Public Workshop on
The Fiscal Year 2019-20 Funding Plan for Clean Transportation Incentives
for
Low Carbon Transportation Investments and
Air Quality Improvement Program

DISCUSSION DOCUMENT

Public Workshop Date and Location:

Thursday June 13, 2019
10:00 a.m. to 2:30 p.m.
Cal/EPA Headquarters Building
Coastal Hearing Room, 2nd Floor
1001 I Street
Sacramento, California 95814

Link to Workshop Notice:
https://www.arb.ca.gov/msprog/mailouts/msc1912/msc1912.pdf?utm_medium=email&utm_source=govdelivery

Link to Webcast Information:
https://video.calepa.ca.gov/

Workshop presentation will be posted on the morning of the workshop at:
http://www.arb.ca.gov/aqip/

Released: June 7, 2019

Workshop Agenda

10 am – 10:30 am	Introduction and Overview of Project Category Funding Allocations
10:30 am – Noon	Vehicle Purchasing Incentives and Clean Mobility Options
Noon – 1 pm	Lunch Break
1 pm – 2:30 pm	Heavy-Duty Vehicle and Off-Road Equipment Investments

Times above are approximate and subject to change.

Discussion Document Table of Contents

Contents

DISCUSSION DOCUMENT INTRODUCTION

The Governor's proposed State Budget for Fiscal Year (FY) 2019-20, released in January 2019, included $382 million for Low Carbon Transportation Investments funded with Cap-and-Trade Auction Proceeds, and $48 million for the Air Quality Improvement Program (AQIP). The May Revision to the Budget, released May 9, 2019, included an additional $65 million in Low Carbon Transportation funding. These amounts are displayed in Table 1.

- For the Clean Vehicle Rebate Project (CVRP), the Governor's January budget proposed $200 million, which includes $25 million specifically to support increased rebates for lower income applicants. This did not change with the May Revison.

- For clean transportation equity projects, which encompasses vehicle ownership and innovative clean mobility projects, the Governor's January budget proposed $50 million. The May Revision included an additional $15 million for these projects.

- For heavy-duty vehicle and off-road equipment projects, the Governor's January budget proposed $132 million. The May Revision included an additional $50 million for these projects.

This discussion document summarizes options for expending these funds, and reflects input from a March 13, 2019 public workshop, public work group meetings held between March and May 2019, and additional stakeholder comments. This discussion document describes initial staff thinking with respect to:

- California Air Resources Board (CARB or Board) priorities for this year's funding cycle.
- Funding allocations for each project category.
- Program refinements based on public input and evaluation of last years' projects.
- Contingency provisions should mid-year refinements be necessary.

It is important to note that the FY 2019-20 State budget is not yet final and may be adjusted further. Any changes in the final approved State budget will be reflected in the draft Funding Plan that goes to the Board in October.

The Low Carbon Transportation and AQIP investments covered in this document represent just one part of California's portfolio of clean transportation incentives. Funding for other CARB incentives is covered in separate documents, such as the *Beneficiary Mitigation Plan for the Volkswagen Environmental Mitigation Trust*, or the *Proposed Community Air Protection Incentives 2019 Guidelines and Staff Report*.

Staff will present and seek comment on these initial options for consideration at a public workshop on June 13, 2019. Based on input provided at this workshop, along with previous public workshops, project-specific public work group meetings, written submissions, and individual meetings with stakeholders, staff will develop final proposed recommendations for Board consideration. Staff plans to release the proposed FY 2019-20 Funding Plan by September 20, 2019 for public comment prior to Board consideration at the October 24-25, 2019 Board meeting.

Table 1: Proposed Project Allocations for FY 2019-20 Funding Plan[1]

Project Category	**Allocation*** (millions)
LOW CARBON TRANSPORTATION FUNDED INVESTMENTS	
CVRP (including increased Rebates for Lower Income Applicants)	$200
Transportation Equity Projects	$65[2]
Clean Trucks, Buses, & Off-Road Freight Equipment	$182[3]
AQIP-FUNDED INVESTMENTS	
Truck Loan Assistance Program	$48
TOTAL	**$495**

*Does not include any adjustments for project administration.

Addressing Changes to the Proposed Budget

Staff will discuss the additional funding proposed in the Governor's May Revision at the June 13th workshop and at subsequent work group meetings. Final draft recommendations for this funding will incorporate input from these meetings and will be included in the final version of the Funding Plan released prior to consideration by the Board.

Final Cap-and-Trade Auction Proceeds Budget: If the final Cap-and-Trade auction proceeds budget passed by the Legislature contains any further changes to CARB's Low Carbon Transportation appropriation, staff would make modifications to reflect the final appropriation and include them in the final version of the Funding Plan prior to consideration by the Board.

[1] Governor's Budget Summary – 2019-20, Figure EPA-01
[2] Includes an additional $15 million from the May Revision to the FY 2019-20 Budget
[3] Includes an additional $50 million from the May Revision to the FY 2019-20 Budget

BACKGROUND

CARB has developed a portfolio of incentive programs that complements our regulatory programs to reduce emissions and increase access to clean transportation. Each incentive program comes with its own statutory requirements, emission reduction goals, and eligible projects 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 (SIPs), air toxics, and community air protection goals.
- Accelerating the introduction and deployment of zero-emission technologies to meet California's longer-term air quality and climate change goals.
- Improving access to clean transportation and mobility options for low-income households and investing in the disadvantaged and low-income communities most impacted by pollution.
- 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 investment to support the commercial viability of advanced technology.

One of our challenges is finding the right balance between investing in technologies that provide cost-effective, near-term emission benefits versus investing in transformative zero-emission technologies that cost more in the near-term but are needed to meet our longer-term 2030 and 2050 goals. If CARB's investments focus exclusively on the projects that are most cost-effective today, the State would miss the opportunity to accelerate deployment of zero-emission technologies thereby jeopardizing our ability to meet 2030 and 2050 goals. This is consistent with CARB's portfolio approach of maintaining a suite of investments that include programs to support the acceleration of fleet turnover to meet near-term air quality goals, as well as programs that keep the momentum of advancing technology from demonstration to commercialization phase, in order to meet future State goals.

The large-scale statewide investments CARB makes through the Low Carbon Transportation Program send a market signal and move the needle in terms of advancing technologies in a way that smaller, locally-focused investments simply cannot match. The State's $700 million investment in clean vehicle purchasing incentives, for example, has been instrumental in California leading the nation in zero-emission vehicle (ZEV) deployment by a considerable margin even compared to the other states that have opted into our ZEV regulation. We are doing the same with our clean mobility projects that bring innovative mobility options such as car-sharing, bike-sharing, and agricultural worker vanpools to residents of disadvantaged and

low-income communities. California is also serving these priority populations with clean school buses, and is making large scale investments to bring zero-emission technologies to the heavy-duty sector. We are already beginning to see success from our investments in zero-emission transit buses, a natural beachhead for transforming the heavy-duty sector. These investments set California up to benefit economically from companies establishing zero-emission vehicle manufacturing operations in the state.

This plan's focus on deploying the cleanest available 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 of 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 travelled, and lessen petroleum dependency.

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 and near zero-emission technologies and use of the cleanest, lowest carbon fuels and energy across all vehicle and equipment categories. The 2016 *California Sustainable Freight Action Plan* reiterates the need for this transition as it relates to the freight sector. In addition, Assembly Bill (AB) 617 establishes new 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* points to the need for adopting alternative modes of transportation wherever possible, and particularly in low-income and disadvantaged communities.

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

- Achieving carbon neutrality as soon as possible, and no later than 2045; and achieving and maintaining net negative emissions thereafter as directed in the Governor's Executive Order B-55-18.

- Reducing GHG emissions to 1990 levels by 2020 as required by AB 32 (Núñez, Chapter 488, Statutes of 2006) and to 40 percent below 1990 levels by 2030 as required by Senate Bill (SB) 32 (Pavley, Chapter 249, Statutes of 2016).

- Reducing petroleum use in vehicles by 50 percent by 2030, one of the pillars of the State's climate change strategies for reducing GHG emissions, and reducing

GHG emissions from the transportation sector to 80 percent below 1990 levels by 2050 as directed in the Governor's Executive Order B-16-2012.

- Meeting the federal health-based ambient air quality standards for ozone by 2023 and 2031 as well as the fine particulate matter (PM2.5) air quality standards.

- Reducing emissions of toxic air contaminants and criteria air pollutants in communities affected by a high cumulative exposure burden as required by AB 617.

- Ensuring that the State's overall auction proceeds investments meet 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 *Cap-and-Trade Auction Proceeds Funding Guidelines for Agencies that Administer California Climate Investments*.

- Following and incorporating goals and priorities from relevant legislation. 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), and SB 1403 (Lara, Chapter 370, Statutes of 2018).

- Incorporating the findings and recommendations from CARB's SB 350 study, *Overcoming Barriers to Clean Transportation Access to Low-Income Residents*.

- Deploying 1 million ZEVs by 2023 pursuant to SB 1275 (De León, Chapter 530, Statutes of 2014).

- Deploying 1.5 million ZEVs by 2025 as directed in Executive Order B-16-2012, and deploying at least 5 million ZEVs by 2030 as directed in Executive Order B-48-18.

- Deploying over 100,000 freight vehicles and equipment capable of zero-emission operation and maximizing near zero-emission freight vehicles and equipment powered by renewable energy by 2030 as called for in the 2016 *California Sustainable Freight Action Plan*.

- Reducing emissions of methane and black carbon to 40 percent and 50 percent, respectively, below 2013 levels by 2030 as called for in the Short-Lived Climate Pollutant Reduction Strategy.

- Supporting the goals of Sustainable Communities consistent with SB 375 (Steinberg, Chapter 728, Statutes of 2008); exploring ways to reduce vehicle

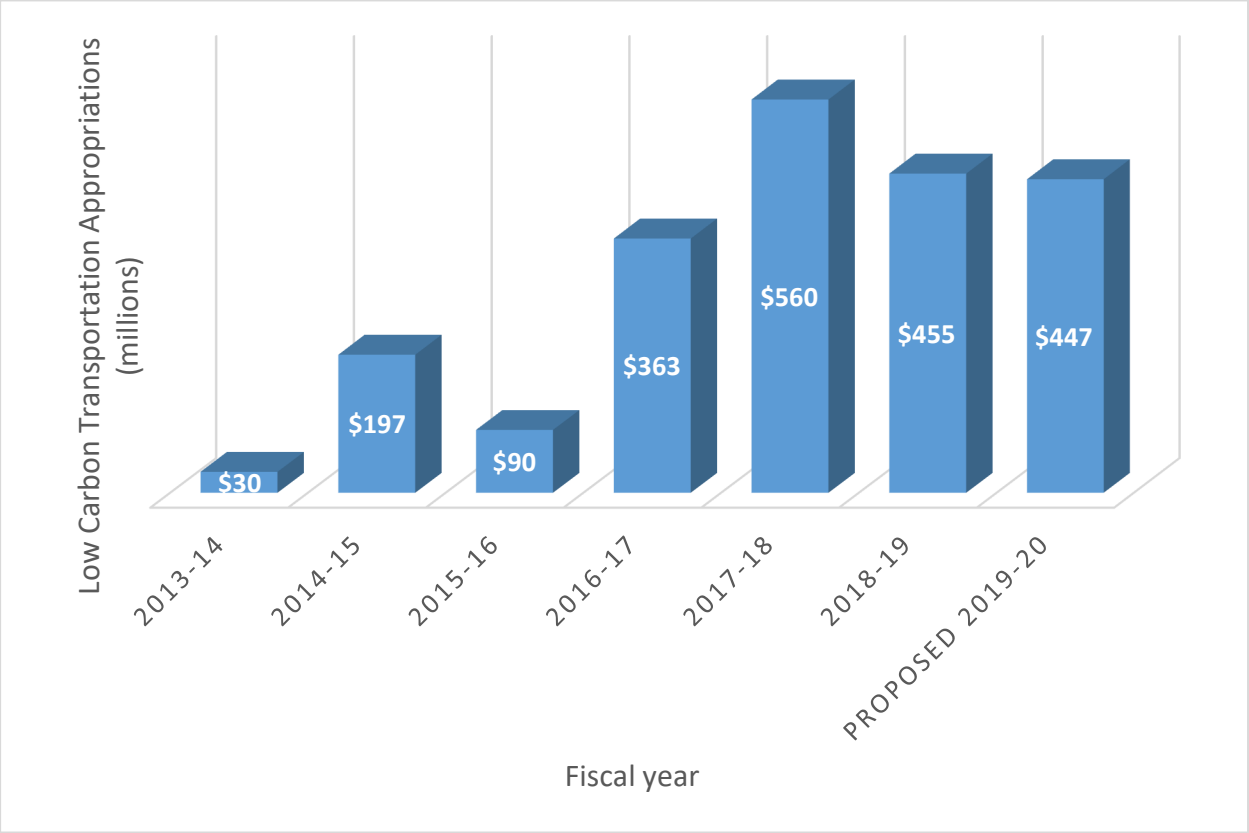
miles travelled while also increasing access to clean transportation options consistent with the SB 150 Progress Report.

LOW CARBON TRANSPORTATION**:** 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.

Low Carbon Transportation investments account for about 90 percent of the funds that will be covered in the FY 2019-20 Funding Plan.

Low Carbon Transportation Funding to Date: The Legislature has appropriated over $1.6 billion to CARB for Low Carbon Transportation projects over the past five budget cycles (FY 2013-14 through FY 2018-19), as shown in Figure 1. 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; Statewide Financing Assistance, and Clean Cars 4 All; clean mobility projects 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, hybrid, and low NOx technologies; and advanced technology demonstration projects for freight trucks and equipment.

Figure 1: Low Carbon Transportation Funding



To date, 54 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. The 54 percent benefiting priority populations greatly exceeds the commitments made in past Funding Plans. Much of the funding benefiting priority populations is for light-duty equity projects, Zero-Emission Truck and Bus Pilot Projects, and Advanced Freight Technology Demonstration Projects. While not limited to priority populations, 69 percent of the Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP) funding has been awarded to trucks and buses benefiting priority populations.

