or buy-back requirements by mid-2019, and takes into account the uncertainty in the vehicle or technology market demand, mix of projects within the recommended funding categories that could be funded, and infrastructure needs. In order to ensure full NOx mitigation, CARB staff used the most conservative estimate, 10,000 tons, as the NOx target when determining the funding recommendations in this document.

B. Policy Drivers for Additional Emission Benefits and Strategies

In addition to fully mitigating the excess lifetime NOx emissions of the VW vehicles subject to the settlement, the projects recommended to be funded in this Discussion Document are consistent with and will aid the State in meeting many of California's air quality goals. Governor Brown has set ambitious climate change goals that include greenhouse gas (GHG) emission reduction targets of 40 percent below 1990 levels by 2030 and reducing petroleum use up to 50 percent by 2030. At the same time, we must continue efforts to attain compliance with national ambient air quality standards and minimize near-source risk and exposure to toxic air contaminants.

To help further the State's air quality, climate change, and petroleum reduction goals, California is committed to deploying one million zero- and near zero-emission vehicles by 2023, as codified in Health and Safety Code Section 44258.4(b); 1.5 million zero-emission vehicles by 2025 as directed in Executive Order B-16-2012; 5 million zero-emission vehicles by 2030 as directed in Executive Order B-48-18; and 4.2 million ZEVs, as identified in CARB's 2016 Mobile Source Strategy.[5] As part of these overall zero-emission vehicle deployment targets, California established the goal to deploy over 100,000 freight vehicles and equipment capable of zero-emission operation and maximize near zero-emission freight vehicles and equipment powered by renewable energy by 2030 in the 2016 California Sustainable Freight Action Plan.[6]

In June 2017, the California Legislature passed SB 92 (Committee on Budgets and Fiscal Review, Chapter 26, Statutes of 2017), which directs the Lead Agency (CARB) to strive to ensure that 35 percent of California's Mitigation Trust allocation benefit low-income or disadvantaged communities and report annually to the Legislature. In order to maintain consistency with legislation that defined disadvantaged and low-income communities and the associated implementation of California Climate

[5] Mobile Source Strategy, May 2016; https://www.arb.ca.gov/planning/sip/2016sip/2016mobsrc.pdf
[6] California Sustainable Freight Action Plan, July 2016; http://www.casustainablefreight.org/documents/PlanElements/FINAL_07272016.pdf

Investments, staff recommends using the disadvantaged and low-income community designations previously made by the California Environmental Protection Agency (CalEPA) with the California Communities Environmental Health Screening Tool 3.0 (CalEnviroScreen).[7] Taking advantage of the extensive efforts made to create these community designations and mapping tools will effectively allow VW Mitigation Trust projects to be funded in a timely manner. Staff's recommended mitigation actions in this document are expected to exceed the target established by SB 92, as shown in Table 1 on page 8.

The funds allocated to California from the VW Mitigation Trust are expected to provide incentives for sustainable freight technology and clean trucks and buses and provide direct benefits to areas disproportionately impacted by air pollution through the replacement of older, high-emitting vehicles and equipment with low- and zero-emission advanced technology vehicles and equipment. The next section discusses the eligible mitigation actions (projects) staff recommends for funding and the guiding principles used to inform those recommended actions.

III. Funding Recommendations

The recommended mitigation actions in this document will result in NOx emission reductions that fully mitigate the excess emissions caused by the subject VW diesel vehicles. In addition, these actions will result in zero-emission vehicle deployments that will not only support market penetration and technology transformation for the heavy-duty sector, but will also aid the state in meeting its zero-emission vehicle deployment goals and petroleum use reduction goals. These projects will additionally result in improved ambient air quality and human health in communities located in nonattainment areas, in areas with historical air quality issues, and in disadvantaged or low-income areas that bear a disproportionate share of the air pollution burden. At the same time, the recommended funding will provide benefits to the local economy and the welfare of residents in those communities.

A. Guiding Principles

The following guiding principles were developed and used in selecting the recommended categories of eligible mitigation actions to be funded.

- Fund actions that offset the VW NOx impacts as well as reduce risk to children and other sensitive populations, including dedicating at least 35 percent of the funds for investment in or benefiting disadvantaged or low-income communities.

- Align with State priorities (as required by SB 92).

[7] SB 535 (De León, Chapter 830, Statutes of 2012) and AB 1550 (Gomez, Chapter 369, Statutes of 2016); California Climate Investments to Benefit Disadvantaged Communities; https://calepa.ca.gov/EnvJustice/GHGInvest/

- Focus on zero-emission technologies where available; low NOx everywhere else (certified Tier 4 if low NOx is not available for the application).

- Prioritize expenditures that are surplus to regulatory requirements and complementary and additional to other investments being made by government and the private sector in California.

- Invest across a variety of geographic regions of the State while transforming the heavy-duty sector through focused implementation of advanced technologies.

- Implement projects using known methods of public process and project management, including competitive solicitations where appropriate, as successfully demonstrated with Low Carbon Transportation Investments.

- Ensure accountability and transparency to help determine effectiveness of programs and identify implementation, durability, and maintenance issues.

Many of the public comments received influenced these guiding principles. For example, many commenters requested a focus on zero-emission technologies where available, including more than 4,000 form letters received via the VW Mitigation Trust online comment docket.

B. Recommended Mitigation Action Categories and Allocations

CARB is proposing to fund nearly all of the project categories listed in the Consent Decree. However, staff is not recommending utilizing the DERA option. Currently, CARB spends State DERA funds on school bus retrofits or replacements. Furthermore, DERA funds are not guaranteed and are limited, typically only about $500,000 annually. Staff believes the demand for the other eligible project categories exceeds that for the DERA option.

