



**Public Workshop on
the Fiscal Year 2018-19 Funding Plan for Clean Transportation
Incentives**

**Low Carbon Transportation Investments and
Air Quality Improvement Program**

DISCUSSION DOCUMENT



Public Workshop Date and Location:

Friday June 15, 2018
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/msc1814/fy1819_fp_workshop_notice_061518.pdf

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 1, 2018

Workshop Agenda

10 am – 10:30 am	Introduction and Overview of Project Category Funding Allocations
10:30 am – Noon	Light-Duty Vehicle and Equity Investments <ul style="list-style-type: none">• CVRP• Transportation Equity Projects
Noon – 1 pm	Lunch Break
1 pm – 2:30 pm	Heavy-Duty and Off-Road Equipment Investments

Times above are approximate and subject to change.

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DISCUSSION DOCUMENT INTRODUCTION

The Governor's proposed State Budget for Fiscal Year (FY) 2018-19 includes \$409 million for Low Carbon Transportation Investments funded with Cap-and-Trade Auction Proceeds, and \$28.64 million for the Air Quality Improvement Program (AQIP).

- For the Clean Vehicle Rebate Project (CVRP), the Governor's budget proposes \$200 million, which includes \$25 million specifically to support increased rebates for lower income applicants.
- For light-duty equity projects, the Governor's budget proposes \$75 million.
- For heavy-duty vehicle and off-road equipment projects, the Governor's budget proposes \$134 million.

This discussion document summarizes the California Air Resources Board's (CARB or Board) staff's recommendations for expending these funds, and reflects input from a March 15, 2018 public workshop, public work group meetings held between March and May 2018, and additional stakeholder comments. The discussion document establishes:

- CARB 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.

Staff will present and seek comment on these recommendations at a public workshop on June 15, 2018. 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 2018-19 Funding Plan by September 21, 2018 for public comment prior to Board consideration at the October 25-26, 2018 Board meeting.

Table 1: Recommended Project Allocations for FY 2018-19 Funding Plan

Project Category	Allocation* (millions)
LIGHT-DUTY VEHICLE AND TRANSPORTATION EQUITY INVESTMENTS	
CVRP (including increased Rebates for Lower Income Applicants)	\$200
Transportation Equity Projects	\$75
Light-Duty Vehicle and Transportation Equity Investment Total	\$275
HEAVY-DUTY VEHICLE AND OFF-ROAD EQUIPMENT INVESTMENTS	
Clean Truck and Bus Vouchers (HVIP + Low NOx Engine Incentives)	\$68
Innovative Solutions Pilot for Zero-Emission Vehicle Adoption	\$10
To be allocated based on demand	\$56
AQIP-FUNDED HEAVY-DUTY INVESTMENTS	
Truck Loan Assistance Program	\$25.6
Diesel Particulate Filter Retrofit Replacements	\$3
Heavy-Duty Vehicle and Off-Road Equipment Investment Total	\$162.6
TOTAL	\$437.6

*Does not include any adjustments for project administration.

Addressing Possible Changes to Proposed Budget

Staff recognizes the appropriations for these programs will not be finalized until the Legislature approves and the Governor signs the State budget. If necessary, CARB will update the allocations in the FY 2018-19 Funding Plan to reflect any changes to these appropriations in the final State budget as described below.

Final Cap-and-Trade Auction Proceeds Budget: If the final Cap-and-Trade auction proceeds budget passed by the Legislature contains changes to CARB's Low Carbon Transportation appropriation, staff would propose modifications to the Funding Plan to reflect the final appropriation at the Board meeting. The Board would consider those modifications as part of its consideration of the Funding Plan.

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-emitting technologies to meet California's longer-term air quality and climate change goals.
- Improving access to clean transportation for low-income households and investing in the disadvantaged and low-income communities most impacted by pollution.
- Supporting a green economy.

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 we focus exclusively on the projects that are most cost-effective today, we would miss the opportunity to accelerate deployment of zero-emission technologies thereby jeopardizing our ability to meet 2030 and 2050 goals. We need both. This is consistent with CARB's approach of taking a portfolio approach, or 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 can make through the Low Carbon Transportation Program can 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 \$500 million investment in consumer rebates for ZEV passenger vehicles, for example, has resulted in California leading the nation in 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 large scale investments to electrify the heavy-duty sector and are already starting to see success of our investments in zero-emission transit buses, a natural beachhead for transforming the heavy-duty sector. These investments also set California up to benefit from the green economy with companies establishing zero-emission vehicle manufacturing operations in the state.

Based on these goals, CARB staff recommends a balanced investment strategy. This includes funding low NOx combustion freight categories to ensure near-term NOx reductions, coupled with funding for ZEV technologies to accelerate the deployment of zero-emission buses, drayage trucks, and freight equipment. A larger share of

investments are directed to the zero-emission categories because of their relatively higher cost at this stage of development compared to combustion technologies. This is necessary and appropriate to fund enough vehicles and equipment to move the market and have a real impact in accelerating zero-emission technologies towards broader commercialization.

The discussion document'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 zero-emission vehicles (ZEVs), and reduce petroleum dependency.

CARB's 2014 and 2017 *Climate Change Scoping Plans* and 2016 *Mobile Source Strategy* conclude that many of the same actions are needed to meet greenhouse gas (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 clean air goals and priorities driving the investments proposed in this discussion document include:

- 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 2017 *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), and SB 350 (De León, Chapter 547, Statutes of 2015).
- Incorporating the findings and recommendations from CARB’s SB 350 study, *Overcoming Barriers to Clean Transportation Access to Low-Income Residents*.
- 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.
- Reducing the carbon intensity of California’s transportation fuels as required by the Low Carbon Fuel Standard (LCFS).

LOW CARBON TRANSPORTATION: Cap-and-Trade auction proceeds provide funding for CARB’s advanced technology, clean transportation incentive programs that reduce GHG emissions, expanding the types of projects previously funded through AQIP. Low Carbon Transportation is identified as a priority investment area in the first two Cap-and-Trade Auction Proceeds Investment Plans. These investments accelerate the transition to low carbon freight and passenger transportation, supporting the Governor’s climate change strategy pillar of a 50 percent reduction in petroleum use in vehicles by 2030 and the Administration’s goal to deploy 5 million zero-emission vehicles by 2030.

Low Carbon Transportation and Fuels investments account for about 93 percent of the funds that will be covered in the FY 2018-19 Funding Plan.

Low Carbon Transportation Funding to Date: The Legislature has appropriated nearly \$1.2 billion to CARB for Low Carbon Transportation projects over the past five budget cycles (FY 2013-14 through FY 2017-18). These appropriations are being used to fund: zero-emission and plug-in hybrid passenger vehicles through CVRP; light-duty vehicle equity projects to increase access to the cleanest vehicles 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.

Over 32 percent of CARB’s Low Carbon Transportation funding has been allocated to projects located in disadvantaged communities, including low-income residents of these communities as shown in Table 2. The 32 percent spent in disadvantaged communities greatly exceeds the commitments made in past Funding Plans. Much of the disadvantaged community focused funding is for light-duty equity projects, Zero-Emission Truck and Bus Pilot Projects, and Advanced Freight Technology Demonstration Projects. While not limited to disadvantaged communities, over 50 percent of HVIP funding has been awarded for trucks and buses operating in disadvantaged communities.