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

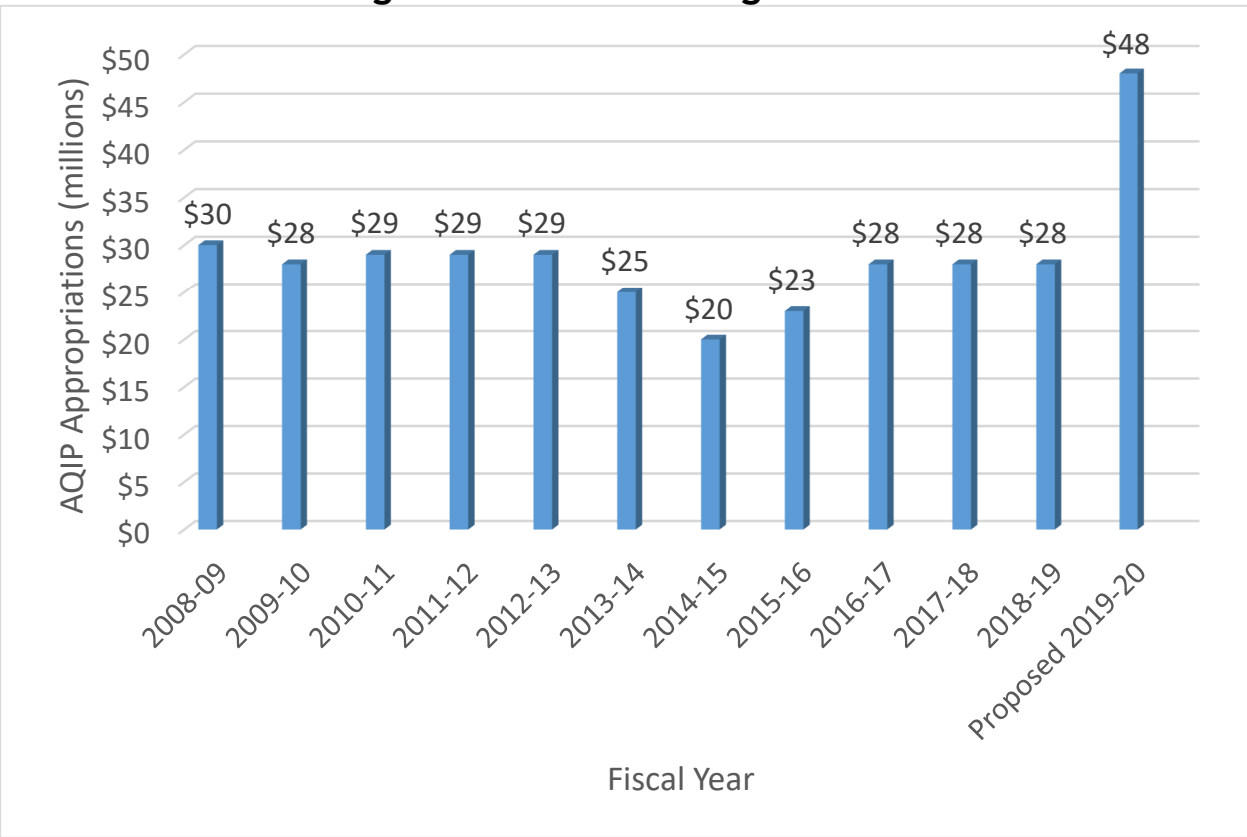
Project	Funding Allocated (millions)	Share Benefiting Priority Populations
Light-Duty Vehicle Investments		
CVRP	$708.4	32%
EFMP Plus-up / Clean Cars 4 All	$102	100%
Clean Mobility Options	$48.1	100%
Financing Assistance for Lower-Income Consumers	$25.9	100%
Agricultural Worker Vanpools in San Joaquin Valley	$9	100%
Clean Mobility in Schools Project	$10	TBD
Rural School Bus Pilot	$55	29%
Heavy-Duty Vehicle and Off-Road Equipment Investments		
Advanced Technology Freight Demonstrations	$84	100%
Clean Off-Road Equipment Vouchers	$40	TBD
Zero-Emission Truck/Bus Pilot	$85	78%
Zero- and Near Zero-Emission Freight Facilities	$155	TBD
Clean Truck and Bus Vouchers and Low NOx Engines (HVIP)	$362.9	69%
Total[5]	**$1,685.3**	**54%**

Source: 2019 Cap-and-Trade Auction Proceeds Annual Report, Table ES-2: Summary of California Climate Investments and Outcomes through 2018.

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. A one-time infusion of additional funding to AQIP this year has given the program a proposed budget of $48 million; typically it has an annual budget of around $28 million. Initially, AQIP had provided the funding for CVRP, HVIP, and demonstrations for advanced emission reduction vehicle technologies since 2009. In recent years, these projects have been funded from the Low Carbon Transportation appropriations, because demand has exceeded AQIP's budget. Since 2014-15, the majority of AQIP funds have been directed to the Truck Loan Assistance Program, which helps small business truckers to secure financing for newer trucks and diesel exhaust retrofits to meet compliance deadlines for CARB's in-use truck and bus regulation. AQIP accounts for about 10 percent of the funds that will be covered in the FY 2019-20 Funding Plan.

AQIP Funding to Date: Figure 2 provides a summary of AQIP investments to date. In some years, CVRP and HVIP received funding from both AQIP and Low Carbon Transportation.

Figure 2: AQIP Funding to Date



DRAFT FUNDING ALLOCATIONS

Investment Priorities for FY 2019-20

CARB is using these incentives to accelerate deployment of the cleanest feasible mobile source technologies and to improve access to clean vehicle purchasing incentives and clean mobility options, including access to alternative modes like transit, biking, and walking. In keeping with public input and legislative direction, staff strives to maximize benefits for priority populations, and prioritizing investments that support multiple clean air goals as described in the introduction. These projects are designed to both achieve immediate emission reductions and, equally important, support the transformation of the fleet needed to meet long-term air quality and climate change goals.

The projects being put forth for consideration for the FY 2019-20 cycle in most cases continue and build on investments from previous budget cycles that were envisioned as multi-year investments. These investments also continue to support CARB's portfolio approach of investing in technologies that provide a balance of cost-effective near-term benefits, as well as initially more costly zero-emission technologies with longer term benefits. Staff determined project allocations by evaluating anticipated demand, reviewing the long-term planning elements of previous Funding Plans, the Long-Term Plan for CVRP and Light-Duty Vehicle Incentives, the Three-Year Investment Strategy for Heavy-Duty Vehicles and Off-Road Equipment included in prior Funding Plans, considering other available funding sources, and taking into account stakeholder input. Staff also evaluated the state of technology in order to evaluate and determine what projects are ready for investment. Staff's draft options for funding allocations are shown in Tables 3 and 4.

Draft Project Allocations

Low Carbon Transportation: For the proposed $447 million Low Carbon Transportation appropriation, CARB staff is considering the project level allocations and priority population investment targets shown in Table 3. More information regarding each of these projects and rationale for these options are described more fully in the remaining sections of this discussion document.

Table 3: Draft Staff Options for Project Allocations for $447 Million Low Carbon Transportation Appropriation

Project Category	Allocation* (millions)
Vehicle Purchasing Incentives - CVRP	**$200**
CVRP • Standard Rebates • Increased Rebates for Lower Income Consumers	$175 $25
Vehicle Purchasing Incentives - Clean Transportation Equity	**$10 of $65**
• Clean Cars 4 All • Financing Assistance	Dollar amounts to be discussed in upcoming work groups
Clean Mobility Options - Clean Transportation Equity	**$50 of $65**
• Clean Mobility Options • Clean Mobility in Schools • Agricultural Vanpools • Rural School Bus Pilot • Community Solutions for Clean Transportation Equity Pilot • General Equity Reserve	Dollar amounts to be discussed in upcoming work groups
Outreach, Community Needs Assessments, Technical Assistance, and One-Stop-Shop	**$5 of $65**
Heavy-Duty Vehicles and Off-Road Equipment Investments	**$182**
Heavy-Duty Commercial Vouchers • HVIP • CORE	Dollar amounts to be discussed in upcoming work groups
Heavy-Duty Demonstration and Pilot Projects	
TOTAL	**$447**

*Does not include any adjustments for project administration.

Vehicle Purchasing Incentives – CVRP: The May Revision proposes a total of $200 million to support our vehicle purchasing incentives. This includes $175 million for Standard CVRP rebates plus an additional $25 million for lower income applicants to ensure the equity element of CVRP continues to grow and that rebates are prioritized for lower income applicants even if funding for standard rebates runs short. However, at this proposed funding level, changes to CVRP will be needed to ensure that funds do not run out before the end of the year.

Clean Transportation Equity Projects: The proposed $65 million for clean transportation equity projects will help to increase access to clean transportation and mobility options benefiting disadvantaged and low-income communities and low-income households consistent with the direction provided by SB 1275 and SB 350. This covers vehicle purchasing incentives, clean mobility options, outreach, community needs assessments, technical assistance, and the One-Stop-Shop. Staff is considering continuing existing projects and adding two new projects, the Community Solutions for Clean Transportation Equity Pilot and Technical Assistance Projects, to address additional priorities.

Heavy-Duty Vehicle and Off-Road Equipment Investments: CARB traditionally takes a portfolio approach with the investment of Low Carbon Transportation and AQIP funds. This means that it 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. While per-vehicle incentives tend to be larger for demonstration and pilot projects, these investments are crucial because they can accelerate the pace of commercializing advanced technology vehicles and equipment by spurring private investment and help to cover the costs of technology development.

The May Revision reflects a proposed allocation of $182 million for for heavy-duty vehicle and off-road equipment projects from Low Carbon Transportation. Prior to the May Revision, staff was considering directing all of the proposed heavy-duty allocation go to support the HVIP project. In light of the May Revision, staff acknowledges the potential opportunity to fund other heavy-duty vehicle and off-road equipment projects, such as demonstration and pilot projects. Staff will seek input on the draft heavy-duty allocation, including HVIP, the Clean Off-Read Engine voucher project (CORE), and potential demonstration and pilot project funding categories at an upcoming work group meeting in summer 2019.

Project Administration: Staff anticipates that about one percent of each category 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 Low Carbon Transportation allocation has grown. Budget language for FY 2018-19 included authorization to allocate up to another five percent for administration. At this time, CARB only anticipates needing an additional one percent, which would be about $4.5 million of the total FY 2019-20 allocation.

Disadvantaged Community, Low-Income 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 disadvantaged community, low-income community, and low-income household targets for the State's Cap-and-Trade auction proceeds investments. With the majority of the proposed FY 2019-20 allocation focused on first-come, first-served project categories, it will be difficult to meet the targets set in prior years. Staff will focus outreach 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 30 percent of funds for projects located within, and benefiting individuals living in, disadvantaged communities.

- At least 20 percent of funds for projects 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 the other funding sources (such as AQIP) are designed to benefit underserved populations as well.

AQIP: As noted in the March 13, 2019 public workshop, CARB staff would consider directing AQIP funding to projects that primarily provide criteria pollutant and toxics benefits and, thus, are not the best fit for Cap-and-Trade auction proceeds funding. Table 4 shows draft AQIP project allocations.

Table 4: Draft Project Allocations for $48 Million AQIP Appropriation

Project Category	**Allocation** (millions)
Truck Loan Assistance Program	$48
TOTAL	**$48**

- All of the AQIP funds would be directed to the Truck Loan Assistance Program, which has been the case in most recent budget cycles, to meet expected increased demand by small and single owner-operator trucking fleets.

Staff's Estimated Project Demand

The May Revision proposed additional funds above what was originally included in the January Governor's Budget proposal. The additional funds, if ultimately appropriated, will provide continued support to the projects that have become cornerstones of the Low Carbon Transportation and AQIP investments. It should, however, be noted that project demand for many project categories exceeds available funding, as shown in Table 5. There are several statutorily required long-term plans that articulate the anticipated demand. This proposed allocation will require staff to make some difficult decisions, particularly related to the first-come-first serve projects. Summaries of these projections can be found with each of the projects. Details on the projects, outcomes of the necessary project modifications, and complete Three-Year Plans for light-duty, equity, and heavy-duty will be included as part of this year's proposed Funding Plan.

Table 5: FY 2019-20 Projected Demand by Project

Project	*Projected Demand (millions)*
Vehicle Purchase Incentives and Equity Projects	
CVRP – Standard Rebates	$274 - $362
CVRP – Low Income Consumer Rebates	35 - $46[4]
Clean Cars 4 All	$25 - $35[5]
Financing Assistance	$38 - $40[6]
Clean Mobility – Equity Focus Projects	
Clean Mobility Options	$42 - $52[7]
Clean Mobility in Schools	$0 - $10[8]
Agricultural Worker Vanpools	$6 - $18
Rural School Bus	$145 - $185
Community Solutions for Clean Transportation Equity **(NEW)**	$20 - $25
Heavy-Duty Vehicles and Off-Road Equipment Projects	
Demonstrations	$65 - $100
Pilots	$170 - $310
Commercial Vouchers (HVIP and CORE)	$215 - $325
Outreach, Community Transportation Needs Assessments, Technical Assistance and the One-Stop-Shop	$5 - $10

Note: Funding remaining from prior years can be used to meet some of the demand and is discussed in each project's section.

[4] At least $10 - $15 million in previously allocated funding is expected to be available, for an actual demand of $20-$36 million.
[5] Approximately $70 million in previously allocated funding will be available to help meet demand.
[6] Approximately $28 million in previously allocated funding will be available to help meet demand.
[7] Approximately $32 million in previously allocated funding will be available to help meet demand.
[8] Approximately $10 million in previously allocated funding will be available to help meet demand.