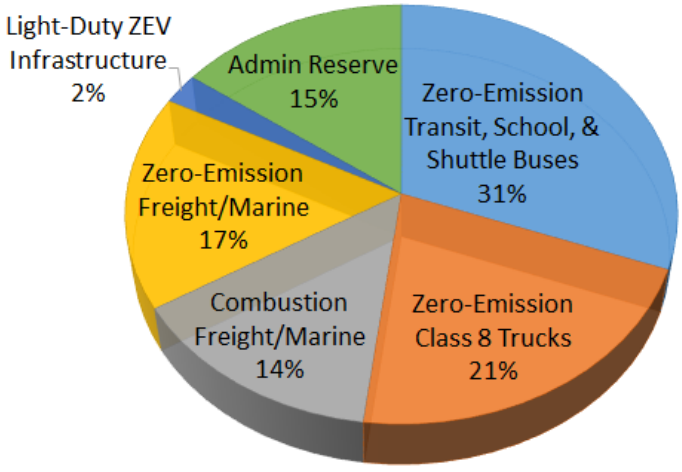
The following recommendations are consistent with the guiding principles described above, the requirements of the Consent Decrees, and California's air quality and climate change goals. Each of the project categories are expected to benefit disadvantaged communities or low-income areas. For all categories except light-duty ZEV infrastructure and oceangoing vessel shorepower, an existing eligible vehicle or engine in the owner's fleet must be scrapped, and the new vehicle, new engine, or new zero-emission motive power system must be certified, verified, or otherwise approved by the U.S. EPA or CARB for operation in California. The recommended categories and allocations are included in Table 1 and Figure 1 below, followed by a more detailed discussion of each.

Table 1: Recommended Categories and Allocations

Eligible Mitigation Action Category	Eligible Technology[1]	Benefiting DC or LIC[2]	Recommended Allocation (millions)
Transit, School, and Shuttle Buses	Zero-Emission	50%	$130
Class 8 Freight and Port Drayage Trucks	Zero-Emission	50%	$90
Light-Duty ZEV Infrastructure	Charging Equipment and Hydrogen Dispensing Equipment	35%	$10
Zero-Emission Freight / Marine			
Forklifts and Port Cargo Handling Equipment	Zero-Emission	75%	$70
Airport Ground Support Equipment	Zero-Emission		
Oceangoing Vessel Shorepower	Shorepower Systems		
Combustion Freight / Marine			
Class 7-8 Freight Trucks	Low NOx[3]	50%	$60
Freight Switchers	Tier 4		
Ferries / Tugs	Tier 4 and Tier 4-Equivalent Hybrid		
Admin Reserve[4]			$63
Total		> 50%	$423

[1] Eligible technologies must meet definitions and requirements in the Consent Decree; only technologies that are commercially available and certified, verified, or otherwise CARB-approved for the specified application will be eligible.
[2] DC = disadvantaged community; LIC = low-income community. More than 50% of the total project funds are expected to provide benefits to disadvantaged or low-income communities.
[3] Certified to 0.02 grams per brake horsepower-hour (g/bhp-hr).
[4] Any unused amount will be redistributed to eligible mitigation actions.

Figure 1: Recommended Project Allocation Distribution



Project Category: Transit, School, and Shuttle Buses

Recommended Allocation: $130 Million

Staff recommends allocating $130 million to replace eligible Class 4-8 school, transit, and shuttle buses with new, commercially available, zero-emission technologies. Specifically, staff recommends a maximum incentive of up to $400,000 for a battery electric school bus, up to $180,000 for a new battery electric transit bus, up to $400,000 for a new fuel cell electric transit bus, and up to $100,000 for a new battery electric shuttle bus. As required by the Consent Decree, total costs per vehicle must not exceed 75 percent for non-government owned vehicles and 100 percent for government owned vehicles. Staff recommends these funds be administered on a first-come, first-served basis to applicants statewide. Only vehicles with internal combustion engines that are compliant with current regulations are eligible for replacement. They include most school buses, and engine model year 2009 and older transit and shuttle buses. At least 50 percent of this allocation is expected to benefit disadvantaged or low-income communities.

Background

Throughout California, transit, school, and shuttle bus fleets have demonstrated that (1) zero-emission technology is readily available; and (2) there is significant market demand for zero-emission bus technology.

Today, transit agencies rely almost entirely on public funding for capital expenditures, fleet and infrastructure operation and maintenance, and other day-to-day operations. Incentives for zero-emission transit buses are also needed to help transit agencies meet their zero-emission goals, support in-state manufacturing, repair, and training networks, and help reduce exposure to sensitive communities. Zero-emission transit incentives will also help to reduce technology costs and advance technology transfer to other heavy-duty sectors. Staff recommends allowing transit agencies to stack Federal Transit Administration (FTA) funds with VW Mitigation Trust funds for purchasing zero-emission transit buses. Funding for infrastructure is eligible under the Consent Decree, and this recommended vehicle funding will support transit agencies using existing funding sources for infrastructure.

About 65 percent of California's fleet of over 25,000 school buses are diesel-fueled and are a primary focus and air quality concern due to diesel's harmful impact on children, one of the State's most sensitive populations. Diesel-fueled buses emit diesel particulate matter (PM), which is a toxic air contaminant that adversely affects human health, including proper lung development in children. CARB has sponsored several studies of diesel PM and children's exposure to air pollution on school buses and has found that the school bus itself is a major source of diesel PM exposure for children riding the bus. Funding school bus replacements not only reduces diesel PM, but also reduces NOx, which is the focus of the VW Mitigation Trust.

