CALIFORNIA AIR RESOURCES BOARD

Public Workshop on
The Fiscal Year 2021-22 Funding Plan
for
Clean Transportation Incentives
Discussion Document

Public Workshop Date and Location:

Wednesday, August 4, 2021
10:00 a.m. to 3:00 p.m.
Webinar

Link to Webinar Registration:
https://us02web.zoom.us/webinar/register/WN_yQWDfkqMSrChGb317UyZeQ

Workshop presentation will be posted on the morning of the workshop at:
https://ww2.arb.ca.gov/our-work/programs/low-carbon-transportation-investments-and-air-quality-improvement-program/low-1

Released: July 28, 2021

Workshop Information

Wednesday, August 4, 2021, 10:00am – 3:00pm

Webinar Information
Zoom Webinar Registration Link:
https://us02web.zoom.us/webinar/register/WN_yQWDfkqMSrChGb317UyZeQ

Agenda

10:00am – 10:20am	Introduction and Overview
10:20am – 12:00pm	Clean Transportation Equity and Light-Duty Investments
12:00pm –12:30pm	Break
12:30pm – 1:00pm	Long-Term Heavy-Duty Investment Strategy
1:00pm – 2:30pm	Heavy-Duty Vehicle and Off-Road Equipment Investments
2:30pm – 3:00pm	Open Discussion

All times are approximate—if a topic concludes early staff will proceed with the next item

Contents

Discussion Document Introduction

The State Budget for Fiscal Year (FY) 2021-22 included a total of over $1.5 billion for a Zero-Emission Vehicle (ZEV) Package and the Air Quality Improvement Program. These investments represent the first installment of a multi-year ZEV Package that will provide a total of $3.9 billion over the next three fiscal years to build on the investments in ZEVs and ZEV infrastructure the State has made over the past decade. The proposed investments are designed to accelerate an equitable ZEV transition, in both the light-duty and heavy-duty transportation sectors. For the California Air Resources Board (CARB or Board), a total of over $2.3 billion is proposed over the next three years. The ZEV package is comprised of funding from the Cap-and-Trade Expenditure Plan (including Low Carbon Transportation), the General Fund, and the Air Pollution Control Fund. While the multi-year proposal allows staff to plan and strategize investments, funds will only be allocated after the Legislature acts on the respective years' budgets. As a result, the FY 2021-22 Funding Plan for Clean Transportation Incentives will include the $1.5 billion of funding included in the FY 2021-22 State Budget as outlined in Table 1. The sources of funding covered in this discussion document are:

- $838 million from the General Fund to support the Clean Vehicle Rebate Project (CVRP), clean trucks, buses & off-road equipment, and the deployment of drayage trucks, transit buses, and school buses.
- $565 million for Low Carbon Transportation Investments with $100 million specified for CVRP, $150 million specified for clean transportation equity projects, and $315 million specified for heavy-duty vehicle and off-road freight equipment.
- A one-time investment of $86.45 million from the Air Pollution Control Fund, originating from the Daimler and Fiat Chrysler Settlements, to support heavy-duty vehicle and off-road freight equipment.
- $28.64 million for the Air Quality Improvement Program (AQIP).
- $45 million to support the replacement of diesel trucks with trucks certified to meet the 0.02 gram per brake horsepower-hour (g/bhp-hr) NOx standard or lower through the Carl Moyer Memorial Air Quality Standards Attainment Program (Carl Moyer Program).

This discussion document summarizes options for expending these funds, and reflects input from a March 30, 2021 public workshop, public work group meetings held between April and July 2021, and additional stakeholder comments. The document describes initial staff thinking with respect to:

- CARB priorities for this year's funding cycle.
- Funding allocations for each project category.
- Program refinements based on public input and evaluation of recent years' projects.
- Potential adjustments to the optional advanced technology cost-effectiveness limit and allocation of the additional funding provided for certain projects in the Carl Moyer Program.

- Enhanced metrics and program evaluation strategies to measure the behavioral changes and socioeconomic benefits generated by projects.
- Contingency provisions should mid-year refinements be necessary.

Table 1: Appropriations for FY 2021-22 Funding Plan

Project Category	Appropriation (millions)
Greenhouse Gas Reduction Fund Low Carbon Transportation Investments	
CVRP	$100
Clean Transportation Equity Projects	$150
Clean Trucks, Buses, and Off-Road Freight Equipment	$315
General Fund Investments[1]	
Drayage Trucks	$75
Drayage Truck and Infrastructure Pilot Project	$40
Transit Buses	$70
School Buses	$130
CVRP	$425
Clean Trucks, Buses, and Off-Road Freight Equipment	$98
Air Pollution Control Funds	
Clean Trucks, Buses, and Off-Road Equipment	$86.45
Air Quality Improvement Funds	**$28.64**
Total	**$1,518.09**

The investments contained in the Funding Plan represent only a portion of the substantial investments made by the State to promote clean transportation, support the State's numerous air quality and climate goals, and provide benefits to low-income and disadvantaged communities. Funding for other CARB incentives is covered in separate documents, such as the Beneficiary Mitigation Plan for the *Volkswagen Environmental Mitigation Trust*, the *Community Air Protection Incentives 2019 Guidelines and Staff Report*,

[1] Because of its unique circumstances, the appropriation to the Carl Moyer Program is not included in the general summaries or tables. A short description of the funds and staff considerations is included on page 13.

The Carl Moyer Program Guidelines, and the *Funding Agricultural Replacement Measures for Emission Reductions (FARMER) Program Guidelines.*[2,3,4,5]

Staff will present draft recommendations pertaining to the specific Clean Transportation Investments listed in Table 1 above at a public workshop on August 4, 2021. Based on input provided at this workshop, along with previous public workshops, project-specific public work group meetings, written stakeholder submissions, and individual meetings with stakeholders, staff will develop final proposed recommendations for Board consideration. Staff plans to release the proposed FY 2021-22 Funding Plan in October for consideration at the November 18-19, 2021 Board Meeting. Final draft recommendations for this funding will incorporate input from the meeting and will be included in the final version of the Funding Plan released prior to consideration by the Board.

[2] California Air Resources Board. *Beneficiary Mitigation Plan for the Volkswagen Environmental Mitigation Trust.* June 2018. https://ww2.arb.ca.gov/sites/default/files/2018-07/bmp_june2018.pdf
[3] California Air Resources Board. Community Air Protection Incentives 2019 Guidelines. October 2020. https://ww2.arb.ca.gov/sites/default/files/2020-10/cap_incentives_2019_guidelines_final_rev_10_14_2020_0.pdf
[4] California Air Resources Board. *The Carl Moyer Program Guidelines: 2017 Revisions.* April 2017. https://ww2.arb.ca.gov/sites/default/files/classic/msprog/moyer/guidelines/2017/2017_cmpgl.pdf
[5] California Air Resources Board. *Final: Funding Agricultural Replacement Measures for Emission Reductions Program Guidelines.* March 2018. https://ww2.arb.ca.gov/sites/default/files/2018-07/farmerguidelines-final.pdf

Background

CARB's portfolio of incentive programs complements regulatory programs to reduce emissions and increase access to clean transportation. Each incentive program comes with its own requirements, emission reduction goals, and project eligibility criteria making the portfolio diverse and far reaching. Together, these projects address multiple goals, including:

- Turning over the legacy fleet to achieve cost-effective, near-term emission reductions in support of State Implementation Plans, air toxics reduction goals, and community air protection goals.
- Accelerating the introduction and deployment of zero-emission technologies to meet California's air quality and climate change goals.
- Improving access to clean transportation and mobility options for low-income households and investing in the low-income and disadvantaged communities most impacted by pollution in support of equity and environmental justice goals.
- Supporting the transition to and adoption of more sustainable transportation modes to reduce greenhouse gas emissions (GHGs).
- Expanding the supply chain for advanced technology components, the number of manufacturers choosing California as a home for manufacturing, and leveraging private partnerships and investment to support the commercial viability of advanced technology.
- Supporting economic recovery and growth to continue the momentum California has built towards becoming a hub for the manufacture and deployment of clean technologies, training and career pathways, and associated green jobs.

The large-scale statewide investments CARB makes through Clean Transportation Incentives send a market signal and move the needle in terms of advancing the commercialization of clean technologies. These investments have been instrumental in California leading the nation in ZEV deployment, but also in developing equity focused programs that bring clean transportation and mobility options to residents of low-income and disadvantaged communities. The State has begun to see the economic benefit of these investments as ZEVs and their components represent the largest source of California exports, supporting jobs in a burgeoning industry for thousands of Californians.[6]

These investments also leverage significant sources of other public and private funding, further stimulating the economy. Many projects such as the heavy-duty demonstration and pilot projects or the clean mobility investment projects see State investments matched by other public or private sources. Purchase incentives such as Clean Cars 4 All, Clean Truck and Bus Vouchers (HVIP) and the Clean Off-Road Equipment Voucher Incentive Project (CORE) encourage consumer and business spending within the State. The dollars invested in Clean Transportation Incentives effectively work as a multiplier—catalyzing far greater spending that supports both California's economy and its climate change, equity, and air quality goals.

[6] "State Exports from California". United States Census Bureau. https://www.census.gov/foreign-trade/statistics/state/data/ca.html Accessed July 17, 2021.

This plan's focus on deploying zero-emission mobile source technologies is just one aspect of the State's climate change and air quality investment portfolio. The investment strategy is also coordinated with and complemented by other State agencies' clean transportation and sustainable community, clean energy, and natural resources programs funded with Cap-and-Trade auction proceeds and other funding sources. All these programs are designed to help achieve one or more of the State's ambitious goals to reduce GHGs and short-lived climate pollutant emissions, improve air quality and reduce toxics risk, deploy ZEVs, reduce vehicle miles traveled, and lessen petroleum dependency.

Funding Plan Goals and Priorities

CARB's 2017 *Climate Change Scoping Plan* and *2016 Mobile Source Strategy* conclude that many of the same actions are needed to meet GHG, smog forming, and toxic pollutant emission reduction goals – specifically, a transition to zero-emission technologies and use of the cleanest, lowest carbon fuels and energy across all vehicle and equipment categories.[7,8] The *2016 California Sustainable Freight Action Plan* reiterates the need for this transition as it relates to the freight sector.[9] In addition, AB 617 (C. Garcia, Chapter 136, Statutes of 2017) establishes goals for reducing emissions of toxic air contaminants and criteria air pollutants in communities affected by a high cumulative exposure burden. The *2018 Progress Report on California's Sustainable Communities and Climate Protection Act* (Senate Bill (SB) 150 Progress Report) points to the need for adopting alternative modes of transportation wherever possible, and particularly in low-income and disadvantaged communities.[10]

The clean air goals and priorities driving the investments included in this discussion document include:

- Accelerating the introduction and deployment of zero-emission technologies to meet California's longer-term air quality, carbon neutrality, petroleum reduction, and climate change goals including that 100 percent of sales of new passenger vehicles and trucks in the State be zero-emission by 2035, all drayage trucks be zero-emission by 2035, off-road vehicles and equipment be zero-emission by 2035 where feasible, and all other vehicles in the medium- and heavy-duty fleet transition to zero-emission by 2045 as described in Governor Newsom's Executive Order N-79-20.

[7] California Air Resources Board. *California's 2017 Climate Change Scoping Plan*. November 2017. https://ww2.arb.ca.gov/sites/default/files/classic//cc/scopingplan/scoping_plan_2017.pdf
[8] California Air Resources Board. *Mobile Source Strategy*. May 2016. https://ww3.arb.ca.gov/planning/sip/2016sip/2016mobsrc.pdf
[9] California Air Resources Board. *California Sustainable Freight Action Plan*. July 2016. https://ww2.arb.ca.gov/sites/default/files/2019-10/CSFAP_FINAL_07272016.pdf
[10] California Air Resources Board. *2018 Progress Report: California's Sustainable Communities and Climate Protection Act*. November 2018. http://ww2.arb.ca.gov/sites/default/files/2018-11/Final2018Report_SB150_112618_02_Report.pdf

- Incorporating equity principles and implementing the recommendations from CARB's SB 350 study, *Overcoming Barriers to Clean Transportation Access to Low-Income Residents* (CARB's SB 350 Guidance Document or Guidance Document).[11]
- Reducing emissions of toxic air contaminants and criteria air pollutants in communities affected by a high cumulative exposure burden consistent with AB 617 goals.
- Ensuring that the State's overall auction proceeds investments meet or exceed the disadvantaged community, low-income community, and low-income household targets established in AB 1550 (Gomez, Chapter 369, Statutes of 2016) and maximizing the benefits to these communities and households as required by the 2018 *Funding Guidelines for Agencies that Administer California Climate Investments.*[12]
- Supporting the goals of Sustainable Communities consistent with SB 375 (Steinberg, Chapter 728, Statutes of 2008); exploring ways to reduce vehicle miles traveled while also increasing access to clean transportation options and critical goods and services consistent with the SB 150 Progress Report.
- Reducing GHG emissions to 1990 levels by 2020 consistent with AB 32 (Núñez, Chapter 488, Statutes of 2006) and to 40 percent below 1990 levels by 2030 consistent with SB 32 (Pavley, Chapter 249, Statutes of 2016).
- Meeting the federal health-based ambient air quality standards for ozone by 2023 and 2031 as well as the fine particulate matter air quality standards.
- Reducing emissions of methane and black carbon to 40 percent and 50 percent, respectively, below 2013 levels by 2030 as called for in CARB's 2017 *Short Lived Climate Pollutant Reduction Strategy.*[13]
- Following and incorporating goals and priorities from relevant legislation, striving to exceed these goals wherever possible. Some of the key bills guiding the Funding Plan include SB 1275 (De León, Chapter 530, Statutes of 2014), SB 1204 (Lara, Chapter 524, Statutes of 2014), SB 350 (De León, Chapter 547, Statutes of 2015), SB 1403 (Lara, Chapter 370, Statutes of 2018), AB 2285 (Committee on Transportation, Chapter 100, Statutes of 2020), AB 841 (Ting, Chapter 372, Statutes of 2020), and SB 129 (Skinner, Chapter 69, Statutes of 2021).
- Addressing recommendations made in February 2021 by the State Auditor in *California Air Resources Board: Improved Program Measurement Would Help*

[11] California Air Resources Board. *Low-Income Barriers Study, Part B: Overcoming Barriers to Clean Transportation Access for Low-Income Residents*. February 2018. https://ww2.arb.ca.gov/sites/default/files/2018-08/sb350_final_guidance_document_022118.pdf

[12] California Air Resources Board. *Funding Guidelines for Agencies that Administer California Climate Investments*. August 2018. https://ww2.arb.ca.gov/sites/default/files/classic//cc/capandtrade/auctionproceeds/2018-funding-guidelines.pdf?_ga=2.114423111.1931706691.1624309565-1297275244.1567180558

[13] California Air Resources Board. *Short-Lived Climate Pollutant Reduction Strategy*. March 2017. https://ww2.arb.ca.gov/sites/default/files/2020-07/final_SLCP_strategy.pdf

California Work More Strategically to Meet Its Climate Change Goals (CARB Audit Report).[14]

Intentional Benefits to Communities

Low-income and disadvantaged communities, particularly communities of color, continue to experience disproportionately high levels of air pollution and the resulting detrimental impacts to their health. To address these inequities, equity must be at the forefront of program design, and programs must be designed to deliver intentional benefits. As Low Carbon Transportation projects have evolved, staff has placed increasing focus on targeting the benefits to those who need them most. While progress has been made, staff recognizes that there are areas where further program refinements and better communication would result in improved benefits to communities.

The Greenlining Institute developed the Six Standards for Equitable Investment to "govern funds and programs intended to address poverty and inequity".[15] These critical principles, which were also identified through CARB's SB 350 Guidance Document, include:

- Emphasizing race-conscious solutions.
- Prioritizing multi-sector and multi-discipline approaches in investments.
- Delivering more intentional benefits and minimizing burdens.
- Building community capacity.
- Being community driven at every stage through community inclusion and idea-building.
- Establishing paths towards wealth-building.

Additionally, The Greenlining Institute has conducted a review of various programs, including California's clean mobility equity programs, to "better understand whether and how clean transportation programs truly address equity in a comprehensive and effective way and make use of knowledge gained in recent years." The report, *Clean Mobility Equity: Playbook – Lessons from California's Clean Transportation Programs* highlights a number of best practices and standards along with recommendations for California to ensure that investments are made to better address poverty and inequity.[16]

The Six Standards for Equitable Investments and report recommendations are just part of what is guiding the funding and program design recommendations included in this Funding Plan. CARB staff acknowledges and continues to learn how program policies and subsequent changes can better meet the needs of underserved communities. Staff will continue to

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[14] California State Auditor. *California Air Resources Board: Improved Program Measurement Would Help California Work More Strategically to Meet Its Climate Change Goals.* February 2021. http://auditor.ca.gov/pdfs/reports/2020-114.pdf

[15] The Greenlining Institute., *The Greenlined Economy Guidebook*. September 2020. https://greenlining.org/publications/2020/greenlined-economy/

[16] [16] The Greenlining Institute., *Clean Mobility Equity: A Playbook – Lessons Learned from California's Clean Transportation Programs*. March 25, 2021. https://greenlining.org/publications/reports/2021/clean-mobility-transportation-equity-report/

increase community outreach, review current and/or develop new methodologies to better understand the impacts of these investments, increase our work with academia and stakeholders, and provide that information in a clear, concise manner to communicate what is and what is not working.

Program Evaluation

Since the inception of the AQIP in 2008 and subsequent addition of Low Carbon Transportation Investments in 2013, CARB staff has continually evaluated the various programs through a variety of avenues including, but not limited to, receiving feedback from grantees, consumers and communities, and utilizing program data collected through surveys, telematics and other evaluation tools. In addition, CARB has funded research contracts with various universities to do analysis of various projects. Staff has also worked with stakeholders that have unique experience understanding underserved communities, applying equity principles in ways that better direct investments and ensure investments they are meeting community needs, and meeting directly with communities who have received funding to understand how our programs are or are not working to meet the various program goals.

With the substantial increase in funding in recent years, there is increased emphasis on program evaluation and using learnings from those evaluations when making funding and design recommendations to improve programs based on those evaluations. In the recent CARB Audit Report, the State Auditor determined that CARB could do more to measure the GHG emissions reductions or programs that primarily provide socioeconomic benefits. CARB staff has acknowledged these shortcomings and has been working with various stakeholders including academia, grantees, environmental and community organizations, and communities and residents in order to take actions based on the recommendations of the report to ensure that the gaps highlighted in the report are filled and future funding and design recommendations being proposed are based on solid data collection and analysis.

As part of the FY 2021-22 Funding Plan, staff will propose additional metrics and strategies to evaluate project effectiveness, as recommended in the CARB Audit Report. These evaluation enhancements will look beyond long-standing metrics such as emission reductions and focus on measuring behavioral changes and socioeconomic benefits that result from clean transportation incentive projects.

For consumer-focused incentives projects, understanding how effective the project is at contributing to behavioral changes could allow CARB to make further project refinements. CARB has several existing efforts underway to collect this data—many projects already conduct surveys of participants to understand what role the project played in vehicle purchase decisions. Additionally, CARB has contracted with the University of California (UC) Berkeley Transportation and Sustainability Research Center to develop evaluation models/processes for CARB to use as a new standard for assessing the effectiveness, sustainability, and outcomes of several of CARB's clean mobility equity pilot projects for disadvantaged communities and low-income communities. Staff is currently building upon these efforts to create streamlined surveys in partnership with internal and external researchers.

While all projects are designed to address multiple goals, including emission reductions, a primary goal of several projects is to provide socioeconomic benefits for priority populations. For each of these projects, staff will propose strategies and metrics to evaluate the socioeconomic benefits resulting from each project. Staff has preliminarily identified the following clean transportation projects as primarily providing socioeconomic benefits:

- Clean Cars 4 All
- Financing Assistance for Lower-Income Consumers
- Clean Mobility Options Projects
- Agricultural Worker Vanpool Pilot Project[17]
- Clean Mobility in Schools
- Sustainable Transportation Equity Project

Greater detail on staff's preliminary proposals for evaluation methods and metrics for each project is included in the following chapters.

Low Carbon Transportation & the ZEV Package

Cap-and-Trade auction proceeds provide funding for CARB's advanced technology, clean transportation incentive programs that reduce GHG emissions. Low Carbon Transportation is identified as a priority investment area in the first three Cap-and-Trade Auction Proceeds Investment Plans. These investments accelerate the transition to low carbon freight and passenger transportation. This year's Low Carbon Transportation appropriation of $565 million is being augmented by an additional $924 million from the Air Pollution Control Fund and General Fund to equitably develop the ZEV market. This additional funding is described below.

General Fund

In the May Revision to the Governor's proposed budget, General Fund dollars supplement funding from the Air Pollution Control Fund and Low Carbon Transportation Investments. The proposal includes a total of over $2.8 billion from the General Fund appropriated over the next three fiscal years to CARB, the California Energy Commission and the Governor's Office of Business and Economic Development. It builds upon previous investments and will provide the additional resources necessary to accelerate the ZEV transition, with a focus on key vehicle segments that are now primed to transition to zero-emission. For FY 2021-22, the State budget provides CARB a total of $838 million to support CVRP, clean trucks, buses, and off-road equipment, and the deployment of zero-emission drayage trucks, school buses, and transit buses. Additionally, the budget includes $45 million to support the replacement of diesel trucks with trucks certified to meet the 0.02 gram per brake horsepower-hour (g/bhp-hr) NOx standard or lower through the Carl Moyer Program.

[17] CARB has paused funding for the agricultural workers vanpools because there are currently no technologies on the market that meet the specifications required for the project. CARB will develop metrics and evaluations strategies for the agricultural workers vanpool at such time that the project receives additional funds.