LIGHT-DUTY ZEV MARKET AND CLEAN TRANSPORTATION EQUITY PROJECTS

Overview

This section of the Discussion Document details staff's initial draft options for public consideration for light-duty vehicle purchase incentives, such as CVRP and Clean Cars 4 All; and clean mobility projects including car sharing and other projects that increase low-income resident access to clean transportation. Each of these sections include initial thoughts for funding existing and new projects, as well as options for potential changes to existing projects. This section also summarizes project funding to date and draft long-term plans for the ZEV market and equity investments.

CARB's light-duty vehicle and equity investments are aimed at supporting the long-term transformation of California's fleet and meeting policy, statutory, and regulatory goals and requirements. Traditionally, these investments have been divided into two funding allocations to align with Legislative budget line-items: CVRP, including increased incentives for lower income consumers; and clean transportation equity projects (equity projects), that span across various incentive mechanisms, all aimed at bringing incentives directly to disadvantaged and lower income consumers and communities. This year, while funding allocations are expected to continue to support these categories, staff have organized the projects within this document by type to better show how these projects work together to achieve common goals. These two distinct, but complementary elements of CARB's advanced technology vehicle and clean mobility investments include:

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 incentive projects 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 options projects support transportation needs of low-income residents and those living in disadvantaged and low-income communities. Mobility needs are not the same in all communities and it is important to provide various options in order to be flexible and responsive to the transportation needs of specific communities.

These projects provide funding for various clean mobility options (other than vehicle ownership) including zero-emission and plug-in hybrid car sharing, vanpools, electric and regular bicycle sharing, ride-hailing, and other clean mobility options.

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 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. These projects provide direct benefits to targeted communities, such as reduced GHG, criteria pollutant, and toxics emissions. These projects also produce critical co-benefits such as improving public health from reduced pollution exposure, transportation-cost savings, increased household economic stability, increased connectivity to destinations, reduced traffic congestion, and increased environmental sustainability.

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; and
- At least 5 million ZEVs by 2030, as directed in Executive Order B-48-18.

Equity: Bringing Zero-Emission Options to Disadvantaged and Lower-Income Communities

A core priority for equity projects continues to be incorporating the findings of CARB's SB 350 Guidance Document. The Guidance Document identifies several barriers to accessing clean transportation, 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 targeting resources for residents that are most in need or face disproportionate impacts.

The Guidance Document establishes key recommendations, several of which are discussed in this document, that provide clear pathways to increase low-income resident access to clean transportation options, and includes steps CARB and other state agencies can take to formulate innovative, meaningful solutions to addressing barriers:

- Expand Community Needs Assessments
- Develop an Outreach Plan
- Develop Regional One-Stop-Shops
- Expand Funding and Financing for Clean Transportation and Mobility Projects
- Develop Grant/Solicitation Guiding Principles
- Maximize Economic Opportunities and Benefits

CARB's equity projects also have the opportunity to support several complementary programs and strategies. With an emphasis on air quality, equity, and community engagement, these projects also support the goals of CARB's AB 617 Community Air Protection Program (CAPP), which is focused on improving air quality in communities disproportionately burdened by air pollution. Staff continues to work together and share lessons learned to maximize the benefits of each project and ensure these benefits go to those communities with the greatest need.

Since FY 2014-15, CARB has allocated nearly $280 million in Low Carbon Transportation funding to a suite of equity pilot projects, as directed by SB 1275. This includes clean vehicle ownership, clean mobility, streamlining access to funding and financing opportunities, and increasing community outreach, education and exposure to clean technologies. These projects exemplify the importance of understanding the unique needs across communities and provide lessons for how we can most directly address barriers to collectively achieve the State's equity, air quality, and climate goals.

New projects being considered in this document include the Community Solutions for Clean Transportation Equity Pilot and funding to support implementation of additional SB 350 Guidance Document recommendations. The Zero-Emission Assurance Project, established by AB 193 (Cervantes, Chapter 363, Statutes of 2018), will provide lower-income Californians who purchased used ZEVS and PHEVs financial support toward battery-related (or fuel cell-related) replacement or servicing costs. CARB staff is in the process of developing guidelines for these projects.

CARB continues to see the importance of pilot projects in the most disadvantaged and low-income communities and are committed to furthering our goals in increasing access to clean transportation and mobility options across the State. To improve consistency and clarity across CARB's vehicle purchase incentive projects (Financing Assistance, Clean Cars 4 All, and CVRP for Lower-Income Consumers), staff is considering the option of aligning various program policies and criteria and streamline low-income consumer access to ZEVs. These draft changes may include vehicle incentive amounts, household and income definitions used, and other program criteria and requirements. Staff will utilize public work groups to seek feedback on the methodology used for evaluating existing policy and potential policy changes. Public feedback will be considered and incorporated into the final recommendations proposed in the Funding Plan.

Summary of Changes to Long-Term Plans for ZEV Market and Equity

ZEV Market Findings (SB 1275)

As previously discussed, 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 increasing 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, and an assessment of when a self-sustaining market is expected and how existing incentives may be modified 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. However, this year's plan will include a more in-depth and comprehensive update.

Since the introduction of the first Light-Duty Long-Term Plan in FY 2016-17, the ZEV market has grown tremendously and events over the last year, with the introduction of new vehicles (there are now over 40 eligible vehicles), have changed the ZEV market landscape. As new data have become available, staff have been analyzing the impacts of these events and updating the assumptions, evaluations, and recommendations. Initial findings indicate a promising prospect for the ZEV market in the coming years, and major changes in incentive programs will be required to ensure project sustainability within a limited budget and to better foster market growth from harder to reach market segments. Findings and suggestions will be presented in this year's Funding Plan after staff complete a thorough analysis of all market and technology aspects.

Clean Transportation Equity Findings

The FY 2019-20 funding plan marks the sixth year of CARB allocating funding to clean transportation equity projects. With no precedent for any of these projects when they started, CARB pursued a pilot approach to allow for flexibility, feedback, and adjustments where necessary. Each project is unique, and the pilot phase is critical to discovering how each can best achieve their specific goals and find solutions to the numerous barriers faced by low-income and disadvantaged communities. During

these initial years a number of lessons were learned and many implementation challenges overcome. The next three years marks a second phase, where existing projects have identified successful strategies focusing on maximizing participation and benefits. CARB's primary role in this new phase is to facilitate coordination across projects, to ensure best practices are shared, and to help projects operate on a larger scale. CARB is also making it a priority to help the clean mobility options projects identify pathways to sustainability where they'll ultimately be able to operate independently without the need for Low Carbon Transportation funding.

Lessons Learned

During the pilot phase each project had to overcome a number of implementation challenges. Some of the most prominent challenges and lessons learned are summarized below:

- The lead time for many projects was longer than expected, due to a number of factors. For example, each project relies on creating a new, strong partnership network, which takes time to build and formalize. It also takes substantial time for a project administrator to learn about their target communities and the unique barriers to clean transportation they face.

- Selecting sites for car sharing and supporting infrastructure can be a challenging process, leading to delays and/or increase costs. For example, the BlueLA car sharing project had to work closely with local residents, business owners, and local officials, including city government, to obtain the necessary siting permissions, which took time since the impacts from this project were unknown. In addition, the City of LA and partner agencies developed a streamlined permitting process to speed up the review and approval of sites.

- Administrative processes also contribute to long project lead times and unexpected delays. Before CARB can award a project grant, a solicitation must be developed, and that can take up to a year to complete.

- For vehicle ownership projects, administrators must commit significant time and resources to process each application, making it challenging to build capacity and scale-up quickly enough to meet growing demand. For example, in the early stages of implementation, for the popularity of South Coast Air Quality Management District's (AQMD's) Clean Cars 4 All Program resulted in long wait times for applicants and/or applicants having to be placed on waiting lists. Over the ensuing year, however, the air district learned how to improve their internal processes and increase efficiencies, eliminating the need for a waiting list and significantly decreasing application processing times.

- Providing the necessary assistance and consumer safeguards, as well as ensuring the funding is going to intended communities, is resource-intensive and time-consuming for project administrators and applicants.

Predictable Funding and Flexible Expenditure Timeline

Stakeholders and administrators have expressed a need for more predictable funding. Project administrators are hesitant to plan longer-term and fully commit their available resources if they're uncertain there will be money for them in future budgets. Also, budget statute currently requires each year's appropriation to be spent within four years. Given the long lead time and the lengthy administrative processes for many projects it can be difficult for administrators to meet these deadlines without having to make otherwise unnecessary changes to their projects.

Metrics for Success

As CARB enters the second phase of implementing clean transportation equity projects, it is a priority for us to continue to identify and develop metrics for evaluating the success of each pilot project. Traditional metrics, such as simple cost effectiveness ratios that measure air quality benefits per dollar spent, do not tell the complete story when it comes to equity projects. CARB must find methodologies that are able to comprehensively measure how well projects are performing against their multiple objectives. Such measures will be critical to determining if there are any gaps in the current suite of projects, how well the existing projects are performing, and where improvements can be made.

Research

Academic research will help CARB to improve existing projects and identify where improvements can be made. Previous research partnerships have helped CARB evaluate and improve project design. For example, the UCLA Luskin Center recently completed a study of the early implementation of the Clean Cars 4 All Project called *Designing Light Duty Vehicle Incentives for Low and Moderate Income Households*. UC Berkeley's Transportation Sustainability Research Center has also developed a framework to help evaluate and measure how well equity projects are achieving their goals. CARB will continue to partner with universities to conduct robust and objective studies to ensure the equity projects are as effective as possible.

Coordination

As more pilot projects are launched and each matures, coordination is another priority for CARB moving forward. Successful coordination means applicants are able to easily access all the projects they're eligible for and maximize their benefits. Successful coordination will also help maximize participation while eliminating

redundancies across projects, ultimately helping ensure as much funding is going to applicants as possible. CARB will continue working with a number of organizations, including state agencies (e.g. California Energy Commission, Governor's Office of Business and Economic Development, and Strategic Growth Council), local agencies (e.g. air districts, land-use and transportation planning agencies), Community-Based Organizations, Non-Governmental Organizations, and private enterprises.

Vehicle Purchase Incentives

This section of the Funding Plan describes staff's draft options for public consideration for light-duty vehicle purchase incentives projects, including CVRP, Clean Cars 4 All, and Financing Assistance. These projects not only help us meet the State's ZEV deployment goals, but also ensure we do so equitably. CVRP for Low-Income Applicants, Clean Cars 4 All, and Financing Assistance are designed to help residents of low-income and disadvantaged communities purchase advanced technology vehicles.

Clean Vehicle Rebate Project (CVRP)

Low Carbon Transportation Allocation from Governor's Proposed Budget
$200 million for CVRP, of which at least $25 million is to be used to support CVRP rebates for Low-Income applicants

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, 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.

Table 6: CVRP Rebate Amounts and Income Limits

<table>
<tr><th></th><th colspan="2">Eligibility</th><th colspan="4">Vehicle Type</th></tr>
<tr><th></th><th>Filing Status</th><th>Gross Annual Income</th><th>Fuel Cell</th><th>Battery Electric</th><th>Plug-in Hybrid[1]</th><th>Zero-Emission Motorcycles</th></tr>
<tr><td>Increased Rebate for Low-Income Applicants</td><td colspan="2">≤ 300 percent of the federal poverty level (FPL)</td><td>$7,000</td><td>$4,500</td><td>$3,500</td><td rowspan="4">$900</td></tr>
<tr><td rowspan="3">Standard Rebate</td><td>Individual</td><td>300% FPL to $150,000</td><td rowspan="3">$5,000</td><td rowspan="3">$2,500</td><td rowspan="3">$1,500</td></tr>
<tr><td>Head of Household</td><td>300% FPL to $204,000</td></tr>
<tr><td>Joint</td><td>300% FPL to $300,000</td></tr>
<tr><td rowspan="3">Income Cap</td><td>Individual</td><td>> $150,000</td><td rowspan="3">$5,000</td><td colspan="3" rowspan="3">Not Eligible</td></tr>
<tr><td>Head of Household</td><td>> $204,000</td></tr>
<tr><td>Joint</td><td>> $300,000</td></tr>
</table>

[1]With an all-electric range of at least 20 miles

In 2016, the Legislature passed SB 859, 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 of these changes to CVRP as part of the FY 2016-17 Funding Plan. Senate Bill 615 (Cooper, Chapter 631, Statutes of 2017) extended these provisions through December 31, 2018. In addition, Assembly Bill 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 to keep the following provisions in place for FY 2019-20: (1) 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; (2) provide increased rebates to eligible low-income applicants as shown in Table 6; and (3) limit plug-in hybrid electric vehicle eligibility to vehicles with at least 20 miles of electric range.

Current Project Status

Through December 2018, CVRP has provided rebates for over 300,000 vehicles totaling just over $675 million since the project's launch in 2010. Since March 2016, almost 12,000 increased rebates have been issued to low-income consumers totaling over $47 million. About 60 percent of rebates went to battery electric vehicles, 38 percent for plug-in hybrid electric vehicles, and about 2 percent of rebates for fuel cell electric vehicles and zero-emission motorcycles. There are now over 40 eligible vehicle models available and more vehicle introductions are planned for 2019 and 2020. As noted in the introduction to this chapter, ZEV sales in California have grown to almost 8 percent of the total light-duty vehicle sales. Additional project statistics are available on the CVRP website: https://cleanvehiclerebate.org/eng/rebatestatistics.

Staff monitors CVRP participation rates by comparing rebate application data to California vehicle registration data to evaluate program trends. Historically, about 74 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 48 percent of ZEVs purchased or leased in California have been rebated. This suggests that the income cap is having its intended effect. Staff will continue to monitor these trends.

Prioritized Rebates: In the FY 2016-17 Funding Plan, CARB introduced prioritized rebate payments to low-income applicants as directed by SB 859. Staff expects last year's allocation of $25 million for low-income applicant rebates to last through at least November 2019. This will keep CVRP's increased rebates up and running for low-income rebate applicants until the FY 2019-20 funding becomes available. Staff will continue to evaluate funding need to ensure that low-income rebates are processed as soon as applications are reviewed and approved even though the project may be in a waiting list mode for other applicants.