Shuttle buses are used throughout the state in many applications. Vehicles like airport shuttle buses that operate on fixed routes, have stop-and-go operations, maintain low average speeds, and are centrally maintained and fueled, are ideal candidates for zero-emission electric technologies.

Regulatory Requirements

Funding for zero-emission transit is also important today because of the pending Innovative Clean Transit (ICT) Rule.[8] The ICT rule, as it is currently being discussed, includes purchase requirements starting with a 25 percent zero-emission bus purchase requirement in 2020 for transit agency fleets with more than 100 buses, and ramping up to a 100 percent purchase requirement for all transit agencies in 2029. Up until 2009, transit agencies were required to comply with the Fleet Rule for Transit Agencies. This rule required agencies to select either the diesel path or the alternative-fuel path, and transit agencies with 200 or more buses were required to demonstrate zero-emission buses with an earlier schedule for diesel and a later schedule for the alternative fuel path. CARB suspended the Rule's purchase requirement in 2009, and directed staff to assess the technology and commercial readiness of zero-emission bus technology.[9] The technology assessment findings and recent technology advances are supporting the ICT rule currently under development.

To reduce children's exposure to diesel PM, CARB requires all diesel-fueled school buses subject to the Truck and Bus Regulation to have a retrofit or original-equipment diesel particulate filter (DPF) installed. Further, school buses and other buses are prohibited from idling at or near schools, and nearly all heavy-duty diesel vehicles, including school buses, are required to be routinely inspected for excessive smoke. The expense of turning over school buses and engines in favor of zero-emission options has been a barrier for many school districts, particularly those in low-income areas. Nearly 4,500 school buses are without DPFs or are nearing the end of their useful life and need to be replaced with cleaner alternatives, such as zero-emission technologies.

Funding for shuttle buses will complement the Zero-Emission Airport Shuttle Bus Measure that CARB is developing.[10] In order to initiate fleet transformation, CARB staff is discussing new purchase requirements starting in 2023, and fleet turnover requirements starting in 2025, with a goal of 100 percent transformation to zero-emission in 2031. Currently, diesel shuttle bus owners in California are subject to the Truck and Bus Regulation, which requires them to replace older vehicles with vehicles meeting the most stringent 2010 model year engine emission standards. By January 1, 2023, fleets must have all of their diesel shuttle buses equipped with 2010 model year or emissions-equivalent engines. Natural gas shuttle buses currently do not have in-use fleet requirements.

[8] The ICT regulation is scheduled to be considered at a 2018 Board Hearing, with workshops to be held in spring 2018; https://arb.ca.gov/msprog/ict/ict.htm
[9] https://www.arb.ca.gov/msprog/bus/bus.htm
[10] https://www.arb.ca.gov/msprog/asb/asb.htm

Expected Benefits

Staff estimates that NOx reductions from this project category will range from 50 to 100 tons per year. The cost-effectiveness ranges from $30,000 to $180,000 per ton of NOx reductions depending on vehicle type, model year, usage and other factors. Based on an evaluation of historical participation data from other first-come, first-served zero-emission bus incentives, staff anticipates that at least 50 percent of the funds in this category will go to projects that benefit disadvantaged or low-income communities.

Project Category: Class 8 Freight and Port Drayage Trucks

Recommended Allocation: $90 Million

Staff recommends allocating $90 million to replace eligible Class 8 freight trucks and port drayage trucks with new zero-emission technologies. While a portion of this allocation will support the early deployment of existing commercially available trucks, staff recommends 70 percent of the allocation be focused on expanding the market as additional manufacturers begin producing Class 8 zero-emission trucks in the next three to five years. Staff recommends a maximum incentive of up to $200,000 per truck in the first year, and will reevaluate incentive amounts in subsequent years, as incremental costs are expected to decline. As required by the Consent Decree, total costs per vehicle must not exceed 75 percent for non-government owned vehicles and 100 percent for government owned vehicles. Staff expects funding demand to be limited in the first two years, with rapidly growing demand around 2020. Staff recommends these funds be administered on a first-come, first-served basis to applicants statewide. Only trucks with engine model year 2009 and older with internal combustion engines that are compliant with current regulations are eligible for replacement. At least 50 percent of this allocation is expected to benefit disadvantaged or low-income communities.

Background

Most heavy-duty trucks in use today are powered by diesel engines. While the California truck fleet is cleaner due to existing regulatory and incentive programs, trucks still contribute significant NOx emissions as well as greenhouse gases, toxics, and other pollutants. Health risk at the community level, where exposure is high, especially near ports and high-volume truck traffic, can be reduced by supporting the deployment of zero-emission technologies.

Existing incentive funding options include the Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP). HVIP provides vouchers to reduce the purchase cost of battery electric, fuel cell, and hybrid trucks and buses and low NOx engines. Other funding options include the Carl Moyer Program and Goods Movement Emission Reduction Program.

Regulatory Requirements

The Statewide Truck and Bus Regulation applies to nearly all diesel-fueled trucks and buses with a gross vehicle weight rating greater than 14,000 pounds.[11] Starting in 2015, the regulation requires accelerated replacements of both lighter and heavier vehicles that do not have PM filters installed. From 2020 to 2023, nearly all older vehicles need to be upgraded or replaced to have exhaust emissions meeting 2010 model year engine emission levels.