Table 2: Low Carbon Transportation Project Allocations to Date

(FY 2013-14, 2014-15, 2015-16, 2016-17, and 2017-18)

Project	Funding (millions)	In DC	Project Outcomes ¹
Light-Duty Vehicle Investments			
CVRP	\$502	8% ²	<ul style="list-style-type: none"> Statewide 1st come, 1st served rebates for 218,000 ZEVs.
Light-Duty Equity Projects			
EFMP Plus-up	\$82	58% ²	<ul style="list-style-type: none"> ~2,900 vehicles scrapped and replaced.
Car Sharing and Mobility Options	\$31.6	100% ³	<ul style="list-style-type: none"> Sacramento car share project launched; Los Angeles project launching this year. 4 additional agreements expected soon.
Public Fleet Incentives for CVRP Eligible Vehicles	\$6	47% ²	<ul style="list-style-type: none"> ~750 ZEV rebates for public fleets in or near disadvantaged communities.
Financing Assistance for Lower-Income Consumers	\$25.9	39% ²	<ul style="list-style-type: none"> Loan assistance project launched in Bay Area. Statewide pilot launching this year.
Agricultural Worker Vanpools in San Joaquin Valley	\$6	100% ³	<ul style="list-style-type: none"> Project launching this year.
Heavy-Duty Vehicle and Off-Road Equipment Investments			
Advanced Technology Freight Demonstrations	\$183	>30% ³	<ul style="list-style-type: none"> ~40 zero emission drayage truck projects at multiple ports/facilities. Multi-source projects: ~40 pieces of zero-emission freight equipment at Port of Los Angeles and 3 facilities in San Bernardino County. Solicitation for Zero- and Near Zero-Emission Freight Facilities Project underway.
Zero-Emission Off-Road Freight Vouchers	\$40	tbd ⁴	<ul style="list-style-type: none"> Project solicitation expected this year.
Zero-Emission Truck/Bus Pilot	\$85	97% ³	<ul style="list-style-type: none"> ~150 zero-emission buses and trucks + supporting infrastructure and training.
Rural School Bus Pilot	\$25	21% ²	<ul style="list-style-type: none"> ~50 zero-emission or renewable-fueled school buses.
Low NOx Engine Incentives with Renewable Fuel	\$13	tbd ⁴	<ul style="list-style-type: none"> ~643 low NOx engine vouchers.
HVIP	\$228	51% ²	<ul style="list-style-type: none"> Statewide 1st come, 1st served vouchers for ~3,481 hybrid and zero-emission trucks or buses.
Total⁵	\$1,202.5⁵	32%	

¹Projected outcomes are estimated based on full expenditure of funds.

²Estimate based on rebates/vouchers issued to date as reported in the March 2018 *Annual Report to the Legislature on California Climate Investments Using Cap-and-Trade Auction Proceeds* projected forward to full expenditure of funds. Will be updated after all funds expended. For EFMP Plus-up, used a conservative estimate because data not yet available for the new air districts launching EFMP programs.

³Based on terms of project solicitation and/or grant agreement.

⁴To Be Determined. Insufficient data yet to estimate; will be reported in future Reports to the Legislature.

⁵Total does not include \$13 million for State operations.

AQIP: AQIP is a mobile source incentive program that focuses on reducing criteria pollutant and diesel particulate emissions with concurrent reductions in GHG emissions. AQIP has an annual budget of about \$28 million. AQIP has provided funding for CVRP, the Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP), and demonstrations for advanced emission reduction vehicle technologies since 2009. In recent years, these projects have been primarily funded from the Low Carbon Transportation appropriations, because demand has exceeded AQIP's budget, and 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 ARB's in-use truck and bus regulation. AQIP accounts for about 7 percent of the funds that will be covered in the FY 2018-19 Funding Plan.

AQIP Funding to Date: Table 3 provides a summary of AQIP investments to date including one-time funding provided in various years to help meet demand. In some years, CVRP and HVIP received funding from both AQIP and Low Carbon Transportation.

Table 3: AQIP Project Allocations by Year¹

AQIP Project	Project Allocations by Fiscal Year										Total
	(millions)										
	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	
Truck Loan Assistance	\$30				\$4	\$20	\$10	\$18	\$25	\$20	\$126
CVRP ²		\$4	\$7	\$16	\$36	\$70	\$10	\$3			\$146 ²
HVIP ²		\$20	\$23	\$11		\$5	\$5				\$64 ²
Low NOx Engine Incentives								\$2		\$8	\$10
Agricultural Equipment Trade Up in San Joaquin Valley								\$0.5	\$3		\$4
Advanced Technology Demonstration/Vehicle Testing		\$1.9	\$1.7	\$1.6	\$1						\$6
Lawn and Garden Equipment Replacement		\$1.6	\$1								\$3
Off-Road Hybrid Equipment Pilot			\$2								\$2
Zero-Emission Agricultural Utility Equipment		\$0.1									\$0.1
TOTAL	\$30	\$28	\$35	\$29	\$42	\$95	\$25	\$23	\$28	\$28	\$362
Air Quality Improvement Fund	\$30	\$28	\$29	\$29	\$29	\$25	\$20	\$23	\$28	\$28	\$269
Other funding sources ¹	-	-	\$6	-	\$13	\$70	\$5	-	-	-	\$93

All project allocations rounded to nearest \$ million, except for projects allocated less than \$2 million.

Rows and columns may not sum to totals due to rounding.

¹Includes a total of \$93 million from other funding sources: \$53 million from the California Energy Commission's Alternative and Renewable Fuel and Vehicle Technology Program or Fund to support CVRP and HVIP in various fiscal years, \$10 million appropriated to Truck Loan Assistance Program in FY 2013-14 as a loan from the Vehicle Inspection and Repair Fund (VIRF) per SB 359 (Corbett, Chapter 415, Statutes of 2013), and \$30 million transferred by the Legislature from VIRF to meet CVRP demand in 2014 per SB 852 (Leno, Chapter 25, Statutes of 2014) and SB 862 (Committee on Budget and Fiscal Review, Chapter 36, Statutes of 2014).

²CVRP and HVIP also received Low Carbon Transportation funds in FY 2013-14 through 2017-18 as shown in Table 2.

DRAFT FUNDING RECOMMENDATIONS

INVESTMENT PRIORITIES FOR 2018-19

CARB is using these incentives to accelerate deployment of the cleanest feasible mobile source technologies and to improve access to clean transportation. Staff strives to maximize benefits for disadvantaged communities, low-income communities, and low-income households. Staff also prioritizes investments that support multiple clean air goals 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 recommended projects for the FY 2018-19 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 both technologies that provide a balance of cost-effective near-term benefits, as well as 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 and the Three-Year Investment Strategy for Heavy-Duty Vehicles and Off-Road Equipment included in prior Funding Plans, considering other available funding sources, and considering stakeholder input. Staff also evaluated the state of technology in order to evaluate and determine what projects are ready for investment. Staff's recommended funding allocations are shown in Tables 4 and 5.

DRAFT PROJECT ALLOCATIONS

Low Carbon Transportation: For the proposed \$409 million Low Carbon Transportation and Fuels appropriation, ARB staff recommends the project level allocations and disadvantaged community investment targets shown in Table 4. The details of each of these projects and rationale for these recommendations are described more fully in the remaining sections of this discussion document. These investments would:

- Meet expected consumer demand for existing first-come, first served projects such as CVRP and HVIP and provide incentives for new, low NOx trucks and buses just coming to market.
- Provide funding for Light-Duty Equity Pilot Projects to Benefit Disadvantaged Communities and a new Clean Mobility in Schools project.
- Continue to fund Clean Truck and Bus Vouchers, holding \$66 million in reserve for allocation where needed later in the fiscal year.