Public Fleet Rebates Through Department of General Services: Staff set aside $1 million of CVRP's FY 2017-18 allocation so that State and other public agency fleets can acquire CVRP-eligible vehicles through DGS's procurement process. The interagency agreement process with DGS to administer these funds has taken longer than anticipated. In order to meet encumbrance deadlines, staff has rolled this funding into the current CVRP grant to be used for public fleets. Staff is considering allocating $1 million from the FY 2019-20 allocation to give DGS ample time to administer these funds.

Draft Funding Allocation for FY 2019-20

In the latter half of 2018, California's ZEV market saw rapid growth leading to a quicker draw down of FY 2018-19 CVRP funds than expected. The program saw record participation with an average of 8,000-10,000 applications received per month starting in late summer 2018. Due to growth in the market, FY 2018-19 funds for standard rebates are expected to run out before the end of the fiscal year leaving a potential waitlist starting in June 2019 as shown in following section on CVRP projections.

Based on the projections presented below, staff projects that the draft allocation will only meet demand for the program for a portion of the upcoming fiscal year given the current program design. Since the draft allocation is not expected to meet demand, staff is considering a suite of program changes which are further discussed below.

CVRP Demand Projections: Estimated CVRP demand over the next three years given the current program design is shown in Figure 3. This updates the projections included in last year's Funding Plan using the same methodology but factoring in the

most recent CVRP and registration data, the income caps and low-income increased rebate levels.

Figure 3: Projected Three-Year CVRP Demand

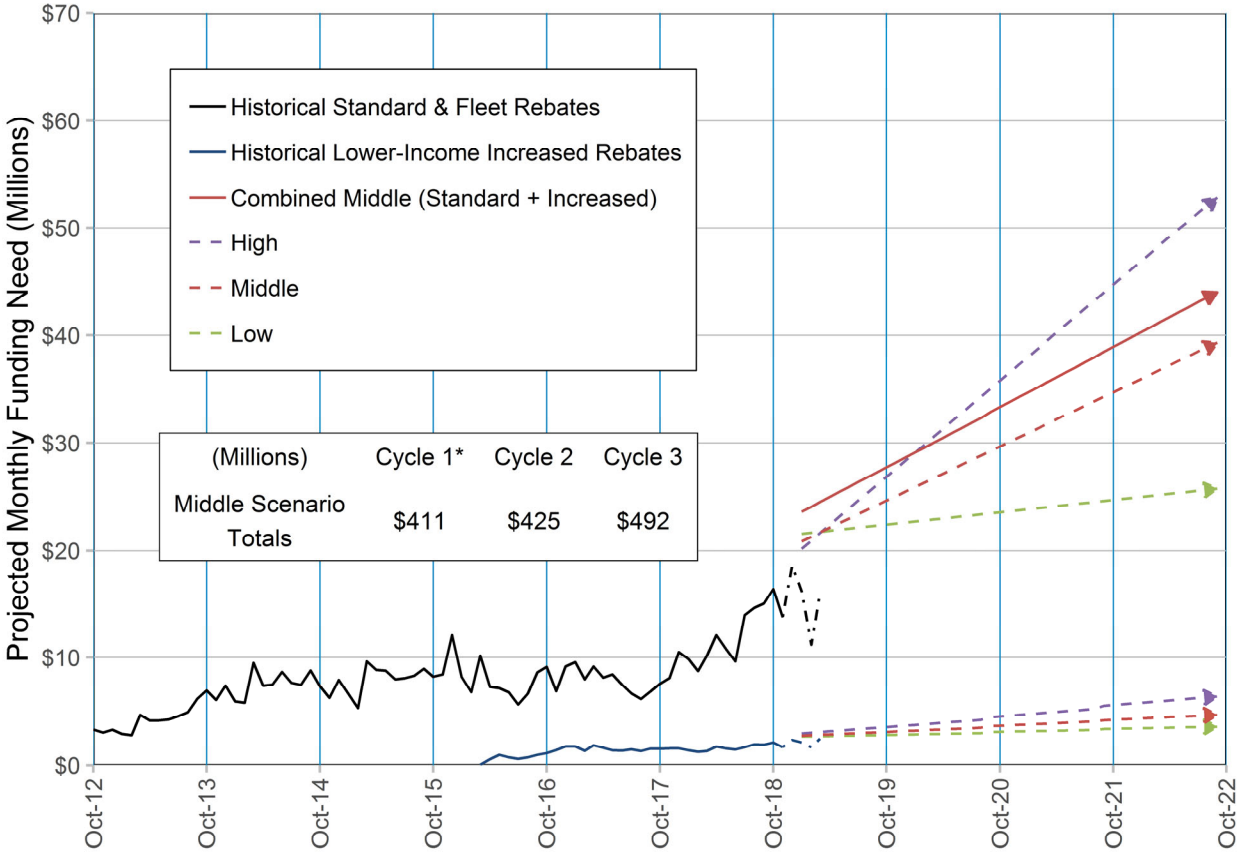


Table 7 shows the estimated potential waitlist demand once FY 2018-19 funds for standard rebates are expended by June 2019 as well as the projected surplus of low-income increased rebates expected during the same time period.

Table 7: Projected FY 2018-19 Funding Status

Time Period	Projected FY 2018-19 CVRP Funding Status	
	Standard Rebates Waitlist Demand	Low-Income Rebates Surplus
June – Aug 2019 (3 months)	$45 to $55 million 21,000-24,000 rebates	$9 to $11 million 2,100-2,500 rebates

Table 8 shows estimated rebate demand for the FY 2019-20 funding cycle and the corresponding funding need, with projections for both standard (including fleet) rebates and low-income increased rebates.

Table 8: Projected Rebate Demand for FY 2019-20 Funding Cycle

Time Period	Projected CVRP Demand (with no program changes)		
	All Rebates	Standard Rebates	Low-Income Rebates Only
Sept 2019 – Aug 2020 (12 months)	$309 to $409 million 117,000-152,000 rebates	$274 to $362 million 109,000-142,000 rebates	$35 to $46 million 8,000-10,000 rebates

Note: Standard rebate and low-income rebate columns do not exactly add to all rebates due to rounding.

Since staff anticipates FY 2019-20 funds to be available by September 2019, the time period covered by the 12-month projection has been adjusted accordingly. According to projections, the proposed allocation would not be sufficient to meet demand for standard rebates through the fiscal year under the existing eligibility criteria. Low-income increased rebates are projected to have a surplus from the FY 2018-19 allocation of about $10 million by September 2019, which when added to the FY 2019-20 allocation of $25 million should meet demand through the fiscal year.

Potential Changes for FY 2019-20

Based on current projections, staff is considering changes to CVRP to ensure that the allocation provides a meaningful incentive to encourage EV purchases while maintaining a program that is viable for a longer portion of the upcoming fiscal year than the current program design would allow. Given the urgency to keep the program open to continue progress towards ZEV deployment goals, staff anticipates taking any program changes for FY 2019-20 to the Board in the summer ahead of the October 2019 hearing on the entire Funding Plan. Staff is currently working with stakeholders through public working groups to discuss various options for changing the program and to determine how to design the program to operate within a $200 million budget.

Staff is considering options to change CVRP such as:

- Altering program design for standard rebates where rebates would only be available during "limited time offer" periods
- Limiting consumers to one rebate per person for the life of the program
- Limiting consumers to a 3-month application window after vehicle purchase
- Increasing the all-electric range requirement for eligible PHEVs
- Introducing an MSRP cap for vehicle eligibility
- Lowering the income cap
- Reducing standard rebate amounts for all vehicle types

Staff is still gathering information on the impacts of program changes and will continue to meet with stakeholders on how best to redesign CVRP in a way that is least disruptive to consumers and the EV market.

As mentioned earlier, staff is considering a set aside of $1 million from the FY 2019-20 CVRP allocation to allow DGS additional time to implement a program for fleets to obtain CVRP-eligible vehicles through the DGS process. This set aside was originally part of the FY 2017-18 funding plan but the program has taken longer than anticipated to implement. Staff believes that this additional time will be sufficient for DGS to implement the program.

Solicitation: CARB selected a grantee to administer FY 2016-17 CVRP funds via a three-year competitive solicitation. As the current grant comes to a close, staff are considering forgoing a solicitation for a new grant this fiscal year and to continue the grant with the current administrator which will be evaluated on an annual basis going forward. The grantee has been the program administrator for almost ten years. Staff believes holding a competitive solicitation this fiscal year will add further disruption to the program as it undergoes changes to meet growing consumer demand.

Clean Cars 4 All

Draft Low Carbon Transportation Allocation $0 million additional from FY 2019-20; projected demand can be met with previous years' remaining allocations

Project Goals

Clean Cars 4 All (formally known as the EFMP Plus-up Pilot Project) provides incentives for lower-income consumers living in and near disadvantaged communities who scrap their old vehicles and purchase new or used hybrid, plug-in hybrid, or ZEV replacement vehicles. Instead of a purchasing a replacement vehicle, participants can choose a alternative mobility incentive voucher to use on public transit and other clean transportation options. In addition, buyers of plug-in hybrid and battery electric vehicles are also eligible for home charger incentives. 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. Measures of success include participation rates by lower-income consumers and disadvantaged communities, number of vehicles funded in total and by replacement vehicle technology type, and number of participants choosing the alternative mobility option.

Current Project Status

Since FY 2014-15, CARB has allocated $112 million for Clean Cars 4 All, including $102 million of Low Carbon Transportation funding and $10 million of Volkswagen funding. Of that total, CARB has allocated $82 million ($41 million each) to South Coast AQMD and San Joaquin Valley Air Pollution Control District (APCD). A total of $16 million has been reserved for new air districts to launch new programs, and an additional $14 million remains in a general reserve to allocate to any air district(s) based on demonstrated need. Overall, approximately $72 million of the total allocation has been either expended or is currently encumbered in grant agreements.

The Clean Cars 4 All Program launched in July 2015. To date, South Coast AQMD has expended about $26.5 million of $41 million to replace 3,240 vehicles (about 15 percent battery electric, 50 percent plug-in hybrid, 35 percent hybrid). San Joaquin Valley APCD has expended about $9 million of $41 million to replace 1,450 vehicles (about 15 percent battery electric, 35 percent plug-in hybrid, 50 percent hybrid). .[9]

Bay Area AQMD is expected to launch a new program by summer of 2019 with a total of $10 million in grant funding ($5 million from FY 16-17 GGRF funding and $5 million from FY 17-18 Volkswagen settlement funding). The Sacramento AQMD project is

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

expected to launch in late 2019 or early 2020, initially with a $5 million grant from FY 17-18 Volkswagen settlement funding.

CARB staff are working closely with each air district to ensure their programs continue their progress and steadily increase participation. Staff also anticipates that the One-Stop-Shop and Financing Assistance programs will further increase participation and streamline the application process.

Last year, the Board approved guidelines for the Clean Cars 4 All Program as required by AB 630 (Cooper, Chapter 636, Statutes of 2017). The intent of AB 630 was to codify the EFMP Plus-up Pilot Project into a formal, stand-alone program. The guidelines are expected to be finalized by July 2019. Once finalized, detailed requirements for the Clean Cars 4 All Program will be proposed and approved via the Low Carbon Transportation Funding Plan process.

Draft Funding Allocation for FY 2019-20

Staff estimates the total funding need for FY 2019-20 to be $25 - $35 million. Staff estimates that nearly $70 million of the total allocation to-date will still be available at the start of the upcoming fiscal year. As such, staff would not consider any new funding be allocated to Clean Cars 4 All in FY 2019-20.

Instead of allocating new funding, staff is considering modifications to the previous year's allocations in the following manner:

- All funding not yet encumbered in existing grants will be reallocated to a general reserve. This amounts to $40 million, which is sufficient to cover projected expenditures for FY 2019-20.
- The $40 million will be allocated to air districts based on periodic evaluations to determine consumer demand. This will ensure that each air district will receive the necessary funding, and it will be spent as quickly as possible to meet statutory expenditure deadlines.

Potential Changes for FY 2019-20

Options for discussion include changes to the $2,000 for home electric vehicle supply equipment (EVSE) installation incentive to further increase flexibility in what can be provided to consumers. Flexibility has proven to be important in equity projects to enable the program to benefit a wider net of eligible participants. Also, to improve consistency and clarity across CARB's various lower income consumer vehicle incentive projects (which include Financing Assistance, Clean Cars 4 All, and CVRP for Lower-Income Consumers), staff are working to align various program policies and criteria across these programs. These alignment changes may include but are not limited to vehicle incentive amounts, household and income definitions used, and other program criteria and requirements.

Financing Assistance for Lower-Income Consumers

Draft Low Carbon Transportation Allocation $10 - $38 million

Project Goals

The Financing Assistance for Lower-Income Consumers pilot project is a grant project that helps lower-income Californians overcome the barrier of obtaining vehicle financing by providing low interest loans and vehicle price buy-downs to consumers. One method to encourage lenders to participate is by offering funds for a loan loss reserve to mitigate risk. As with Clean Cars 4 All, buyers of plug-in hybrid and battery electric vehicles are also eligible for EVSE. This pilot is meant to complement CVRP and Clean Cars 4 All by providing low-interest loans to participants in those programs. 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. Measures of success include the number of consumers who participate, their income level and residency location, costs and types of vehicles purchased, and loan repayment status.

Current Project Status

Fiscal Year 2014-15

Community Housing Development Corporation (CHDC), a community-based organization, received a $932,457 grant to begin a financing assistance project for low-income residents living in the Bay Area. CHDC has helped 80 participants purchase clean vehicles with low-interest rate loans and vehicle price buy-downs and has expended their funds for vehicle incentives for FY 2014-15. In addition to greater transportation security, participants have experienced co-benefits such as improved credit scores, more and better housing options, better job opportunities, and improved access to services.