[11] https://www.arb.ca.gov/msprog/onrdiesel/regulation.htm

Diesel-fueled trucks transporting cargo destined to or coming from California's ports and intermodal rail yards must be registered in the statewide Drayage Truck Registry prior to entry.[12] Drayage fleets must comply with requirements by operating only vehicles with 2007 MY engines or newer. By January 1, 2023, all Class 7 and 8 diesel-fueled drayage trucks must have 2010 and newer engines. Trucks with 2010 and newer engines are fully compliant with both the Truck and Bus and Drayage regulations.

Expected Benefits

Staff estimates that NOx reductions from this project category will be approximately 100 to 150 tons per year. The cost effectiveness ranges from $80,000 to $95,000 per ton of NOx reductions depending on vehicle type, model year, usage, and other factors. Based on the number of freight hubs and ports located in disadvantaged or low-income communities, the number of drayage trucks transiting through those areas, and historical participation data from HVIP, staff anticipates that at least 50 percent of the funds in this category will go to projects that benefit disadvantaged or low-income communities.

[12] https://www.arb.ca.gov/msprog/onroad/porttruck/porttruck.htm

Project Category: Light-Duty Zero-Emission Vehicle Supply Equipment

Recommended Allocation: $10 Million

Staff recommends allocating $10 million for fueling infrastructure for light-duty zero-emission vehicles (ZEV). As required by the Consent Decree, funding is limited to up to 100 percent of the cost of publicly accessible electric vehicle supply equipment (EVSE) at government owned property, up to 80 percent for similar EVSE at privately owned property, up to 60 percent for non-public EVSE at workplaces and multi-unit dwellings, and up to 33 percent of the cost for a new hydrogen fueling station (HFS). The allocation will provide funding to help purchase, install, operate and maintain new EVSE for battery electric vehicles (BEV) and new HFS for fuel cell electric vehicles (FCEV). These projects will complement other light-duty infrastructure funding being implemented through many other sources, including the Energy Commission, the California Public Utilities Commission, and the VW ZEV Investment Plan. Staff recommends that these funds be administered statewide using a competitive process, and that the funds support projects that meet the fueling needs of a growing ZEV fleet and fill gaps not met by other funding programs. At least 35 percent of this allocation is expected to benefit disadvantaged or low-income communities.

Background

Considerable investment in light-duty ZEV infrastructure made in California over the past several years has facilitated increasing numbers of ZEVs on the road today as well as a growing variety of ZEV choices. The growing market enhances the need to develop ZEV fueling infrastructure at a faster pace. Governor Brown recognized this need when he signed Executive Order (EO) B-48-18, ordering State entities to collaborate with the private sector to put at least 5 million ZEVs on California roads by 2030, and spur the construction and installation of 200 HFSs and 250,000 EVSEs, including 10,000 fast chargers, by 2025.

EVSE for BEVs

Several programs fund the installation and maintenance of EVSE in public, workplace and multi-unit dwelling settings. According to California Energy Commission staff analysis, there are nine critical players investing in charging infrastructure: the Energy Commission's Alternative and Renewable Fuel and Vehicle Technology Program, Pacific Gas & Electric, Southern California Edison, San Diego Gas & Electric, Sacramento Municipal Utility District, Los Angeles Department of Water & Power, NRG/EVGo, Electrify America, and Japan's New Energy and Industrial Technology Development Organization. Considering both existing and planned/funded charging stations, these investments will result in roughly 3,000 public fast chargers, 38,000 public Level 2 chargers, 26,000 Level 2 workplace chargers, and 37,000 Level 2 multi-unit dwelling chargers within the next few years. However, these numbers fall short of Energy Commission staff's estimate that between 125,000 and 174,000 additional chargers will be needed to meet California's earlier light-duty vehicle

electrification goals of 1.5 million ZEVs by 2025 (see discussion on EO B-16-2012 below).

HFS for FCEVs

To date, most of the funding for public HFS's has been provided by Assembly Bill 8 (AB 8; Perea, Chapter 401, Statutes of 2013). AB 8 directs the Energy Commission to allocate up to $20 million annually from the Alternative and Renewable Fuel and Vehicle Technology Program for developing HFSs until there are at least 100 publicly available stations in California. To ensure the successful launch of this new market, the Energy Commission funds the stations and technologies that have the greatest potential for achieving self-sufficiency. To inform future investments, the Energy Commission relies on CARB to evaluate FCEV and HFS deployments annually and project relative need for new hydrogen stations (in terms of both location and capacity) based on automaker's FCEV market projections, existing and planned public HFSs, and a number of other factors.[13] With the current funding levels, station deployments are averaging about 8 new stations per year, which, according to CARB's evaluation, will be insufficient to satisfy projected growth in market demand beyond 2020. Additional funding now would help accelerate near-term station development to more closely match the projected demand.

Regulatory Requirements

The main regulatory driver behind the need for light-duty ZEV infrastructure is the ZEV Regulation, which requires most automakers to produce increasing numbers of ZEVs for sale or lease in California and in other states that have adopted the ZEV Regulation.[14] The 2016 California ZEV Action Plan (developed per EO B-16-2012) supports the ZEV Regulation with a goal of deploying infrastructure capable of supporting up to 1 million ZEVs by 2020, and having 1.5 million electric vehicles on California roads by 2025. Executive Order B-48-18, discussed above, extends this goal to 5 million ZEVs on California roadways by 2030, and adds specific goals for fueling infrastructure. In addition, the California Green Building Standards Code requires charging infrastructure[15] for 3 percent of parking spaces in new commercial buildings. Finally, CARB is developing a regulation that will implement Electric Vehicle Charging Stations Open Access Act (Senate Bill 454, Statutes of 2013), which will facilitate electric vehicle charging station open access for all users.