The Carl Moyer Program provides grant funding that is cost-effective toward the incremental cost of cleaner-than-required engines, equipment, and advanced technologies providing surplus emission reductions (i.e. early and/or in excess of what is required by regulation). Currently, for Carl Moyer projects, there is a base cost-effectiveness limit of $30,000 per weighted ton for surplus emission reductions to required certified emission standards where applicable, including replacing to a certified 0.2 g/bhp-hr NOx standard for on-road engines. Additionally, air districts may choose to use an Optional Advanced Technology cost effectiveness limit of $100,000 per weighted ton for surplus emission reductions achieved to the cleanest optional certified emission standard where applicable, including replacing to a certified 0.02 g/bhp-hr NOx standard or cleaner for on-road engines. The budget appropriation of $45 million was made for local air districts in severe or extreme non-attainment to administer through the Carl Moyer Program for purchases of non-diesel medium and heavy-duty vehicles meeting at least a certified 0.02 g/bhp-hr NOx standard. As authorized by Health and Safety Code Section 44283, the Board, in collaboration with the air districts, may set cost-effectiveness values that take into consideration factors including the cost of technologies and the cost-effectiveness values for adopted rules and regulations. Staff is considering potentially adjusting the Optional Advanced Technology cost-effectiveness limit for Carl Moyer Program projects to account for percentage of change in inflation rate, cost of technologies, and adopted rules and regulations for advanced technologies including 0.02 g/bhp-hr or lower certified NOx standard for on-road engines.

Air Pollution Control Fund

The Air Pollution Control Fund is used to put penalties and fees collected from polluters to work improving air quality in the state. The State budget includes a one-time appropriation of $86.45 million from the Air Pollution Control Fund to support the clean trucks, buses, and off-road equipment. Specifically, the Air Pollution Control Fund dollars included in the ZEV package originate from enforcement settlements with Fiat Chrysler (FCA) and Mercedes-Benz (Daimler).

FCA and Daimler Settlements

As a result of automotive manufacturers' previous use of "defeat devices" in diesel vehicles that are designed to control emissions during certification and vehicle testing, and to illegally reduce emissions controls during normal driving, CARB and the U.S. Environmental Protection Agency (U.S. EPA) continue to perform enhanced screening on diesel vehicles sold by all manufacturers.

Using the enhanced testing procedures, CARB identified two additional manufacturers that used defeat device software resulting in additional nitrogen oxides (NOx) emissions from subject vehicles. Many of these vehicles were marketed to consumers as environmentally friendly, meeting or exceeding California's emissions rules, and providing better fuel economy.

FCA installed emission defeat devices on model year 2014-2016 Jeep Grand Cherokee and Ram 1500s and was ordered to make a mitigation payment of $19.035 million to California. Mercedes-Benz and Daimler AG installed emission defeat devices on model year 2009-2016

passenger vehicles and Sprinter delivery vans, and was ordered to make a mitigation payment of $110 million to CARB.

In the May Revision to the Governor's Budget, the combined $129.035 million from the FCA and Daimler settlements is proposed to be appropriated to expand existing incentive projects that can mitigate NOx impacts. Specifically, the State budget included $86.45 million to support clean trucks, buses, and off-road equipment through the Clean Transportation Incentives Funding Plan, and the remaining funds are proposed to augment the FARMER Program. CARB anticipates that a significant portion of these funds would benefit low-income or disadvantaged communities based on past investment data.

Low Carbon Transportation Funding to Date

Since 2013, the Legislature has appropriated a total of over $2.1 billion to CARB for Low Carbon Transportation projects. These appropriations are being used to fund: zero-emission and plug-in hybrid passenger vehicles through traditional and innovative car ownership projects such as CVRP, Clean Cars 4 All, and Statewide Financing Assistance; clean mobility investments to increase access to alternative modes of transportation in and near disadvantaged communities and for lower income Californians; deployment incentives for clean trucks and buses utilizing zero-emission technologies; and advanced technology demonstration projects for freight trucks and equipment.

To date, 56 percent of CARB's Low Carbon Transportation funding has gone to projects benefiting disadvantaged communities and low-income communities, including low-income residents of these communities (collectively referred to here as priority populations) as shown in Table 2 below. The 56 percent benefiting priority populations exceeds the commitments made in past Funding Plans. Much of the funding benefiting priority populations is for clean transportation equity projects, Zero-Emission Truck and Bus Pilot Projects, and Advanced Freight Technology Demonstration Projects. While not limited to priority populations, 63 percent of the HVIP funding has been awarded to trucks and buses benefiting priority populations.

Table 2: Low Carbon Transportation Project Allocations Benefiting Priority Populations to Date[a]

Project	Funding Allocated (millions)	Share Benefiting Priority Populations
Clean Transportation Equity and Light-Duty Investments		
Clean Vehicle Rebate Project (CVRP)	$948.9	32%
Clean Cars 4 All	$102[b]	88%
Clean Mobility Options	$55.2	100%
Financing Assistance for Lower-Income Consumers	$33.9[b]	78%
Agricultural Worker Vanpools	$6	100%
Clean Mobility in Schools Pilot Project	$24.6	100%
Rural School Bus Pilot Project	$61.6	60%
Sustainable Transportation Equity Project (STEP)	$19.5	100%
Outreach, Education, and Awareness	$6[b]	100%
Heavy-Duty Vehicle and Off-Road Equipment Investments		
Advanced Technology Freight Demonstrations	$81.2	100%
Clean Off-Road Equipment Vouchers	$44.2	70%
Zero-Emission Truck/Bus Pilot	$85	78%
Zero- and Near Zero-Emission Freight Facilities	$148.7	100%
Clean Truck and Bus Vouchers (HVIP)	$486.4	63%
Total	**$2,077.7**	**56%**

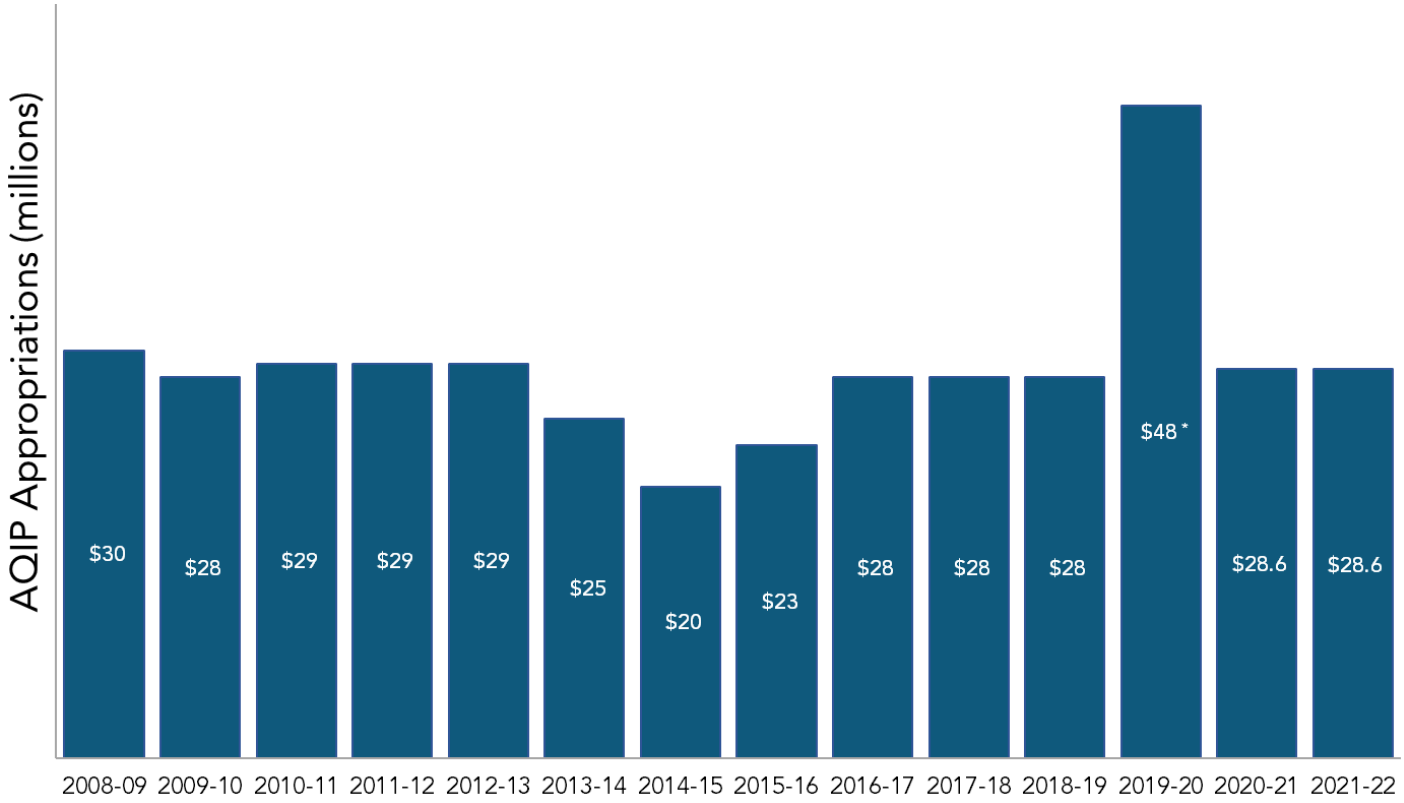
[a] *Source: 2021 Cap-and-Trade Auction Proceeds Annual Report, Table ES-2: Summary of California Climate Investments and Outcomes through 2018, with the exception of STEP which was updated to reflect the results of the recent solicitation.*

[b] *Funding shown here only includes Low Carbon Transportation Allocations. Clean Cars 4 All received $3 million from AQIP and $10 million from the Volkswagen settlement funds. Financing Assistance for Lower-Income Consumers received $10 million from the Volkswagen settlement funds, and Access Clean California also received $5 million from the Volkswagen settlement funds.*

Air Quality Improvement Program (AQIP)

AQIP is a mobile source incentive program that focuses on reducing criteria pollutant and diesel particulate emissions with concurrent reductions in GHG emissions. Since 2009, AQIP has provided funding for CVRP, HVIP, demonstrations for advanced emission reduction vehicle technologies, and in recent years, the Truck Loan Assistance Program. Funding for AQIP comes primarily from the smog abatement fee assessed annually by the Department of Motor Vehicles (DMV) during a vehicle's first six registration years in lieu of a biennial smog inspection. This year, the program has a budget of $28.64 million.

Figure 1: AQIP Funding to Date



**In FY 2019-20 AQIP received an addition $20 million as a one-time infusion of funding to ensure that the Truck Loan Assistance Program was fully funded and able to meet an anticipated increase in demand associated with automatic compliance verification of the Truck and Bus Regulation (SB 1, Beall, Chapter 5, Statutes of 2017)*

Figure 1 provides a summary of AQIP investments to date. In FY 2019-20, AQIP was provided a one-time infusion of funding to help the Truck Loan Assistance Program to meet an anticipated increase in demand associated with SB 1 (Beall, Chapter 5, Statutes of 2017) taking effect.

Funding Plan Development Process and Outreach

To date, staff held one public workshop, 12 public work group meetings, three targeted fleet focus groups, a community listening session, and numerous one-on-one discussions with interested stakeholders to develop the preliminary recommendations contained in this discussion document. Staff will host additional work groups as necessary prior to the release of the proposed Funding Plan.

Staff is also taking initial steps to more meaningfully engage with communities and community advocates. In early January 2021, staff held the Project 800 Zero-Emission Truck Forum to address topics associated with large-scale zero-emission Class 8 truck deployments. The forum concluded with an evening community session to discuss priorities of local communities and advocates. As part of project development, staff has also engaged with focus groups of advocates and small fleet operators to better tailor project design to serve the intended audience. Additionally, when considering draft funding allocations staff has reviewed priorities highlighted by communities through other processes, such as AB 617, through internal coordination efforts and reviewing existing community emission reduction plans. CARB staff continue to collaborate internally with groups working on regulations, such as the Advanced Clean Cars rulemaking, and across the broader clean transportation incentive portfolio to hold joint community listening sessions and better understand community identified needs and solutions in expanding access to the zero-emission vehicle market. CARB recognizes that these actions are initial steps and will continue to improve its approach to community outreach and engagement in developing future funding plans.

Draft Funding Allocations

With zero-emission technologies becoming widely available, now is the optimal time for the state to double down on supporting equitable access to zero-emission options for priority communities. The proposed multi-year investments are designed to scale the ZEV market toward sustainability in the key vehicle segments ready for a significant ramp up in commercial deployment.

To help reach scale, the projects under consideration for the FY 2021-22 cycle in most cases continue and build on investments from previous budget cycles that were envisioned as multi-year investments. These include projects that aim to accelerate deployment of the cleanest feasible mobile source technologies and to improve access to clean vehicle purchasing incentives and clean mobility investments, including access to transportation options like transit, biking, and walking. The draft investments also include targeted support to those communities most impacted by poor air quality. Previous years' investments, paired with regulations, have proven successful in advancing technology growth and transforming the market. As technologies become more established and demand continues to grow, CARB is beginning to shift from broad purchase incentives to more targeted strategies that support the lower-income consumers and small fleets facing the greatest barriers to adoption. Broad purchase incentives continue to play an important role in the investment portfolio, particularly as new technologies come to market. However, more targeted investments are critical to creating an equitable transition to a clean transportation future.

Staff determined draft project allocations by evaluating anticipated demand, reviewing the long-term planning elements of previous funding plans, considering priorities identified by communities in CARB engagement efforts and documents such as community emission reduction plans, assessing other available funding sources, and taking into account feedback from stakeholders.

Draft Project Allocations

Staff's draft funding allocations are shown in Table 3. More information regarding each of these projects and rationale for these recommendations are described more fully in the remaining sections of this discussion document.

Table 3: Draft FY 2021-22 Project Allocations (Millions)

Project Category	Low Carbon Transportation	General Fund*	APCF	AQIP	Total Draft Allocation
Vehicle Purchasing Incentives – CVRP	**$100**	**$425**			**$525**
CVRP	$100	$415			$515
Electric Bicycle Incentives		$10			$10
Clean Transportation Equity Investments	**$150**				**$150**
Clean Cars 4 All	$75				$75
Financing Assistance	$23.5				$23.5
Clean Mobility Options	$10				$10
Clean Mobility in Schools Pilot Project	$10				$10
Rural School Bus Pilot					$0**
Sustainable Transportation Equity Project (STEP)	$25				$25
Outreach, Community Needs Assessments, Technical Assistance, and the One-Stop-Shop	$5				$5
Workforce Training and Development	$1.5				$1.5
Heavy-Duty and Off-Road Equipment	**$315**	**$413**	**$86.45**	**$28.64**	**$843.09**
HVIP	$196.5	$373			$569.5
HVIP–Standard	*$171.5*	*$98*			*$269.5*
HVIP–Transit		*$70*			*$70*
HVIP–School Buses		*$130*			*$130*
HVIP–Drayage		*$75*			*$75*
HVIP–Innovative Small e-Fleets	*$25*				*$25*
Clean Off-Road Equipment Vouchers (CORE)	$78.5		$86.45		$164.95
Drayage Truck and Infrastructure Pilot		$40			$40
New Demonstration & Pilot Projects	$40				$40
Truck Loan Assistance Program				$28.64	$28.64
Total	**$565**	**$838**	**$86.45**	**$28.64**	**$1,518.09**

**Does not include any adjustments for project administration.*

***After several years of successful implementation the Rural School Bus Pilot Project is transitioning from a pilot to a full-scale project to be implemented through HVIP.*

CVRP

The budget includes $525 million for consumer rebates for new ZEV purchases through CVRP. These funds represent a substantial investment, intended to last for three years, to address the recent increase in consumer demand since the January Budget proposal. Along with rebates for vehicles, $10 million will be provided to support rebates for electric bicycles in line with legislative direction. As part of this allocation, staff is required to develop a ramp-down plan for CVRP based on cumulative electric vehicle sales. Staff will include this along with proposed program changes in the funding plan.

Clean Transportation Equity Projects

The $150 million for clean transportation equity projects will help to increase access to clean transportation and mobility options benefiting low-income and disadvantaged communities and low-income households consistent with the direction provided by SB 1275 and SB 350. This covers vehicle purchase incentives, clean mobility investments, outreach, community transportation needs assessments (needs assessments), technical assistance and capacity building, Access Clean California and workforce training and career development. In line with legislative direction, staff will direct $75 million of the clean transportation equity funds to Clean Cars 4 All. This year, staff is considering using the funds to continue to support and expand existing projects, including expanding Clean Cars 4 All to San Diego, and is also considering allocating funds to directly support workforce training and career development to build environmental literacy and strong pathways to green jobs. Additionally, staff is considering transitioning the Rural School Bus Pilot Project from a pilot to a full-scale project to be implemented through HVIP.

Heavy-Duty Vehicle and Off-Road Equipment Investments

CARB will invest the $843 million for heavy-duty and off-road equipment following the principles of the portfolio approach. This means that CARB provides funding across multiple technologies at different points on their commercialization arcs to support those that are providing emission reductions today, as well as those that need to mature to meet future goals. Incentives are needed to help fund the development of advanced technologies through demonstration and pilot projects. And as these technologies reach the market, they progress to funding programs such as HVIP and CORE, which offer vouchers for early commercial advanced technologies. Finally, the Truck Loan Assistance Program helps small business truckers to secure financing for newer trucks to meet compliance deadlines for CARB's in-use truck and bus regulation.

This year, funds will be set aside for drayage trucks, transit buses, and school buses, all of which are primed to rapidly transition to zero-emission. In line with Legislative direction, these set-asides will be administered through HVIP. Additionally, staff is considering introducing another new set-aside through HVIP called Innovative Small e-Fleets that will focus on lowering barriers to zero-emission technology adoption for owner operators and small fleets. After its successful launch last year, staff is also considering allocating

considerably more funding to CORE than the $25 million minimum specified by the Legislature.

State Operations

Staff anticipates that a small portion of the General Fund appropriation may be used for project administration by CARB. CARB's allocation for State Operations has been about $5 million per year; however, this amount has not increased, even as the total appropriation has grown. This year, the budget language has included authorization to allocate up to five percent of the General Fund appropriation for administration.

Measures to Expedite Funding to Oversubscribed Projects

As many existing projects are oversubscribed and have not received funding for over a year, staff is prioritizing delivering funds to projects quickly so that the air quality and economic benefits of these projects can be realized. To do so, CARB intends to rely on contingency provisions in the FY 2020-21 Funding Plan and the Executive Officer's authority to allocate a portion of funds to first-come, first-served projects prior to Board consideration of the funding plan.[18] Additional details are included in the following chapters.

Low-Income Community, Disadvantaged Community and Low-Income Household Investment Targets

A key component of these programs is providing health and economic benefits to California's most disadvantaged communities and low-income households. AB 1550 establishes low-income community, disadvantaged community, and low-income household targets for the State's Cap-and-Trade auction proceeds investments. Staff will focus outreach and engagement in low-income and disadvantaged communities in order to help increase these targets.

With this in mind, staff recommends that at least 50 percent of the Low Carbon Transportation appropriation be invested in projects meeting one of the AB 1550 criteria with the following targets:

- At least 35 percent of funds for projects located within, and benefiting individuals living in, disadvantaged communities.
- At least 15 percent of funds for projects located within and benefiting low-income communities or benefiting low-income households.

Staff considers the targets to be a floor and strives to exceed them. In designing project solicitations and implementation requirements, staff will consider whether there are provisions that can be incorporated to help ensure that CARB exceeds these minimum targets. CARB is not limiting the disadvantaged community and low-income community/household focus to Low Carbon Transportation investments. Investments from

[18] California Air Resources Board. *Proposed Fiscal Year 2020-21 Funding Plan for Clean Transportation Incentives.* November 2020. https://ww2.arb.ca.gov/sites/default/files/2020-11/proposed_fy2020-21_fundingplan.pdf

AQIP, the General Fund, and the Air Pollution Control Fund are designed to benefit low-income and disadvantaged communities as well.

Safeguards for Cap-and-Trade Auction Revenue Uncertainty

The Low Carbon Transportation Investments are a part of the Cap-and-Trade Expenditure Plan developed annually by the Legislature. As in past years, this plan relies in part on future revenues generated at auctions in the upcoming fiscal year. To account for uncertainties in the revenue projections used to develop the appropriations, CARB is required to not encumber 25 percent of the Low Carbon Transportation appropriation until the fourth auction is completed, which is expected to occur in May 2022. The 25 percent restriction applies individually to each of the three Low Carbon Transportation suballocations (CVRP, Clean Transportation Equity, and Heavy-Duty Vehicles and Off-Road Equipment). The impacts are most prominent in the Clean Transportation Equity category as the full $150 million is subject to this requirement, and the Legislature specified that $75 million of the appropriation be allocated to Clean Cars 4 All. Thus, $37.5 million in funding from the other Clean Transportation Equity projects must not be encumbered until after the fourth auction, so some projects will be delayed in receiving part or all of their allocation. Staff is considering how to divide the 75 percent of the Low Carbon Transportation appropriation that is initially available between projects in each of the three suballocations in a manner that reduces project disruptions and maximizes immediate benefits to communities.

Proposed General Fund Investments for Future Years

To support the transition of vehicle segments that are prime to make the transition to zero-emission, the May Revision to the Governor's proposed budget proposes multi-year investments from the General Fund to augment Low Carbon Transportation investments. The proposed multi-year investments to CARB are shown in Table 4. This table only focuses on a subset of the overall investment package. The May Revision to the Governor's Budget also included a proposal for multi-year appropriations for CVRP, however, rather than span investments across multiple budget years, the State budget included a large upfront investment for CVRP intended to last for three years. While the multi-year proposal allows staff to plan and strategize investments, funds will only be allocated after the Legislature acts on the respective years' budgets. As a result, only the FY 2021-22 appropriation will be included in this year's funding plan.

Table 4: Proposed Multi-Year Investments (Millions)

Program	FY 2021-22	FY 2022-23	FY 2023-24	Total
Drayage Trucks	$75	$75	$70	$220
Transit Buses	$70	$70	$60	$200
School Buses	$130	$135	$135	$400
Clean Cars 4 All	$75*	$125	$125	$325
Total	**$320**	**$405**	**$390**	**$1,145**

**The $75 million for Clean Cars 4 All in FY 2021-22 comes from the $150 million appropriated to Low Carbon Transportation Clean Transportation Equity Projects. All other funding shown in the table is from the General Fund.*

Drayage Trucks, Transit Buses, and School Buses: The May Revision to the Governor's budget proposed a multi-year investment of $820 million to put 1,000 drayage trucks, 1,000 transit buses, and 1,000 school buses on California roads over the course of the next three years. The proposed appropriations to CARB shown in the table above are complemented by funds appropriated to CEC to support infrastructure development.

Clean Cars 4 All: The May Revision to the Governor's budget included a total of $250 million for FY 2022-23 and FY 2023-24 to expand the Clean Cars 4 All program statewide. The proposed $250 million is in addition to the $75 million to Clean Cars 4 All that the Legislature specified should be allocated from the FY 2021-22 Low Carbon Transportation Clean Transportation Equity appropriation. Clean Cars 4 All provides funding to low-income Californians living in and near disadvantaged communities to scrap their old car and replace it with a new or used advanced technology car. This year staff will take the steps needed to plan and prepare for a successful expansion to a statewide program.