Fiscal Year 2016-17 (funds not available in FY 2015-16)

CARB allocated $6 million for the Financing Assistance of Lower-Income Consumers projects, split into $5 million for a statewide project and $1 million for a local project(s). A competitive solicitation resulted in a grant award for a statewide administrator (see below), and the $1 million for local projects was moved to Clean Mobility Options for Disadvantaged Communities due to the fact that no applications were submitted for this part of the solicitation.

- Statewide project: Beneficial State Foundation (BSF) was awarded a $5 million grant to run the statewide Financing Pilot, also known as the Clean Vehicle

Assistance Program. Project partners include Beneficial State Bank, the Center for Sustainable Energy, and GRID Alternatives. The project launched in June 2018 and by November 2018, the project had received enough applications to commit all the funds for vehicle incentives for FY 2016-17, so BSF closed the program to new applicants. This unprecedented demand was in part due to robust outreach efforts. To date, BSF has helped 350 participants purchase clean vehicles with low-interest loans and vehicle price buy-downs, with additional vehicles pending.

- Local project: No applications were submitted for the allocation of local funds. CARB initially reallocated the $1 million of expansion funding first to the FY 2016-17 Clean Mobility Options for Disadvantaged Communities program to support additional projects. However, this funding was not needed for Clean Mobility Options, so it ultimately went to CVRP Rebates for Lower-Income Households.

Fiscal Year 2017-18

CARB allocated $20 million split into $18 million for a competitive solicitation for a statewide administrator that closed in December 2018 and $2 million to expand the existing CHDC pilot project (local project). A new grant agreement for BSF to relaunch the statewide Clean Vehicle Assistance Program is expected to be executed in May 2019. CHDC submitted an application for expansion funding and the grant amendment expanding the current project was executed in April 2019. One application was received for the competitive solicitation for a statewide administrator.

Fiscal Year 2018-19

CARB allocated $10 million to increase the funds for the statewide project via a competitive solicitation, or expand the current statewide project without doing a new solicitation depending upon the performance of the existing statewide administrator.

Draft Funding Allocation for FY 2019-20

Based on initial projections of funding needs, and including unmet demand from temporarily closing the program, staff estimates the project could spend anywhere from $38 million to $40 million during FY 2019-20. Taking into account the $28 million still available from previous allocations, staff estimates that between $10 to $12 million will be needed in the upcoming fiscal year. If funding is not fully awarded, staff would consider flexibility to shift the funding for other transportation equity projects that are showing demand.

Potential Changes for FY 2019-20

Staff may consider changes to the EVSE installation incentive to further increase flexibility in what can be provided to consumers. Flexibility has proven to be important in equity projects to enable the program to benefit a wider net of eligible participants.

To improve consistency and clarity across CARB's various lower-income consumer vehicle incentive projects (which include Financing Assistance, Clean Cars 4 All, and CVRP for Lower-Income Consumers), staff are working to align various program policies and criteria across these programs. These alignment changes may include but are not limited to vehicle incentive amounts, household and income definitions used, and other program criteria and requirements.

Clean Mobility Projects

This section of the Funding Plan describes staff's draft considerations for a suite of clean mobility projects. Complementing the various vehicle purchase incentives, clean mobility projects focus on providing clean transportation options in low-income and disadvantaged communities, such as car and bike sharing, van pooling, clean school buses, or a combination of these options. Existing clean mobility investments projects include:

- Clean Mobility Options Benefitting Disadvantaged Communities
- Clean Mobility in Schools
- Agricultural Worker Vanpools Pilot Project
- Rural School Bus Pilot Project

This year CARB is introducing a new clean mobility investments project called Community Solutions for Clean Transportation Equity. This new project will follow a community-based approach to collaboratively identify and address the unique mobility needs of a given community. This new project is an example of how clean transportation equity projects can work with local planning and transportation agencies in developing innovative strategies to achieve SB 375 GHG reductions.

Clean Mobility Options Benefiting Disadvantaged Communities

Draft Low Carbon Transportation Allocation $10 - $20 million

Project Goals

The Clean Mobility Options Benefiting Disadvantaged Communities pilot project is intended to assess the barriers and transportation needs of low-income residents and those living in disadvantaged communities. Using these transportation needs assessments, the projects can then provide various clean mobility options (other than vehicle ownership) in order to overcome those barriers for the residents and increase their access to clean mobility options. The project provides funding for various clean shared transportation options that increase access to zero-emission and near zero-emission car sharing, vanpools, electric and regular bicycle sharing, scooter sharing, ride-hailing, and other clean mobility options. CARB will encourage these projects to link with current or future innovative mobility hub concepts to promote multimodal trips, including co-located passenger rail, bus/shuttle, ride-hailing, public charging, and first mile/last mile transit solutions. Measures of success include the numbers and types of zero-emission vehicles, chargers, and clean mobility options introduced into disadvantaged communities, number of disadvantaged community residents participating as drivers or riders, zero-emission vehicle miles traveled and

number of trips taken, and improvements in access to destinations and mobility experienced by participants.

Current Project Status

Over $46 million in Low Carbon Transportation Investments have been allocated to clean mobility projects since FY 2014-15. Funds have been awarded for six projects benefiting disadvantaged communities throughout California. These funds have been used to leverage over $30 million in private and public match funds. The following is a brief description of the projects funded in each fiscal year.

BlueLA Car Share

- The City of Los Angeles received $1.7 million from FY 2014-15 for a zero-emission car share pilot project in four Los Angeles disadvantaged communities. Project partners include the Shared Use Mobility Center, several City of Los Angeles departments, and community-based organizations including the Coalition for Clean Air, Communities for a Better Environment, East LA Community Corporation, LA Mas, Korean Immigrant Workers Alliance, Move LA, PATH Ventures, and T.R.U.S.T. South LA. The project launched to the public in April 2018 with 25 electric vehicles and 35 chargers in 7 locations, and will grow to 100 vehicles and 200 chargers in 40 locations by spring of 2019.

- From the FY 2017-18 allocation, an additional $3 million was provided to the BlueLA project to expand their fleet from 100 electric vehicles to 300 electric vehicles. Up to 600 electric bicycles and scooters will also be available to residents including those living in additional disadvantaged communities.

Our Community Car Share

- Sacramento Metropolitan AQMD received $1.4 million for electric car sharing services for Sacramento subsidized multi-unit housing communities. Project partners include the City of Sacramento, Sacramento Housing and Redevelopment Agency, Mutual Housing California, Sacramento Municipal Utilities District, Breath California, and Zipcar. The original project launched in March 2017 with 8 vehicles supported by 8 level-2 chargers and one DC fast charger in four locations.

- CARB awarded $1 million from the FY 2016-17 allocation to expand the FY 2014-15 Our Community Car Share project. These funds provided 6 electric vehicles and mobility options to 3 additional multi-unit housing communities. Vehicles became available to residents in early 2019.

- CARB awarded the project an additional $2 million from the FY 2017-18 allocation to continue expanding the project. These funds will allow between

4 and 6 additional affordable multi-unit housing communities' access to electric vehicles while expanding the ride hail pilot and incorporating e-bike sharing.

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

- Community Bridges received a $268,219 grant from FY 2016-17 for two electric ADA-equipped shuttle vans replacing internal combustion engine vans for Lift Line service in the Watsonville community. The community-based partner for this project is Regeneracion. The project includes two level two publicly accessible chargers and will serve about 700 disadvantaged community residents, and will begin service in spring 2019.

Car Sharing and Mobility Hubs in Affordable Housing Pilot Project

- Metropolitan Transportation Commission was awarded $2.25 million from FY 2016-17 for an electric vehicle and e-bike sharing pilot project. The project will place 24 vehicles with 24 chargers at 3 affordable housing sites in San Jose, Oakland, and Richmond. Partners include Bay Area AQMD, Transform, GIG Car Share, Shared Use Mobility Center, AC Transit, Santa Clara Valley Transportation Authority, and Greenlining Institute. Transform is conducting transportation needs assessments of the three locations and will use this information to inform how the placement of the clean mobility options will be utilized. The design may also include e-bikes, scooters, subsidized ride hail and public transit.

Valley Air ZEV Mobility Pilot

- San Joaquin Valley APCD was awarded $749,800 from FY 2016-17 for a combined service of electric vehicle car sharing, vanpool, and e-bike sharing project for 1,000 disadvantaged community residents of Merced, Bakersfield, and West Fresno County. The project includes 12 electric vehicles, 29 publicly accessible level two chargers, 3 DC fast chargers, and 16 e-bikes. Partners include GreenCommuter, Swiftmile, and CALSTART. The project is anticipated to launch in fall 2019.

Ecosystem of Shared Mobility

- San Joaquin Valley APCD was awarded $2.25 million from FY 2016-17 for an electric vehicle car sharing project serving 7 disadvantaged community affordable housing complexes in rural Tulare and Kern. The project includes 24 electric vehicles with 17 publicly accessible chargers, and the ride-matching application will also be developed to aggregate demand of trip times to minimize costs and Vehicle Miles Traveled along with maximizing riders. Partners include the Shared Use Mobility Center, UC Davis Institute of

Transportation Studies, Sigala Inc., Self Help Enterprises, and MOVE. The project is anticipated to launch in summer or fall 2019.

Statewide Administrator for Clean Mobility Options for Disadvantaged Communities

- CARB allocated $17 million in FY 2017-18 for a competitive solicitation for a statewide administrator to award funding on a first-come, first-served basis for small, simple car sharing and ride sharing projects serving disadvantaged communities. A competitive solicitation resulted in the awarding of these funds to CALSTART, Inc. who is developing this project. CALSTART, Inc. is planning to launch an outreach and education effort later this year in anticipation of opening up a voucher process to streamline funds for communities to launch small-scale clean mobility projects in early 2020.

- In FY 2018-19, CARB allocated an additional $15 million to expand funding for the statewide administrator pilot program to award funding on a first-come, first-served basis for small-scale car sharing and clean mobility projects serving disadvantaged communities. Staff will review the progress of this program in 2019 and early 2020 to see if funds should be provided for expansion or if funds should be shifted to other clean mobility projects.

Draft Funding Allocation for FY 2019-20

Staff estimates a total demand of $42-$52 for Clean Moblity Options projects in the upcoming fiscal year. This estimate includes unmet demand for which $32 million is still available from previous allocations. As such staff estimates a need for $10-$20 million for FY 2019-20. These funds could be allocated by expanding existing pilots (including the statewide administrator) or issue a new competitive solicitation for another statewide administrator or some combination of these options. In late 2019 or early 2020, CARB staff will evaluate the current projects and decide on the best option for allocating funds. In addition, staff would have the flexibility to direct any funding that is not awarded for Clean Mobility Options Benefiting Disadvantaged Communities projects to fund other clean transportation equity projects that show demand.

Potential Changes for FY 2019-20

Staff is considering providing funding for transportation needs assessments that can inform how investments in clean mobility options should be implemented in neighborhoods and communities. This is a priority recommendation from the SB 350 Guidance Document. For example, the statewide administrator would use funds for these assessments prior to awarding funds for the clean mobility options. These assessments will also consist of outreach and education to inform residents on potential clean mobility options.

In addition, staff would consider doing an initial review of current projects to assess the need and demand for additional funding to ensure projects can continue. As a result of various factors, these projects have taken more time than initially anticipated to develop and launch and may have run out of funds for some components, including implementation and outreach costs. Grantees will need to demonstrate funding needs and provide this information to CARB in order to receive additional funding.

Finally, in previous funding years, mobility enhancement options such as transit or on-demand travel subsidies, and para-transit enhancements were required to be part of a car sharing or ridesharing project and would have to be tied to a vehicle. Staff is suggesting that funds be available for mobility enhancement options without the requirement to be tied to a vehicle. For example, if the neighborhood has a need for ride hailing subsidies to allow residents to access public transit, this could be funded without requiring a vehicle to be purchased and placed within communities.

Clean Mobility in Schools Pilot Project

Draft Low Carbon Transportation Allocation $5 - $10 million

Project Goals

The Clean Mobility in Schools pilot project, first funded in Fiscal Year 2018-19, provides funding for zero-emission school buses and other school district vehicles, installation of supporting charging/fueling infrastructure, other clean mobility options such as creation of an electric vehicle car sharing service for school district employees and/or a bike sharing program for school staff and students, zero-emission lawn and garden equipment, and outreach and education for kindergarten through 12th grade public school district(s) in disadvantaged communities. The project is intended to introduce disadvantaged community students, teachers, and staff to advanced clean transportation options and benefits, and to encourage and accelerate the deployment of new zero-emission school buses, medium- and light-duty white fleet vehicles, passenger cars, and lawn and garden equipment in California. The project will provide immediate GHG emissions reductions, and reduces schoolchildren's and community members' exposure to cancer-causing and smog-forming pollution. Measures of success will include reduced fuel expenditures, numbers of vehicles and equipment placed, vehicle miles traveled, numbers of school district employees, staff, and students using the zero-emission vehicles and equipment, and numbers of students and other school community members engaged through outreach and education efforts.

Current Project Status

A $10 million competitive solicitation is expected to be released in summer 2019. CARB will announce the grant award(s) once the grant agreement(s) is/are executed.

Draft Funding Allocation for FY 2019-20

Staff is considering a funding level of $5 - $10 million for this project for FY 2019-20 to build upon the data collected from the FY 2018-19 project(s) funded, and to increase opportunities for understanding how to best implement such a program for the benefit of schools in disadvantaged communities by adding the experiences from additional school district(s). As school districts have a variety of needs and uses for clean mobility, it would be beneficial to fund pilot projects in at least two distinct school districts. Funds would be awarded to applicants from the competitive solicitation to be released this summer, or to a new solicitation if there are not any applicants from that solicitation. Though not expected, if funding is not fully awarded,

staff would consider flexibility to shift the funding to other equity projects that are showing demand.

Potential Changes for FY 2019-20

Because staff is still developing the first solicitation for the Clean Mobility in Schools Pilot Project, and have not yet learned of any need for changes, no changes are being considered for FY 2019-20.