[13] AB 8 requires CARB to conduct this annual evaluation. The most recent evaluation, "2017 Evaluation of Fuel Cell Electric Vehicle Deployment and Hydrogen Fueling Station Network Development", can be accessed at https://www.arb.ca.gov/msprog/zevprog/ab8/ab8_report_2017.pdf

[14] https://www.arb.ca.gov/msprog/zevprog/zevprog.htm

[15] "Charging infrastructure" in the CalGreen Code refers to installing a raceway for cables, sufficient panel capacity, and a dedicated circuit; it does not include the actual EVSE device and connector, which could be purchased and installed at a later date.

Expected Benefits

Increasing investments in light-duty ZEV infrastructure will result in emission reductions associated with increased ZEV adoption and usage. However, to avoid double-counting emission benefits associated with vehicles, this plan will not quantify direct NOx reduction benefits from this project category. The competitive solicitation for this project will include criteria that ensures at least 35 percent of the funds in this category will go to projects that benefit disadvantaged or low-income communities.

Project Category: Zero-Emission Freight / Marine

Recommended Allocation: $70 Million

Staff recommends allocating $70 million to replace eligible airport ground support equipment (GSE)[16] and forklifts and port cargo handling equipment with new, commercially available, zero-emission technologies and to install oceangoing vessel shorepower systems at port terminals. The goal of this project category is to maximize NOx reductions by funding the most cost-effective zero-emission freight or marine projects. Specifically, staff recommends maximum funding up to the full incremental cost for a battery electric airport GSE vehicle, up to $175,000 for a heavy-lift forklift or battery electric port cargo handling equipment vehicle, and up to $2,500,000 for installing a port-side oceangoing vessel shorepower system. As required by the Consent Decree, total costs per vehicle or equipment must not exceed 75 percent for non-government owned vehicles or equipment and 100 percent for government owned vehicles or equipment. Vehicle or equipment owners will be eligible to apply for funding via competitive solicitation. At least 75 percent of this recommended allocation will benefit disadvantaged or low-income communities.

Background

Marine shorepower systems enable a compatible vessel's main and auxiliary engines to remain off while the vessel is at berth. The Consent Decree limits funding to the following components: cables, cable management systems, shorepower coupler systems, distribution control systems, and power distribution. Eligible shorepower systems must comply with international shorepower design standards and should be supplied by power sourced from the local utility grid.

Airport ground support equipment performs a variety of functions, including: starting aircraft, aircraft maintenance, aircraft fueling, transporting cargo to and from aircraft, loading cargo, transporting passengers to and from aircraft, baggage handling, lavatory service, and food service.

Forklifts are non-road equipment used to lift and move materials short distances. Types of forklifts identified as eligible in the Consent Decree include reach stackers, side loaders, and top loaders with greater than 8,000 pounds lift capacity. Port cargo handling equipment are rubber-tired gantry cranes, straddle carriers, shuttle carriers, terminal tractors, yard hostlers, and yard tractors that operate within ports.

Regulatory Requirements

Currently, a 70 percent power reduction/visit requirement exists for fleets subject to the At-Berth Regulation.[17] This requirement increases to 80 percent in 2020. Additional and improved infrastructure is essential to improve access to shore power berths in

[16] Pre Tier-3 diesel, or uncertified or certified ≥3 g/bhp-hr NOx + hydrocarbon spark-ignition engines.
[17] https://www.arb.ca.gov/ports/shorepower/shorepower.htm

regulated ports as an increasing number of vessels are expected to utilize shore power to comply with the At-Berth Regulation. Potential amendments to the At-Berth Regulation are under discussion, with CARB staff exploring ways to achieve additional emission reductions by including additional vessel types and additional ports/marine terminals in the Regulation. This effort will likely require additional shorepower installation at ports in California.

Most GSE are subject to either the Regulation for In-Use Off-Road Diesel-Fueled Fleets[18] (commonly known as the Off-Road Regulation), or the Large Spark-Ignition (LSI) Fleet Regulation.[19] Diesel-fueled GSE must meet increasingly stringent NOx fleet averages based on fleet size. Spark-ignition GSE fleets of four or more vehicles must meet a NOx and hydrocarbon fleet average established in 2013, based on fleet size.

Diesel-fueled cargo handling equipment at California ports are subject to the CARB Regulation for Mobile Cargo Handling Equipment at Ports and Intermodal Rail Yards (CHE regulation).[20] The CHE regulation is applicable to any diesel-fueled mobile equipment used at California ports to either handle freight or bulk material or to perform other on-site activities, such as maintenance. The CHE regulation requires emission reductions from in-use equipment, mostly through early vehicle turnover, and includes requirements for vehicles added to the fleet.

Expected Benefits

Staff estimates that NOx reductions from this project category will range from 30 to 50 tons per year. The projected cost-effectiveness ranges from $130,000 to $350,000 per ton of NOx reductions depending on the types of projects selected through competitive solicitation. The competitive solicitation for this project will include criteria that ensures at least 75 percent of the funds in this category will go to projects that benefit disadvantaged or low-income communities.