Table 4: Draft Staff Recommended Project Allocations for \$409 Million Low Carbon Transportation Appropriation

Project Category	Allocation* (millions)
Light-Duty Vehicle and Equity Investments	
CVRP (standard rebates and increased rebates for lower income consumers)	\$200
Transportation Equity Projects EFMP Plus-up / Clean Cars 4 All - \$16M Financing Assistance for Lower-Income Consumers - \$10M Clean Mobility Options - \$15M Agricultural Worker Vanpools in San Joaquin Valley - \$3M Rural School Bus Pilot - \$15M Clean Mobility in Schools - \$10M Funding Reserve - \$6M	\$75
Heavy-Duty Vehicles and Off-Road Equipment Investments	
Clean Truck and Bus Vouchers Hybrid Zero-Emission Low NOx with Renewable Fuel	\$68
Innovative Solutions Pilot for Zero-Emission Vehicle Adoption	\$10
To be allocated based on demand	\$56
TOTAL	\$409

*Does not include any adjustments for project administration.

Light-Duty Vehicle and Transportation Equity Investments: Staff recommends a total of \$275 million for light-duty vehicles and transportation equity investments funded from Low Carbon Transportation. 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.

Staff proposes a total of \$75 million for transportation equity projects to increase access to clean transportation in disadvantaged communities and low-income households as directed by SB 1275. The transportation equity funding would expand ongoing projects as envisioned in the long-term plan for light-duty vehicle incentives included in the FY 2016-17 Funding Plan.

Heavy-Duty Vehicle and Off-Road Equipment Investments: Staff recommends a total of \$134 million for heavy-duty vehicle and off-road equipment projects in this discussion document. While the Governor’s budget reflects a proposed allocation of \$160 million for Low Carbon Transportation, it also directs \$26 million of the funding to the Carl Moyer Memorial Air Quality Standards Attainment Program.

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 2017-18 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 approximately \$4 million of the total FY 2018-19 allocation.

Disadvantaged Community, Low-Income Community, 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 FY 2018-19 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 40 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 10 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. Staff designed investments from the other funding sources to benefit underserved populations as well.

AQIP: As noted in the March 15, 2018 public workshop, ARB staff recommends directing AQIP funding to projects that primarily provide criteria pollutant and toxics benefits and, thus, are not the best fit for auction proceeds funding. Table 5 shows draft AQIP project allocations.

Table 5: Draft Staff Recommended Project Allocations for \$28.6 Million AQIP Appropriation

Project Category	Allocation (millions)
Truck Loan Assistance Program	\$25.6
Diesel Emission Retrofit Replacement Filters	\$3
TOTAL	\$28.6

- Most AQIP funds would be directed to the Truck Loan Assistance Program as has been the case in recent budget cycles to meet expected increased consumer demand. Staff also recommends funding to help pay for replacement filters for diesel emission control device retrofits in the on-road truck fleet.

LIGHT-DUTY VEHICLE INVESTMENTS

This section of the Discussion Document details staff's draft recommendations for light-duty vehicle investments. This includes continued funding for CVRP and Light-Duty Equity Projects.

CARB's light-duty vehicle investments are aimed at supporting the long-term transformation of the fleet and meeting each of these policy, statutory, and regulatory goals and requirements. There are two distinct, but complementary elements to CARB's advanced technology light-duty investments:

CVRP supports increasing the number of ZEVs on California's roadways to meet these deployment goals and achieve the large scale transformation of the fleet.

Transportation Equity Projects are designed to increase access to these clean transportation options in disadvantaged communities and lower-income households. These projects provide opportunities for residents of these communities to participate in a range of transportation and mobility options ranging from vehicle retirement and purchase incentives and financing assistance as well as increasing consumer awareness of clean vehicles in disadvantaged communities through car sharing and other mobility improvement programs.

CARB's light-duty vehicle deployment investments are complemented by parallel California Energy Commission (Energy Commission) investments in ZEV charging and fueling infrastructure. To date, the Energy Commission has invested nearly \$80 million in electric vehicle charging infrastructure for over 7,500 charging stations and over \$132 million for over 60 hydrogen fueling stations through the Alternative and Renewable Fuel and Vehicle Technology Program. For FY 2018-19, the Energy Commission expects an additional \$235 million to be allocated specifically for electric vehicle charging infrastructure and hydrogen fueling infrastructure.¹ The Energy Commission also provides funding to support the development of regional readiness plans, helping regions to prepare for and expedite the deployment of ZEVs.

CARB's long-term plan for CVRP and light-duty vehicle incentives included an assessment of the state of the ZEV market and technology development (as required by SB 1275). The assessment found that ZEV technology costs are declining, in most cases, more quickly than originally expected. The assessment also showed growth in vehicle diversity, number of manufacturers selling vehicles, and consumer demand. Staff found that ZEV sales have accounted for over 3 percent of total light-duty vehicle sales in California. More recent data show that ZEV sales accounted for over 4 percent of total light-duty vehicle sales in 2017. While these are all positive signs, the ZEV

¹ California Energy Commission, *2018-19 Investment Plan Update for the Alternative and Renewable Fuel and Vehicle Technology Program – Commission Report*, May 2018.
<https://efiling.energy.ca.gov/getdocument.aspx?tn=223420>

market is still in its infancy, and the assessment notes that it will take at least another 5 to 10 years before the market reaches sustainability. Thus, the long-term plan notes the continued need for the types of projects recommended in this discussion document.

CVRP

Recommended Low Carbon Transportation Allocation –
 \$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 on a first-come, first-served 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

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

¹With 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) extends these provisions through December 31, 2018. Staff proposes keeping these provisions in place for FY 2018-19.

CURRENT PROJECT STATUS

Through April 2018, CVRP has provided rebates for over 235,000 vehicles at a cost of nearly \$525 million since the project's launch in 2010. Since March 2016, almost 7,500 of these rebates have been increased rebates issued to low-income consumers at a cost of nearly \$30 million. About 60 percent of rebates went to battery electric vehicles and nearly 40 percent for plug-in hybrid electric vehicles, with only a small number of rebates issued for fuel cell electric vehicles and zero-emission motorcycles. There are now 40 eligible vehicle models available and more vehicle introductions are planned for 2018 and 2019. As noted in the introduction to this chapter, ZEV sales in California have grown to over 4 percent of the total light-duty vehicle sales. Additional project statistics are available on the CVRP website: <https://cleanvehiclerebate.org/eng/rebate-statistics>.

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 50 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 December 2018. This will keep CVRP's increased rebates up and running for low-income rebate applicants until the FY 2018-19 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.

Rebate Now: Staff developed a pilot project for a pre-qualification mechanism to bring the CVRP rebate closer to the point of sale, which was a change included in the FY 2016-17 Funding Plan. The pilot, called Rebate Now, launched on January 30, 2018. Rebate Now is currently limited to San Diego County residents and will give eligible residents the opportunity to be preapproved for a CVRP rebate prior to

purchasing or leasing an eligible vehicle. Pre-qualification is expected to increase CVRP participation, and the initial pilot will allow CARB and the CVRP administrator to test and refine implementation on a small scale, provide one-on-one dealer training and support, and gauge the effectiveness of the pilot before launching statewide. In the first few months of the pilot's launch, staff has learned that there is a lot of adjustment and outreach needed to ensure its success. Staff is closely monitoring the pilot project and making adjustments to tackle any implementation hurdles. Staff does not expect expansion of this pilot statewide during the 2018-19 fiscal year.