Clean Transportation Equity & Light-Duty Investments

Overview

CARB's clean transportation equity and light-duty vehicle investments are aimed at supporting the long-term transformation of California's fleet and ensuring that this transformation occurs in an equitable manner. The investments include three complementary strategies: vehicle purchase incentives; clean mobility investments; and outreach, technical assistance, needs assessments, and workforce training and career development. Starting in 2009, CVRP laid the initial foundation for vehicle purchase incentives. Expanding on these initial investments, since FY 2014-15, CARB has allocated over $330 million to clean transportation equity pilot projects. Together, these strategies work to meet policy, statutory, and regulatory goals and requirements, and support an equitable transition to a clean transportation future.

Vehicle Purchase Incentives: CVRP supports increasing the number of ZEVs on California's roadways to meet deployment goals and achieve large scale transformation of the fleet while also providing support to increase ZEV adoption in low-income communities. Clean Cars 4 All and Financing Assistance are designed to increase access to cleaner vehicles in disadvantaged communities and lower-income households as prescribed by SB 1275 and supported by SB 350, as well as provide support to the secondary ZEV market. Each of these vehicle purchase incentives programs provide opportunities for all California residents to participate in vehicle purchase incentive programs as well as increase consumer awareness of clean vehicles in disadvantaged communities.

Clean Mobility Investments: Clean mobility investments support transportation needs of low-income residents and those living in low-income and disadvantaged communities. Transportation and mobility needs are not the same in all communities, so it is important to provide various options to be flexible and responsive to the community-identified needs. These projects provide funding for various clean mobility solutions (other than vehicle ownership) including zero-emission car sharing, vanpools, electric and regular bike sharing, ride-hailing, and other clean mobility options.

Outreach, Technical Assistance, Needs Assessments, and Workforce Development: Better understanding the transportation needs of low-income residents and disadvantaged communities, and increasing residents' awareness of clean transportation and mobility options are primary recommendations identified in CARB's SB 350 Guidance Document. Additionally, the Guidance Document identified the need to prioritize incentive projects that demonstrate local economic benefits through workforce development and job training opportunities. These projects and efforts focus on more meaningfully engaging with communities to understand transportation needs and gaps, tailoring outreach to increase awareness of funding programs, providing technical assistance to strengthen partnerships and funding accessibility,

creating streamlined applications for incentive funding, and expanding workforce training and career development opportunities.

These incentive projects are the result of multiple key legislative drivers, including SB 1275, SB 535 (de León, Chapter 830, Statutes of 2011), AB 1550, and SB 350, but also recognize that increasing access and consumer awareness must be an ongoing process. In addition, equity projects follow SB 535's direction that investments must benefit California's disadvantaged communities. Projects also incorporate the findings of CARB's SB 350 Guidance Document. These projects provide direct benefits to priority populations, such as reduced GHG, criteria pollutant, and toxics emissions, as well as other co-benefits.

A core priority across equity projects continues to be incorporating CARB's SB 350 Guidance Document equity principles and implementing recommendations in priority communities. The Guidance Document identifies several barriers to accessing clean transportation and mobility solutions, such as affordability, funding for clean transportation investments, and a lack of awareness of clean transportation options. The Guidance Document also identifies community-specific barriers, like access, convenience, and safety. Because each community is unique and there are many factors to consider, such as geographic, economic, demographic, or cultural and linguistic attributes, and varied styles of communication, there is no single statewide solution to address all barriers. This increases the importance of developing equitable but community-specific solutions and prioritizing resources for priority populations who face disproportionate impacts.

This year, CARB will focus on developing metrics and creating a plan to measure the outcomes of clean transportation equity and light-duty vehicle projects. This includes evaluating how effective these projects are at generating behavioral changes and developing a plan to expand the metrics used to measure the socioeconomic benefits of the clean transportation equity projects. This data will be used in the future to guide funding and design recommendations.

In addition, CARB is also considering how and where to incorporate The Greenlining Institute's Six Standards for Equitable Investment[19] and Equity Evaluation Methodology[20] when developing and analyzing clean transportation equity programs. The Equity Evaluation Methodology is comprised of Greenlining's Six Standards for Equitable Investment and Greenlining's Making Equity Real Framework.[21] This methodology, which can be adjusted to fit each community's specific needs, can be used to evaluate where programs are succeeding at incorporating equity and where they could be improved.

CARB's equity projects also support several complementary programs and strategies. Given the collective emphasis on air quality, equity, and community engagement, staff continues to

[19] The Greenlining Institute. *The Greenlined Economy Guidebook*. September 2020. https://greenlining.org/publications/2020/greenlined-economy/

[20] The Greenlining Institute. *Clean Mobility Equity: A Playbook – Lessons Learned from California's Clean Transportation Programs*. March 25, 2021. https://greenlining.org/publications/reports/2021/clean-mobility-transportation-equity-report/

[21] The Greenlining Institute. *Sustaining Clean Mobility Equity Programs*. March 31, 2021. https://greenlining.org/publications/reports/2021/sustaining-clean-mobility-equity/

work across other CARB programs and with State and local agencies to share lessons learned, maximize the benefits of each project, and ensure these benefits are realized in priority communities.

Draft Allocations for Clean Transportation Equity and Light-Duty Projects

The State budget provides substantial investments to support an equitable transition of passenger vehicles to zero-emission. The budget includes an upfront investment of $525 million from the General Fund and Low Carbon Transportation to support CVRP for the next three fiscal years. Additionally, the State budget includes $150 million for clean transportation equity projects, with $75 million of that earmarked for Clean Cars 4 All. In addition to this year's investments, the ZEV Package included in the May Revision to the Governor's budget envisioned additional appropriations in FY 2022-23 and FY 2023-24 totaling $250 million to expand Clean Cars 4 All statewide. Table 5 outlines the draft FY 2021-22 allocations for CVRP and each equity project, considering current project demand and uptake, administrator capacity to spend funds, and funding that has already been allocated in past fiscal years but not spent. CARB staff considered stakeholder comments received through the public process and prioritized investments that can result in the most immediate impact in communities.

Table 5: FY 2021-22 Draft Allocations for CVRP and Clean Transportation Equity Investments (millions)

Project Category	Total Allocations to Date*	Draft Low Carbon Transportation Allocation	Draft General Fund Allocation**	Total Draft Allocation
Vehicle Purchasing Incentives – CVRP	**$1,086**	**$100**	**$425**	**$525**
CVRP	$1,086	$100	$415	$514
Electric Bicycles Incentives Project			$10	$10
Clean Transportation Equity Investments	**$337**	**$150**		**$150**
Clean Cars 4 All	$115	$75		$75
Financing Assistance	$44	$23.5		$23.5
Clean Mobility Options	$55	$10		$10
Clean Mobility in Schools Pilot Project	$25	$10		$10
Agricultural Workers Van Pool	$6	$0		$0
Rural School Bus Pilot	$62	$0		$0
Sustainable Transportation Equity Project (STEP)	$20	$25		$25
Outreach, Community Needs Assessments, Technical Assistance, and the One-Stop-Shop	$11	$5		$5
Workforce Training and Development	$0	$1.5		$1.5
Total	**$1,424**	**$250**	**$425**	**$675**

**Funding shown here includes Low Carbon Transportation Allocations, Air Quality Improvement Program (AQIP) allocations, and Volkswagen settlement Funds. CVRP received $146 million from AQIP and has received $940 million from Low Carbon Transportation. Since FY 2017-18, $25 million of each year's CVRP allocation has been earmarked for increased rebates for low- and moderate-income applicants. Clean Cars 4 All received $3 million from AQIP and $10 million from the Volkswagen settlement funds. Financing Assistance for Lower-Income Consumers received $10 million from the Volkswagen settlement funds, and Access Clean California also received $5 million from the Volkswagen settlement funds. Totals are rounded to the nearest million.*

***Does not include any adjustments for project administration.*

CARB will continue to prioritize equity projects and work to balance the portfolio of clean transportation investments, including for vehicle purchase incentives, to allow for the most

impacted communities with increasing burdens to have more immediate benefits as California transitions to a low carbon economy.

Vehicle Purchase Incentives

Light-duty vehicle purchase incentives such as CVRP play an important role in increasing the number of ZEVs on California's roadways and achieving large-scale transformation of the fleet. Equity focused projects such as Clean Cars 4 All, the Financing Assistance programs and the increased CVRP rebates for lower-income applicants provide purchase incentives to increase ZEV adoption in low-income communities.

Driven by SB 1275, SB 350, and AB 1550, the Clean Cars 4 All and Financing Assistance programs incentives help increase access to cleaner vehicles for lower income households in disadvantaged communities and support the secondary ZEV market. These programs promote ZEV awareness, education, and provide a financial stimulus to lower-income Californians to aid in the purchase of cleaner vehicles. While each program has different goals and eligibility requirements, they complement each other by providing financial tools and incentives to make advanced clean technology vehicles more affordable and achievable for lower-income consumers.

Lessons learned throughout the life of these programs have allowed for program refinements to better serve lower-income Californians and achieve California's climate goals. One such refinement includes aligning the definition of income and household across the various vehicle purchase incentives.

Although not a refinement, staff has learned from the Financing Assistance project that lower-income consumers can be wary of battery reliability in ZEVs. In an effort to address this concern, AB 193 (Cervantes, Chapter 363, Statutes of 2018) established the Zero-Emission Assurance Project (ZAP) to help lower-income Californians reduce the risk of buying a used ZEV by providing a rebate or vehicle service contract for the replacement battery or fuel cell component. AB 193 states that CARB will "establish ZAP by allocating moneys, available upon appropriation from the Legislature in the annual Budget Act or other statute". Since no such funding or resources have been allocated, CARB is unable implement ZAP at this time; however, staff will continue to do research and lay the groundwork to support this project in anticipation of a direct funding appropriation. Despite the challenges and barriers faced by lower-income consumers, demand from these programs indicate that there is substantial interest in purchasing cleaner vehicles. As these programs reach more Californians and demand grows, there is a need to further develop and improve these programs.

CARB's light-duty vehicle investments focus on supporting the long-term transformation of California's fleet and meeting policy, statutory, and regulatory goals and requirements. These incentive projects are a result of multiple key legislative drivers, including SB 1275, SB 535, AB 1550, and SB 350, but also recognize that increasing clean transportation access and consumer awareness must be an ongoing process.

Background on ZEV Deployment Goals

CARB is using these light-duty vehicle investments to accelerate deployment of the cleanest feasible vehicle technologies to meet California's air quality, climate change, and petroleum reduction goals. These goals include deploying:

- 1 million ZEVs by 2023, as directed by SB 1275.
- 1.5 million ZEVs by 2025, as directed in Executive Order B-16-2012.
- At least 5 million ZEVs by 2030, as directed in Executive Order B-48-18.

In addition, these investments also support Executive Order N 79-20 which requires that, by 2035, all new cars and passenger trucks sold in California be ZEVs.[22]

Summary of Changes to Long-Term Plans for ZEV Market

ZEV Market Findings (SB 1275)

SB 1275, signed into law in 2014, established the Charge Ahead California Initiative with the goals of placing one million zero-emission and near zero-emission vehicles in California by 2023 to establish a self-sustaining market and increase access to these vehicles for low-income consumers and consumers in disadvantaged communities. Among other requirements, SB 1275 required CARB to include a long-term plan for CVRP and related programs in the FY 2016-17 Funding Plan. The plan must include:

- A three-year forecast of funding needs to support the goals of technology advancement, market readiness, and consumer acceptance of advanced vehicle technologies.
- A market and technology assessment for each funded vehicle technology.
- An assessment of when a self-sustaining market is expected.
- An assessment of how to modify existing incentives to recognize expected changes in future market conditions.

As part of the FY 2016-17 Funding Plan, staff, in consultation with stakeholders, proposed a framework for the plan and provided the first 3-year funding need forecast along with a market and technology assessment. Staff also proposed a suite of indicators to measure ZEV market growth over time. Although SB 1275 required CARB to update the plan every 3 years, staff has provided updates to all components of the plan each year since. Next year, staff will include a more in-depth and comprehensive update to the plan.

As part of the Supplemental Report of the 2018-19 Budget Act[23], CARB is required to submit an annual supplemental report, until January 1, 2030, that includes a forecast of the total State rebate investment necessary to reach the goal of placing at least 5 million ZEVs in

[22] Executive Order N-79-20 https://www.gov.ca.gov/wp-content/uploads/2020/09/9.23.20-EO-N-79-20-Climate.pdf

[23] Supplemental Report of the 2018-19 Budget Act, https://lao.ca.gov/reports/2018/3883/supplemental-language-2018.pdf.

service on California's roads. Development of the first report occurred alongside the development of the update to the long-term plan for CVRP and light-duty incentives in 2019. The first report was provided in the FY 2019-20 Funding Plan as part of Appendix C and will be updated in the funding plan annually thereafter until 2030. Per the direction of SB 129, this year's plan will include a schedule to phase down rebates based on cumulative sales over the next three fiscal years –FY 2021-22, FY 2022-23, and FY 2023-24 – while not impacting the low and moderate-income bonus. This plan must include rebate levels that continue to encourage early adoption of ZEVs, encourage a sustainable ZEV market, and support EV sales to reach the state's goal of 5 million ZEVs by 2030.

Since the introduction of the first Light-Duty Long-Term Plan in FY 2016-17, the ZEV market has grown tremendously. However, events over the last year have changed the ZEV market landscape and the new vehicle market as a whole. Despite the health and economic crisis, EV market share in California held steady at about 8 percent through 2020 and the beginnings of a market rebound were evident as the year came to a close. Recent EV sales data and project participation rates indicate that the rebound is continuing into 2021 and registration data through Q1 of 2021 shows that the EV market share grew to 10.8 percent.[24] It is too early to predict if the increase in EV purchases will continue into 2021, if an EV market share of 10.8 percent or higher will be sustained through the year, and how this will impact progress towards deployment goals. The inability to predict how the ZEV market will rebound continues to pose some challenges to updating funding need projections and the long-term plan. Staff is continuing to review new data as it becomes available and analyzing how the ZEV market rebounds in 2021 in order to update assumptions, evaluations, and recommendations for the long-term plan.

What remains constant is the need to get more ZEVs on California's roads and prioritize complimentary clean transportation and mobility equity investments in the process. Incentives will continue to play a critical role in meeting ZEV deployment goals for the foreseeable future, especially to encourage market growth in harder to reach market segments. Staff will present updated findings and suggestions to support this goal in this year's Funding Plan after completing a thorough analysis of all market and technology aspects.

[24] California New Car Dealers Association, California Auto Outlook Covering First Quarter 2021, Released May 2021. https://www.cncda.org/wp-content/uploads/Cal-Covering-1Q-21.pdf.

Clean Vehicle Rebate Project (CVRP)

Draft General Fund Allocation–$425 million
Draft Low Carbon Transportation Allocation–$100 million

Project Goals

CVRP offers vehicle rebates to eligible applicants on a first-come, first-serve basis for light-duty ZEVs, plug in hybrid electric vehicles (PHEVs), and zero-emission motorcycles. CVRP helps get the cleanest vehicles on the road in California by providing consumer rebates to partially offset the higher initial cost of these advanced technologies. Per-vehicle rebate amounts are based on consumers' income and vehicle technology as shown in Table 6. Increased rebates for low-income applicants were introduced in 2016.

In 2016, the Legislature passed SB 859 (Committee on Budget and Fiscal Review, Chapter 368, Statutes of 2015), which mandated a number of changes to CVRP, including:

- Increasing rebate amounts for low-income applicants with household incomes less than or equal to 300 percent of the federal poverty level to those shown in Table 6.
- Reducing the income cap to the levels shown in Table 6.
- Limiting plug-in hybrid electric vehicle eligibility to vehicles with at least 20 miles of electric range.
- Requiring outreach to low-income consumers.
- Requiring prioritized rebate payments for low-income consumers.

CARB incorporated all these changes to CVRP as part of the FY 2016-17 Funding Plan. SB 615 (Cooper, Chapter 631, Statutes of 2017) extended these provisions through December 31, 2018. In addition, AB 2885 (Rodriguez, Chapter 366, Statutes of 2018) extends the requirements for CARB to continue providing outreach to low-income households and low-income communities and prioritize rebate payments to low-income applicants until January 1, 2022.

While the statutory requirement for some of the above-mentioned provisions sunset at the end of 2018, staff is considering keeping the following provisions in place for FY 2021-22:

- Provide rebates for applicants who report gross annual income on Internal Revenue Service (IRS) Form 1040, IRS Form 1040A, or IRS Form 1040EZ, that does not exceed the limits as shown in Table 6.
- Provide increased rebates to eligible low-income applicants as shown in Table 6.
- Limit plug-in hybrid electric vehicle eligibility to those that meet the current electric range requirement.

Table 6: CVRP Rebate Amounts and Income Limits

Rebate Type	Fuel Cell Electric Vehicle	Battery Electric Vehicle	Plug-in Hybrid Electric Vehicle[25]	Zero-Emission Motorcycle
Increased Rebate for Low-Income Applicants Households with income less than or equal to 300% of federal poverty level	$7,000	$4,500	$3,500	$750
Standard Rebate Available for: Individual tax filers whose income is greater than 300% of the federal poverty level but less than or equal to $150,000 Head-of-household tax filers whose income is greater than 300% of the federal poverty level but less than or equal to $204,000 Joint tax filers whose income is greater than 300% of federal poverty level but less than or equal to $300,000	$4,500	$2,000	$1,000	$750
Above Income Cap Individual tax filers whose income is greater than $150,000 Head-of-household tax filers whose income is greater than $204,000 Joint tax filers whose income is greater than $300,000	$4,500	Not eligible	Not eligible	Not eligible

[25] With an all-electric range of at least 30 miles as determined by U.S. EPA

Current Project Status

Through November 2020, CVRP has provided rebates for over 409,000 vehicles totaling about $935 million since the project's launch in 2010. Since March 2016, almost 23,000 increased rebates have been issued to low-income consumers totaling over $91 million. About 64 percent of rebates issued went to battery electric vehicles (BEVs), 34 percent to PHEVs, and about 2 percent to fuel cell electric vehicles (FCEVs) and zero-emission motorcycles.

In December 2020, the Board approved a number of minor program adjustments to CVRP proposed in the FY 2020-21 Funding Plan. These changes were made to make implementation easier for CARB and our administrators and to allow for alignment with other Clean Transportation Equity Projects, such as Financing Assistance and Clean Cars 4 All. A detailed explanation of these changes can be found in the FY 2020-21 Funding Plan for Clean Transportation Incentives.[26]

The CVRP administrator, the Center for Sustainable Energy (CSE), implemented most of these changes on January 27, 2021 with the exception of the increase in PHEV all-electric range which was implemented on April 6, 2021. A majority of these changes were administrative in nature and have little to no impact on CVRP funding need. Implementing the change to PHEV all-electric range decreased the number of eligible PHEVs to four which staff anticipate may reduce the number of rebate applications received for PHEVs. Additionally, since implementing the increase to the income limit for increased rebate eligibility, staff has noticed a marked increase in participation. Staff is continuing to monitor program data to better reflect the impact of these changes on future CVRP funding need. Additional project statistics are available on the CVRP website.[27]

Staff monitors CVRP participation rates by comparing rebate application data to California vehicle registration data to evaluate program trends. Historically, about 75 percent of ZEVs purchased or leased in California received a rebate prior to the introduction of income-based consumer eligibility. Since the introduction of the CVRP income cap, roughly 50 percent of ZEVs purchased or leased in California have received a rebate. This suggests that the income cap is having its intended effect. Staff will continue to monitor these trends as the suite of program changes that went into effect in 2019 and the beginning of 2021 may impact the percentage of the ZEV market that receives a CVRP rebate.

Draft Funding Allocation

As previously mentioned, the EV market started showing signs of a rebound toward the end of 2020 and some changes were made to CVRP in early 2021. Around the same time, staff recognized an increase in program participation overall with a more drastic increase in rebate applications for low- and moderate-income increased rebates as eligibility was expanded.

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[26] Proposed Fiscal Year 2020-21 Funding Plan for Clean Transportation Incentives, Approved at the December 10, 2020 CARB Board Meeting, https://ww2.arb.ca.gov/sites/default/files/2020-11/proposed_fy2020-21_fundingplan.pdf.

[27] CVRP Rebate Statistics, https://cleanvehiclerebate.org/eng/rebate-statistics.

Additional factors for this increase could include pent up demand from 2020, the launch of the statewide Clean Fuel Reward point of sale incentive, or an increase of targeted outreach at the state and local level and by manufacturers.

Due to the increase in participation in early 2021, it became evident that the remaining FY 2019-20 funding for CVRP would be exhausted by the end of April 2021. Staff initially expected this funding to last further into the year especially for increased rebates. So, staff made the decision to hold a waitlist once current funds were exhausted. CARB sent a press release on April 14, 2021 and held a public work group on April 16, 2020 to signal the impending end of current funding and to announce that a waitlist would be held this year. The CVRP administrator officially notified applicants of the impending waitlist on April 23, 2021. Remaining buffer funding allowed CVRP to fund applications that were received through May 18, 2021. All applications for both standard and increased rebates received on or after May 19, 2021 are officially on the waitlist and will be processed when additional funding becomes available. Staff is working with the CVRP administrator to refine projections for anticipated waitlist costs and will provide additional information at the second public workshop scheduled for August 4, 2021.

The Budget Act of 2021, signed into law on July 12, 2021, included a substantial upfront allocation of $525 million for CVRP from both the General Fund ($425 million) and the Greenhouse Gas Reduction Fund ($100 million). This allocation is expected to fund the program for Fiscal Years 2021-22, 2022-23, and 2023-24. Additionally, $10 million of this allocation will be used to establish the Electric Bicycles Incentive Project. Staff will implement this program separately from CVRP and will work with stakeholders through the public process to develop the program. Additional details on the Electric Bicycle Incentives Project will be included in this year's funding plan.