Agricultural Worker Vanpools Pilot Project

Draft Low Carbon Transportation Allocation $5 - $6 million

Project Goals

The goal of the Agricultural Worker Vanpools Pilot Project is to provide safe, convenient and reliable transportation for agricultural workers living in disadvantaged and low-income communities, while also achieving emission reduction benefits through deployment of clean technology vehicles. The project meets a basic transportation need of agricultural workers and reduces vehicle miles travelled (VMT) by single occupancy gasoline vehicles to job sites. The use of shared mobility transportation combined with clean technology vehicle deployment results in immediate emission reduction benefits in areas disproportionally burdened by poor air quality. The project meets the requirements of Assembly Bill 2006 (Eggman, Chapter 364, Statutes of 2018), which requires the project to serve disadvantaged and low-income communities, as defined, and to allocate a minimum of 25 percent of the moneys appropriated for agricultural vanpool programs to those programs servicing low-income communities.

Current Project Status

Project allocations for FY 2016-17 and FY 2017-18 were combined into one, $6 million grant solicitation, and the California Vanpool Authority (CalVans) was competitively selected as the grantee. CalVans $1.5 million cash match combined with CARB's grant funding supported purchase and outfitting of 154, 15-passenger hybrid vans. Vans deployed for the spring 2019 harvest season, with approximately 90 percent of the fleet serving agricultural workers in the San Joaquin Valley with the rest serving workers in the Coachella and Salinas Valleys, Santa Maria, and other disadvantaged agricultural areas statewide.

CalVans recently received $4.7 million in FY 2018-19 expansion grant funding to support deployment of additional hybrid vans to additional disadvantaged communities, while also including low-income agricultural communities. This includes the $3 million allocation, as well as an additional $1.7 million staff is considering allocating from the FY 2018-19 general equity reserve. The grant funding, combined with CalVans match funding, expands the hybrid fleet by approximately 120 vans. All phases of the project incorporate strong community outreach and education, and include ridership surveys, vehicle telematics, and other participant feedback used to maximizing project benefits and incorporate lessons learned. The hybrid vans have proven a desirable mode of transportation for agricultural workers, resulting in a waiting list for vehicle placements, and a sharp increase in demand. Demand projections indicate a steady increase as the project gains visibility and popularity.

Draft Funding Allocation for FY 2019-20

Current and near-term projections on project demand indicate a slight increase in FY 2019-20 of between $5-6 million. The FY 2019-20 allocation will be award via a competitive solicitation with the option of adding FY 2020-2021 and FY 2021-2022 funds, if available. If funding is not fully awarded, staff would consider flexibility to shift the funding to other clean transportation equity projects that are showing demand.

Potential Changes for FY 2019-20

Staff is not considering any changes to this project for FY 2019-20.

Rural School Bus Pilot

Draft Low Carbon Transportation Allocation $5 - $30 million

Project Goals

The Rural School Bus Pilot Project helps California school bus fleets turnover to lower-carbon transportation choices by funding zero- and near zero-emission school buses, including new conventionally-fueled school buses that use renewable fuels. The project prioritizes small and medium sized air districts (as defined by the California Air Pollution Control Officers Association) because those air districts have less access to funding from Department of Motor Vehicle fees and other local sources. Also prioritized are older school buses with higher mileage. Buses in large air districts are eligible if projects in small and medium air districts do not use all of the funding. The project provides immediate GHG emission reductions and reduces schoolchildren's exposure to cancer-causing and smog-forming pollution. Measures of success include reduced fuel expenditures, number and technology type of vehicles placed, vehicle miles traveled, and number of disadvantaged and lower-income communities benefitted by the project.

Current Project Status

The project was first awarded funding in FY 2016-17. Since then, CARB has cumulatively awarded $55 million, over three grants, to the North Coast Unified AQMD (NCUAQMD) to administer the project statewide. NCUAQMD held two competitive solicitations for school districts to apply for grant funding in March 2017 and June 2018. The 2018 solicitation garnered nearly 600 applications, with requested funds totaling approximately $185 million. To date, the project has funded 43 school buses, including 32 zero-emission and 11 internal-combustion renewable-fueled buses. Approximately 120 additional school buses are expected to be awarded with remaining funds.

Draft Funding Allocation for FY 2019-20

Based on the strong demand from the current solicitation and the large remaining need, staff is considering allocating $5 - $30 million for FY 2019-20.

Potential Changes for FY 2019-20

Staff is considering two options for changing the program, starting with FY 2019-20 funds. The first option would be to consider requiring dismantling of all old school buses replaced by this program. In previous years, dismantling of the old school bus was required for school districts receiving a new conventionally-fueled school bus, but

the school district was allowed to keep their old school buses as back-up buses (operated less than 1,000 miles per calendar year) if they received one or more zero-emissions school buses. This approach helped ease school districts' potential apprehension about trying new technology in their fleets, and helped ensure they could reliably meet their primary responsibility to transport pupils. However, a significant number of school districts have chosen to dismantle their old bus even if it was not required, and requiring dismantling would permanently ensure the maximum amount of emissions reductions.

The second option to consider would be checking the old school buses' compliance status with the Truck and Bus Regulation as part of the project ranking criteria or eligible award amount determination. School buses are regulated under 13 CCR 2025(k), the school-bus-specific section of the Truck and Bus Regulation. The section essentially requires that any diesel school bus over 14,000 lbs. gross vehicle weight rating, either have a diesel particulate filter (either original from the factory or as an add-on retrofit), or operate less than 1,000 miles per calendar year. School buses (individually, not as a fleet) that do not meet this requirement would receive a lower project ranking or lower funding amount.

This approach helps ensure that those school districts that have not complied with the regulations are not unfairly prioritized over complying fleets.

These two changes will be discussed in a stakeholder work group before the final FY 19-20 Funding Plan is released.

Community Solutions for Clean Transportation Equity Pilot

Draft Low Carbon Transportation Allocation $20 - $25 million

Project Goals

The Community Solutions for Clean Transportation Equity Pilot is a new pilot project for Fiscal Year 2019-20. The pilot intends to help connect people to places equitably and sustainably, and takes a community-based approach to help overcome barriers identified in CARB's SB 350 Guidance Document and help address key challenges outlined in CARB's 2018 SB 150 Progress Report for California's Sustainable Communities and Climate Protection Act (SB 375).

This pilot aims to establish new and strengthen existing partnerships between community members, technical experts and private partners, and local public agencies to identify and address the unique mobility needs in their communities, including the transportation, accessibility, and land-use barriers that affect residents of disadvantaged and low-income communities. Through facilitated collaboration and capacity building, the pilot also aims to work with communities to develop context-specific solutions for a cleaner, more accessible, and more integrated transportation system that benefits the community residents that need it most. This effort entails accelerating both the development of community transportation needs assessments and the availability and adoption of clean transportation modes beyond the single-occupancy vehicle that align with regions' Sustainable Communities Strategies.

CARB will ensure that implementation provides meaningful benefits for residents of low-income and disadvantaged communities. These benefits include improving air quality and public health, increasing opportunities for safe access to clean transportation and mobility options, and increasing access to economic opportunities.

Measures of success will include a reduction in vehicle miles traveled, greenhouse gas emissions, and criteria and toxic air pollutants; an increase in trips made using more than one mode of transportation; increased mode share of various clean mobility options; reported increased understanding of community residents' transportation needs; reported improvements in access to destinations by community residents; and a reduction in transportation-related injuries.

Proposed Project for FY 2019-20

Staff is considering $20 - $25 million for a competitive solicitation, open to cities, counties, or community-based organizations as lead applicants and partnerships with other stakeholders as co-applicants. This solicitation will include funding for two

different grant types: community transportation needs assessment grants and implementation block grants.

The pilot will fund multiple (anticipated three to five) lead applicants to conduct community transportation needs assessments. These assessments are meant to both improve local agencies' understanding of their residents' transportation needs at the neighborhood or community-level and identify the most critical gaps in the transportation system that impact residents' ability to access destinations without a personal vehicle.

The pilot will also fund at least one lead applicant to administer a block grant for a transformative, place-based implementation project meant to demonstrate the holistic application of a series of clean transportation and land-use components. This implementation pilot is an opportunity for the selected community to create and evaluate new, innovative strategies to increase residents' access to destinations, while simultaneously reducing GHG emissions and vehicle miles traveled. The lead applicant, in consultation with CARB, will work with the selected community to identify the suite of components funded by the block grant that will address residents' transportation needs.

The suite of components funded by the implementation block grant may include planning, policy, behavior change, and capital projects that increase mobility and reduce vehicle miles traveled. Some examples of potential components include active transportation infrastructure, public transit improvements, shared or pooled electric vehicles and charging infrastructure, land-use plans for transit-oriented and transit-ready development, zoning code updates, targeted behavior change campaigns, and curbside and public parking management.

Outreach, Community Transportation Needs Assessments, Technical Assistance and the One-Stop-Shop

Draft Low Carbon Transportation Allocation
$5 - $10 million

Staff is considering allocating $5 - $10 million to continue to help implement the recommendations from CARB's SB 350 *Low-Income Barriers Study, Part B: Overcoming Barriers to Clean Transportation Access for Low-Income Residents* Guidance Document. Understanding the transportation needs of low-income residents and disadvantaged communities, and residents' awareness of clean transportation and mobility options are primary barriers identified in the study. CARB's SB 350 priority recommendations focus on strategies to better engage with communities to understand transportation needs and gaps, tailor outreach to better increase awareness of funding programs, provide technical assistance to strengthen partnerships and funding accessibility, and create a streamlined application.

Expand Community Transportation Needs Assessments

Increasing low-income and disadvantaged community access to clean transportation requires further understanding of community-based needs on the part of State agencies and other groups that implement transportation policies and planning activities. Community transportation needs assessments are the first step in identifying barriers, opportunities, and solutions best suited to meet the needs of residents within individual communities. Caltrans, the lead entity for implementing this priority recommendation from the Guidance Document, is coordinating with regional and local governments to promote expanding assessments of low-income community transportation needs. Over time, Caltrans plans to develop best practices that highlight successful local/regional engagement efforts and provide recommendations for objectives that can be achieved through needs assessments. CARB is designing a complementary approach for working with communities to assess their needs and resources and integrate this process into new and existing CARB-led programs, including the Clean Mobility Options for Disadvantaged Communities and Community Solutions for Clean Transportation Equity Pilot projects.

Develop an Outreach Plan/Roadmap

For low-income residents, access is the most common barrier to clean transportation and often results from a lack of knowledge and awareness of rebate and incentive programs, as well as clean transportation options. This insight underscores the need for CARB and other agencies to increase the State's education and outreach efforts designed to reach these communities. Thus, CARB is leading implementation of an Outreach Roadmap that identifies strategies for effectively coordinating, streamlining, and delivering tailored clean transportation outreach. The Roadmap also highlights the importance of a robust community engagement process that values community

knowledge and includes residents in developing solutions. The goal is to adopt practices that involve communities in identifying outreach and transportation needs, but also strengthen partnerships and build local capacity. The Roadmap emphasizes the need to allocate funding and designate a more central role to community-based organizations that are often most trusted and better positioned for providing responsive and appropriately tailored outreach. CARB will continue working with program administrators and outreach providers to implement the various strategies outlined in the Roadmap.

Provide Technical Assistance

Often is the case that low-income residents and disadvantaged communities lack the resources or capacity to develop projects and apply for, or administer, greatly needed project funding. As such, local community-based organizations can be ideal entities to help fill this need as they have the best knowledge of the community's specific barriers, gaps, and resources. Community-based organizations, as trusted entities within a community, can help foster the strengthening of existing, and building of new partnerships. They can also help in disseminating project information, such as funding opportunities and application assistance, to communities. CARB staff have been working with the Strategic Growth Council to provide technical assistance in the form of outreach and networking workshops and train-the-trainer sessions, and are working to incorporate funding for these types of activities into existing and new funding projects.

Develop Regional One-Stop-Shops

The goals of the regional One-Stop-Shop concept are to increase awareness for low-income residents by streamlining access to clean energy, transportation, and other related consumer-based incentives and expand existing outreach and education efforts on clean transportation and mobility options.

To this end, CARB awarded GRID Alternatives $5 million in Volkswagen settlement funding via a competitive grant solicitation in October 2018 and staff anticipate a statewide launch late 2019. This initial pilot focuses on the development and maintenance of a single application for low-income consumers to apply and qualify for CARB's Low Carbon Transportation Equity Projects (e.g. Clean Cars 4 All, Financing Assistance programs, CVRP, and Clean Mobility Options for Disadvantaged Communities). This pilot will also focus on providing coordinated community-based outreach and education to maximize program participation and promote advanced technology vehicle adoption in disadvantaged communities, low-income communities, and low-income households.

HEAVY-DUTY VEHICLE AND OFF-ROAD EQUIPMENT INVESTMENTS

Overview

This section of the Discussion Document provides a description of heavy-duty vehicle and off-road equipment investments for the following projects:

- The Truck Loan Program; and
- The clean truck and bus voucher project, (HVIP and Low NOx Engines)
- Advanced technology heavy-duty vehicle and off-road equipment demonstration and pilot projects

The draft funding investments for FY 2019-20 are consistent with and support the priorities described in the introduction and those outlined in the Three-Year Plan. The Three-Year Plan was established to provide a roadmap that was built upon information obtained from technology status assessments[10] developed by CARB, additional research where available, previous investments, recent market trends, and input from public work group meetings and industry.

Goals

As was discussed in the introduction, the Low Carbon Transportation Program is part of a much larger clean transportation funding portfolio, and the intent of this program is to send a market signal to move the needle in terms of advancing technologies and to improve near- and long-term air quality in California. Per SB 1403, CARB's Three-Year Heavy-Duty Strategy[11] prioritizes CARB's Low Carbon Transportation Investments on building successful beachheads, seeding promising next markets, and continuing to feed the innovation pipeline. AQIP investments continue to support the cleanest conventional technologies where Low Carbon Transportation funds cannot address their needs.