Outreach and Education in Disadvantaged Communities: In addition to the launch of Rebate Now, staff continues to implement expanded outreach and public education efforts. The CVRP administrator is currently working with Central Valley Asthma Collaborative, Legacy LA, and Grid Alternatives who help support on-the-ground outreach efforts, including ride and drive events. These community-based organizations also canvas for information, promote events, and provide assistance at these events. There are plans to expand these efforts in 2018 to include partnerships with additional community-based organizations. Additionally, the CVRP administrator has increased outreach to dealerships in disadvantaged communities. Outreach includes phone calls, conference calls, and in-person outreach with dealerships. In the past six months, the CVRP administrator has provided outreach to over 250 dealerships located in areas designated as benefitting disadvantaged communities. There has also been an increase in the number of outreach events held in disadvantaged communities. Since the introduction of increased rebates for low-income consumers, over 230 outreach events have occurred in disadvantaged communities. These events include ride and drives, presentations, and community events. The CVRP administrator is also creating a newsletter targeted at consumers in disadvantaged communities which is expected to be distributed by mid-2018. Lastly, the CVRP Community Incentive Assistance webpage offers tools such as a cost savings calculator to give low-income consumers a better understanding of available incentives. More information on cost savings and other tools are available on the CVRP website, <https://cleanvehiclerebate.org/eng/community>.

DMV Mailer: Staff developed a DMV mailer to provide consumers information on the benefits of ZEV ownership and available incentives. In this preliminary mailing, inserts were included in 700,000 DMV title notices for vehicle owners who either paid off their vehicle or purchased a vehicle outright. Staff will analyze the impact of these mailers on CVRP participation and determine if and when additional DMV mailers will be sent. This concept directly supports one of the tasks outlined in the 2016 Governor's ZEV Action Plan. The increased outreach with low-income consumer and disadvantaged community focus is consistent with recommendations from the draft SB 350 Guidance Document.

Fair and Responsible Labor Standards: AB 134 directed CARB to work with the Labor and Workforce Development Agency to develop procedures for certifying manufacturers of CVRP eligible vehicles as being fair and responsible in the treatment of their workers. In AB 134, the Legislature further expressed its intent that the Labor Secretary shall first

certify manufacturers as fair and responsible in the treatment of their workers before their vehicles are included in any rebate program funded with state funds beginning with FY 2018-19. Staff worked with the Labor and Workforce Development Agency to develop and release a concept paper on potential manufacturer certification procedures that can be found at: <https://www.arb.ca.gov/msprog/aqip/cvrp/2018cvrpconceptpaper-labor.pdf>. A docket is open for public comment and staff will evaluate recommendations and determine the next steps in the process after the public comment period closes on June 4, 2018.

Choose Your Incentive: AB 544, enacted in October 2017, limits incentives for consumers with an income greater than the thresholds outlined in Table 6 who purchase or lease an eligible FCEV on or after January 1, 2018. These consumers must choose between obtaining a CVRP rebate and receiving a decal under the Clean Air Decal Program administered by the DMV. Staff is working with the DMV to compare CVRP and Clean Air Decal applicant information to verify that affected participants are only utilizing one incentive. Consumers with an income below the thresholds outlined in Table 6 who purchase or lease a qualifying vehicle remain eligible for both the Clean Air Decal and CVRP rebate.

Public Fleet Incentives: One refinement for the FY 2017-18 funding cycle incorporated the Public Fleet Pilot Project into CVRP, which provides an extra incentive for CVRP-eligible vehicles to public fleets operating in and near disadvantaged communities. CARB previously offered incentives for public fleets through both CVRP and the Public Fleet Pilot. This pilot had been funded separately as an equity project in previous budget cycles, but administered by the CVRP grantee. CARB incorporated the Public Fleet Pilot into CVRP once FY 2016-17 pilot funds were exhausted.

Staff incorporated several provisions unique to the Public Fleet Pilot into CVRP. These included: the option for public fleets to reserve funds by submitting a pre-acquisition plan; a streamlined application process (e.g. one application for all vehicles); required annual vehicle usage reports; flexibility for assigning rebates and retaining ownership; and tribal government participation. Staff also included provisions that allow fleets up to 6 months to apply for pre-acquisition applications and up to 18 months to apply for regular applications (i.e. after the purchase is complete or vehicles are delivered). These changes apply to public fleets anywhere in California, not just those operating in disadvantaged communities. These are intended to make participation easier for public fleets by accommodating their typical procurement process.

Similar to the Public Fleet Pilot Project, CVRP Public Fleet funding maintains an increased incentive for fleets operating in disadvantaged communities. Staff aligned the increased incentives for fleets to match the incentives for low-income consumers of up to \$7,000 as shown in Table 6. Eligibility for the extra incentive is limited to those vehicles domiciled in a disadvantaged community census tract consistent with the direction in AB 1550, rather than allowing vehicles in ZIP Codes containing disadvantaged community census tracts to qualify.

Staff also set aside \$1 million of CVRP's FY 2017-18 allocation so that fleets can acquire CVRP-eligible vehicles through DGS's procurement process. Staff is finalizing an interagency agreement with DGS to administer rebates during the procurement process, allowing fleets to utilize the incentive at the point of sale. Fleets that do not use the DGS procurement process are allowed to use the normal CVRP process to obtain funding for vehicles. CARB is working with DGS on implementation details and staff expects this to launch in by mid-2018.

POTENTIAL CHANGES FOR FY 2018-19

In the Governor's proposed budget, the Administration is proposing a new eight-year initiative to accelerate the sales of zero-emission vehicles through a series of actions. One of these actions includes the intent to provide an annual CVRP allocation of \$200 million through 2025. This year's proposal allocates \$200 million for CVRP of which at least \$25 million is to be used to support low-income increased rebates. The allocation for FY 2018-19 should meet low-income demand through at least fall 2019 based on the CVRP projections presented below.

CVRP Demand Projections: Estimated CVRP demand over the next three years is shown in Figure 1. 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.

The projections shown in Figure 1 differ slightly from the projections shared previously because they are based upon updated vehicle registration data through December 2017. They indicate that a strengthening market will lead to increased rebate demand relative to previous projections.