Staff plans to use a portion of the FY 2021-22 allocation to fully fund the waitlist that began on May 19, 2021. Since the CVRP allocation comes as its own line item in the budget, staff can start the process of adding a portion of these funds into the current grant as soon as the budget is approved and ahead of the Board Meeting. This will allow the program administrator to start processing applications and issuing rebates to those on the waitlist while CARB staff finalize a proposal for the remainder of the funding. Staff will continue to work with stakeholders through the public process to determine which program adjustments are needed over the next few years based on projected demand and remaining funds expected after the waitlist is funded. Staff's proposal for the remainder of the allocation and a three-year plan for ramping down the program will be included in this year's funding plan.

CVRP Demand Projections: In early June 2021, staff worked with CSE to release updated preliminary projections that included EV sales and program data through Q1 2021.[28] Staff have modeled projections for both standard and increased rebate funding need.

The methodology is very similar to previous years, however, this year CSE is using Prophet, an open-source modeling tool. Prophet helps to better simulate market conditions and

[28] Center for Sustainable Energy, Preliminary 2021–2023 CVRP Projections: Update 2, Released June 4, 2021. https://cleanvehiclerebate.org/eng/content/preliminary-2021%E2%80%932023-cvrp-projections-update-2

rebate demand based on estimates of market recovery following last year's economic uncertainty. The projections include estimates of the impact of the Clean Fuel Reward, increasing the income threshold for increased rebates to 400 percent of the federal poverty level, and the increase in the minimum PHEV all-electric range requirement. Additionally, the projections adjust for the large increase in EV sales due to the release of the Tesla Model 3 in 2018 and pent-up market demand in winter 2020-21. Lastly, the projections assume linear growth for most vehicle categories and rebate types and assumes that state and federal incentives remain constant.

As previously mentioned, funding for standard and increased rebates ran out in mid-May 2021. Table 7 shows the anticipated backlog of demand ("waiting list") of about 25,000 rebates totaling about $71 million between May 19, 2021 and when the FY 2021-22 funding could be added to the program in September 2021. Table 8 shows estimated rebate demand for the FY 2021-22 funding cycle, which goes from October 2021 through June 2022, and the corresponding funding need, with projections for both standard rebates and low-income increased rebates. These projections assume no changes to the current program design. In previous years, staff has shown these values as a range of low, middle, and high. For the purposes of program analysis, staff chose to use the middle value.

Table 7: Projected FY 2020-21 Waitlist Demand

Time Period	Standard Rebates Waitlist Demand	Low-Income Rebates Waitlist Demand	Total Waitlist Demand
May 19, 2021-September 30, 2021 (4.5 months)	$35 million ~16,000 rebates	$37 million ~8,000 rebates	$71 million ~25,000 rebates

Table 8: Projected Rebate Demand for FY 2021-22 (with no changes)

Time Period	All Rebates	Standard Rebates	Low-Income Rebates
October 1, 2021-June 30, 2022 (9 months)	$201 million ~70,000 rebates	$96 million ~46,000 rebates	$106 million ~24,000 rebates

Staff will work with the program administrator to update projections as additional data becomes available. Updated projections will be publicly available on the CVRP website and discussed through the public process. CSE plans to incorporate refinements to the

projections that include adjusting for upcoming EV model releases, seasonality, and regional forecasting.

Potential Changes for FY 2021-22

Since the ZEV market is still rebounding from the impacts of 2020 and California is not yet on track to meet the 2030 ZEV deployment goal, it is staff's desire to continue utilizing CVRP as a way to provide a stimulus to the ZEV market. Staff is considering a wide range of program changes that can be phased in over the next few years to allow the proposed allocation to provide a meaningful incentive for the entirety of the next three fiscal years.

Staff is considering program changes such as:

- Exploring how and when to phase out standard rebates for individuals and fleets
- Decreasing the income cap for standard rebate eligibility
- Decreasing the income threshold for increased rebate eligibility back to 300% of the Federal Poverty Level
- Decreasing the manufacturer suggested retail price (MSRP) cap for BEVs and PHEV eligibility
- Implementing an annual rebate cap for vehicle manufacturers

Staff is still gathering information on the impacts of these program adjustments. Staff will continue to meet with stakeholders to discuss how to design CVRP in a way that supports California's ZEV deployment goals and provides a stimulus to the ZEV market.

Solicitation: In previous years, CARB has held competitive solicitations for a CVRP administrator up to every three years as the program grant term came to a close. However, CVRP has experienced numerous disruptions over the last several years due to insufficient funding which has eroded consumer confidence in the program and limited the incentive opportunities available for EVs. These disruptions would be magnified by re-soliciting for a program administrator as the process takes months to complete. This in turn leads to delayed program reopening, increased rebate processing times, and prolonged waitlists.

CVRP is a critical, high priority, ongoing incentive program with an existing administrator in place and prepared to implement new funding quickly to avoid further disruptions. The current CVRP administrator, CSE, has proven themselves as being a highly reliable and experienced administrator. It should also be noted that CSE has been the only entity that has applied in the two previous CVRP solicitations (FY 2014-15 and FY 2016-17). For these reasons, CARB staff is considering not holding a new solicitation this year. CARB staff will re-evaluate the need for a new solicitation next year and, if needed, will hold the solicitation at a time that is as minimally disruptive to the program as possible.

Draft Project Evaluation Strategy

Staff is developing a plan to further evaluate the effectiveness of CVRP by looking at the impacts the program has on California's ZEV market. Currently, the CVRP consumer survey provides data that helps analyze market impacts through demographics of program participants and importance of CVRP and other EV incentives. In previous long-term plans,

staff indicated that a 16-20 percent EV market share would define a sustainable market. Aside from market share statistics, staff identified metrics to track the progress toward EV market sustainability, which would signal a phase-out of broad market incentives. These metrics include:

- ZEV sales numbers
- Diversity in available models
- Consumer education and awareness
- Battery and vehicle cost
- Importance and impact of federal policies

Staff plans to work with stakeholders through the public process to determine if there are additional metrics that can help measure the progress toward EV market sustainability. Additionally, staff will work with stakeholders to identify goal markers for each of these metrics, and ensure the metrics are response to the recommendations in the CARB Audit Report. This will help with the development of a plan to phase out standard rebates once market sustainability is reached and turn CVRP's main focus to harder to reach market segments through increased rebates. An update on this process will be included in the FY 2021-22 Funding Plan and a more in-depth analysis will begin in late-2021.

Clean Cars 4 All

Draft Low Carbon Transportation Allocation
$75 million

Project Goals

Clean Cars 4 All (formerly known as the Enhanced Fleet Modernization Program (EFMP) Plus-up Pilot Project) provides incentives to help lower-income consumers living in and near disadvantaged communities replace their old higher-polluting vehicles with newer and cleaner transportation. Options include the purchase of new or used hybrid, plug-in hybrid, or ZEV replacement vehicles. Furthermore, participants can choose an alternative mobility option such as an electric bike, a voucher for public transit, or a combination of clean transportation options allowed under the program in lieu of purchasing a replacement vehicle. In addition, buyers of plug-in hybrid and battery electric vehicles are also eligible for home charger incentives or prepaid charge cards if home charger installation is not an option. Participants must have a household income of less than 400 percent of the federal poverty limit and live in a ZIP Code containing a disadvantaged community census tract.

Clean Cars 4 All and the scrap-only component of EFMP use participation rates as one measure of success in reaching FY 2021-22 annual goals. These annual goals are established through a public process. In addition to monitoring overall participation rates, the number of vehicles funded by replacement vehicle technology type, and number of participants choosing the alternative mobility option are also tracked.

In response to the California Auditor's report on CARB incentive programs, CARB will also develop metrics to gauge the socioeconomic benefit of the improved reliability of the replacement vehicle over the retired vehicle.

Current Project Status

Since FY 2014-15, CARB has allocated $115.6 million for Clean Cars 4 All, including $102 million of Low Carbon Transportation funding, $10 million of Volkswagen settlement funding, and $3.6 million of AQIP funding. South Coast Air Quality Management District (AQMD) has received $61 million while San Joaquin Valley Air Pollution Control District (APCD) received $28.6 million. The Bay Area AQMD and Sacramento Metropolitan AQMD have more recently launched Clean Cars 4 All programs and have been allocated $17 million and $9 million respectively.

The Clean Cars 4 All Program launched in July 2015 in South Coast AQMD and San Joaquin Valley APCD. To date, South Coast AQMD has expended approximately $58 million to replace 6,762 vehicles. Of the replacement vehicles purchased, 10 percent were battery electric vehicles BEVs, 58 percent were plug-in hybrid electric vehicles PHEVs, and 31 percent were conventional hybrid vehicles. Additionally, 16 FCEV replacements and seven alternative mobility options were utilized by participants. San Joaquin Valley APCD has expended approximately $25 million to replace 3,188 vehicles. Of the replacement vehicles

purchased, 10 percent were BEVs, 50 percent were PHEVs, and 40 percent were conventional hybrids.[29]

Bay Area AQMD launched their Clean Cars 4 All program in September 2019 and has since expended approximately $12 million to replace 1,293 vehicles and fund 117 electric vehicle service equipment (EVSE) installations. Of the replacement vehicles purchased, 22 percent were BEVs, 49 percent were PHEVs, and 27 percent were conventional hybrid vehicles. Additionally, 1 percent was FCEV replacements and 1 percent was mobility options.

Sacramento Metropolitan AQMD launched their Clean Cars 4 All program in July 2020 and has expended approximately $2.4 million to replace 163 vehicles. Of the replacement vehicles, 28 percent were BEVs and 72 percent were PHEVs.

San Diego APCD is working with CARB staff to understand all programmatic requirements so they can implement Clean Cars 4 All in the San Diego air basin with future funding.

The South Coast AQMD, San Joaquin Valley APCD, and Bay Area AQMD Clean Cars 4 All programs are expected to exhaust existing funds funding by mid-to-late summer 2021. Sacramento Metropolitan AQMD is expected to exhaust their funds in the summer of 2022.

CARB staff is working closely with each air district to ensure their programs continue to progress and steadily increase participation. Districts have already increased support for online and call-center applications and instituted various tools such as virtual inspections. When additional funding is available, districts plan to increase targeted outreach to underserved communities. Staff also anticipates that the Access Clean California and Financing Assistance programs will further increase participation and streamline the application process.

Draft Funding Allocation

CARB works with participating districts to determine funding allocations through a collaborative and public process. CARB analyzes past performance data alongside data, metrics, and other details provided by the districts to forecast program demand and related funding needs. Given this year's appropriation and legislative direction, staff recommends allocating $75 million to Clean Cars 4 All for FY 2021-22. With an allocation of $75 million, staff expects to distribute funding to participating air districts as presented in Table 9 below. Staff recommends a $5 million allocation to San Diego APCD to launch their local program. Staff recommends that $10 million be allocated for strategic reserve. The strategic reserve may be allocated to any participating air district based on program demand.

[29] These figures reflect vehicles funded only with Low Carbon Transportation funding allocated in previous Funding Plans.

Table 9: Draft FY 2021-22 Clean Cars 4 All Allocations to Air Districts

Project	FY 2021-22 Funding (millions)
South Coast AQMD	$28
San Joaquin Valley APCD	$15
Bay Area AQMD	$15
Sacramento AQMD	$2
San Diego APCD	$5
Strategic Reserve	$10
Total	**$75**

Staff plans to use $25 million of the FY 2021-22 allocation to provide funding to Districts to avoid disruptions to programs. Since the Legislature directed that $75 million be allocated to Clean Cars 4 All, staff can start the process of adding a portion of these funds based on district needs into existing programs as soon as the budget is approved and ahead of the Board Meeting. This will allow the Districts to continue processing applications and issuing grants while CARB staff finalize a proposal for the remainder of the funding. Staff will continue to work with the stakeholders through the public process to determine funding allocations based on projected demand and remaining district funds. Staff's proposal for the remainder of the allocation will be included in the FY 2021-22 Funding Plan for Clean Transportation Incentives that is scheduled to be heard before the Board later this year.

Potential Changes for FY 2021-22

CARB staff is considering revising the Clean Cars 4 All program guidelines to provide districts the flexibility to require cleaner replacement technologies in their local programs. CARB will also continue coordinating with districts to address program issues that were highlighted by recent participant surveys. For example, many participants in the survey responded that they could not install in-home EVSE. To address this outcome from the survey, CARB incorporated prepaid charge cards into the program guidelines and will encourage districts to promote the adoption of mobility options as an alternative to vehicle replacements and EVSE installations for BEV and PHEV replacements. Districts will be required to provide additional guidance and education to participants as to the full financial implications of participation in Clean Cars 4 All, including potential impacts on tax returns. CARB recommends districts engage further with dealerships to further educate dealership personnel on program processes, requirements, and vehicle technologies. CARB staff will also examine alternative measures

such as conducting public workgroups to solicit stakeholder feedback and potential solutions. This will ensure financial impacts on participants are manageable; further protect against predatory practices; and ensure participants find the vehicle technology that best meets their needs. Lastly, districts will be responsible for participating in and providing assistance with the development of the Access Clean California pilot program. Access Clean California will provide potential applicants more efficient and transparent access to available incentive programs. In preparation for potential future funding for statewide expansion of the Clean Cars 4 All program, CARB staff is evaluating the program regulations and guidelines for required changes. Any updates will be developed via a separate public process as necessary to incorporate stakeholder input and make the statewide expansion possible.

Draft Project Evaluation Strategy

As part of CARB's response to the California Auditor's report on CARB incentive programs, CARB will be taking measures to improve evaluation, analysis, and reporting of socioeconomic benefits for program participants. An expected socioeconomic benefit of the Clean Cars 4 All program is an increase in vehicle reliability. One metric for measuring this benefit is future disruptions of service based on the model year of the retired vehicle and that of the incentivized vehicle. The evaluation method is to model the predicted disruptions of service of the scrapped and incentivized vehicles as a relative measure of reliability. Another qualitative metric is improved access to employment and goods and services as a measure of vehicle reliability. Evaluation methods may include surveys in which participants self-report on improved access, and on participant testimonials.

To better identify additional socioeconomic benefits and areas of improvement for the Clean Cars 4 All program, CARB staff is developing an updated participant survey. This survey will provide for more streamlined data collection, analysis, and identification of benefits or areas for improvement. Staff is also working with the districts in this effort to refine the survey questions and additional methods to improve data quality and response rate. In addition, data will be analyzed on the types of jobs created and trainings supported by Greenhouse Gas Reduction Funds administered through the Clean Cars 4 All program. This data includes the total number of jobs funded, number of funded jobs held by members of priority populations, education and experience required, and training programs administered and credentials awarded.

CARB is working to increase transparency and cooperation with air districts in the annual program participation goal setting. CARB will request districts regularly provide additional metrics including total applications received and ultimately processed to completion, current program staffing levels and processing capacity, and any additional metrics or plans that may inform the goal setting process. These additional metrics will aid in fine-tuning the goal setting process to better gauge program demand and application processing capability. The metrics will also assist in identifying common barriers in the application process and allow for staff to work with stakeholders and communities to identify solutions. One such effort already underway in coordination with the districts is the development of the Access Clean California pilot program to provide a one-stop-shop information and application portal for prospective applicants.

Financing Assistance for Lower-Income Consumers

Draft Low Carbon Transportation Allocation
$23.5 million

Project Goals

The Financing Assistance for Lower-Income Consumers Pilot Project (Financing Assistance) provides financial resources to help lower-income Californians purchase advanced clean vehicles. The project offers vehicle price buy-downs (grants) at the point-of-sale and fair financing through lower interest loans.

Financing Assistance complements CVRP and Clean Cars 4 All by offering low-interest loans to participants in those programs. Program administrators provide financial education and advanced vehicle technology training to ensure consumer protection, increase the chance of successful loan repayments, and ensure that the vehicles chosen by participants appropriately meet their transportation needs. Participating financial institutions and lenders in this project are being offered funds for a loan loss reserve to mitigate risk.

There are two different programs under this project: a local program and a statewide program. The Driving Clean Assistance Program (DCAP) administered by Community Housing Development Corporation (CHDC) is the local program that serves twelve counties in Northern California. The Clean Vehicle Assistance Program (CVA Program) is the statewide program, administered by Beneficial State Foundation that provides incentives to consumers across the State.

Current Project Status

CHDC, a community-based organization (CBO), received a $6.9 million grant to serve low-income residents living in the nine Bay Area counties, Yolo, Santa Cruz, and recently Sacramento counties. So far, CHDC has provided 218 grants, helped secure 187 low interest rate loans, and issued 80 EVSE grants to participants. All loans issued under this program have been under 8 percent interest and are further supported by a loan loss reserve account with participating financial partners.

The CVA Program has been awarded $36.8 million and since inception, the program has provided 3,200 vehicle grants, 966 EVSE grants, and facilitated 2,546 vehicle low interest loans to program participants.

Due to higher than expected demand, on March 17, 2021 a reservation list was put in place, but soon reached its maximum capacity and the program closed to new applicants on April 14, 2021.

Draft Funding Allocation

Based on initial projections of funding needs and considering recent allocations, staff estimates the Financing Assistance project demand is between $35 million and $50 million for FY 2021-22.

Staff plans to use up to $8 million of the FY 2021-22 appropriation to fund grants on the current waitlist for the Financing Assistance program. This would align with the contingency provisions set forth in the FY 2020-2021 Funding Plan for Clean Transportation Incentives, which gave authority to the Executive Officer to immediately allocate limited funding to ongoing voucher and rebate consumer purchase incentive projects to prevent or reduce program interruptions. Staff can start the process of adding a portion of these funds into the current grant as soon as the budget is approved and ahead of the Board Meeting. This will allow the program administrator to start processing applications and issuing grants to those on the waitlist while CARB staff finalize a proposal for the remainder of the funding. Staff will continue to work with stakeholders through the public process to determine if any program adjustments are needed based on projected demand and remaining funds expected after the waitlist is funded. Staff's proposal for the remainder of the allocation will be included in the FY 2021-22 Funding Plan for Clean Transportation Incentives that is scheduled to be heard by the Board later this year.

Potential Changes for FY 2021-22

Based on the project data for the last few years, and as presented at the June 17, 2021 work group, staff recommends transitioning from two pilots to one full-fledged statewide program.[30] CARB has learned many valuable lessons and with proper policy and program changes, staff can structure the program to better serve low-income consumers.

Unlike market-focused incentive programs, equity programs intend to help financially challenged consumers and facilitate their access to resources that might not be available in competitive markets. Therefore, staff believes that it is necessary to transition from a first-come, first-served model and to a needs-based model. In a needs-based model, consumers' applications will be prioritized depending on their needs and financial situation. Staff will collaborate with stakeholders to determine the metrics used to prioritize applications and match consumers to the services that meet their needs. For instance, a consumer with poor credit score will be set up to receive financial literacy and counselling and upon credit score improvement, will be helped to go through the purchase process.

Project data shows that a small percentage of participants purchased conventional hybrid vehicles (only 4 percent in CVA Program and 11 percent in DCAP). BEVs and PHEVs are more popular among all income groups with 68 percent and 28 percent share respectively. BEVs are the most popular choice with statewide but PHEVs are more popular among very low-income applicants. Staff suggests removing conventional hybrid vehicles from the

[30] California Air Resources Board. *Workgroup Meeting on: Vehicle Purchase Incentive Projects for Low-Income Consumers (Financing Assistance & Clean Cars 4 All).* June 17, 2021. https://ww2.arb.ca.gov/sites/default/files/2021-06/fa_wkgrp_pres_06172021.pdf

program to focus the programs limited funding on the cleanest, most advanced technologies in line with State goals to deploy more electric vehicles.

Applying a vehicle purchase price cap, loan term and loan amount cap are other considerations that staff believes will help direct funds toward those who need them the most. Program data shows that a majority of very low-income participants prefer to purchase less expensive vehicles and subsequently take lower loan amounts. Their preferred choice is not to lease a vehicle, but to purchase low mileage used EVs that are off lease contracts. Therefore, staff recommends excluding lease options from this project and helping consumers purchase vehicles they can hold onto longer.

Staff also recommends lowering the Annual Percentage Rate (APR) of loans issued across the board (the current cap for partner banks is 8 percent and outside lenders is 12 percent) and expanding the partner banks network.

Solicitation: CARB selected a grantee to administer FY 2017-18 Statewide Financing Assistance Project funds via a competitive solicitation and awarded additional funds from FY 2018-19 and FY 2019-20 to the selected grantee under the same terms and conditions. Staff expects to release a solicitation in Quarter 3 of 2021 and have a grant in place for the FY 2021-22 funds by the end of 2021.

Draft Project Evaluation Strategy

By implementing this project under two pilot programs for several years at the state and local level, staff has collected program and survey data and gained insights on low-income consumers. Restructuring the two programs into one full-fledged, need-based statewide program, expanding participating partner banks and financial institutions, and rearranging the application process will help to better serve the low-income consumers and track socioeconomic benefits of this program.

Under the new program design, staff can better develop metrics to measure the impact of incentives. An expected socioeconomic benefit of this project is to bring the benefits of clean transportation to lower-income and disadvantaged communities that are most impacted by pollution, which can be evaluated through measuring the increased number of clean vehicles in disadvantaged communities. The metric for measuring this benefit is the increased number of cleaner vehicles purchased by disadvantaged community residents. Other metrics to consider in evaluating the success of this project can be measuring increase in project demand, number of program applicants, changes in participants' income level and residency location, costs and types of vehicles purchased, and loan repayment status. Improvement in participants' credit scores is another important metric that can be measured by evaluating the aggregate credit score of participants at the onset of the loan to their credit score over time.

Clean Mobility Investments

CARB has funded clean mobility investments since FY 2014-15 and has learned from these early projects how to better address community specific transportation needs. With the 2018 development of CARB's SB 350 Guidance Document, CARB identified many barriers to accessing clean transportation and mobility investments and provided recommendations to inform these investments. These barriers include affordability and the lack of access to or awareness of funding opportunities. The drafting of the Guidance Document was a public process that included many information gathering sessions, direct engagement with community members and participation in community-led meetings, meetings with stakeholders, and regional case studies. The Guidance Document prioritized recommendations to provide meaningful clean mobility options for low-income and disadvantaged communities.

CARB's continued clean mobility investments support the Guidance Document recommendations, including complementing vehicle purchase incentives with clean and equitable community driven mobility solutions. The solutions that can provide clean mobility options in low-income and disadvantaged communities include zero-emission car and bicycle sharing, vanpooling, and clean school buses, or combinations thereof. These solutions also address SB 350 and SB 150 Progress Report findings that clean single-occupancy vehicles are not the only path forward for CARB to reach its equity, air quality, and GHG reduction goals.