Using that foundation, the plan focused on the concept of beachheads - technology footholds that can be built upon, enabling further expansion into follow-on applications - to prioritize funding around those technologies and applications that have strong potential to transfer and spread to broader applications. The Three-Year Heavy-Duty Strategy consequently identified the level of investment needed to move

[10] California Air Resources Board, *Technology and Fuels Assessment Reports*, 2015-2016. https://www.arb.ca.gov/msprog/tech/report.htm

[11] California Air Resources Board, *Fiscal Year 2017-18 Funding Plan for Clean Transportation Incentives: Three-Year Investment Strategy for Heavy-Duty Vehicles and Off-Road Equipment from Low Carbon Transportation Investments and AQIP*, December 2017. https://www.arb.ca.gov/msprog/aqip/fundplan/proposed_1718_funding_plan_final.pdf

the zero-emission, low NOx engine, and efficiency pathways forward toward our 2030 goals over the next three years. These draft priorities are shown in Table 9 below.

Summary of Changes to the Three-Year Investment Strategy for Heavy-Duty Vehicles and Off-Road Equipment from Low Carbon Transportation Investments

In Fiscal Year 2017-18, CARB developed a three-year long-term investment strategy for investing Low Carbon Transportation funds in heavy-duty vehicles and off-road equipment. With the involvement of stakeholders, staff endeavored to articulate the agency's goals, study and understand the most important factors impacting the efficacy of projects, and present a thoughtful strategy for how best to invest Low Carbon Transportation funds. The result of the process was the Three-Year Investment Strategy for Heavy-Duty Vehicles and Off-Road Equipment.

The Three-Year Strategy is generally comprised of three primary components: technology status snapshots to track progress toward commercialization, beachheads for the three advanced technology pathways (zero-emission capable, low-NOx, and efficiencies) showing technology transfer, and a three-year investment priorities table showing staff's assessment of application priorities and estimated funding need to maintain progress toward commercialization.

As with last year, staff have updated the core components of the Strategy that are necessary to the integrity of its recommendations.

Technology Status Snapshots

Technology is rapidly advancing in the heavy-duty vehicle and off-road equipment space. It is critical that staff retain an accurate sense of where priority technologies are on their path to commercialization in order to make appropriate funding considerations. As such, CARB will continue to monitor and update the status of these core technologies and applications on an annual basis.

Technology Pathway Beachheads

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

Noting the significant advancement of off-road technologies and sudden emergence of promising new applications, CARB recognized a need to better integrate off-road into the beachhead models and the Three-Year Heavy-Duty Strategy more broadly.

CARB worked with stakeholders to understand the connections between on- and off-road and will be updating the beachheads accordingly. The updates allow CARB to invest more appropriately in both on- and off-road to accelerate technology commercialization for all of heavy-duty.

Three-Year Investment Priorities Table

The distillation of the Three-Year HD Strategy is the three-year investment priorities table, which contains CARB's top priorities for the next three fiscal years (not including the current year) for Low Carbon Transportation funds. Similar to last year, staff are adding a new third year (FY 2022-23) 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 major shifts in technology, current projects that the State is investing in, and consequent impacts to our priorities.

Table 9: DRAFT Investment Priorities to Advance Long-Term Pathways

THREE-YEAR HEAVY-DUTY STRATEGY INVESTMENT PLAN UPDATE*			
	FY 2020-21	**FY 2021-22**	**FY 2022-23**
Demos	*$60-$85 Million* Focus: ZE/PHEV HD Regional Delivery, ZE/Hybrid Ag-Construction Equipment, ZE/Hybrid Heavier Cargo Handling Equipment, ZE/Hybrid Marine	*$50-$90 Million* Focus: ZE/PHEV Longer Range HD Goods Movement, ZE/PHEV Ag- Construction Equipment, ZE/Hybrid Heavier Cargo Handling Equipment, ZE/Hybrid Marine	*$50-$90 Million* Focus: ZE Longer Range HD Goods Movement, ZE Construction Equipment, ZE Heavier Cargo Handling Equipment, ZE Rail, ZE/Hybrid Marine
Pilots	*$185-$310 Million* Focus: ZE/PHEV Drayage and Regional Delivery, Advanced Powertrains, ZE/Hybrid Heavier Cargo Handling Equipment, ZE Facilities	*$200-$325 Million* Focus: ZE/PHEV Drayage and Regional Delivery, Advanced Powertrains, ZE/Hybrid Ag- Construction-Heavier Cargo Handling Equipment, ZE/Hybrid Marine, ZE Facilities	*$200-$325 Million* Focus: ZE Longer Range Goods Movement, Advanced Powertrains, ZE Ag-Construction-Heavier Cargo Handling Equipment, ZE/Hybrid Marine, ZE Facilities
Commercial	*$365-$545 Million* Focus: ZE Delivery, ZE Transit, Low NOx Line haul Trucks, Ground Support Equipment, ZE/Hybrid Heavier Cargo Handling Equipment	*$420-$580 Million* Focus: ZE/PHEV Drayage and Regional Delivery, ZE Delivery, ZE Transit, Low NOx Line haul Trucks, ZE/Hybrid Heavier Cargo Handling Equipment	*$425-$585 Million* Focus: ZE/PHEV Drayage and Regional HD Delivery, ZE Delivery, ZE Transit, ZE/Hybrid Heavier Cargo Handling Equipment, ZE/Hybrid Marine
Total Funding	**$610-$940 Million***	**$670-$995 Million***	**$675-$1,000 Million***

Three-year funding plan investment priorities define yearly focus areas and propose funding that aligns with progress required for each key pathway.
** The draft funding amounts listed here represent a critical down payment towards meeting the funding need outlined at the beginning of this section, but do not meet the entire need.*

Other Updates

- State School Bus Evaluation – During the 2018 legislative session, Senate Bill 1403 was passed codifying the Heavy-Duty Three-Year Strategy and adding to it a report on the State's school bus population and funding needs. The report is being developed via public process and in coordination with the California Energy Commission. It will be included in this year's update of the strategy.

- Metrics of Success – The FY 2017-18 HD Strategy recognized that there are many ways to gauge the efficacy of Low Carbon Transportation investments and put in writing some of the goals Low Carbon Transportation projects should seek to achieve. Taking the categories established in the first year, CARB has worked with stakeholders and discussed possible metrics that CARB could use — especially using data already being collected — to construct a holistic set of evaluation tools. While progress has been made in exploring options, work will continue to fully understand options, costs, and benefits.

- Infrastructure – Infrastructure continues to grow in visibility and is critical to the success of CARB transportation investments. Last year's Strategy began to explain and address the numerous barriers posed by infrastructure and possible solutions to ease future deployments. In addition to offering a summary and analysis of barriers, the Strategy also chronicled the coordination efforts CARB is participating in or leading to provide relief.

  Despite growing attention, there is still a lack of data on the total magnitude of need for heavy-duty infrastructure. In the absence of an economy-wide needs assessment, CARB is interested in leveraging its existing projects to extract lessons learned and eventually conduct a broader assessment of Low Carbon Transportation projects. This year's initial assessment will include a case study of a small number of Low Carbon Transportation projects. Pending the outcome of this year's work groups on the 3-Year HD Strategy, staff may also include an assessment of the need for vehicles funded through HVIP. Future years may expand upon these small scale analyses.

A summary of the FY 2019-20 allocations is shown below in Table 10. The May Revision reflects a proposed allocation of $182 million for for heavy-duty vehicle and off-road equipment projects from Low Carbon Transportation. Prior to the May Revision, staff was considering that all of the proposed heavy-duty allocation support the HVIP project. In light of the May Revision, staff acknowledges the potential opportunity to fund other heavy-duty vehicle and off-road equipment projects, such as demonstration and pilot projects. Staff will seek input on the draft heavy-duty allocation, including HVIP, Clean Off-Read Engine voucher project (CORE), and potential demonstration and pilot project funding categories at an upcoming work group meeting in summer 2019.

Table 10: Summary of Draft Heavy-Duty Vehicle and Off-Road Equipment Project Allocations (Millions)

Project Category	Low Carbon Transportation	AQIP	Total
Clean Truck and Bus Vouchers (HVIP + Low NOx Engines)	TBD		$182
Clean Off-Road Equipment (CORE)			
Heavy-Duty Vehicle and Off-Road Equipment Demonstration and Pilot Projects			
Truck Loan Assistance Program		$48	$48
Heavy-Duty Vehicle and Off-Road Equipment Investment Total	**$182**	**$48**	**$230**

To ensure that CARB continues to meet its goal of advancing technology and establishing sustainable markets for these technologies faster, staff is considering updating the Three-Year Plan introduced in the FY 2017-18 Funding Plan. This update will focus on updates to the Plan's assumptions, progress made on the identified beachheads, and forecasting the need for 2021-22. Staff plans to hold an additional work group meeting with interested stakeholders in summer 2019.

Clean Truck and Bus Vouchers (HVIP and Low NOx Engine Incentives)

Draft Low Carbon Transportation Allocation TBD

Project Goals

Clean truck and bus voucher incentives have a strong track record of successfully bringing zero-emission and other clean heavy-duty vehicle technology to California. The Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (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 near-term technology to help meet health-based ambient air quality standards. Incentives for low NOx engines began in 2016, corresponding with the introduction of the first engine certified to an optional low NOx standard – with up to 90 percent fewer NOx emissions than an engine meeting today's mandatory standards. Voucher incentives complement other programs in CARB's heavy-duty funding portfolio by providing a streamlined application process without requiring scrapping an existing vehicle.

As required by SB 1204, the proposed heavy-duty project allocations ensure that at least 20 percent of Low Carbon Transportation truck funding supports early commercial deployment of existing zero- and near zero-emission heavy-duty truck technology. CARB expects to significantly exceed the 20 percent requirement in SB 1204 through the investments made in this project.

Current Project Status

Since its inception in 2010, HVIP and Low NOx Engine Incentives have supported the purchase of 2,456 zero-emission trucks and buses, 2,593 hybrid trucks, 1,700 low NOx engines, and 195 trucks outfitted with electric power take off systems (ePTOs) by California fleets through January 31, 2019. Market demand for battery-electric trucks and buses continue to increase. Voucher requests for low NOx engines and trucks with ePTOs remained strong. Over the past year, HVIP experienced a significant increase in overall funding demand, growing to about $10 million in voucher requests per month, and CARB received the largest single voucher request in HVIP history of nearly 1,000 zero-emission trucks. We anticipate that there will not be enough funding for the upcoming fiscal year to meet demand, and a waitlist may be necessary.

Component Cost Analysis: CALSTART, the Grantee selected to administer HVIP, has begun the process of developing a component cost analysis. The component cost analysis will provide staff with much needed information regarding actual cost of advanced technology vehicles. CALSTART is working with CARB staff and vehicle manufacturers to obtain accurate cost information. The component cost analysis will continue to be updated annually in order to reflect the most accurate costs associated

with the manufacturing of advanced technology vehicles. Once the analysis is complete, staff will use results to better determine voucher incentives. Voucher incentive will most likely change this year or next fiscal year. The analysis might lead to funding voucher based on vehicle efficiency, battery size or other variables. Funding vouchers based solely on GVWR or bus length may not be the best approach for providing future voucher funding.

Potential Changes for FY 2019-20

While the advanced clean heavy-duty vehicle sector is growing rapidly, it is still in the early stages of commercialization. As a result, staff continues to refine HVIP and make adjustments to build on the momentum HVIP has generated in bringing these vehicles to market. After receiving input from stakeholders during public work group meetings, staff is considering the following changes to the project criteria:

Transition funding for all bus types using the 8.9L low NOx engine: Currently, school buses and shuttle buses using the 8.9L low NOx engine are eligible for HVIP funding. Now that zero-emission school buses have become commercially available, staff is considering no longer funding combustion-engine buses through HVIP, and instead, fund those buses through other funding programs such as the Carl Moyer Program. This transition has already taken place for transit buses, as part of the work group process in last year's Funding Plan.

Voucher enhancements for electric vehicle supply equipment and hydrogen fueling infrastructure: In the FY 2016-17 Funding Plan, funding was approved to help offset infrastructure costs for battery-electric and fuel cell heavy-duty vehicles. This voucher enhancement was structured as a short-term solution to help fleets overcome non-vehicle cost barriers until other more suitable funding sources became available. HVIP was designed to offer a streamlined approach to funding advanced technology vehicle purchases through a simple first-come, first-served program. However, funding for infrastructure is a complex issue that requires case-by-case evaluation, which is incongruous with HVIP's simplified system and goals of expediency. Looking to the future, and to capitalize on HVIP's core competencies, staff is continuing to evaluate other infrastructure funding sources and potentially discontinuing the infrastructure voucher enhancements after the 2019-20 fiscal year.

Stacking/combining other funds with HVIP: Incentives for some technologies in HVIP may be "stacked" or combined with other public incentives, and total incentive amounts up to 100 percent of the total vehicle cost (excluding taxes and fees) are allowed for public fleets. For private fleets it is 90 percent, although private fleets have not often used this option. HVIP incentives cover half up to full incremental cost without a scrap requirement. HVIP's intent is to substantially offset the cost of new technology, but not necessarily to combine with other incentive programs that fund nearly the whole cost of a vehicle, thus exceeding the incremental cost. HVIP will keep in place the public fleet option of combining funds up to 100 percent of the vehicle

cost (excluding taxes and fees) in order to assist with school district purchases that traditionally have limited transportation funding options available, and transit agencies that rely on Federal Transit Administration (FTA) funding and other public subsidies to successfully purchase buses. However, staff is considering to not allow that other state-funded incentives be stacked with HVIP funding (such as the Energy Commission's School Bus incentives program). Stacking with local incentive funds would continue to be allowable, so long as they are not paying for the same incremental costs.

Examine Fleet Limits: CARB removed the 200-voucher limit per fleet per calendar year in the FY 2017-18 Funding Plan. Since the goal of HVIP and Low NOx Engine Incentives is to reduce vehicle cost and accelerate the placement of vehicles in to the market, staff believed this to be a reasonable change. However, with some orders now coming in significantly over 200 vehicles, staff may consider an annual cap and/or tailoring funding. Staff will work with stakeholders to develop a set of criteria to consider, such as a potential price reduction associated with bulk purchases.