Figure 1: Projected Three-Year CVRP Demand

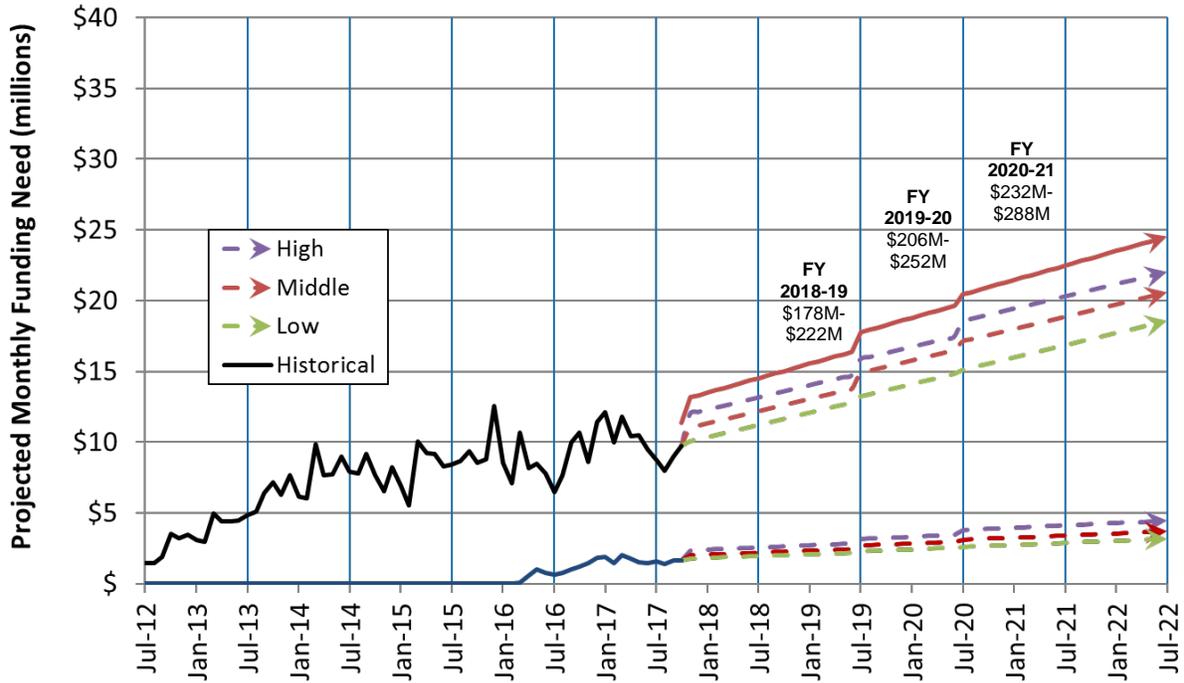


Table 7 shows estimated rebate demand for the FY 2018-19 funding cycle and the corresponding funding need, with projections for both standard (including fleet) rebates and low-income increased rebates.

Table 7: Projected Rebate Demand for FY 2018-19 Funding Cycle

Time Period	Projected CVRP Demand		
	All Rebates	Standard Rebates	Low-Income Rebates Only
Oct 2018 – Sept 2019 (12 months)	\$178 to \$222 million 66,000-78,000 rebates	\$161 to \$194 million 60,000-70,000 rebates	\$16 to \$26 million 5,700-7,500 rebates

Note: Standard rebate and low-income rebate columns don't exactly add to all rebates due to rounding.

Since staff anticipates FY 2018-19 funds to be available in October 2018, the time period covered by the 12-month projection has been adjusted accordingly. According to projections, the proposed allocation should be sufficient to meet demand through September 2019 and avoid the need for waiting lists to bridge funding shortfalls between budget cycles. However, as indicated by the high end of the range shown in Table 7, this depends on various assumptions. Further, all scenarios assume no expansion of the Rebate Now pilot in the upcoming fiscal year. Waiting lists are particularly problematic for low-income applicants, who need the incentive as close to the time of purchase as possible. Furthermore, the Rebate Now pilot project only works if there is funding to reserve for prequalified rebates.

Based on these estimates, the proposed \$175 million appropriation for standard CVRP rebates should meet 12 to 13 months of demand through September or October 2019. The proposed appropriation of \$25 million for low-income rebates would meet at least 13-14 months of demand; this would keep the low-income applicant element of CVRP funded through at least fall 2019.

Staff's recommendation would keep rebates for low-income applicants funded for at least 1 or 2 months longer than standard rebates. Staff believes this is consistent with the Legislature's direction to prioritize rebates for low-income applicants. Staff will reassess these projections at the start of the fourth quarter of the fiscal year. In the event that staff finds the low-income applicant demand is higher than projected, it would consider reallocating funding from standard rebates to low-income rebates. However, staff would not consider reallocating funding from low-income rebates to standard rebates. It would instead consider managing a standard rebate funding shortfall with a waiting list.

Because the proposed budget aligns with projected demand, staff believes no major changes to CVRP rebate amounts or eligibility requirements are needed. This is consistent with staff's findings from the long-term plan for CVRP and light-duty vehicle incentives that the ZEV market has not progressed to the point where changes, such as reduced rebates, are warranted.

CVRP Eligibility Requirements: Staff is recommending no major changes to CVRP eligibility requirements. However, staff did evaluate several minor refinements, including:

- Reducing fuel cell vehicle rebate amounts and bringing fuel cell vehicles under the income cap requirements
 - After considering stakeholder input, staff determined that it is premature to reduce fuel cell vehicle rebate amounts or to bring them under income cap requirements because these vehicles and their infrastructure are still in the earliest stage of commercialization.
- Limiting consumers to one rebate per person
 - It was also determined that it was too early to implement a one-rebate limit on consumers (down from the existing two-rebate limit). However, staff will explore how to implement a limit in future years and will outline those strategies in the next three-year plan.
- Increasing minimum all-electric range requirements for PHEVs
 - Staff determined that further analysis is needed before any changes can be made to the minimum all electric range requirements for PHEVs. Staff will look into this proposal further and address any need for changes in the upcoming three-year plan.

- Bundling funding for home charging infrastructure with low-income rebates
 - Staff determined that providing an additional incentive to low-income rebate applicants for charging infrastructure would lead to other program changes such as making adjustments to vehicle rebate amounts. In addition, other State agencies and public utilities already offer incentives for home charging. Staff determined not to include rebates for charging infrastructure for low-income applicants and instead recommend focusing on the coordination of various light-duty incentive efforts for low-income consumers through the One Stop Shop Pilot Project.

Federal Tax Credit Phase-Out: Internal Revenue Code Section 30D provides a credit of up to \$7,500 for Qualified Plug-in Electric Drive Motor Vehicles, including passenger vehicles and light trucks, purchased after December 31, 2009. The credit begins a one-year phase out period for a manufacturer's vehicles when at least 200,000 electric vehicles have been sold for use in the United States. Staff continues to monitor monthly electric vehicle sales as a few manufacturers are projected to reach the 200,000 mark by the end of 2018. These vehicles will still be eligible for a reduced federal tax credit during a portion of the year-long phase-out period. At this time, staff is not proposing to adjust rebate amounts to supplement the phased-out federal tax credit for affected manufacturers as the program does not have funding to support this change. Additionally, no changes were made to rebate amounts for FCEVs when the federal tax credit sunset for those vehicles at the end of 2017.

AB 1550 Disadvantaged Community and Low-Income Household/Community Benefits: CVRP 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 and benefit disadvantaged communities, low-income communities, and low-income households. About 8 percent of Low Carbon Transportation funding for CVRP to date has been applied for and received by applicants in disadvantaged communities as reported in the March 2018 Annual Report to the Legislature on California Climate Investments Using Cap-and-Trade Auction Proceeds. Staff has also reviewed recent CVRP data and found that an additional 11 percent of funds were applied for and received by applicants in low-income communities that don't overlap with disadvantaged communities.