There are no new proposed clean mobility investment projects for FY 2021-22. CARB is focusing on refining existing programs, analyzing socioeconomic benefits, and identifying potential gaps for future investments to meet community-identified needs. The existing portfolio of clean mobility investments include:

- Clean Mobility Options
- Clean Mobility in Schools Pilot Project
- Agricultural Worker Vanpools Pilot Project
- Rural School Bus Pilot Project[31]
- Sustainable Transportation Equity Project (STEP)

Based on existing funded projects, it is increasingly clear that each community faces unique challenges, but with new challenges arise new opportunities. There is no single statewide solution to address all barriers—especially those faced by overburdened communities disproportionately bearing climate and air quality impacts. This highlights the importance of developing thorough community transportation needs assessments that focus CARB's equity strategies on building mechanisms to overcome barriers. Furthermore, the current public health crisis has demonstrated the importance of having a diverse slate of clean transportation and mobility strategies to address unique travel needs and behavior.

[31] As a result of substantial funding made available in the State budget, this project has been incorporated into HVIP

Rigorous community transportation needs assessments arise through understanding the existing transportation planning landscape and centering trust in CARB's partnerships with community-based organizations and residents. By asking residents what types of advanced clean technologies and strategies they would like to see that would most meet their needs, CARB can support their vision of clean mobility investments and equity goals in their community. This requires outreach via an open, ongoing dialogue, and a community-led process while delivering tailored clean mobility investments. Open communication ensures that vital needs are met, critical gaps are filled, applications are streamlined, and policy adjustments are made in a timely manner to allow for a smooth transition to an equitable zero-emission future.

Advancing Clean Mobility Investments

The FY 2021-22 Funding Plan marks CARB's eighth year of funding clean mobility investments. Since the beginning, CARB has seen value in implementing a pilot program approach to clean transportation and mobility investments to allow flexibility, ongoing stakeholder and community feedback, and adjustments where necessary. As noted above, each project is unique, and the pilot phase is critical to discover how each project can best achieve their specific goals and find solutions to the numerous obstacles faced by low-income and disadvantaged communities. As pilot projects mature and move to the full program implementation phase, there are opportunities to expand and replicate proven strategies and models to maximize benefits and participation across communities.

CARB continues to coordinate with State and local partners to ensure accessibility and transparency in developing mobility programs. To broaden clean mobility investments and further address equity needs, CARB plans to leverage the incentive programs to expand workforce training and career development. CARB is working with project administrators to identify pathways to self-sufficiency allowing future independent operation of equity projects without relying on Low Carbon Transportation funding to remain sustainable.

CARB has seen an increasing need to identify and implement clear, measurable metrics to assess and track progress of clean transportation and mobility equity investments. In order to develop a project evaluation strategy and address the CARB Audit Report recommendations, CARB is first analyzing lessons learned across the suite of clean transportation incentive programs to determine a path forward for developing and reporting equity metrics across projects. CARB is prioritizing a data collection methodology to quantify equity and incentive program outcomes and determine if they are achieving intended community benefits. As part of this effort, CARB is determining a process through its workshop and public work groups to define, collect, and use data to measure and report on each clean transportation and mobility equity metric, identify direct and measurable community benefits, such as socioeconomic, job, workforce training and development, and other quality of life improvements, and a public and community engagement and reporting process. Central to CARB's evaluation strategy and metrics assessment is intentional and meaningful community engagement throughout the process, including soliciting and elevating ideas on how CARB should measure and report benefits and remaining gaps, and providing strong feedback

loops for policy and program adjustments based on findings, including with the public and the Legislature.

To aid in identifying and implementing evaluation metrics, CARB has contracted with the UC Berkeley Transportation Sustainability Research Center to develop an evaluation framework for assessing the effectiveness, sustainability, and outcomes of pilot projects. This framework will be applied to evaluate and compare existing projects and identify what criteria contribute to project success. An assessment of community engagement strategies for future projects will also be conducted. The project will result in policy recommendations for consideration in implementing existing and future clean transportation projects and methods of incorporating lessons learned.

Clean Mobility Options

Draft Low Carbon Transportation Allocation
$10 million

Project Goals

Clean Mobility Options (CMO) is a funding category intended to assess and address the barriers and transportation needs of low-income residents and disadvantaged communities and provide funding for mobility options to help address those needs. By combining community transportation needs assessments, other forms of community input and engagement, and direction from the SB 350 Guidance Document, projects in this category are tailored to meet communities' unique transportation needs and provide various clean mobility options that do not require but can complement vehicle ownership. The project category provides funding for clean, shared transportation options, including zero-emission car sharing, vanpools, electric and regular bicycle sharing, scooter sharing, and ride-hailing services. The projects are designed to connect with current or future innovative mobility hub concepts that promote multimodal trips, including co-located passenger rail, bus/shuttle, ride-hailing, public charging, and first mile/last mile transit solutions.

One of CARB's goals is to streamline the CMO mechanism that supports and maximizes community investments. This project category has historically awarded grants via a competitive solicitation and entities must have the knowledge and resources to be competitive. This in turn leaves many communities without the opportunities to address their transportation challenges. CARB created the Clean Mobility Options Voucher Pilot to address multiple barriers that create more opportunity for communities statewide to conduct community transportation needs assessments and create clean mobility options based on community feedback. Staff's intention is to have the Clean Mobility Options Voucher Pilot become the primary mechanism of CMO funds in order to equitably disperse funds across California's most underserved communities.

Over $55 million in Low Carbon Transportation Investments have been allocated to the initial Clean Mobility Options pilot projects and statewide Clean Mobility Options Voucher Pilot mobility investments since FY 2014-15. Funds have been awarded for seven projects benefiting low-income, tribal governments, and disadvantaged communities throughout California. These funds have leveraged over $30 million in private and public match funds thus far. The CMO project allocation in FY 2019-20 was earmarked for expansion of the existing pilot projects. Current grantees were required to apply for expansion funding through CARB in order to receive additional funding.

As part of CARB's efforts to strengthen collaboration with State partners, maximize investments in low-income and disadvantaged communities, and address stakeholder and community feedback on the need to expand funding opportunities staff pursued co-funding opportunities, including with the CEC. As a result of this collaboration, CEC is partnering with CARB through an interagency agreement to increase funding for this program by adding

$8 million from CEC's Clean Transportation Program to the Clean Mobility Options Voucher Pilot for additional vouchers, technical assistance, capacity building in communities, and outreach efforts.

The following is a brief description and update on CMO projects. All projects were impacted by COVID-19 and had to pause service or in some cases cease operations such as the Valley Air ZEV Mobility Pilot. Many of the projects have relaunched and will work to return to normal service as conditions allow.

BlueLA Car Share

- Since 2014, the City of Los Angeles (City of LA) has received a total of $4.7 million for a zero-emission car share pilot project in 13 disadvantaged communities. The project launched to the public in April 2018 and has progressed to include 100 vehicles and about 200 chargers. Project partners include the Shared Use Mobility Center, several City of Los Angeles departments including the Department of Transportation, Mobility Development Partners, Blink Mobility, and community-based and environmental justice organizations including the Coalition for Clean Air, Communities for a Better Environment, East LA Community Corporation, LA Más, Korean Immigrant Workers Alliance, Move LA, PATH Ventures, and T.R.U.S.T. South LA.
- In the next couple of years, the City of LA will increase the number of vehicles up to 300 electric vehicles and up to 600 electric bicycles and scooters. This expansion has been temporarily delayed because of the change in the EV operator. To date, the project has provided 42,000 EV car share rides and provided over 4,200 memberships of which nearly 60 percent are from low-income households. The most recent membership surveys in December 2019 indicate a nearly 85 percent satisfaction rate.

Our Community Car Share

- Between 2014 and 2021, Sacramento AQMD received $5.8 million for electric car sharing services for Sacramento affordable multi-unit housing communities. Services are available at 10 community housing sites with additional sites expected to launch later in 2021. The project also provides a subsidized transportation voucher program for non-driving residents that utilizes pre-paid incentive cards for ride hail services, e-bike sharing, and regional transit. Our Community Car Share project partners include Breathe California, Sacramento Housing and Redevelopment Agency, Mutual Housing California, Community Housing Opportunities Corporation, Eskaton, Green Tech, Sacramento Municipal Utilities District, the City of Sacramento, and Zipcar.
- CARB awarded $1.5 million in expansion funding from the FY 2019-20 allocation to continue development of the project. This expansion takes a larger, regional approach by supporting mobility services in centralized locations to serve a wider range of residents living in low-income and disadvantaged communities. The launch of this expansion will begin in 2022.
- As of March 2021, the project has about 640 total members, including about 120 non-driving members using transportation incentive cards, since the launch in

March 2017. The total number of vehicle reservations is 40,200. Data reported through December 2020 indicates over 676,000 electric vehicle miles traveled.
- In post-trip surveys conducted between March 2021 and May 2021, a majority of respondents (71 percent) indicated that the purpose of their trip had been grocery or household shopping, while 12 percent stated that their trip had been for a health care or medical appointments. Nine percent of respondents reported job related trips, and nine percent reported school related trips. Entertainment, recreation, and social activities comprised three percent of vehicle use.

Lift Line Paratransit Dial-a-Ride Electric Vehicle Transition Program

- In FY 2016-17, Community Bridges received a $268,219 grant to purchase two ADA equipped electric EV shuttle buses which replaced two internal combustion engine shuttles for Lift Line service based in Watsonville. The shuttle buses are available to participants who are: low-income Santa Cruz County residents, under 200 percent of the federal poverty level, 60 years of age or older, and/or have a disability. The project includes two level-2 chargers and began service in spring 2019. This project currently serves over 800 underserved community members and will continue to address unmet transportation needs and help to transition Lift Line's fleet to zero-emission in Santa Cruz County's disadvantaged communities.
- CARB awarded $247,600 in expansion funding from FY 2019-20 for an EV shuttle bus to replace an internal combustion engine shuttle. This is an expansion in funding from the FY 2019-20 allocation.

Car Sharing and Mobility Hubs in Affordable Housing Pilot Project

- In FY 2016-17, the Metropolitan Transportation Commission was awarded $2.25 million for an electric vehicle and e-bike sharing pilot project. The project addresses gaps in clean transportation and mobility needs in the communities of San Jose, Oakland, and Richmond. Once fully operational the pilot project will serve approximately 6,000 residents. Partners include TransForm, Bay Area AQMD, GIG Car Share, Shared Use Mobility Center, AC Transit, Santa Clara Valley Transportation Authority, and The Greenlining Institute. TransForm conducted a community transportation needs assessment in 2019 to tailor the design of mobility solutions to the community's unique needs and provide a foundation for comprehensive mobility planning across affordable housing developments. A report documenting key findings was released publicly in February 2020, which provides lessons for CARB's suite of clean transportation equity projects and highlights the importance of prioritizing and incentivizing community transportation needs assessments for equity projects.
- CARB awarded $765,000 in expansion funding from FY 2019-20 to continue and expand this project, fully launch car share and mobility services, maximize data collection and analysis over an 18-month period, and plan for sustainability.
- Survey and usage reporting will be provided when available.

Valley Air ZEV Mobility Pilot

- In FY 2016-17, San Joaquin Valley APCD received $749,800 for a combined service of electric vehicle car sharing and vanpooling for disadvantaged community residents of Merced, Bakersfield, and Fresno County. The project got off the ground in early 2019 and included nine electric vehicles (six Chevy Bolts and three Tesla Model Xs), 29 publicly accessible level-2 chargers, and three DC fast chargers. Partners include Green Commuter and CALSTART.
- This project was shut down due to COVID-19 and subsequent lack of demand for shared mobility in a couple of communities. Project partners will examine data and share lessons learned with CARB and other clean mobility partners.

Ecosystem of Shared Mobility

- In FY 2016-17 San Joaquin Valley APCD received $2.25 million for an electric vehicle car sharing project serving eight disadvantaged community affordable housing complexes in rural Tulare and Kern Counties. The project includes 27 electric vehicles with 17 publicly accessible chargers for an electric car sharing service called MíoCar and has a volunteer ride-hailing component for non-drivers called Volunteers on the Go (VOGO). The project also developed a transportation planning app called VAMOS, which allows users to plan trips in the San Joaquin Valley across multiple transit agencies. This mobility as a service (MaaS) platform maximizes trip efficiency and includes electric car sharing reservations, EV ride-hailing, bike routes, and the option to pay fares through the app. Partners include Sigala Inc, UC Davis Institute of Transportation Studies, Self-Help Enterprises, Mobility Development Group, and Stanislaus County based non-profit MOVE. The project launched the car sharing service MíoCar in early 2020.
- CARB awarded $869,000 in expansion funding from FY 2019-20 to continue and expand this project, fully launch the car share and mobility services MíoCar, VAMOS and VOGO, maximize data collection and analysis over an 18-month period, and plan for project sustainability.
- Survey and usage reporting will be provided when available.

Statewide Clean Mobility Options Voucher Pilot

- From 2017 through 2019, CALSTART was awarded $32 million through a competitive solicitation to serve as CARB's statewide clean mobility options projects administrator. These community-driven projects are designed to increase access to clean transportation for residents based on their needs and priorities. Projects are awarded funding on a first-come, first-served basis for disadvantaged communities, affordable housing in low-income communities, and tribal governments.
- In FY 2019-20, CARB awarded an additional $5.2 million to further expand project resources. CARB has seen a very high demand from communities for a streamlined approach to implementing small-scale clean mobility options with community feedback derived from the transportation needs assessments. There has also been significant demand for more robust technical assistance, which further lowers the

barriers to accessing funding, contributes to capacity building in communities, and helps to ensure robust project design and successful implementation.

- In June 2020, CALSTART opened the application window for entities to apply for Community Transportation Needs Assessment Vouchers with total funding of $1.15 million (each voucher award up to $50,000). This funding allocation was oversubscribed on the first day. The program administrator received 44 applications requesting over $1.9 million in funding which resulted in 24 awards[32] to eligible disadvantaged communities and tribes across 14 counties. About half of the needs assessment awards are located in the Central Valley, with four projects in Fresno County, two projects in Kern County and two projects in Monterey County. Nearly 33 percent are in Southern California with three projects in Riverside and San Diego Counties, and two projects in Los Angeles County. The rest of needs assessment awards are in Northern California with two projects in Sacramento County and two projects in Contra Costa and Tehama Counties. These assessments will help communities engage their residents to identify their unmet mobility needs, develop solutions that will work best for them, and provide a strong foundation to be able to apply for Mobility Project Vouchers in future funding windows.
- In October 2020, CALSTART opened the application window for entities to apply for Mobility Project Vouchers with total funding of $20 million (each voucher award up to $1 million) including a $2 million set-aside for tribal governments. The program became oversubscribed shortly after the application window opened. CALSTART received 33 applications requesting over $31 million in funding which resulted in 21 awards to eligible disadvantaged communities, affordable housing in low-income communities, and tribal governments across 11 counties. Over 50 percent of mobility project awards are in Southern California with four projects in Los Angeles County, three projects in San Bernardino County, two projects in Riverside County, two projects in San Diego, and one project in Imperial County. About 25 percent of awards are in Northern California and the Bay Area with two projects in Alameda and two projects in Contra Costa Counties, in addition to one project in Shasta County. The rest of mobility project awards are in the Central Valley with two projects in Fresno County, one project in San Joaquin County, and one project in Sacramento County.
- As previously mentioned, CARB is partnering with CEC through an interagency agreement to expand program eligibility and funding by adding $8 million to the program for the next application window anticipated to launch in early 2022.

Draft Funding Allocation

Staff recommends that $10 million be allocated in FY 2021-22 to expand the Statewide Clean Mobility Options Voucher Pilot through the existing grant agreement. This recommended allocation takes into consideration funds allocated and reallocated from previous fiscal years, leveraged funds, as well as communities that are conducting Community Transportation Needs Assessments. Staff continuously evaluates the current projects and explores possible

[32] https://www.cleanmobilityoptions.org/2020-community-transportation-needs-assessment-voucher-awardee-press-release/

adjustments based on lessons learned. In addition, staff would have the flexibility to direct any funding that is not awarded for CMO projects to fund other clean transportation equity projects that show demand and meet the most critical needs of low-income and disadvantaged communities.

Potential Changes for FY 2021-22

Staff is not currently considering any major changes to this project category or proposing new projects. CARB is focusing on continuing and expanding existing projects to apply lessons learned, making adjustments that bring the projects into continuously improving alignment with project goals, and maximizing benefits in communities to help ensure long-term, sustainable mobility continues to be available.

Solicitation: CARB held a competitive solicitation for the Statewide Clean Mobility Options Voucher Program administrator for funding available up to three years. The three years of funding have been split into two funding windows, the first one being administered in 2020. Additional funds proposed in this Funding Plan would be a fourth year of funding added to the second funding window that is anticipated to launch in early 2022. CARB staff is considering not holding a new solicitation this year for the second funding window, to minimize any delays in supporting community needs in this ongoing program. In future years, if funding became available for additional funding windows, CARB staff would propose to hold a new competitive solicitation.

Draft Project Evaluation Strategy

Staff anticipates these projects will provide socioeconomic benefits, such as improving lower income residents' access to goods and services and workforce training and development opportunities, in addition to promoting improved air quality in communities. Evaluation methods of socioeconomic benefits include participant surveys and other forms of direct participant feedback, and vehicle/equipment telematics data. Metrics include usage data such as vehicle miles traveled, vehicle/equipment utilization rates, number of reservations, number of hours reserved, vehicle trip types, and user satisfaction. Staff also plans to refine and seek out other evaluation metrics through workshops and public work groups.

Clean Mobility in Schools Pilot Project

Draft Low Carbon Transportation Allocation
$10 million

Project Goals

The Clean Mobility in Schools Pilot Project (CMIS) facilitates bold transformations in transportation and mobility opportunities in and around school communities. Grants provide funding for zero-emission vehicles, charging infrastructure, active and alternative modes of transportation, and more. CMIS projects aim to increase knowledge and acceptance of zero-emission mobility options for staff, students, parents, and the surrounding communities. Additionally, projects must be located within a disadvantaged community.

Each project also aims to gain a better understanding of "mode-shifting" and what the school districts can do to further serve the school and the community in promoting and incentivizing the shift to cleaner and active modes of travel. This process includes a deeper understanding of community needs to effectively communicate and incentivize behavior shifts.

Current Project Status

$24.6 million was awarded to three grantees with FY 2018-19 and FY 2019-20 Low Carbon Transportation Incentives. Awarded projects are leveraging over $210,000 in private and public match funds.

Located in El Monte, San Diego, and Stockton, each school district was impressively able to identify solutions to the unforeseen challenges COVID-19 required just as the projects prepared to launch in May 2020. Each project features strong relationships with local utility providers, project management partners, technology vendors, and dependable and innovative district staff working together to create a sustainable, impactful model for future scholars and leaders.

CMIS grantees are collecting data from vehicles, charging hardware, utility bills and investment strategies, as well as qualitative research on participation rates and opinions through user surveys and tally sheets. Data collection efforts include both one-time collection of information (e.g. specifications) and ongoing data streams (e.g. performance data) of both vehicles and equipment. The following is a brief description of the projects.

El Monte High School District

- The El Monte Union High School District received $9.8 million in funding. Their project takes place in the heart of the San Gabriel Valley, one of the State's most disadvantaged communities. The project includes: 11 battery electric school buses; 11 electric maintenance vehicles; three zero-emission carpool vehicles; five energy storage systems; charging hardware to support electric vehicles; an active

transportation feasibility study that encompasses six school sites; and a Clean Energy Fellowship. The project will also deploy a communications plan and create a zero-emission technology curriculum tailored to their Career Technical Education pathways.
- The project partners include Gladstein, Neandross & Associates; VMA Communications, Inc.; University of California, Riverside; San Gabriel Valley Conservation Corps; Fehr & Peers; A to Z Bus Sales; El Monte / South El Monte Chamber of Commerce; Greenlots; and Engie.

San Diego Unified School District

- The San Diego Unified School District received $9.8 million in funding. Their project takes place in the Lincoln High School cluster area. The project includes: one battery electric food delivery truck and one food serving vehicle; a variety of zero-emission landscape and custodial equipment including maintenance vehicles and crew trucks, power washers, mowers, and more; two zero-emission carpool vehicles; 13 battery electric school buses with managed charging stations, vehicle-to-grid capability and two battery storage units; a robust public education effort to support behavior changes for students, parents and staff; two electric bicycle sharing projects for senior students and teachers; and a replicable template for other districts to use for implementing similar projects.
- The project partners include CALSTART; S Curve Strategies; Center for Sustainable Energy; Circulate San Diego; Cleantech San Diego; Environmental Health Coalition; San Diego Gas & Electric; Black & Veatch; and Nuvve.

Stockton Unified School District

- The Stockton Unified School District received $4.9 million in funding. Located in the Central Valley, the project aims to build a master plan to quickly move the school district towards becoming California's first fully carbon neutral school district. The project includes: a carbon emissions analysis of baseline and future pathways; four battery electric school buses; 22 managed charging stations; a variety of zero-emission maintenance and landscape equipment including eight maintenance vehicles; an expansion of a student-led Energy Patrol programs to all school sites; and outreach and communication events in the school and surrounding community.
- The project partners include The Center for Transportation and the Environment; Sage Energy Consultants; Schneider Electric; and The Mobility House.

Draft Funding Allocation

The response during the project's application period for the FY 2018-19 funding cycle demonstrates a strong interest by California school districts to participate in the project. As such, staff recommends allocating $10 million to CMIS. Staff is evaluating whether to conduct a solicitation for one to three new projects or to fund existing applications from the FY 2018-19 funding cycle that were extremely competitive.

Potential Changes for FY 2021-22

Attention to data collection and assessment of implementation best practices from the current projects will provide a basis for improved future program design. During the April 2021 public work group teleconference, stakeholders shared their support for additional funding from Low Carbon Transportation Incentives allocated towards workforce training. CMIS projects are a great fit for a targeted effort to utilize a school district's portfolio and network to make a lasting impact on the community members they serve. Workforce training activities will be a top priority in future CMIS projects. Stakeholder feedback also highlighted the need to identify and announce the solicitation and grant information opportunities to a targeted school district audience. Staff will work with current grantees, relevant stakeholder groups, and social media outlets to share upcoming participation opportunities for feedback.