[18] https://www.arb.ca.gov/msprog/ordiesel/ordiesel.htm
[19] https://www.arb.ca.gov/msprog/offroad/orspark/orspark.htm
[20] section 2479 of title 13, California Code of Regulations (CCR) article 8, chapter 9

Project Category: Combustion Freight / Marine

Recommended Allocation: $60 Million

Staff recommends allocating $60 million to replace eligible Class 7 and 8 freight trucks[21] or their engines (1992 to 2012 model year), freight switcher locomotives or their engines (pre-Tier 1), and ferry, tugboat, and towboat engines (pre-Tier 3), with the cleanest commercially available internal combustion or hybrid technologies. The goal of this project category is to maximize NOx reductions by funding the most cost-effective, lowest emission engine projects. Specifically, staff recommends maximum funding up to $60,000 for a certified 0.02 g/bhp-hr low NOx engine truck or repower, up to $1.35 million for a Tier 4 freight switcher locomotive or engine repower, and up to $1 million for a Tier 4, or hybrid with Tier 4-equivalent NOx emissions, ferry or tug engine repower. Total costs per vehicle or equipment must not exceed those stated in the Consent Decree for government and non-government owned vehicles or equipment.[22] Vehicle or equipment owners will be eligible to apply for funding via competitive solicitation. Staff expects that at least 50 percent of this recommended allocation will benefit disadvantaged or low-income communities.

Background

The first engines certified to California's most stringent, optional low NOx standard entered the heavy-duty on-road vehicle market in 2015. The 8.9-liter 0.02 g/bhp-hr low NOx Cummins Westport natural gas engine is currently available for truck and bus applications. Recently, the 11.9-liter natural gas engine was certified to the same low NOx standard and is expected to be available for deployment this year, expanding low NOx technology availability to Class 7 and Class 8 trucks. Because the NOx emission level of these engines is 90 percent lower than the mandatory standard, they can be a very cost-effective, near-term solution for cleaning up the existing diesel or natural gas truck fleet. The Goods Movement Emission Reduction Program (Prop 1B) has offered funding for heavy-duty trucks but excludes refuse trucks. While incentive funding for low NOx trucks is currently available through HVIP and Low NOx Engine Incentives, funding for the 8.9-liter engine is limited to the incremental costs of a conventional natural gas to low NOx engine, and a large portion of the available funding requires renewable fuel. Staff's recommended per vehicle funding amount above is intended to offset the incremental costs from diesel to low NOx as well as help offset the loss associated with scrapping an eligible truck.

Freight switcher locomotives are those rated between 1,006 and 2,300 hp and designed to move rail cars around a rail yard, as opposed to larger line-haul locomotives that

[21] Also includes waste haulers, dump trucks, and concrete mixers.
[22] Maximum amounts range from up to 25 percent for non-government owned to up to 100 percent for government owned, depending on the vehicle or equipment type and whether the project is for replacement or engine repower; https://www.cand.uscourts.gov/filelibrary/2869/Order-Granting-Entry-of-Consent-Decree.pdf.

move freight or passengers. While freight switcher locomotive replacements and engine repowers can cost millions of dollars, most existing switchers in California are equipped with uncertified (pre-Tier 1) engines and typically consume 10,000 to 50,000 gallons of diesel fuel annually, making replacements with Tier 4 engines a cost-effective emission reduction strategy.[23] While incentive funding to offset up to 85 percent of the costs of a new locomotive or engine is available through the Carl Moyer Program, participation has been limited.

Ferries are designed primarily for efficient passenger transport around California's coastal waterways but also provide excursion service. Tugboats and towboats push or pull other vessels in ports, harbors, and inland waterways. Several hybrid systems have been built for commercial harbor craft applications and can be effective in reducing fuel consumption and NOx emissions.[24] Funding opportunities for these vessels are also available through the Carl Moyer Program but depend on compliance with existing regulations.

Regulatory Requirements

Diesel trucks are typically covered under one of three regulations: Truck and Bus Regulation, Solid Waste Collection Vehicle Rule, or the Fleet Rule for Public Agencies and Utilities. The latter two rules require Best Available Control Technology (BACT) to reduce diesel PM, and both rules' compliance deadlines have passed. The Truck and Bus Regulation initially required verified particulate filter diesel emission control system be installed depending on engine model year. Beginning in 2015, truck owners were required to begin replacing their vehicles with newer used or new vehicles meeting 2010 model year engine emission standards. The regulation requires all heavy-duty trucks to be equipped with 2010 model year or emissions-equivalent engines by January 1, 2023.

Under the Clean Air Act (CAA), U.S. EPA has the sole authority to establish emission standards for new locomotives. The two largest rail operators, BNSF Railway Company and Union Pacific Railroad Company entered into voluntary but enforceable agreements in 1998 and 2005 to respectively achieve a Tier 2 locomotive NOx fleet average in the South Coast Air Basin by 2010 and reduce railyard PM emissions statewide.[25]

Ferries, tugboats, and towboats are required to comply with CARB's Commercial Harbor Craft Regulation, which includes replacing Tier 1 and earlier propulsion and

[23] CARB, Technical Options to Achieve Additional Emissions and Risk Reductions from California Locomotives and Railyards, 2009: https://www.arb.ca.gov/railyard/ted/083109tedr.pdf; CARB, Technology Assessment: Freight Locomotives, 2016: https://www.arb.ca.gov/msprog/tech/techreport/final_rail_tech_assessment_11282016.pdf
[24] CARB, Technology Assessment: Commercial Harbor Craft, 2015: https://www.arb.ca.gov/msprog/tech/techreport/draft_chc_technology_assessment.pdf.
[25] CARB, Technical Options to Achieve Additional Emissions and Risk Reductions from California Locomotives and Railyards, 2009: https://www.arb.ca.gov/railyard/ted/083109tedr.pdf

auxiliary engines with those meeting U.S. EPA Tier 2 or Tier 3 standards.[26] Compliance dates are based on existing engine model year and range from 2009 through 2022.

Expected Benefits

Staff estimates that NOx reductions from this project category will range from 650 to 750 tons per year. The projected cost-effectiveness ranges from $5,000 to $30,000 per ton of NOx reductions depending on the types of projects selected through competitive solicitation. The competitive solicitation for this project will include criteria that ensures at least 50 percent of the funds in this category will go to projects that benefit disadvantaged or low-income communities.