Staff expects that the AB 1550 benefits for the FY 2018-19 funding should increase with the changes to increase the equity-focused components of CVRP. These include the higher rebates for low-income consumers, a dedicated funding allocation for low-income rebates, launch of the Rebate Now prequalification pilot, and increased outreach for disadvantaged communities and low-income households, all of which should help low-income consumers make these purchases. As part of the Cap-and-Trade auction proceeds reporting requirements, CARB will track where funds are spent, so it can calculate and report the portion that meets AB 1550 investment criteria.

Terms and Conditions: When CVRP and the Public Fleet Pilot were established, CARB and the project administrator developed Terms and Conditions to highlight the policies

set forth by the Board in more detail for consumers, and ensure a fair, equitable, and responsible project. More specifically, the Terms and Conditions are intended to notify consumers of the core requirements of the program prior to submitting an application. Additionally, CARB and the project administrator developed an Implementation Manual to further define these rules and define roles and responsibilities. The current Terms and Conditions and Implementation Manual are available at:

CVRP Terms and Conditions: <https://cleanvehiclerebate.org/terms-and-conditions>

CVRP Implementation Manual:

<https://cleanvehiclerebate.org/sites/default/files/docs/nav/transportation/cvrp/documents/CVRPImplementation-Manual.pdf>

Public Fleet Pilot Terms and Conditions:

<https://cleanvehiclerebate.org/eng/pfp/requirements>

Public Fleet Pilot Implementation Manual:

<https://cleanvehiclerebate.org/sites/default/files/docs/nav/transportation/pfp/Public-Fleet-Pilot-ProjectImplementation-Manual.pdf.pdf>

These documents are incorporated into the proposed Funding Plan by reference and updated periodically throughout the year to reflect project changes after the Board adopts each funding plan and as other changes are necessary to provide further clarity.

Solicitation Process: CARB selected a grantee to administer FY 2016-17 CVRP funds via a three-year competitive solicitation with the option of adding the FY 2018-19 funds with an updated grant agreement. As the current grant comes to a close, staff will evaluate whether a new grant remains feasible under the three-year solicitation.

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TRANSPORTATION EQUITY INVESTMENTS OVERVIEW

This section describes CARB's transportation equity investments and provides funding recommendations for public input for the FY 2018-19 budget cycle. Since FY 2014-15, CARB has allocated Low Carbon Transportation funding to a suite of pilot projects that increase access to clean vehicles and mobility options in disadvantaged and low-income communities and lower-income households, as directed by SB 1275. Equity projects include:

- EFMP Plus-up / Clean Cars 4 All
- Financing Assistance for Lower Income Consumers
- Clean Mobility Options for Disadvantaged Communities
- Agricultural Worker Vanpools in the San Joaquin Valley
- Rural School Bus Pilot
- Increased CVRP Rebates for Public Fleets (discussed in the CVRP section above)
- CVRP Rebates for Low-Income Households (discussed in the CVRP section above)
- One-Stop-Shop for CARB's Equity ZEV Replacement Incentives
- Clean Mobility in Schools (New for FY 2018-19)

These transportation equity projects follow SB 535's direction that investments must benefit California's disadvantaged communities as defined by CalEPA based on geographic, socio-economic, public health, and environmental hazard criteria. Transportation equity projects also help CARB meet its AB 1550 targets for projects located in disadvantaged communities, low-income communities, and low-income households. These projects also provide reduced GHG, criteria pollutant, and toxics emissions. Important co-benefits of these projects include improved public health from reduced pollution exposure, transportation-cost savings, increased household economic stability, increased connectivity to destinations, reduced traffic congestion, and increased environmental sustainability.

Another priority for these equity projects is to incorporate the findings of CARB's *SB 350 Low-Income Barriers Study: Overcoming Barriers to Clean Transportation Access for Low-Income Residents*. This study identifies barriers that lower-income residents and disadvantaged communities face in accessing clean transportation and mobility options, and specific recommendations to address them. These equity projects address many of these barriers by helping lower-income consumers and disadvantaged community residents afford to purchase a clean vehicle, install a home charger, or participate in clean vehicle ride sharing, car sharing, vanpooling, ride-hailing, bike sharing, and other clean transportation and mobility options across the State.

Table 8 below shows that CARB has allocated \$210.4 million to date for the current group of transportation equity projects, including \$185.4 million of Low Carbon Transportation funding since FY 2014-15 and \$25 million of FY 2017-18 Volkswagen

Settlement funding. The table does not display two CVRP-related components that began as transportation equity projects in earlier cycles (the Increased CVRP Rebates for Public Fleets project and the CVRP Rebates for Low-Income Households project, discussed in the CVRP section above).

The table also shows CARB has awarded \$160.5 million and \$47.5 million remains to award. The large amount of funding not yet awarded is due, in part, to the time needed to carefully design and implement projects to fit the needs of lower-income consumers and disadvantaged communities. CARB requires grantees to seek and receive community feedback about the community’s unique transportation barriers to help shape the project solutions offered. Outreach and education efforts must not only be multilingual but also culturally appropriate and respectful. Installation of charging in public areas must garner the support of local officials, businesses, and planning agencies. As projects roll out, grantees must continue to process feedback and adjust to meet challenges. Staff acknowledges that this approach takes time to design and implement projects, but believes this level of care and consideration is essential to deliver positive project outcomes over the long term.

Table 8: Transportation Equity Project Allocation and Award History

Projects	Funds Allocated to Date (millions)	Funds Awarded To Date* (millions)	Funds Remaining to Award (millions)
EFMP Plus-up / CleanCars4All	\$96	\$82	\$14
Financing Assistance for Lower-Income Consumers	\$25.9	\$7.9	\$18
Clean Mobility Options for Disadvantaged Communities	\$31.6	\$14.6	\$17
Agricultural Worker Vanpools	\$6	\$6	\$0
Rural School Bus Pilot	\$40	\$40	\$0
Clean Mobility in Schools (New)	\$0	\$0	\$0
One-Stop-Shop for CARB Transportation Incentives	\$5	\$5	\$0
General Equity Project Funding Reserve	**	**	\$0
Total	\$210.4	\$160.5	\$51.5

*Grants are in place or grant agreements are under development.

**FY 2017-18 Funding Reserve of \$20 million was reallocated in Spring 2018 (see below).

Table 9 below shows staff’s proposed allocations for the FY 2018-19 Governor’s proposed budget for Transportation Equity projects. Note that staff recommends

holding \$6 million in reserve to award to any FY 2017-18 or FY 2018-19 equity-related projects that have higher demand than can be met with initial allocations. This reserved funding provides CARB the flexibility to direct funds to projects that are oversubscribed, and follows a similar provision in the FY 2017-18 allocation table that held \$20 million of funding in reserve that was allocated in Spring 2018 to EFMP Plus-up (\$4 million), and Rural School Bus Pilot (\$15 million).

Table 9: Recommended Transportation Equity Project Allocations for FY 2018-19

Projects	Staff's Proposed FY 18-19 Allocations (Governor's Proposed Budget includes \$75M)	Total Project Allocations To Date Including This Proposal
EFMP Plus-up / Clean Cars 4 All	\$16	\$113
Financing Assistance for Lower-Income Consumers	\$10	\$35
Clean Mobility Options	\$15	\$40
Agricultural Worker Vanpools	\$3	\$9
Rural School Bus Pilot	\$15	\$55
Clean Mobility in Schools (New)	\$10	\$10
One-Stop-Shop for CARB Transportation Incentives*	\$0	\$5
General Equity Project Funding Reserve	\$6	\$6
TOTAL	\$75	\$273

*The zero allocation for One-Stop-Shop reflects that the FY 2017-18 allocation of \$5 million is intended to cover two funding cycles.