Draft Project Evaluation Strategy

A socioeconomic benefit of these projects is improving visibility and acceptance of zero-emission mobility options. Evaluation methods consist of participant surveys and other forms of direct participant feedback, and vehicle/equipment telematics data. Metrics include school district staff feedback on usage purpose and satisfaction, usage data such as vehicle miles traveled, vehicle/equipment utilization rates, number of trips in new vehicles, number of hours of use of new equipment, and likelihood of adopting the options for personal use.

Sustainable Transportation Equity Project

Draft Low Carbon Transportation Allocation
$25 million

Project Goals

The Sustainable Transportation Equity Project (STEP) is a pilot project first introduced in FY 2019-20. STEP funds community-based solutions to address transportation inequities and facilitate socioeconomic benefits in disadvantaged and low-income communities. The pilot is designed to help overcome barriers identified in CARB's SB 350 Guidance Document and address key challenges outlined in CARB's 2018 SB 150 Progress Report.

STEP is piloting an approach to Low Carbon Transportation funding that aims to 1) address community residents' transportation needs, 2) increase access to key destinations (such as schools, grocery stores, workplaces, daycare facilities, community centers, medical facilities), and 3) reduce GHG emissions. STEP has the flexibility to fund many different types of capital, operations, planning, and capacity building projects to help meet the needs of each community within that community's context.

By funding different types of clean transportation and supporting projects within a single community, STEP facilitates collaboration between community residents, local public agencies, and private partners. This collaboration is critical for creating a cleaner, more accessible, and more integrated transportation system that benefits the community residents that need it most. STEP also acknowledges the intersection of the climate, transportation, and equity sectors, and aims to establish new and strengthen existing partnerships between these sectors.

Current Project Status

Using FY 2019-20 funds, CARB released a $19.5 million competitive solicitation on June 4, 2020 and closed the solicitation on August 31, 2020. CARB partnered with the Strategic Growth Council to provide technical assistance on application development to all interested applicants. Applicants submitted 34 proposals (14 Implementation Grant proposals and 20 Planning and Capacity Building Grant proposals), requesting almost $109 million, which was over five times the available funding.

CARB awarded three Implementation Grants totaling $17.8 million to the San Joaquin Council of Governments, the City of Commerce, and the Los Angeles Department of Transportation. (Based on the remaining funds available, LADOT was only awarded half the funds requested.) Implementation Grants provide an opportunity for the selected disadvantaged communities to create and evaluate new, innovative strategies to address community residents' transportation needs and increase residents' access to key destinations, while simultaneously reducing GHG emissions and vehicle miles traveled. The suite of components funded in these Implementation Grants includes a wide variety of clean transportation and supporting projects that increase mobility and reduce vehicle miles

traveled, such as electric carshare, bikeshare, and shuttle services; public transit subsidies and network-fare integration projects; bike lanes; urban forestry; community outreach and education; workforce development projects; and transit-oriented development and displacement avoidance planning—all while centering community needs and decision-making.

CARB also awarded eight Planning and Capacity Building Grants totaling $1.7 million to the Oakland Department of Transportation, Circle of Life Development Foundation dba MLKCommUNITY Initiative, Omnitrans, Isla Vista Community Services District, City Heights Community Development Corporation, Anaheim Transportation Network, Solano Transportation Authority, and City of South El Monte. Planning and Capacity Building Grants fund the community engagement and community transportation needs assessments necessary to help low-income and disadvantaged communities identify, prioritize, and prepare to implement clean transportation and supporting projects.

As of summer 2021, awarded projects are beginning implementation. All recipients are eligible to receive technical assistance through contracts with the Strategic Growth Council and UC Berkeley's Othering and Belonging Institute (OBI).

Draft Funding Allocation

Staff recommends an allocation of $25 million for STEP.

In the FY 2019-20 STEP solicitation, the top five highest-scoring Implementation Grant proposals were all extremely competitive. However, CARB only had enough funding in STEP to support the top two and a half Implementation Grant proposals. Staff is considering allocating $25 million to fully fund the two and a half Implementation Grant proposals that were extremely competitive, but that were not funded in the FY 2019-20 solicitation.

Staff recommends this approach over conducting a new solicitation this year for three primary reasons:

1. Applicants put a lot of effort and resources into the proposals that were submitted in STEP's first solicitation, and there are very competitive projects that are ready to fund now. CARB staff wants to make the most of all the work that was done and maximize the outcomes of the first solicitation and get the funding to communities that need it as quickly as possible.
2. Postponing the next solicitation another year will allow CARB to continue to learn from the outcomes of STEP's first solicitation. Staff will be able to use these takeaways to improve future solicitations.
3. Lastly, postponing the next solicitation another year will also allow some of the Planning Grantees to conduct community transportation needs assessments and be more prepared to apply for a STEP Implementation Grant, if that is their determined next step.

If less than $25 million is allocated, staff will consider awarding fewer applicants from the previous solicitation, conducting a new solicitation (and potentially previously unsuccessful applicants to apply again), or shifting the funding to other transportation equity projects that

show demand. Staff may also consider allocating a small amount of funding to continue supporting current and future grantees. This support may include helping grantees meet costly grant agreement requirements, such as insurance requirements, or helping grantees address other outstanding challenges, such as the long-term financial sustainability of implemented projects.

This recommendation was drafted prior to the public work group meeting on July 19, 2021 where STEP was discussed. Staff will share any updates based on input from that public work group meeting in the Funding Plan workshop on August 4, 2021.

Potential Changes for FY 2021-22

CARB does not plan to release a new STEP solicitation for FY 2021-22.

Draft Project Evaluation Strategy

CARB plans to evaluate the success of STEP-funded projects via two research contracts. CARB has a contract with OBI to evaluate the success of the eight funded Planning and Capacity Building Grants. OBI will work with each Grantee to develop an evaluation framework and community-defined metrics of success. Metrics that may be evaluated include increased understanding of residents' transportation needs, prioritization of projects according to those needs, and level of engagement with community residents – particularly hard-to-reach residents.

CARB has a contract with the University of California Berkeley's Transportation Sustainability Research Center to evaluate the success of the three funded Implementation Grants. UC Berkeley will work with each Grantee to develop an evaluation framework that is specific to their projects and their community's definition of success. The contract will evaluate whether the funded projects help meet the transportation needs of different community demographics across accessibility, affordability, environmental sustainability, reliability, and safety. Metrics that may be evaluated include mode shift away from single occupancy vehicles, number of clean transportation choices available, public health (e.g., air pollution exposure), and level of engagement with community residents—particularly hard-to-reach residents.

A socioeconomic benefit of these projects is travel cost savings. Evaluation methods consist of collecting data from the Grantees and quantifying the associated savings. Metrics include number of subsidies, value of each subsidy, and average fare of each clean transportation service. Another socioeconomic benefit of these projects is access to clean transportation options. Evaluation methods consist of collecting data from the Grantees and estimating the value of the access provided. Metrics include clean, shared vehicle miles traveled and usage of clean transportation services. Lastly, a socioeconomic benefit of these projects is workforce development. Evaluation methods consist of collecting data from the Grantees. Metrics include the number of people who complete a workforce training program.

Outreach, Technical Assistance, Needs Assessments, and Workforce Development Overview

This section covers CARB's investments in outreach and other capacity-building support efforts, including a streamlined one-stop-shop (Access Clean California), community transportation needs assessments, technical assistance, and workforce training and development. These investments are critical to ensuring the clean transportation equity projects are accessible to, and meet the needs of, the State's priority communities. These investments incorporate equity principles, such as building community awareness and capacity across clean transportation and mobility programs, and support implementation of the recommendations from CARB's SB 350 Guidance Document to reduce the barriers low-income residents face in accessing clean transportation and mobility options.

Outreach, Community Transportation Needs Assessments, Technical Assistance and Access Clean California

Draft Low Carbon Transportation Allocation
$5 million

Project Goals

The goals of investments in Outreach, Community Transportation Needs Assessments, Technical Assistance and Access Clean California (formerly named the One-Stop-Shop Pilot Project) are to work with local community-based organizations and trusted community leaders to help increase awareness of Low Carbon Transportation Investment funding opportunities, build local community capacity, and streamline access to Low Carbon Transportation equity projects. These investments help to reduce barriers to participation, expand educational, training, and workforce development opportunities, and raise awareness in the most impacted and underinvested communities. Through Access Clean California, equity metrics will evaluate how effectively these equity outcomes are operationalized and achieved.

Current Project Status

Traditionally, Low Carbon Transportation Investment funding for outreach has been part of each individual project, such as CVRP, Clean Cars 4 All, etc., and conducted somewhat disparately by each program administrator. In the FY 2019-20 Funding Plan, however, CARB allocated a total of $7 million[33] to support a comprehensive outreach strategy centered on implementing several CARB's SB 350 Guidance Document priority recommendations and meeting the broader clean transportation and mobility needs of community residents. Of this, CARB dedicated $1 million for additional outreach support for existing equity project administrators, and to support technical assistance and capacity building for priority populations through funding to local community-based organizations. This funding was allocated to GRID Alternatives to pilot additional capacity-building grants to CBOs representing historically underinvested communities. So far the grants are helping an initial cohort of six CBOs from across the State develop fellowship opportunities, training curriculum and materials, and other capacity-building efforts to support targeted outreach in priority communities.

CARB allocated the remaining $5 million from FY 2019-20 to continue development and implementation of Access Clean California. In the FY 2017-18 Funding Plan, CARB allocated $5 million of VW settlement funding to initiate development of Access Clean California, and after a competitive solicitation in 2018 selected GRID Alternatives as the program

[33] The final funding allocation was reduced to $6 million due to reductions directed by the Department of Finance per the Budget Act of 2019, associated with lower fourth quarter Cap-and-Trade auction proceeds.

administrator. A priority recommendation of both CEC's SB 350 Low-Income Barriers Study[34] and CARB's SB 350 Guidance Document, Access Clean California is a multi-dimensional outreach project with the ultimate goal of streamlining access to, and coordinating outreach for, the State's clean transportation and clean energy consumer-based equity projects. While the long-term goal is for Access Clean California to be a multi-agency platform, in the near-term the pilot project focuses on CARB's clean vehicle purchase incentive projects, including Clean Cars 4 All, Financing Assistance, CVA Program, and CVRP.

Consistent with the Greenlining Institute's Six Standards for Equitable Investment, the pilot has undertaken a user-centered approach to developing the various components of Access Clean California. To date, the pilot successfully built a statewide network of outreach partners to help CARB spread the word about its clean transportation equity programs and build trust and capacity in the most impacted communities. In support of these partners, Access Clean California provides a resource hub to make outreach resources more accessible, as well as providing a platform for partners to come together, share lessons learned, exchange best practices, and facilitate communication. The project's outreach coordination efforts also support CARB's Strategic Outreach Roadmap key strategies, including creating a community of practice for project administrators and outreach partners, building a searchable database of CARB's clean transportation outreach efforts, and partnering with the Greenlining Institute to develop equity metrics to evaluate outreach effectiveness.

To streamline the application process, GRID Alternatives undertook a human-centered design approach to create the Benefits Finder, which is a user-centered application tool that helps users determine eligible programs and kick-start their applications. The Benefits Finder is hosted on the Access Clean California Web-platform[35] and is currently available for facilitated-use by the project's outreach partners with the ultimate goal of opening up for broader use after the clean vehicle purchase incentive projects receive additional funding. Via the Benefits Finder, GRID Alternatives is also piloting a centralized income verification process to inform how income verification—one of the most complicated steps in each program's application process—can be streamlined across all the connected programs. To support applicants through the entire application process, GRID Alternatives has also developed a case management system with supporting back-end software.

Looking toward FY 2021-22, CARB staff and the Access Clean California project team plans to significantly scale-up outreach implementation, expand the partner network, and provide additional capacity-building grants for outreach by community-based organizations. Access Clean California will also be working to expand the Benefits Finder to additional programs, to fulfill the ultimate vision, as outlined in the CARB's SB 350 Guidance Document, of being a multi-agency platform for the State's equity focused clean transportation and energy programs. Discussions with State partners, such as California Public Utilities Commission,

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[34] California Energy Commission. *Low-Income Barriers Study, Part A: Overcoming Barriers to Energy Efficiency and Renewables for Low-Income Customers and Small Business Contracting Opportunities in Disadvantaged Communities.* December 2016. https://efiling.energy.ca.gov/getdocument.aspx?tn=214830

[35] www.AccessCleanCA.org

CEC and other State agencies, are ongoing to determine longer-term project support via additional funding sources.

Draft Funding Allocation

Staff recommends allocating $5 million to continue prioritizing and expanding outreach, education, and other capacity-building efforts to increase awareness and build broader understanding of community clean transportation and mobility needs. This includes Access Clean California, technical assistance and community transportation needs assessments. Staff estimates that $3-5 million would be used to support scaling-up implementation of Access Clean California, as well as expanding additional clean transportation and energy incentive programs. The remaining funds will be used to expand or enhance outreach, technical assistance, and capacity-building efforts through funding to local community-based organizations for existing equity projects in the near-term.

Potential Changes for FY 2021-22

Staff is not proposing any significant policy changes for Access Clean California, but will be working closely with GRID Alternatives to ensure that as the project scales-up in FY 2021-22 it is effectively targeting the most impacted and underinvested communities. The project will also be coordinating closely with Financing Assistance as this program considers transitioning to a more needs-based implementation model.

Over the next year staff will evaluate communities to determine whether there is a need to develop outreach, needs assessment, technical assistance and/or other capacity building efforts that are separate from those being implemented through existing projects. For example, would a more centralized approach to needs assessments or technical assistance be more effective than continuing to fund these elements through STEP and CMO projects?

Solicitation: CARB held a competitive solicitation for Access Clean California (then called the One-Stop-Shop Pilot Project) administrator with funding beginning in FY 2017-18 and with the option at CARB's discretion for new Grant Agreements for each of the subsequent two fiscal years (FY 2018-19 and FY 2019-20). A second grant agreement was executed in February 2020 using FY 2018-19 funds. Access Clean California is a critical, high-priority outreach effort for the agency that staff do not want to subject to any delays that could negatively impact participation from priority population. Additionally, the current Access Clean California administrator, GRID Alternatives has proven themselves as being a highly reliable and experienced administrator. As such, staff is considering not holding a new solicitation this year, to minimize any delays in supporting community needs in this ongoing program. In future years, if funding became available for additional funding windows, CARB staff would propose to hold a new competitive solicitation.

Draft Project Evaluation Strategy

In partnership with the Greenlining Institute, Access Clean California developed an equity metrics framework to quantitatively and objectively measure how effectively the project is achieving and operationalizing its equity goals. Developed with input and feedback from

outreach partners, the metrics help identify areas of strength, challenges, and gaps in the project's implementation strategy. For each goal, multiple indicators are measured and aggregated to an overall score. To evaluate how successfully the project is raising awareness of the equity projects, for example, the metrics measure nine different outcomes, including the number of project administrators capturing demographic data, number of outreach partners representing priority audiences, and percentage of applicants from priority communities. The data captured through these metrics will allow the program to adapt and adjust to meet the needs of its priority audience and disadvantaged communities, and also supports the Greenlining Institutes Mobility Equity Framework.

Workforce Training and Development

Draft Low Carbon Transportation Allocation
$1.5 million

Project Goals

The goal for investment in Workforce Training and Development is to maximize economic opportunities and benefits for low-income and disadvantaged communities by expanding and increasing priority population residents' connections to good quality clean transportation jobs, training opportunities, and career development. Investment in Workforce Training and Development pilot projects will not only support current and future ZEV development in low-income and disadvantaged communities, but will also further support job training and career advancement opportunities in the communities where CARB incentivized ZEV deployment is occurring. These investments aim to reduce community barriers and increase access to good quality jobs in the most impacted and underinvested communities.

Current Project Status

Workforce Training and Development has been an important element of CARB's Low Carbon Transportation Investments and has been encouraged from the start of many CARB equity projects. A key focus has been on electric vehicle charging infrastructure within school-focused and shared mobility projects, and on outreach and education activities. To support commercial operations of zero-emission bus (ZEB) adoption programs, several ZEB technology workforce educational curricula have been developed, providing residents with new technology vehicle training and skills. Additionally, many of CARB's clean mobility equity projects provide training opportunities for residents, and high school and college aged youth. One of CARB's most recent collaborations with the CEC is to co-fund the Inclusive, Diverse, Equitable, Accessible, and Local (IDEAL) Zero-Emission Vehicle Workforce Pilot: Training, Employment, and Recovery (ZEV Workforce Pilot). The IDEAL ZEV Workforce Training and Development Program includes the development of new training projects and investments to provide communities with direct workforce training and development opportunities. In addition to working with the CEC, CARB is also exploring potential partnerships with other agencies, such as the California Workforce Development Board, to leverage existing workforce training and development efforts. CARB is also looking at how to bridge low-income and disadvantaged communities' workforce training and development needs in the light-duty and heavy-duty sectors as a whole and how to connect residents to existing and future workforce training and development programs.

Schools have an extended reach when it comes to workforce training, education, and outreach. CARB's focus on battery electric school bus replacement funding programs, such as the Rural School Bus Pilot Project and the Clean Mobility in Schools (CMIS) Pilot Project, provide a core touchpoint for spreading the news that it is possible to achieve our clean air and climate goals. The CMIS project directly impacts students, staff, and teachers through curriculum development, and workforce training, including a Clean Energy Fellow to provide

low-income and disadvantaged residents with direct training opportunities in the clean transportation sector in their communities. Located within disadvantaged communities, grantees will develop both educational outreach forums to residents as well as curriculum in partnership with University of California professors, Rio Hondo Community College, zero-emission technology manufacturers, and community-based organizations on a variety of CMIS project elements. Both the Rural School Bus Pilot Project and CMIS grants are investing in our local community education and workforce training.

Some pioneer ZEB-adopting transit agencies, such as Sunline Transit Agency and Alameda-Contra Costa Transit District, have played an important role as ZEB technology educators and have developed curriculums to share and provide workforce training programs to support the commercial operation of ZEBs. These training programs ensure advanced skillsets are taught to operate and maintain zero-emission battery and hydrogen fuel cell buses.

CMO and STEP provide funding for several projects that involve workforce training and career development opportunities for local residents. CMO provides opportunities mostly focused on electric vehicle education, installation and maintenance of charging infrastructure and solar equipment, marketing, outreach and education activities such as working with local students to serve as ambassadors to engage community members and expand education and awareness opportunities. STEP funds several workforce development projects in which workforce training and development is an important element of the projects and encouraged from the beginning. Most STEP projects are focused on either electric vehicle charging infrastructure and shared mobility projects, or on outreach and education activities, and many provide training opportunities for high school and college-aged youth.

Currently, CARB and the CEC are collaborating to develop a new, innovative workforce training and career development project called the IDEAL ZEV Workforce Pilot. This work builds on CARB and the CEC clean transportation program lessons and equity principles, including the need to understand and fill critical gaps in access to workforce programs that provide direct community benefits, maximize investments in programs that address community-identified needs, and prioritize and elevate community-driven ideas and solutions that support California's transition to a zero-emission future. CARB and the CEC are working to finalize an interagency agreement and anticipate releasing the competitive ZEV Workforce Pilot grant solicitation publicly in the late summer of 2021.

In working with our stakeholders and communities, workforce development has been elevated as a critical aspect for communities. CARB plans to continue bolstering workforce elements of our existing programs to support the green economy and funding these additional workforce training and career development projects in the future. This may include providing economic opportunities through high-quality jobs and collaborating with workforce development and training programs creating career pathways for residents.

Draft Funding Allocation

Staff recommends allocating $1.5 million to prioritize and expand workforce training and development to maximize the economic opportunities and the benefits for low-income and

disadvantaged communities by prioritizing the implementation of incentive projects that provide residents with connections to good quality clean transportation jobs, training opportunities, and workforce development. Specifically, objectives for this investment include expanding access to training programs that support clean transportation jobs and workforce development, and expanding opportunities and creating connections for good quality clean transportation jobs in low-income and disadvantaged communities.

Potential Changes for FY 2021-22

As this is a new allocation proposed for funding workforce training and development, CARB will seek stakeholder and community feedback on the workforce training and development goals and project priorities through a public work group process and one-on-one discussions. Given the amount of funding available, CARB is considering funding initially one or two existing projects, with either full funding for a single project type or funding more than one project at a reduced amount. CARB may augment existing grants to integrate or expand workforce training and development concepts, or develop a solicitation for a new grantee. CARB plans to hold additional workgroup meetings to identify project implementation after the funding plan is approved by the Board.

Draft Project Evaluation Strategy

As CARB expands investments that support a green workforce, such as zero-emission job training and career development, CARB staff will work with our state and local partners and communities to determine a process to define, collect, and use data to measure and report on these investments. This includes identifying direct and measurable community benefits, such as socioeconomic, job access, zero-emission technology and environmental literacy, and other quality of life and social impact improvements. This evaluation effort will be done in parallel with CARB's other clean transportation and mobility investments to determine relevant data and lessons that can be applied across programs. Central to CARB's evaluation strategy and metrics assessment is intentional and meaningful community engagement throughout the process. This includes soliciting and elevating ideas on how CARB and our partners should measure and report workforce training and development benefits and providing strong feedback loops for policy and program adjustments based on findings.

Heavy-Duty Vehicle and Off-Road Equipment Investments

Overview

The pace of heavy-duty technology advancement has increased rapidly over the past several years, resulting in more commercially available zero-emission vehicle and equipment options than ever before. And several new advancements are emerging to expand technology options and reach new market segments, supporting the transformation of the on-road and off-road fleet to zero-emission wherever feasible to help meet California's ambitious air quality and climate change goals.

This section of the Discussion Document describes potential heavy-duty vehicle and off-road equipment (heavy-duty) investments to be funded through Clean Transportation Incentives. Staff provides an overview of CARB's heavy-duty investments in the context of the Long-Term Heavy-Duty Investment Strategy and the current technology and market landscape before providing preliminary funding recommendations for and descriptions of the following projects:

- Advanced Technology Heavy-Duty Demonstration and Pilot Projects
- Clean Truck and Bus Voucher Incentive Project (HVIP)
- Clean Off-Road Equipment Vouchers Incentives Project (CORE)
- The Truck Loan Assistance Program

CARB's strategy for heavy-duty investments maximizes benefits and enables progress toward State climate change and air quality goals, while ensuring that investments benefit the communities most impacted by poor air quality. This is an important time to invest in heavy-duty applications for technology development, market transformation, and economic recovery.