Zero-Emission Powertrain Certification: Staff will work with stakeholders to consider developing a voucher enhancement for zero-emission technology providers who opt to participate in the Zero-Emission Powertrain Certification process before it is required.

AB 1550 Disadvantaged Community and Low-Income Household/Community Benefits: HVIP and Low NOx Engine Incentives will continue to be 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. As of March 31, 2019, about 55 percent of Low Carbon Transportation funding for HVIP and low NOx Incentives has been spent in disadvantaged communities.

Currently, a higher HVIP incentive is offered for zero-emission vehicles domiciled and operating in disadvantaged communities as a way to encourage HVIP participation from fleets operating in these communities.

As part of the Cap-and-Trade auction proceeds reporting requirements, CARB will track where HVIP and Low NOx Engine Incentive funds are spent, so it can calculate and report AB 1550 investment criteria.

Solicitation: CARB selected a grantee to administer FY 2016-17 HVIP funds via a three-year competitive solicitation. As the current grant comes to a close, staff would conduct a competitive solicitation to select a grantee for the next three years. While the solicitation would encompass up to three fiscal years, the grant agreement would initially cover one fiscal year with the option to renew for each of the following two fiscal years. The solicitation would be released after the Board approves the FY 2019-20 Funding Plan, and it would be open for 30 days. Staff anticipate having a grant in place for the FY 2019-20 funds by the end of January 2020.

Clean Off-Road Equipment Voucher Incentive Project

Draft Low Carbon Transportation Allocation
TBD

Project Goals

The Clean Off-Road Equipment Voucher Incentive Project (CORE) is a new project analogous to HVIP, but for off-road freight equipment. Like HVIP, it is targeted toward commercialized products and is designed to accelerate deployment of cleaner technologies by providing a streamlined way for fleet ready to purchase specific zero-emission equipment to receive funding to offset the higher cost of such technologies.

Some zero-emission off-road applications are already being deployed, and their main barrier to more widespread adoption is that production volumes are too low for the equipment to be cost competitive. Staff believes that serving these applications with an off-road freight voucher incentive project would help to bring about greater adoption of cleaner, commercially available off-road technologies throughout California, particularly in areas such as ports, railyards, airports, and warehouses, that are most impacted by emissions from off-road freight equipment.

CORE, like the Clean Truck and Bus voucher project, will operate on a first-come, first-served basis and support a wide variety of private and public fleets who are ready to purchase specific commercially available zero-emission and near zero-emission products.

Current Project Status

CARB allocated $40 million to the CORE project as part of the FY 2017-18 Funding Plan. Because this was a new project, staff held a series of work group meetings to obtain stakeholder input on designing the project and developing a list of eligible technologies and releasing a draft implementation manual. CARB released a competitive solicitation for a project administrator in early 2019. Staff is now in the process of finalizing a grant agreement with the administrator, and the project is expected to launch and begin taking applications by fall 2019.

Draft Funding Allocation for FY 2019-20

CARB's Three-Year Investment Strategy for Heavy-Duty Vehicles and Off-Road Equipment created a roadmap for the level of heavy-duty incentive funding needed over the next three years to put the State on a trajectory to meet the its ZEV adoption and emission reduction goals. The projected need identified for off-road freight equipment falls within a range of $26-$43 million. Since the CORE program still has $40 million from the FY 2017-18 Low Carbon Transportation allocation, staff is considering to utilize existing funding and not to provide additional funding for

FY 2019-20. Staff anticipates that the $40 million available will be sufficient to meet the demand through the fall of 2020.

Potential Changes for FY 2019-20

No additional changes are planned for the project for FY 2019-20.

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

Draft Low Carbon Transportation Allocation
TBD

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 technology advancement toward commercialization, per-vehicle incentives are high because manufacturing is not standardized and is focused on smaller batches of vehicles. Higher levels of incentives per vehicle are needed to help entrepreneurs cover the costs of technology development. 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. All demonstration projects must have the potential for widespread commercialization that will significantly transform the industry while achieving GHG, criteria pollutant, and toxic emission reductions as required by SB 1204. Once demonstration projects reach the goal of market deployment, longer-term future emission reductions in considerably larger magnitudes can be achieved.

Pilot commercial deployment projects help to support larger-scale deployments of vehicles, thereby accelerating their introduction and market penetration. In the pilot phase, projects are typically focused on assessing issues around manufacturing design, user acceptance, and support. During this phase, per-vehicle incentives are high because engineering designs are still evolving, manufacturing is not standardized and is focused on smaller batches of vehicles. Higher levels of incentives per-vehicle are needed to help entrepreneurs cover the costs of technology development.

Current Project Status

Over the past five years, CARB has funded 30 heavy-duty demonstration and pilot projects with approximately $360 million in incentives. Demonstration projects include clean port trucks and cargo handling equipment, energy management systems, an opposed piston engine, a battery-electric switcher locomotive, electric agriculture tractors, and a hydrogen fuel cell passenger ferry. Pilot projects include battery electric and fuel cell transit buses, electric school buses, and battery electric delivery trucks. In addition, CARB's Zero- and Near Zero-Emission Freight Facilities project funded eleven transformational projects demonstrating a wide range of advanced technology vehicles and equipment around the State. The projects range 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 at https://www.arb.ca.gov/msprog/lct/posters.htm?_ga=2.186122473.1188775721.1557325257-1828363756.1522690103.

Draft Funding Allocation for FY 2019-20

CARB's Three-Year Investment Strategy for Heavy-Duty Vehicles and Off-Road Equipment created a roadmap for the level of heavy-duty incentive funding needed over the next three years to put the State on a trajectory to meet the its ZEV adoption and emission reduction goals. The total heavy-duty funding need projected for FY 2019-20 is in a range from $450-$735 million. Since the proposed allocation from the Governor's budget is a total of $132 million, staff's initial thought was to only fund the commercial voucher incentives – HVIP. As a result, no funding would be available for demonstration and pilot projects. However, some portion of the additional $50 million made available under the May Revision to the State Budget could be used for this. Staff recognizes that it is critical to reduce possible disruptions to the first-come, first-served projects as funding gaps in these projects can have chilling, sometimes long-term effects on the market. Taking this under consideration, staff's option for public discussion is to ensure that the on-road truck and bus voucher project is fully funded based on current projections.

Potential Changes for FY 2019-20

The May Revision reflects a proposed allocation of $182 million for for heavy-duty vehicle and off-road equipment projects from Low Carbon Transportation. Prior to the May Revision, staff was considering that all of the proposed heavy-duty allocation support the HVIP project. In light of the May Revision, staff acknowledges the potential opportunity to fund other heavy-duty vehicle and off-road equipment projects, such as demonstration and pilot projects. Staff will seek input on the draft heavy-duty allocation, including HVIP, Clean Off-Read Engine voucher project (CORE), and potential demonstration and pilot project funding categories at an upcoming work group meeting in summer 2019.

Truck Loan Assistance Program

Draft AQIP Allocation
$48 million

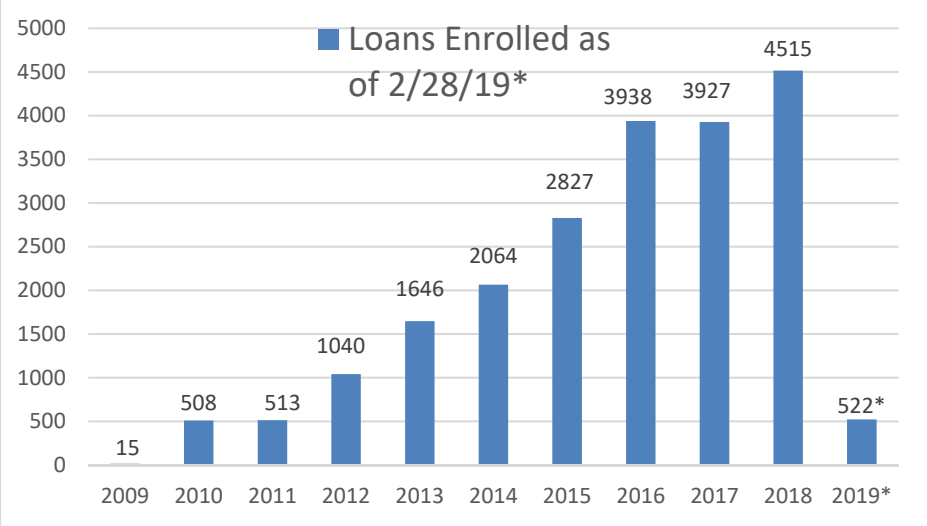
Project Goals

Launched in 2009, the Truck Loan Assistance Program utilizes Air Quality Improvement Program (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 (CalCAP) 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. 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 most appropriate source of CARB funding available for this program.

Current Project Status

As of February 28, 2019, about $107.2 million in Truck Loan Assistance Program funding has been expended to provide about $1.4 billion in financing to small-business truckers for the purchase of approximately 23,200 cleaner trucks, exhaust retrofits, and trailers. Demand by truck owners has increased nearly every year as shown in Figure 4. Program growth is driven by increased lender and borrower awareness and utilization of the program, increased cost of new diesel trucks, and increased enforcement of the Statewide In-Use Truck and Bus Regulation.

Figure 4: Loan Activity by Calendar Year



To meet consumer demand and to ensure that the program would remain fully funded, CARB allocated $25.6 million for the program for FY 2018-19 and $20 million for FY 2017-18. Due to concerns from forecasted funding shortfalls, at the end of FY 2017-18, CARB allocated an additional $15 million of its own funds to the Truck Loan Assistance Program.

In 2017 CARB staff successfully worked with CPCFA to establish incremental recapture procedures. 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. Active lenders enrolled in the program on or after August 15, 2017 are subject to recapture. Based on loan activity through June 30, 2018, a total of approximately $8 million in recaptured funds have been redeposited into the program account. The quantity of recaptured funds from matured loans will be determined after the conclusion of each fiscal year.

Table 11 provides a summary of financing provided to date. About 43 percent of enrolled loans have been issued to owner operators with one truck, and about 96 percent of enrolled loans have been issued to fleet owners with 10 or fewer employees.

Table 11: Truck Loan Assistance Program Status –Vehicles/Equipment Financed

Number of Loans Issued[1]	Number of Projects Financed	Project Type	State Funding (million)	Total Amount Financed (billion)
21,520	22,105	Truck Purchases	$107.2	$1.4
	620	Exhaust Retrofits		
	502	Trailers		

Based on data through February 28, 2019.

[1] Total number of loans issued does not equal the number of projects financed because some loans included multiple projects.

Draft Funding Allocation for FY 2019-20

CARB staff's option for consideration is a funding allocation of $48 million for the Truck Loan Assistance Program to meet expected demand for the FY 2019-20 cycle. This is an increase of $22.4 million over the previous funding cycle in FY 2018-19. Program need and popularity is expected to grow more in the coming years because the Road Repair and Accountability Act of 2017 (SB 1, Beall, Chapter 5, Statutes of 2017), beginning in 2020, will only allow clean trucks in compliance with CARB's Truck and Bus Regulation to be registered by the Department of Motor Vehicles (DMV). The Truck and Bus Regulation requires most heavy-duty vehicles to be equipped with 2010 or newer model year engines between 2020 and 2023.

CARB has an enforcement process in preparation for SB 1 and upcoming replacement deadlines. It is a streamlined process that will substantially increase the numbers of Notices of Violation and vehicle registration holds received by non-compliant fleets. 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 2019-20

Starting in FY 2019-20, retrofits and 2007 to 2009 model year engines will no longer be eligible through the Truck Loan Assistance Program. Most vehicles equipped with engines retrofitted with diesel particulate filters will require an upgrade to a 2010 or newer model year engine by 2020, so retrofits are no longer feasible. Most 2007 to 2009 model year engines will also require an engine upgrade by 2023. The term of a loan may be five years or more so it will not be practical to finance into 2023 or later if the financed vehicle will become non-compliant.

To ensure the sustainability of the program and continuous availability of funding to participating lenders, staff is working with CPCFA to address long-term cash flow and meet future demand.

- *Long-term cash flow:* Projections of the potential funding needed for loan applicants purchasing compliant vehicles through the loan program due to SB 1 and engine upgrade requirements in the Truck and Bus Regulation exceed forecasted funding allocations between now and 2023. CARB staff is continuing to search for future sources of funding to meet anticipated increases in demand.

- *Determination of future demand:* Staff is analyzing economic, applicant, and enforcement data so CARB can more accurately determine future program demand.

Acronym List

1. AB – Assembly Bill
2. APCD – Air Pollution Control District
3. AQIP – Air Quality Improvement Program
4. AQMD – Air Quality Management District
5. CalCAP – California Capital Access Program
6. Cal/EPA – California Environmental Protection Agency
7. CAPCOA – California Air Pollution Control Officers Association
8. CARB – California Air Resources Board
9. CEC – California Energy Commission
10. CHDC – Community Housing Development Corporation
11. CPCFA – California Pollution Control Financing Authority
12. CVRP – Clean Vehicle Rebate Project
13. DGS – Department of General Services
14. DMV – Department of Motor Vehicles
15. EFMP – Enhanced Fleet Modernization Program
16. ePTO – electric power take-off
17. EV – electric vehicle
18. EVSE – electric vehicle supply equipment
19. FC – fuel cell
20. FCEV – fuel cell electric vehicle
21. FTA – Federal Transit Administration
22. FY – fiscal year
23. GHG – greenhouse gas
24. GVWR – gross vehicle weight rating
25. HD – heavy-duty
26. HVIP – Hybrid and Zero-Emission Voucher Incentive Program
27. MD – medium-duty
28. NG – natural gas
29. NOx –nitrogen oxides
30. PHEV – plug-in hybrid-electric vehicle
31. PM – particulate matter
32. ROG – reactive organic gas
33. SB – Senate Bill
34. ZE – zero-emission
35. ZEV – zero-emission vehicle