The remainder of this section provides additional details for each of the proposed transportation equity projects.

EFMP PLUS-UP / CLEAN CARS 4 ALL

Recommended Low Carbon Transportation Allocation – \$16 million

PROJECT GOALS

EFMP Plus-up 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. 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. To date, 93 percent of recipients have annual incomes below 225 percent of the federal poverty level. Measures of success include participation rates by lower-income consumers and disadvantaged communities, number of vehicles funded in total and by technology type, GHG benefits and the increased fuel economy achieved by vehicle replacements, and the age and mileage of retired and replaced vehicles.

CURRENT PROJECT STATUS

Since FY 2014-15, CARB has allocated \$96 million for EFMP Plus-up, including \$86 million of Low Carbon Transportation funding and \$10 of FY 2017-18 Volkswagen funding. Of that total, CARB has allocated \$72 million (\$36 million each) to South Coast Air Quality Management District (AQMD) and San Joaquin Valley Air Pollution Control District (APCD), and \$10 million (\$5 million each) to the Bay Area AQMD and Sacramento Metropolitan AQMD to launch new programs. \$14 million remains in reserve, split into \$8 million available for allocation to any EFMP Plus-up program based on demand, and \$6 million available for new air district programs (including further support for Bay Area AQMD or Sacramento AQMD programs).

EFMP Plus-Up launched in July 2015. To date, San Joaquin Valley APCD has expended about \$5 million to replace 880 vehicles (about 15 percent battery electric, 30 percent plug-in hybrid, 55 percent hybrids). South Coast AQMD has expended about \$8 million to replace 1570 vehicles (about 20 percent battery electric, 40 percent plug-in hybrid, 40 percent hybrids). 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 help each district expend the available funding in a timely manner.

A \$5 million Bay Area AQMD project is expected to launch in early 2019 and a \$5 million Sacramento AQMD project is expected to launch later in 2019. Staff continues to reach out to other interested air districts.

DRAFT FUNDING ALLOCATION FOR FY 2018-19

Staff recommends a \$16 million allocation, split as follows:

- \$10 million (\$5 million each) to South Coast AQMD and San Joaquin Valley APCD.
- \$6 million held in reserve to be allocated to any EFMP Plus-up project, based on demand.

POTENTIAL PROJECT CHANGES FOR FY 2018-19

Recently enacted legislation, AB 630 (Cooper, Chapter 636, Statutes of 2017), requires CARB to update the EFMP guidelines as well as create guidelines for a new vehicle replacement program called the Clean Cars 4 All Program. In establishing this new program, the intent of AB 630 is to codify the existing EFMP Plus-up pilot project into a formal, stand-alone program. Staff is currently developing the proposed Clean Cars 4 All guidelines, which will be presented to the Board for approval at the July 2018 hearing. The proposed guidelines, along with the accompanying staff report, will be available to the public beginning June 5, 2018. The 45-day comment period will begin June 8, 2018.

FINANCING ASSISTANCE FOR LOWER-INCOME CONSUMERS

Recommended Low Carbon Transportation Allocation – \$10 million

PROJECT GOALS

The Financing Assistance for Lower-Income Consumers pilot project helps lower-income Californians overcome the barrier of obtaining vehicle financing by providing low interest loans and vehicle price buy-downs. Lenders are offered a loan loss reserve to mitigate risk. Buyers of electric vehicles are also eligible for a home charger incentive. Participants of CVRP and EFMP Plus-up are also eligible for low-interest loans. Administrators provide financial literacy, advanced vehicle technology training to ensure that vehicles meet participant needs and loans are successful, and other consumer protections. 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 \$900,000 grant to begin a financing assistance project in the San Francisco Bay Area. To date, CHDC has helped more than 40 participants purchase clean vehicles and low-interest rate loans. In addition to greater transportation security, participants have experienced co-benefits such as improved credit scores, more and better housing options, and better job opportunities.

Fiscal Year 2016-17

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 local projects. 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 to help fund additional projects (see below).

- Clean Vehicle Assistance Project - Beneficial State Foundation received a \$5 million grant to provide financing assistance for eligible participants statewide. The project seeks to help about 700 participants purchase clean vehicles using low-interest rate loans. Project partners include Beneficial State Bank and Grid Alternatives. Project development is underway, and the project will launch in July 2018.

- No applications were submitted for local projects funding. CARB reallocated the \$1 million of expansion funding first to the FY 2016-17 Clean Mobility Options for Disadvantaged Communities program to support additional projects, and, when not needed due to a withdrawn project, to CVRP Rebates for Low-Income Households.

Fiscal Year 2017-18

CARB allocated \$20 million for the Financing Assistance for Lower-Income Consumers Pilot Project, split into \$18 million for a competitive solicitation for a statewide administrator to be released in late 2018 or early 2019 and \$2 million to expand the existing CHDC pilot project. The expansion funding process is underway and an application for the expansion funding will be due in August 2018.

DRAFT FUNDING ALLOCATION FOR FY 2018-19

Staff recommends a \$10 million allocation to expand the existing pilot projects, issue a competitive solicitation for another administrator(s), or some combination of these options. If funding is not fully awarded, staff proposes flexibility to shift the funding for other transportation equity projects that are showing demand.

POTENTIAL CHANGES FOR FY 2018-19

To ensure consistency among CARB's various lower-income consumer vehicle incentives projects, staff recommends working with CARB's One-Stop-Shop project to analyze aligning the vehicle price buy-down amounts available in the Financing Assistance projects with the incentive amounts offered by EFMP Plus-up and CVRP. Staff also recommends two changes to the EVSE installation incentive: expand eligibility to include participants who choose a plug-in hybrid vehicle and expand the equipment eligible for funding (i.e., electrical panels, etc.).

CLEAN MOBILITY OPTIONS FOR DISADVANTAGED COMMUNITIES

Recommended Low Carbon Transportation Allocation – \$15 million

PROJECT GOALS

The Clean Mobility Options for 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 assessments, the project can then provide funding for various clean mobility options (other than vehicle ownership) in order to overcome those barriers and increase access to clean mobility options. The project provides funding for various clean mobility options that increase access to zero-emission and plug-in hybrid car sharing, vanpools, electric and regular bicycle sharing, ride-hailing, and other clean mobility options. CARB will encourage these projects to link with current or future innovative mobility hub concepts, 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 clean vehicles, chargers, and clean mobility options introduced into disadvantaged communities, number of disadvantaged community residents participating as drivers or riders, vehicle miles traveled and number of trips taken, and improvements in access to mobility experienced by participants.

CURRENT PROJECT STATUS

Fiscal Year 2014-15:

- BlueLA – The City of Los Angeles received \$1.7 million 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 the end of 2018.
- 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 Redevelopment Authority, Mutual Housing California, Sacramento Metropolitan Utility District, Policy in Motion, and Zipcar. The original project launched in April 2018 with 8 vehicles supported by 8 level-2 chargers and one DC fast charger in four locations. An award of \$1 million of expansion funding will allow the project to expand by adding 6 electric vehicles

and chargers for 3 more subsidized multi-unit housing communities, and will add subsidized ride-hailing to increase access to more mobility options.