Supporting Zero-Emission Market Development

The successful deployments of zero-emission truck and bus technologies from early investments have been instrumental in advancing the zero-emission on-road vehicle market to where it is today, with a wide array of vehicles and equipment on the commercial market. More recent investments in the development and demonstration of zero-emission off-road vehicles and equipment have resulted in a growing list of commercial products in the off-road sectors. Continued commitment to these markets in the form of commercial incentives as well as funding for demonstration and pilot projects will play a critical role in:

- Meeting California's air quality and climate goals.
- Achieving vehicle and equipment deployment targets.
- Ensuring all residents experience improved air quality and have access to incentive programs.
- Supporting high-quality jobs.
- Enhancing California's leadership role as an incubator and marketplace for clean, zero-emission technology.

Executive Order N-79-20[36] sets near-term and longer-term targets to meet these objectives: 100 percent of medium- and heavy-duty vehicles in the state be zero-emission by 2045 for all operations where feasible, and all drayage trucks be zero-emission by 2035. In addition, the Executive Order directs CARB to develop regulations to make these targets a reality and to work with other agencies to develop and propose strategies to achieve 100 percent zero-emission off-road vehicle and equipment by 2035. The *California Zero-Emission Vehicle Market Development Strategy*[37] establishes priorities, roles and responsibilities of state agencies and private stakeholders to achieve the goals of Executive Order N-79-20 and advance the ZEV market to scale.

CARB recognizes the challenges and opportunities associated with larger scale deployments, where multiple vehicles are deployed at one location. Fleet refueling/charging and vehicle operation and maintenance needs must be met for a successful zero-emission fleet deployment. CARB will continue to collaborate with CEC and other agencies on large-scale vehicle/infrastructure projects to share lessons learned with scaling up deployments of battery-electric and hydrogen fuel cell fleets.

Continuing to invest in technology demonstrations will be critical to develop and advance zero-emission technology in challenging sectors, such as rail, marine, port, construction, and agriculture. Commercializing new technologies and transfer to new applications supports emission reductions during the demonstration phase and enables longer term emissions reductions needed in the communities most impacted by poor air quality. It is also important to identify opportunities to build on the progress made in earlier demonstrations to help further their advancement towards commercialization.

The Climate Change Scoping Plan, Sustainable Freight Action Plan, and Mobile Source Strategy all demonstrate that meeting the State's air quality, climate, and equity goals will require robust zero-emission markets for an array of heavy-duty applications. And ensuring that communities most impacted by poor air quality reap the benefits will require active and meaningful community engagement. Acknowledging that these benefits will not materialize soon enough on their own, California is investing in their realization with incentives and complementary regulatory measures.

As costs continue to decline and technologies expand, incentives will phase out of some markets as they mature, or refocus on priority fleets. Regulations that require cleaner vehicle technologies provide long-term market certainty and continue growth in the market. The following regulations are a key part of CARB's strategy to support cleaner technologies through a strategic combination of incentives and regulations:

- Innovative Clean Transit regulation, adopted December 2018
- Zero-Emission Airport Shuttle Bus regulation, adopted June 2019

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[36] Executive Order N-79-20, September 23, 2020. https://www.gov.ca.gov/wp-content/uploads/2020/09/9.23.20-EO-N-79-20-Climate.pdf

[37] California Governor's Office of Business and Economic Development. *California Zero-Emission Vehicle Market Development Strategy*. February 2021. https://static.business.ca.gov/wp-content/uploads/2021/02/ZEV_Strategy_Feb2021.pdf.

- Advanced Clean Trucks regulation, adopted December 2020
- Heavy-Duty Omnibus regulation, adopted August 2020
- Upcoming Advanced Clean Fleets regulation

Draft Recommendations

For FY 2021-22, the State budget included a total of $315 million for heavy-duty vehicle and off-road equipment projects from the Greenhouse Gas Reduction Fund for Low Carbon Transportation, which is augmented by $413 million from the General Fund, and $86.45 million from the Air Pollution Control Fund. Additionally, $28.64 million in AQIP funds were appropriated to CARB through the Budget Act of 2021. Following the Budget Act of 2021, staff's draft FY 2021-22 allocations are shown in Table 10. Staff will continue to seek input on the draft allocations and on the projects listed in Table 10.

Table 10: Draft FY 2021-22 Heavy-Duty Vehicle and Off-Road Equipment Project Allocations (Millions)

Project Category	Low Carbon Transportation	General Fund*	APCF	AQIP	Total Draft Allocation
Clean Truck and Bus Vouchers (HVIP)	**$196.5**	**$373**			**$569.5**
HVIP Standard	*$171.5*	*$98*			*$269.5*
HVIP–Transit		*$70*			*$70*
HVIP–School Buses		*$130*			*$130*
HVIP–Drayage		*$75*			*$75*
HVIP–Innovative Small e-Fleets	*$25*				*$25*
Clean Off-Road Equipment Vouchers (CORE)	**$78.5**		**$86.45**		**$164.95**
Demonstration & Pilot Projects	**$40**	**$40**			**$80**
Drayage Truck and Infrastructure Pilot		*$40*			*$40*
New Demonstration and Pilot Projects	*$40*				*$40*
Truck Loan Assistance Program				**$28.64**	**$28.64**
Total	**$315**	**$413**	**$86.45**	**$28.64**	**$843.09**

**Does not include any adjustments for project administration.*

The following section provides more information on each of these projects as well as on the Long-Term Heavy-Duty Investment Strategy and updates to it this year.

Summary of Changes to the Long-Term Heavy-Duty Investment Strategy

Four years ago, as part of the Fiscal Year 2017-18 Funding Plan, CARB developed a three-year long-term investment strategy to serve as a roadmap showing how best to focus the investment of Low Carbon Transportation funds in heavy-duty vehicle and off-road equipment incentives so that they can have the greatest impact. Each year, staff has updated this document through a public process, using stakeholder input while laying out the agency's goals, analyzing the factors affecting the efficacy of projects, and presenting a thoughtful strategy for accomplishing this. The result of the process was the Three-Year Investment Strategy for Heavy-Duty Vehicles and Off-Road Equipment.

The now renamed Long-Term Heavy-Duty Investment Strategy generally includes three main components: technology status snapshots that show progress to date toward commercialization; beachheads for the three advanced technology pathways (zero-emission capable, cleanest combustion, and efficiencies) that describe the avenues for technology transfer; and a three-year investment priorities table that details staff's assessment of individual priorities and estimated funding needed to ensure continued progress toward commercialization and market transformation goals.

Each year has seen dramatic changes taking place in the market and a number of economic uncertainties. The Strategy provides a focus to help guide the resources that are available to where they can help us make the most progress towards meeting our long-term air quality, climate, and equity goals. As in prior years, staff has updated the core components of the Strategy that are integral to its mission and purpose.

Technology Status Snapshots

Since the development of the first Funding Plan for Low Carbon Transportation and AQIP, technology has been advancing rapidly in the heavy-duty vehicle and off-road equipment space. Understanding where key technologies are on their path to commercialization better enables CARB staff to make appropriate funding considerations. As such, this year's Long-Term Heavy-Duty Investment Strategy includes an annual update to the status of these core technologies and applications.

Technology Pathway Beachheads

The foundation of CARB's heavy-duty investment strategy is the concept of beachheads: early successful vehicle applications where the pathway technologies can best establish initial market acceptance, and then continue from there to advance and seed additional adjacent market applications. CARB has worked with its partners including CALSTART to understand how vehicle technology evolves and transfers between applications, transforming this understanding into a theory of change for heavy-duty transportation technologies.

With the ongoing advancement of off-road technologies and the emergence of promising new applications, CARB has continued to integrate off-road technologies into the beachhead models and the Long-Term Heavy-Duty Investment Strategy more broadly. CARB has worked with stakeholders to understand the connections between on- and off-road applications and will be updating the beachheads accordingly. These updates will better enable CARB to invest appropriately in both on- and off-road applications and to accelerate technology commercialization for the entire heavy-duty sector.

Three-Year Investment Priorities Table

Many of the key findings of the Long-Term Heavy-Duty Investment Strategy are captured in the three-year investment priorities table, which contains CARB's top priorities for the upcoming three fiscal years (not including the current year) for Low Carbon Transportation funds. As in prior years, staff will be adding a new third year (FY 2024-25) to the table along with draft funding levels for technologies in the demonstration, pilot, and commercial incentive categories. Small changes are being made to the other years to recognize shifts in technology, current projects receiving State investment, and the resulting impacts to investment priorities.

Other Updates

- **Metrics of Success:** Prior Strategy documents have highlighted the need to define what makes a program successful in order to more effectively set goals, establish priorities, and assess progress. Staff identified three broad categories that define success: creating healthy communities; growing the green economy; and supporting technology evolution. CARB worked with stakeholders to develop a set of metrics—using data already being collected—to construct a holistic set of evaluation tools. These include measures such as clean vehicle miles traveled, investments in California's disadvantaged communities, the number of incentive vouchers issued by technology type, private funding leveraged by public investments, the number of participating advanced technology manufacturers, as well as other technology and market readiness indicators. For this year's Strategy, these metrics will be updated, and potential new metrics will be discussed and considered for inclusion, including those that are designed to support equity goals – as discussed below.
- **Equity:** Equity has been an important consideration with the development of each year's update; however, the update for FY 2021-22 will examine the heavy-duty investment strategy more broadly through the lens of equity. In addition to considering how heavy-duty investments can benefit priority populations, CARB will work with stakeholders and communities, with a coordinated approach across light-duty and heavy-duty investments, to identify other metrics that can help to demonstrate the benefits and co-benefits of incentive funding.
- **Industry Examples:** As has been the case in prior years, CARB will include a series of industry examples, or mini case studies, which are designed to illustrate specific examples where industry is adapting to meet specific needs for heavy-duty investments. For this year, examples may include narratives that discuss such areas as

infrastructure needs, hydrogen fuel cell technologies, collaborative opportunities / partnerships, and advances in battery technology.

SB 1403 School Bus Report Updates

In 2018, the Legislature passed SB 1403, formalizing the Long-Term Heavy-Duty Investment Strategy and adding to it a report on the State's school bus population and funding needs. This year's report will follow a similar outline as last year's report and will provide an update to State school bus funding programs, the State school bus inventory, and a discussion on achieving statewide zero-emission school bus goals by 2045. The report will also include case studies from school districts that have incorporated zero-emission school buses into their fleet. The report is being developed via a public process and in coordination with the CEC. Additional partners include local air districts, school districts, zero-emission school bus manufacturers, and state utilities.

Heavy-Duty Vehicle and Off-Road Equipment Demonstration and Pilot Projects

Draft Low Carbon Transportation Allocation–$40 million
Draft General Fund Allocation–$40 million

Project Goals

Demonstration projects are intended to accelerate the introduction of advanced emission reducing technologies that are on the cusp of commercialization into the California marketplace. In this first phase of CARB investments, pushing technology advancement toward commercialization, per-vehicle or equipment incentives are high because manufacturing is not standardized and is focused on developing and testing technologies with businesses. Higher levels of incentives per vehicle are needed to help companies cover the costs of technology development, deployment, and supporting infrastructure installations. A public investment in these technologies helps to achieve GHG reductions, as well as criteria pollutant and toxic air contaminant reductions, sooner than would be possible otherwise. This commitment from the State encourages industry to expeditiously invent, develop, test, and introduce cutting edge emission reducing technologies in the on- and off-road sectors. All demonstration projects must have the potential for widespread commercialization and be significantly transformative while achieving GHG, criteria pollutant, and toxic emission reductions as required by SB 1204, SB 1403, and AB 2285 with nearly all of the funding being spent in low-income and disadvantaged communities. Once demonstration projects reach the goal of market availability, longer term future emission reductions in considerably larger magnitudes can be achieved by moving these technologies to the pilot phase of commercialization. Two successful examples of this are CARB's support for zero-emission school buses in 2012 and zero-emission yard trucks in 2013. Currently, both electric school buses and yard trucks are fully commercialized by a diverse number of manufacturers, realizing lower operational costs for their end users and providing needed emission benefits to California's impacted communities.

Current Project Status

Over the past six years, CARB has funded over 30 heavy-duty demonstration and pilot projects with approximately $400 million in incentives paired with an equal if not larger sum contributed by the hundreds of implementing project partners, including many California businesses utilizing these technologies every day. Demonstration projects include over a hundred clean heavy-duty trucks and pieces of cargo handling equipment, energy management systems, an opposed piston engine, electric agriculture tractors, and a hydrogen fuel cell passenger ferry. Pilot projects include battery electric and fuel cell transit buses, electric school buses, battery electric delivery trucks and super clean marine vessels. In addition, CARB's Zero- and Near Zero-Emission Freight Facilities project funded ten transformational projects demonstrating a wide range of advanced technology vehicles and equipment around the State at significant scale. The projects occur throughout California

from San Diego to the South Coast area, through the San Joaquin Valley up to Sacramento and the Bay Area. Detailed summaries of all of CARB's heavy-duty demonstration and pilot projects funded to date can be found on the Moving California website.[38]

Draft Funding Allocation

CARB's Long-Term Heavy-Duty Investment Strategy laid out a roadmap showing how much heavy-duty incentive funding would be needed over the next three years to put the State on a trajectory to meet its ZEV adoption and emission reduction goals. The total funding need for demonstration and pilots projected for FY 2021-22 ranges from $250-$415 million. However, the State budget provides a total of $745 million for heavy-duty projects across all phases of the commercialization arc, leaving sufficient funding for only several important CARB Advanced Technology Demonstration and Pilot Project categories. Therefore, staff is considering funding the following demonstration and pilot projects:

$40 million from General Fund for the Zero-Emission Drayage Truck and Infrastructure Pilot Project:

- CARB and CEC released a joint $44.1 million FY 2019-20 Zero-Emission Drayage Truck and Infrastructure Pilot Project solicitation in November 2020 to support large scale deployments of zero-emission regional haul and drayage trucks. Seven applications were submitted, requesting $152 million in funding, with a proposed $200 million in match funding, representing nearly $350 million in total project costs. Only one of the selected projects is be fully funded and the second project is only being partially funded. The goal of this program would be to make whole the second highest scored project and fund additional eligible projects resulting from the joint CARB and CEC solicitation.

$40 Million in Greenhouse Gas Reduction Funds for Low Carbon Transportation funds for Off-Road Demonstration and Pilot Projects:

- Staff are proposing a focus on off-road demonstration and pilot projects. This could include projects related to construction, cargo handling equipment, ocean-going vessels, commercial harbor craft, and locomotives. In addition to these concepts, staff is considering retaining a third-party administrator to conduct the solicitation and implement selected projects moving forward. Concepts will be discussed in an upcoming workgroup.

Potential Changes for FY 2021-22

If the final adopted State budget reflects a larger or smaller allocation for heavy-duty vehicle and off-road equipment projects, staff will work with stakeholders through public workshop and work group meetings over summer 2021 to make adjustments to this proposal.

Staff is considering utilizing a third-party administrator to act as CARB's Project Liaison to implement the above Low Carbon Transportation funded projects. A single solicitation may

[38] https://www.arb.ca.gov/msprog/lct/projectheavyduty.htm

be issued in lieu of several category specific solicitations and may include the third-party administrator solicitation as a single large solicitation. Any agreement with a third-party administrator is intended to be a multi-year agreement that may allow for the third-party administrator to issue future CARB Advanced Technology Demonstration and Pilot project solicitations. Specific details about the roles and responsibilities of the third-party administrator and the solicitation format will be developed, with stakeholder input, through the public workshop and workgroup process.

As with past funded demonstration and pilot projects, all funded projects through any Advanced Technology Demonstration and Pilot solicitation will be required to be located in a disadvantaged community. Staff is considering including specific workforce training and development components for future solicitations. New jobs reporting guidelines for projects funded under any solicitation that comes from this Funding Plan are not yet fully developed. However, detailed information on jobs created or retained by funded projects along with salary levels, education requirements, internships and other information will be reported.

Draft Project Evaluation Strategy

Metrics for evaluating success of any Advanced Technology Heavy-Duty Vehicle and Off-Road Equipment Demonstration and Pilot Project will include:

- **Successful deployments of vehicles and equipment along with supporting infrastructure.** This metric is evaluated by comparing the proposed project outcome described in the project's application with actual performance.
- **Accurate data collection and reporting of project performance.** This metric is evaluated by an analysis of the quality of the data projects are generating and how that data is being reported to interested stakeholders.
- **Advancing technological development.** This metric is evaluated after the close of a project with an assessment of what level the technology has penetrated into the marketplace to displace conventionally fueled technologies.

The most quantitative way of evaluating success is to compare the project as originally scoped by the application to the actual outcome of the project, as each demonstration and pilot project has unique goals and metrics. However, the ultimate analysis of the success of an Advanced Technology Heavy-Duty Vehicle and Off-Road Equipment Demonstration and Pilot Project can only be evaluated long after it has ended. Success is determined by the extent to which the project has pushed a technology quicker into the marketplace, accelerated the adoption of that technology, and secured those emission reductions by displacing conventionally fueled technologies in an economical way earlier than would have organically happened.

Clean Truck and Bus Vouchers (HVIP)

Draft Low Carbon Transportation Allocation–$196.5 million
Draft General Fund Allocation–$373 million

Project Goals

The Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP) continues to accelerate market transformation by incentivizing the purchase of zero-emission heavy-duty trucks and buses for California fleets. HVIP is the cornerstone of advanced technology heavy-duty incentives, providing funding since 2010 to support the long-term transition to zero-emission vehicles in the heavy-duty market, as well as supporting investments in other emerging technologies to achieve substantial greenhouse gas reductions and help meet health-based ambient air quality standards. Investments made through HVIP provide both broad purchase incentives for fleets, and more targeted measures to address air quality needs in California's most impacted communities. Voucher incentives complement other programs in CARB's heavy-duty funding portfolio by providing a streamlined application process without requiring the scrappage of an existing vehicle. Last year, staff worked with stakeholders to better define and memorialize the program's guiding principles and implemented program policy changes to address an unprecedented fiscal crisis. As funding opportunities have resumed, staff continues to recognize the importance of equity in incentive opportunities. Staff is proposing to add additional language to the guiding principles that reflect opportunities to advance equity.

HVIP is a unique project in the CARB portfolio. As the only incentives project that exclusively supports on-road advanced technologies with high adoption barriers, it provides the bridge between demonstrations and pilots to the scrap and replace programs. HVIP also plays an important role in preparing the market for regulations by increasing market adoption and decreasing vehicle costs prior to regulatory deadlines such as those for the Innovative Clean Transit and Advanced Clean Trucks regulations. The Carl Moyer Memorial Air Quality Standards Program, Community Air Protection Incentive Funds, Volkswagen Environmental Mitigation Trust, Truck Loan Assistance Program, and FARMER Program all provide funding for heavy-duty vehicles adopting clean technology but have their own program goals such as achieving cost-effective emission reductions or meeting the needs of specific communities.

HVIP will continue to support the statutory requirements of SB 1204, SB 1403, and AB 2285 by prioritizing funds for early commercial clean heavy-duty vehicles. The draft HVIP funding policies will ensure that at least 20 percent of Low Carbon Transportation truck funding supports early commercial deployment of zero- and near zero-emission heavy-duty truck technology.

HVIP will continue to provide benefits to AB 1550 disadvantaged and low-income communities. HVIP is implemented on a first-come, first-served, statewide basis, so it is not possible to estimate in advance exactly how much funding will be spent in disadvantaged

communities. To date, over 60 percent of awarded HVIP funding has benefited disadvantaged and low-income communities.[39]

Current Project Status

Since its inception in 2010, HVIP has supported the purchase of over 3,200 zero-emission trucks and buses, 2,500 hybrid trucks, 3,000 low NOx engines, and 230 trucks outfitted with electric power take off systems (ePTOs) by California fleets through November 2019. While it has continued to process vouchers from previous applications, HVIP had been closed to new vouchers for over 18 months. The unprecedented waitlist experience helped define HVIP waitlist protocol discussed in public work groups and included in the current Implementation Manual. However, prior to closing in 2019, there was significant market demand for zero-emission trucks and buses. With more zero-emission Class 8 trucks now commercially available and the continued development of additional product lines, the diversity of available models has increased substantially.

HVIP opened for new voucher requests in June 2021, with approximately $170 million in total funding. The first voucher request application period provided about half of the available funding for new requests and was quickly exhausted in one day. Voucher requests will continue to be accepted for drayage trucks and public agencies on an ongoing basis, with another application period for all fleets opening in August.

Project Solicitation: CARB held a competitive solicitation for the selection of a HVIP Grantee in October 2019. In January 2020, CALSTART was selected as the Grantee to administer HVIP for FY 2019-20 via a three-year competitive solicitation with the option of adding the FY 2020-21 and FY 2021-22 funds with an updated grant agreement. To help ensure that new funding supports economic recovery and to minimize potential funding gaps, CARB will continue to implement HVIP with the existing grantee and will not issue a new solicitation for FY 2021-22.

HVIP Guiding Principles

HVIP guiding principles were approved in the FY 2020-21 Funding Plan and will carry forward in each subsequent funding plan. They are designed to not be strictly interpreted, but rather reflect foundational values that would be factored into decision making. HVIP's guiding principles are as follows:

- Accelerate market transformation for the cleanest advanced technologies
- Support the goals laid out in CARB's Long-Term Heavy-Duty Investment Strategy
- Drive purchase decisions
- Maintain simplicity and a fleet-friendly process
- Support CARB regulatory programs

[39] California Air Resource Board. *2021 Cap-and-Trade Auction Proceeds Annual Report*. May 2021. https://ww2.arb.ca.gov/sites/default/files/classic//cc/capandtrade/auctionproceeds/2021_cci_annual_report.pdf.

- Avoid market disruptions caused by unpredictable funding availability
- Graduate established technologies

This year staff is considering an additional guiding principle focused on recognizing the potential for HVIP to advance CARB's goal of supporting more equitable investments, including support for smaller, economically disadvantaged fleets.

Draft Funding Allocation

With new zero-emission technologies coming to market, HVIP has seen continued growth and demand. Given this year's appropriation and considering all of CARB's current funding priorities, staff is considering allocating $196.5 million of FY 2021-22 Low Carbon Transportation Investments to HVIP. Additionally, staff is considering allocating $373 million from the General Fund appropriation to HVIP, including $275 million to support the deployment of zero-emission drayage trucks, transit buses, and school buses as described in the State budget.