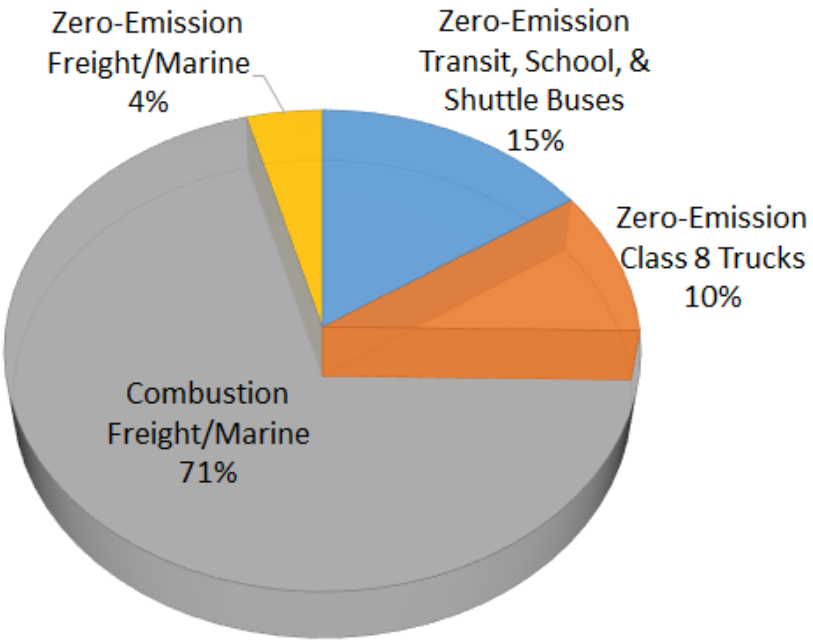
[26] CARB, Commercial Harbor Craft Regulation Fact Sheet: https://www.arb.ca.gov/ports/marinevess/harborcraft/documents/chcfactsheet0516.pdf

IV. Estimated NOx Emission Reductions

CARB staff estimates the recommended actions in this document will reduce about 10,000 tons of NOx over a 10-year period, which would fully mitigate the environmental harm caused by the subject VW diesel vehicles. Additionally, the funding recommendations provide an important path for zero-emission technologies, which are essential in meeting California's health-based air quality standards as well as its GHG emission reduction targets and zero-emission vehicle mandates. These emission reductions are expected to be surplus to regulatory requirements. Staff recommends California's VW Mitigation Trust funds not be combined with any other CARB-implemented funding or other funding program where any portion of the resulting NOx reductions could be double-counted.

The distribution of estimated NOx emission reductions for the recommended project categories is presented in Figure 2. The figure excludes the Light-Duty Infrastructure project category and the 15 percent reserve for administrative costs, since they will not be credited with direct emission reductions.

Figure 2: Estimated NOx Reduction Distribution by Recommended Project Category



These anticipated emission reductions were used to inform the recommended funding priorities, categories of eligible mitigation projects, and funding allocation considerations for each category of projects. It is important to note that the estimated emission benefits are based on potential project scenarios; actual NOx emission reductions will vary based on the type of projects that actually apply for funding and the eligible mitigation projects that are ultimately funded. Therefore, not all potential vehicle or

equipment types will be modeled. A brief discussion of the draft emission reduction quantification methodology for each recommended funding category is included below. A more detailed discussion of quantification of benefits will be included in the proposed Beneficiary Mitigation Plan.

Transit, School, and Shuttle Buses

Transit and shuttle bus emission reduction estimates were calculated assuming a 2006 or older model year diesel engine replaced with a battery electric or fuel cell bus with a 10-year project life. Emission factors were based on 2017 Carl Moyer Program Guidelines and annual mileage was based on the 2016 National Transit Database. Under the Fleet Rule for Transit Agencies, as of October 1, 2002, all Transit fleets shall have a fleet average below 4.8 g/bhp-hr. Only those reductions above and beyond regulatory requirements are included.

School bus emission reduction estimates were calculated assuming a 1997 or older model year diesel engine replaced with a battery electric bus with a 10-year project life. Emission factors and annual mileage was based on the 2017-18 Funding Plan for Clean Transportation Incentives. Under the Truck and Bus Regulation most school buses are required to have a PM filter installed by 2014. Only those reductions above and beyond regulatory requirements are included.

Class 8 Freight and Port Drayage Trucks

Emission reduction estimates were calculated assuming a baseline 2007-2009 model year diesel engine replaced with a zero-emission truck with a 10-year project life. Emission factors were based on 2017 Carl Moyer Program Guidelines and annual mileage was based on the 2002 Vehicle In-use Survey. Emission benefits were reduced to account for regulatory requirements. Under the Truck and Bus Regulation most trucks are required to have a 2010 model year engine by 2023. Only those reductions above and beyond regulatory requirements are included.

Zero-Emission Freight / Marine

Off-road vehicle equipment emission reduction estimates were calculated assuming a Tier 4 100-175hp diesel engine yard truck replaced with a zero-emission yard truck with a 10-year project life. Emission factors were based on 2017 Carl Moyer Program Guidelines, and annual gallons of diesel fuel used were based on the CARB Cargo Handling Equipment Emissions Inventory. Emission reductions are still being determined for oceangoing vessel shorepower.

Combustion Freight / Marine

Class 7 combustion truck emission reduction estimates were calculated assuming a 2006 or older model year diesel or natural gas refuse truck replaced with a low NOx (0.02 g/bhp-hr) natural gas truck with a 10-year project life. Emission factors were

based on 2017 Carl Moyer Program Guidelines and annual mileage was based on the 2002 Vehicle In-use Survey. Under the Waste Collection Vehicle Regulation all 2006 or older engines are required to be converted to the best available control technology by 2012. Only those reductions above and beyond regulatory requirements are included.

Class 8 combustion truck emission reduction estimates were calculated assuming a baseline 2007-2009 model year diesel engine replaced with a low NOx engine (0.02 g/bhp-hr) truck with a 10-year project life. Emission factors were based on 2017 Carl Moyer Program Guidelines, and annual mileage was based on the 2002 Vehicle In-use Survey. Emission benefits were reduced to account for regulatory requirements. Under the Truck and Bus Regulation most trucks are required to have a 2010 model year engine by 2023. Only those reductions above and beyond regulatory requirements are included.

Switcher locomotive emission reduction estimates were calculated assuming an unregulated (Tier 0) diesel engine replaced with a Tier 4 diesel engine. Emission factors were based upon Regulatory Impact Analysis: Final U.S. EPA Locomotive Regulation 2008,[27] and annual mileage was based on the Technical Options to Achieve Additional Emissions and Risk Reductions from California Locomotives and Railyards, CARB, August 2009.[28]

Ferry emission reduction estimates were calculated assuming repower of two diesel powered Tier 2 176-750hp engines with two diesel powered Tier 4 engines between 805-4960hp. Emission factors were based on 2017 Carl Moyer Program Guidelines, and annual hours were based on the 2003 CARB Commercial Harbor Craft Survey. Only those reductions above and beyond regulatory requirements are included.

V. Project Administration and Program Oversight

As mentioned earlier in this document, the recommended project categories would be funded either on a first-come, first-served basis or through competitive solicitations. CARB staff recommends working with air pollution control or air quality management districts, other government entities, or California-based non-profit organizations to administer, on a statewide basis, each recommended project category. CARB will maintain oversight for project implementation. The project administrator for each project category will be expected to conduct outreach, including potential workgroup meetings to determine project implementation details, develop solicitations where applicable, and meet program review, audit, and reporting requirements. The fifteen percent reserve for administration costs will cover costs for both CARB and the project administrators. All of these elements will be identified in the mitigation action project agreements. General information is included below for project agreements, disbursements, expected program oversight, and reporting requirements.

[27] https://www.arb.ca.gov/railyard/ted/tedr_loco_options.pdf
[28] https://www.arb.ca.gov/railyard/ted/083109tedr.pdf

A. Mitigation Action Project Agreements

CARB will develop and execute a mitigation action project agreement with each project administrator. The agreement will include programmatic details for the project administrator to implement the projects, such as applicant solicitation requirements, provisions for first-come, first-served project implementation, amount of funds provided per project, applicant and vehicle eligibility, recordkeeping, and reporting requirements. Funding applicants statewide will submit their applications to the designated administrator for their specified project category and will receive approved funding from that administrator. CARB will continue to provide oversight and participate in the solicitation development process where applicable.

B. Disbursements

The mitigation action project agreement between CARB and the project administrator will prescribe disbursement requirements in accordance with the Trust. Each project administrator will be responsible for submitting funding requests to CARB, who will then submit to the Trustee. CARB will direct the Trustee on the disbursement method. Project funds may be disbursed directly from the Trust to the project administrator in advance of project expenditures or following completion of specified milestones, as stated in the mitigation action project agreement.

C. Program Oversight

Program oversight is designed to ensure that all projects funded from the VW Mitigation Trust meet the requirements of the Consent Decree, State Trust Agreement, and the Beneficiary Mitigation Plan. CARB staff will review a sufficient number of funded projects each year to ensure effective program implementation and accountability.

CARB staff will conduct both programmatic reviews and fiscal audits.[29] During the review and audit process, CARB will:

1) Identify the scope of the review;
2) Work collaboratively, while maintaining open communication with the project administrator;
3) Ensure objectivity and predictability;
4) Make reports and related documents available on CARB's VW Mitigation Trust website; and
5) Conduct follow-up activities to ensure that any deficiencies are mitigated.

Project administrators will be expected to maintain program and accounting records and make them available to CARB staff as requested, work to fully and promptly mitigate deficiencies identified during the review and audit process, work to resolve any disagreements, and request assistance from CARB as necessary.

[29] Fiscal audits will be conducted in accordance with Generally Accepted Government Auditing Standards.

D. Reporting Requirements

As the Lead Agency for implementing California's allocation of the VW Mitigation Trust, CARB is required to report semi-annually to the Trustee on eligible mitigation action implementation. SB 92 further directs CARB to report annually to the Legislature on the proposed and actual expenditures from the Trust. In order to help fulfill these reporting requirements, each project administrator will be required to report to CARB semi-annually on the implementation progress of each funded project category. Reports will include, but may not be limited to, a project summary, status, expenditures, and emission reductions achieved during the reporting period and to date. CARB expects to make available on its website the semi-annual reports submitted to the Trustee and annual reports submitted to the Legislature.

VI. Next Steps

This Discussion Document identifies the staff's initial recommended funding actions to be included in California's Beneficiary Mitigation Plan for the State's allocation of the VW Mitigation Trust. CARB staff will continue to receive and consider public input following the workshops and will release the proposed Beneficiary Mitigation Plan for public comment prior to Board consideration at a public meeting anticipated in late spring 2018. CARB will submit the Beneficiary Mitigation Plan to the Trustee following Board approval. CARB staff will then work with project administrators to develop mitigation action project agreements.