In order to minimize market disruptions and aid in market recovery, staff may provide an early allocation of up to $60 million of the FY 2021-22 Low Carbon Transportation Investments to HVIP as a stop-gap measure. This would align with the Contingency Provisions set forth in the FY 2020-2021 Funding Plan for Clean Transportation Incentives, which gave authority to the Executive Officer to immediately allocate limited funding to ongoing voucher and rebate consumer purchase incentive projects to prevent or reduce program interruptions. Additionally, since the General Fund appropriations for drayage trucks, transit buses, and school buses comes as their own line items in the budget, staff may allocate a portion of those funds early. These early allocations permit staff to start the process of adding a portion of these funds into the current grant as soon as the budget is approved and ahead of the Board Meeting. This will allow the program administrator to start processing applications and issuing vouchers while CARB staff finalize a proposal for the remainder of the funding. Staff will continue to work with stakeholders through the public process to determine if any program adjustments are needed based on projected demand and remaining funds. Staff's proposal for the remainder of the allocation will be included in the FY 2021-22 Funding Plan for Clean Transportation Incentives that is scheduled to be heard before the Board later this year.

Potential Changes for FY 2021-22

As demand for HVIP has increased dramatically in recent years, staff continues to adapt and consider policy changes to amplify the impacts of limited funding and ensure that those fleets in greater need of support still have access to incentives. Staff is considering the changes below:

- **Support Future CARB Regulations:** CARB's planning, regulatory, and funding policy documents emphasize the importance of coordinated incentives and regulations for a cohesive and effective air quality and climate change strategy. Some basic principles of the incentive-regulatory interface are straightforward—incentives should not be used to pay for compliance, for example. Others are more nuanced. Recently

adopted heavy-duty zero-emission regulations and more on the horizon will drive faster deployment of zero-emission technologies, making HVIP's technology preparation and market transformation goals even more important. Staff began a discussion with stakeholders last year on concepts that HVIP can consider to support CARB regulations, such as focusing on incentives that are early or extra relative to regulatory deadlines. This year, staff are considering specific policy changes such as fleet size limits as described below.

- **Fleet Size Limits:** Staff are considering adding limits to the fleet size eligible to participate in HVIP. For example, only fleets with 100 trucks or fewer would qualify for participation in 2022, declining to a maximum of 50 trucks to qualify for participation in 2023. This threshold could be aligned with the proposed Advanced Clean Fleets regulation. Fleet size limits could be implemented as early as 2022, with the potential for later implementation in priority vocations such as drayage. Public agency fleets, including public transit and school districts, may be exempted from the fleet size limit. Newer technologies just entering commercialization, such as fuel cell trucks, could also be exempted from the fleet size limits for a period of time to help support early deployments.

- **ZEPCert Requirement:** Additionally, as HVIP continues to push for greater market penetration from heavy-duty zero-emission vehicles, staff is considering a requirement for Zero-Emission Powertrain Certification (ZEPCert) for all applicable trucks and buses, transitioning from an optional certification, to a requirement for HVIP vehicle eligibility. ZEPCert is a certification pathway administered by CARB for heavy-duty electric vehicles that helps reduce the variability in the quality and reliability of such vehicles, ensure information regarding such vehicles and their powertrains are effectively and consistently communicated to purchasers, and accelerate progress towards greater vehicle repairability. To facilitate this transition, the requirement for ZEP-cert could begin for new vehicle eligibility applications submitted to CARB as early as July 2022.

- **Public Transit Set-Aside:** The State budget includes the first installment of incentives funding to deploy 1,000 zero-emission transit buses in California. The FY 2021-22 State budget includes $70 million for transit bus incentives, consistent with the proposed three-year budget appropriation of $200 million to CARB described in the Governor's May Revision to the Proposed Budget. This vehicle funding will be implemented through HVIP, and will be complemented by additional funding for infrastructure to be administered by CEC. These funds will assist public transit fleets, including those who were initially on a diesel compliance pathway for the Innovative Clean Transit regulation, purchase zero-emission public transit buses. By providing these funds, HVIP reinforces its continued support for emission reductions of diesel particulate matter in communities disproportionately impacted by air pollution. Once depleted, HVIP will continue to allow standard HVIP applications for all public transit bus fleets.

- **School Bus Set-Aside:** The Rural School Bus Pilot Project would now be administered as an ongoing set-aside within HVIP. The Governor's May Revision to the Proposed Budget includes funding to support incentives to deploy 1,000 zero-emission school buses in California. The proposal includes a three-year budget allocation of $400 million to CARB for school bus incentives, and the first installment of $130 million was included in the State budget for FY 2021-22. The HVIP program will set aside $130 million for zero-emission school buses. The set-aside funds would be exclusively for California public school bus fleets purchasing zero-emission buses. Some of the existing program requirements from the pilot will migrate to HVIP. Currently, purchasers can request funding for up to three school buses, up to $400,000 each, and add up to $5,000 each for charging infrastructure for each purchased school bus. CARB and CEC are coordinating to ensure that funding for infrastructure remains available for these buses.

- **Drayage Set-Aside:** The Governor's May Revision to the Proposed Budget includes a total of $220 million to CARB to support incentives to deploy 1,000 zero-emission drayage trucks in California over the next three fiscal years. As the first installment of this proposal, the FY 2021-22 State budget includes $75 million for zero-emission drayage truck incentives. This vehicle funding will be implemented through HVIP, and will be complemented by additional funding for infrastructure to be administered by the CEC. Eligibility is anticipated to be based on existing HVIP-eligible Class 8 trucks purchased by fleets and owner-operators that are currently operating in drayage service. Funding amounts are planned to be consistent with existing HVIP drayage truck voucher amounts, with consideration of additional funding to support smaller, disadvantaged fleets. This funding will provide the additional resources needed to build on the momentum of the Project 800 initiative to support orders for at least 800 zero-emission drayage trucks in 2021, and continue supporting equitable access to zero-emission options for more fleets.

- **Innovative Small e-Fleets:** Staff is considering an Innovative Small e-Fleets set-aside which would provide $25 million of pilot funding for incentives geared towards small truck fleets and independent owner operators. Adding Innovative Small e-Fleets to HVIP would allow CARB to implement innovative mechanisms including, but not limited to: flexible leases, truck as a service, assistance with infrastructure, individual owner planning assistance, as well as other mechanisms. Traditionally, small fleets, owner operators, and fleets served by the Truck Loan Assistance Program, have faced unique barriers transitioning to zero-emission trucks such as: high upfront costs and access to refueling infrastructure. By dedicating this set-aside funding for small fleets, HVIP can position itself to better understand the unique needs of this traditionally underserved group and support their transition to zero-emission in advance of the Advanced Clean Fleets rule.

- **Revisions to Disadvantaged Community Enhancements:** Staff is evaluating revisions to improve the effectiveness of the existing disadvantaged community enhancements for vehicles used and domiciled in low-income and disadvantaged

communities. Staff is considering adding alternative eligibility criteria to focus on fleets with significant financial burdens. For example: including eligibility criteria used in the truck loan assistance program related to business size and annual revenue and increasing funding for small fleets.

Draft Project Evaluation Strategy

HVIP staff have developed a new Fleet Survey that focuses on various user experiences including factors that influenced the purchase decision. Moreover, HVIP may consider collecting vehicle use data through telematics. These data streams allow for participants to help shape future policy through their direct and indirect feedback.

Clean Off-Road Equipment Voucher Incentive Project (CORE)

Draft Low Carbon Transportation Allocation–$78.5 million
Draft Air Pollution Control Fund Allocation–$86.5 million

Project Goals

The Clean Off-Road Equipment Voucher Incentive Project (CORE) is intended to accelerate deployment of advanced technology in the off-road sector by providing a streamlined way for fleets to access funding that helps offset the incremental cost of such technology. CORE targets commercial-ready products that have not yet achieved a significant market foothold. By promoting the purchase of clean technology over internal combustion options, the project is expected to reduce emissions, particularly in areas that are most impacted; help build confidence in zero-emission technology; and provide other sector-wide benefits, such as technology transferability, reductions in advanced-technology component costs, and larger infrastructure investments.

Current Project Status

CORE received an initial allocation of $40 million from FY 2017-18 funds and was subsequently allocated an additional $4.6 million from FY 2018-19 funds. It established a first-come, first-served voucher program for zero-emission off-road freight equipment that launched in February 2020. Over 300 vouchers have been issued since inception, totaling approximately $41 million. Approximately 75 percent of CORE funded equipment has been or will be deployed in low-income and disadvantaged communities ($32.2 million). CORE stopped accepting new voucher requests in August 2020, and the current waitlist exceeds the initial funding allocation (i.e., greater than 100 percent oversubscribed). Program reopening is pending a new funding allocation.

A total of 13 manufacturers currently have eligible equipment models, including terminal tractors, forklifts, transport refrigeration units, mobile power units, forklifts, and railcar movers. Altogether, there are 57 different eligible equipment model configurations.

Draft Funding Allocation

There has been substantial interest and demand for CORE funding, and staff expects continued growth within the program. Given this year's appropriation and considering all of CARB's current funding priorities, staff is considering allocating $164.95 million of FY 2021-22 funding to the CORE program. Staff will consider revising elements of the program to maximize its effectiveness at the proposed funding level.

Staff plans to use up to $30 million of the FY 2021-22 appropriation to fund vouchers on the current waitlist for the CORE program. This would align with the Contingency Provisions set forth in the FY 2020-2021 Funding Plan for Clean Transportation Incentives, which gave authority to the Executive Officer to immediately allocate limited funding to ongoing voucher and rebate consumer purchase incentive projects to prevent or reduce program

interruptions. Staff can start the process of adding a portion of these funds into the current grant as soon as the budget is approved and ahead of the Board Meeting. This will allow the program administrator to start processing applications and issuing vouchers to those on the contingency while CARB staff finalize a proposal for the remainder of the funding. Staff will continue to work with stakeholders through the public process to determine if any program adjustments are needed based on projected demand and remaining funds expected after the continency list is funded. Staff's proposal for the remainder of the allocation will be included in the FY 2021-22 Funding Plan for Clean Transportation Incentives that is scheduled to be heard before the Board later this year.

Potential Changes for FY 2021-22

CORE is still a relatively new program, and staff will continue to engage with stakeholders through a public work group process to make changes to the program. Based on current Board priorities and input received from stakeholders, staff is considering the following changes to the program:

- **Equity and Small Business Considerations:** Staff will evaluate methods to build awareness and make funds more accessible to small businesses while continuing to prioritize the deployment of CORE-funded equipment in low-income, disadvantaged, underserved and rural communities. In addition, staff will coordinate closely with other clean transportation investment projects and evaluate potential ways to incorporate elements, such as workforce training, career development, and job pathways/creation requirements in CORE to boost the socioeconomic impact of the program and meet CARB's equity goals.
- **New Equipment Categories:** Staff has received interest from manufacturers of off-road equipment types that are not currently eligible to participate in CORE, such as those used in construction, agriculture, and lawn and garden. Staff sees significant opportunity to expand the eligible equipment categories to include equipment used in these industries based on several factors: strong interest from industry stakeholders, significant population of equipment types with a higher expected feasibility of transitioning to zero-emission technology, and the contribution of said sectors to emissions in California. Staff is also considering the addition of commercial landscaping equipment for these same reasons.

  In addition, staff will continue to evaluate early-market opportunities to expand the program to include new freight equipment types as well.
- **Hybrid Technology:** Staff will continue to evaluate the appropriateness of including hybrid technology in CORE. Thus far, the program has only funded zero-emission technology. However, staff believes there could be applications where zero-emission technology is not available and hybrid technology could help serve as a critical steppingstone.

- **Voucher Amounts, Off-Ramps for Mature Equipment Categories, and Other Programmatic Changes:** CORE is intended to spur market growth of advanced technology in off-road equipment. Staff will continue to adjust voucher levels in a way that continues to move the needle to advance technology, ensure equipment diversity, and maximize the impact of available funding. Potential adjustments could include reducing voucher amounts for equipment categories that are further along in their commercialization arc, establishing project caps, and adjusting enhancements, as appropriate. Additionally, staff will evaluate the implementation of off-ramps for categories of equipment that will soon be required by regulation to be manufactured or purchased. Lastly, staff will investigate opportunities to transfer more control of vouchers to purchasers.

Solicitation: Previously, CARB has held a competitive solicitation for an initial CORE administrator for a grant term which is coming to a close. However, CORE has experienced disruptions over the last year due to insufficient funding which has eroded fleet confidence in the program and limited the incentive opportunities available for zero-emission off-road equipment. These disruptions would be magnified by re-soliciting for a program administrator as the process takes months to complete. This in turn leads to delayed program reopening, increased voucher processing times, and prolonged waitlists.

CORE, along with CARB's other clean transportation programs, is a critical, high-priority effort for the agency that staff do not want to subject to further disruptions. Additionally, the current CORE administrator, CALSTART, has proven themselves as being a highly reliable and experienced administrator. For these reasons, CARB staff is considering not holding a new solicitation this year. CARB staff will re-evaluate the need for a new solicitation next year and, if needed, will hold the solicitation at a time that is as minimally disruptive to the program as possible.

Draft Project Evaluation Strategy

Staff will include a more comprehensive assessment of project effectiveness moving forward including appropriate metrics and data collection methodologies. An example is assessing the acceptance of zero-emission off-road equipment using metrics such as feedback on usage purpose and satisfaction, usage data such as hours of use of new equipment, and factors that influence the purchase decision. These metrics can be assessed through participant surveys. The assessment will also evaluate how effective the project is at achieving other expected outcomes, such as improving zero-emission technology acceptance, reducing advanced technology component costs, and increasing private investment. This will build upon existing data collection elements already in CORE, such as end user surveys, and likely involve the participation of a person or persons with direct applicable experience and expertise in these types of assessments.

Truck Loan Assistance Program

Draft AQIP Allocation
$28.64 million

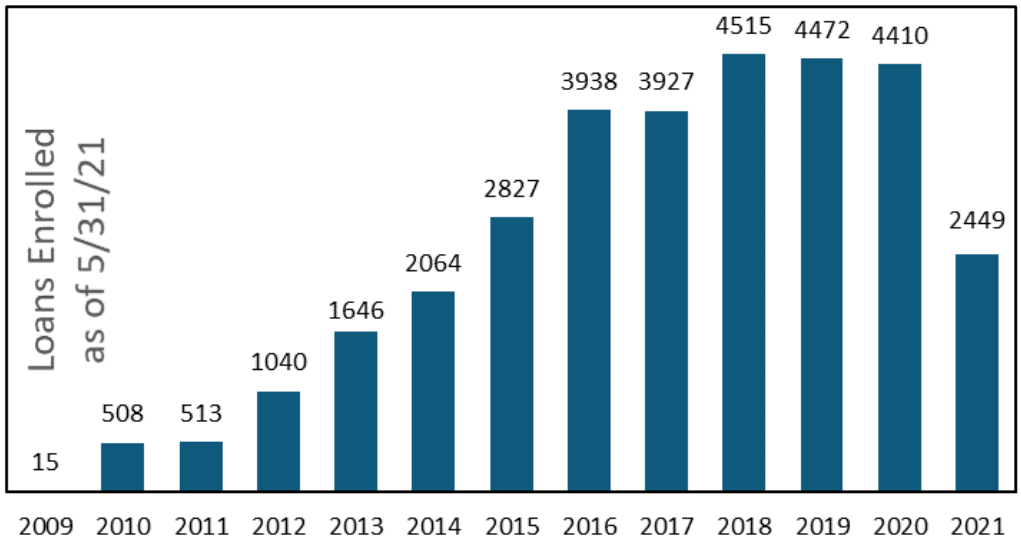
Project Goals

Launched in 2009, the Truck Loan Assistance Program utilizes AQIP funds to help small-business fleet owners, affected by CARB's In-Use Truck and Bus Regulation, to secure financing for upgrading their fleets with newer trucks. The program is implemented in partnership with the California Pollution Control Financing Authority (CPCFA) through its California Capital Access Program and leverages public funding with private funding from participating lending institutions. The program is available for small fleets with 10 or fewer trucks at the time of application. It creates financing opportunities for truck owners, who fall below conventional lending criteria and are unable to qualify for traditional financing at reasonable rates, giving them an opportunity to improve their credit rating and build their business. Lenders use their traditional underwriting standards to establish loan terms; however, the program currently includes an interest rate cap of 20 percent. Because the program primarily reduces criteria and toxic air contaminant emissions, AQIP is the only source of CARB funding available for this program.

Current Project Status

As of May 31, 2021, about $164 million in Truck Loan Assistance Program funding had been expended to provide about $2.2 billion in financing to small-business truckers for the purchase of over 34,800 cleaner trucks, exhaust retrofits, and trailers. Demand by truck owners has been increasing over most years of the program and has remained steady over the last few years as shown in Figure 2.

Figure 2: Loan Activity by Calendar Year



CARB did not allocate funding for the Truck Loan Assistance Program for FY 2020-21 because available funding from previous fiscal years was expected to meet demand. The AQIP funding allocation for FY 2019-20 of $48 million was much higher than any other allocation in recent fiscal years with $25.6 million and $20 million in AQIP funds provided in the previous fiscal years of 2018-19 and 2017-18 respectively.

CARB contribution rates for lender loan loss reserve accounts were increased in March of 2020. The CARB contribution rate for lenders with loan loss reserve accounts of $500,000 or more was increased to 10 percent of the enrolled loan balance. For lenders with loan loss reserve accounts less than $500,000 the contribution rate remained at 14 percent. The previous contribution rate structure had three tiers of 4, 7, and 14 percent at loan loss reserve amounts of over $1.5 million, $500,000 to $1.5 million and under $500,000 respectively. The increase in the contribution rate has significantly increased the consumption of CARB funding from an average of about $3,000 per loan in first quarter of 2020 to about $7,000 per loan in the fourth quarter of 2020.

Incremental recapture procedures have been implemented since 2017. This mechanism redirects older contributions back to the Truck Loan Assistance Program to support future enrollments and makes the program more self-sustaining by reinvesting funds from matured loans. A total of nearly $13 million in recaptured funds have been redeposited into the program account.

Draft Funding Allocation

CARB staff is considering a funding allocation of $28.64 million for the FY 2021-22 funding cycle. Program need and popularity is expected to be steady in the next couple of years. Factors such as California DMV compliance verification, which will only allow clean trucks in compliance with CARB's Truck and Bus Regulation to be registered by the DMV, upcoming equipment replacement deadlines in the In-Use Truck and Bus Regulation, and recovery from the global health and economic crisis are expected to continue demand for the program. Based on recent program demand, funding allocated in previous fiscal years will be exhausted before the end of FY 2021-22. To ensure the continuity of the program, additional funds will be needed especially to support zero-emission vehicle financing.

For many small fleets, this loan program may offer the only viable option to achieve compliance. CARB remains committed to meeting demand, as having loan assistance unavailable for even a short period erodes the confidence lenders have in providing the necessary financing to purchase trucks to meet the compliance requirements of the In-Use Truck and Bus Regulation.

Potential Changes for FY 2021-22

As 2023 approaches, the model year schedule in the In-Use Truck and Bus Regulation will come to an end and 2010 or newer engines will be required except for some exemptions. In addition, with the Governor's executive order moving towards the target of 100 percent of the heavy-duty fleet transitioning to zero-emission vehicles by 2045 everywhere feasible and for all drayage trucks to be zero-emission by 2035 and the CARB's upcoming advanced clean

trucks and advanced clean fleets regulations, California is quickly moving toward zero-emission vehicles. With these changes the loan program will have to be adjusted in future years to meet the needs of small business truckers. CARB staff is working with CPCFA and participating lenders to increase the number of zero-emission heavy-duty trucks financed for small fleets. This will include developing strategies in support of the new Innovative Small e-Fleets set-aside in HVIP and looking for ways to adjust the loan program to better support borrowers seeking zero-emission vehicle loans.

Draft Project Evaluation Strategy

The program benefits small business fleet operators that are unable to qualify for traditional financing at reasonable rates. Though the program has an interest rate limit of 20 percent the average interest rate of the loans in the program is 13 percent. About 96 percent of enrolled loans have been issued to fleet owners with 10 or fewer employees and about 46 percent of enrolled loans have been issued to owner operators with one truck. The loan program has successfully leveraged public funds into private financing, having leveraged $164 million in contributions into $2.2 billion in private financing.

Almost half of the Truck Loan Assistance Program funding has been spent within and benefiting individuals living in low-income and disadvantaged communities. The program has broad statewide appeal including rural regions. CARB staff will be monitoring the increase in zero-emission trucks enrolled in the program, especially in disadvantaged and low-income communities.

Acronym List

1. AB – Assembly Bill
2. APCD – Air Pollution Control District
3. APR – annual percentage rate
4. AQIP – Air Quality Improvement Program
5. AQMD – Air Quality Management District
6. BEV – battery electric vehicle
7. CAPP – Community Air Protection Program
8. CARB – California Air Resources Board
9. CBO – community-based organization
10. CEC – California Energy Commission
11. CHDC – Community Housing Development Corporation
12. CMIS – Clean Mobility in Schools Pilot Project
13. CMO – Clean Mobility Options
14. CORE – Clean Off-Road Equipment project
15. CPCFA – California Pollution Control Financing Authority
16. CSE – Center for Sustainable Energy
17. CVA Program – Clean Vehicle Assistance Program
18. CVRP – Clean Vehicle Rebate Project
19. DCAP – Driving Clean Assistance Program
20. DMV – Department of Motor Vehicles
21. EFMP – Enhanced Fleet Modernization Program
22. ePTO – electric power take-off
23. EV – electric vehicle
24. EVSE – electric vehicle supply equipment
25. FARMER – Funding Agricultural Replacement Measures for Emission Reductions
26. FCA – Fiat Chrysler America
27. FCEV – fuel cell electric vehicle
28. FY – fiscal year
29. GHG – greenhouse gas
30. g/bhp-hr – gram per brake horsepower-hour
31. HVIP – Hybrid and Zero-Emission Voucher Incentive Program
32. IRS – Internal Revenue Service
33. NOx – nitrogen oxides
34. OBI – Othering and Belonging Institute
35. PHEV – plug-in hybrid-electric vehicle
36. SB – Senate Bill
37. STEP – Sustainable Transportation Equity Project
38. UC – University of California
39. U.S. EPA – United States Environmental Protection Agency
40. VOGO – Volunteers on the Go
41. ZAP – Zero-Emission Assurance Project
42. ZEB – zero-emission bus

43. ZEPCert – zero-emission powertrain certification
44. ZEV – zero-emission vehicle