Fiscal Year 2016-17:

CARB allocated \$8 million for Car Sharing and Clean Mobility Options Pilot Projects, split into a \$6 million solicitation and \$2 million for expansion of existing projects. A \$6 million competitive solicitation resulted in offers of awards to five applicants. Due to the number of worthy project applications received, CARB moved \$1 million of expansion funding and \$1 million of Financing Assistance funding to support additional projects. Five applications were selected for awards. When one project subsequently withdrew, the CARB awarded four new projects, expanded one existing project, and reallocated the remaining funds, as follows:

- Lift Line Paratransit Dial-a-Ride Electric Vehicle Transition Program – Community Bridges received a \$268,219 grant 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 Ecology Action. The project includes two DC fast chargers and will serve about 700 disadvantaged community residents, and will begin service in Fall 2018.
- Car Sharing and Mobility Hubs in Affordable Housing Pilot Project – Metropolitan Transportation Commission was awarded \$2.25 million for an electric vehicle and ebike sharing pilot project. The project will serve 2,790 disadvantaged community residents of low-income housing in San Jose, Oakland, and Richmond. The project includes 24 electric vehicles, 24 chargers, 18 ebikes, and subsidized ride-hail and public transit. Partners include Bay Area AQMD, Transform, GIG Car Share, Shared Use Mobility Center, AC Transit, Santa Clara Valley Transportation Authority, and Greenlining Institute.
- Valley Air Zero-Emission Vehicle Pilot – San Joaquin Valley APCD was awarded \$750,000 for an electric vehicle car sharing, vanpool, and ebike sharing project for 1,000 disadvantaged community residents of Merced, Bakersfield, and West Fresno County. The project includes 12 electric vehicles, 30 chargers, and 16 ebikes. Partners include GreenCommuter, Swiftmile, and CalSTART.
- Ecosystem of Shared Mobility – San Joaquin Valley APCD was awarded \$2.25 million for an electric vehicle car sharing project and unique ride-matching application serving 7 disadvantaged community affordable housing complexes in rural Tulare and Kern. The project includes 25 electric vehicles, one electric van, and 19 chargers. Partners include the Shared Use Mobility Center, UC Davis Institute of Transportation Studies, Sigala Inc., Self Help Enterprises, and MOVE.
- An additional \$1 million of expansion funding was awarded to expand the FY 2014-15 Sacramento car sharing pilot project.

- \$2.5 million that remained after an awarded project withdrew was reallocated to CVRP for Low-Income Households.

Fiscal Year 2017-18:

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 projects serving disadvantaged communities. A competitive solicitation will be released in May/June 2018. Staff are developing grant agreements with existing car sharing pilot projects for the \$5 million reserved for expansion.

DRAFT FUNDING ALLOCATION FOR FY 2018-19

Staff recommends a \$15 million allocation for FY 2018-19 to expand the FY 2017-18 Clean Mobility Options pilot by issuing a competitive solicitation for another administrator(s), providing expansion funding to successful older pilots (including the statewide administrator), or some combination of these options. In late 2018 or early 2019, CARB staff will evaluate the current projects and decide on one of these options. In addition, staff proposes the flexibility to direct any funding that is not awarded for Clean Mobility Options for Disadvantaged Communities projects to fund other transportation equity projects that show demand.

POTENTIAL CHANGES FOR FY 2018-19

The light-duty transportation sector is a quickly changing landscape. Staff proposes that a Clean Mobility Options administrator be given flexibility to work with CARB to evaluate and implement innovative approaches to increasing access to clean transportation in disadvantaged communities and lower-income consumers. Other approaches that increase access to clean transportation and mobility options, continue to increase the involvement of local community organizations, and provide co-benefits such as workforce training and job creation in these communities may also be considered.

AGRICULTURAL VANPOOLS

Recommended Low Carbon Transportation Allocation – \$3 million

PROJECT GOALS

The Agricultural Vanpools pilot project expands access to clean transportation vanpools for agricultural workers. For FY 2016-17 and FY 2017-18, the project focused on serving disadvantaged communities in the San Joaquin Valley and allowed for opportunities in other disadvantaged communities. Metrics to measure progress for this project include information on the types of vehicles purchased, the number of disadvantaged community residents signed up for services, the vehicle miles traveled and number of trips taken, and changes in access to mobility experienced by participants.

CURRENT PROJECT STATUS

Fiscal Year 2016-17 and 2017-18

- A \$6 million competitive solicitation that combined FY 2016-17 and FY 2017-18 allocations closed in March 2018. CARB will announce a grant award once the grant agreement is executed.

DRAFT FUNDING ALLOCATION FOR FY 2018-19

Based on data received to date regarding the level of demand for agricultural vanpools in the San Joaquin Valley as well as in other agricultural areas of the State, staff recommends \$3 million for FY 2018-19 to expand the existing pilot project or to issue a new competitive solicitation for another administrator.

POTENTIAL CHANGES FOR FY 2018-19

Staff proposes flexibility to either expand funding for the new grant if it meets project milestones and the grantee provides an acceptable plan for expansion or include this type of project as an option in the Clean Mobility Options pilot project.

RURAL SCHOOL BUS PILOT

Recommended Low Carbon Transportation Allocation – \$15 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 conventional-fueled school buses that use renewable fuels. The project prioritizes small and medium sized air districts (as defined by CAPCOA) 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

Fiscal Year 2016-17

- CARB awarded a \$10 million grant to the North Coast Unified AQMD to administer the project. A competitive solicitation for school districts to apply for grant funding in March 2017 resulted in 422 applications requesting \$127 million in funding. To date, CARB has funded 26 school buses, including 19 zero-emission and 7 internal-combustion renewable-fueled buses. A subsequent \$5 million grant will add 11 zero-emission and 3 internal-combustion renewable fuel buses using renewable fuel. More than one-third of buses funded to date are located in disadvantaged or low-income communities.

Fiscal Year 2017-18

- A \$10 million FY 2017-18 grant agreement with North Coast Unified AQMD is currently under review. This grant will continue to fund school buses using the same priorities.
- Staff recommends an additional \$15 million of FY 2017-18 reserve funding for a total of \$25 million to meet the strong demand for cleaner school buses.

DRAFT FUNDING ALLOCATION FOR FY 2018-19

Based on the strong demand from the FY 2016-17 solicitation and the large remaining need, staff recommends allocating \$15 million for FY 2018-19.

POTENTIAL CHANGES FOR FY 2018-19

Staff proposes no changes for FY 2018-19.

CLEAN MOBILITY IN SCHOOLS

Recommended Low Carbon Transportation Allocation – \$10 Million

PROJECT GOALS

Clean Mobility in Schools is a new pilot project for Fiscal Year 2018-19. It will provide funding for zero-emission vehicles, charging equipment, and clean mobility options for a K through 12 public school district in a disadvantaged community. Staff have received strong and enthusiastic support for this concept since introducing this potential project design during the FY 2017-18 funding plan development process and during several subsequent work group meetings. In particular, stakeholders support introducing disadvantaged community students, teachers, and staff to advanced clean transportation for immediate health benefits and long-term familiarity. Measures of success will include reduced fuel expenditures, numbers of vehicles and equipment placed, vehicle miles traveled, numbers of school district employees and staff using vehicles, and numbers of students engaged.

PROPOSED PROJECT FOR FY 2018-19

Staff recommends \$10 million for a competitive solicitation. Project components include electrification of one school district's vehicle fleet, including school buses and other vehicles used by the school district, and installation of supporting charging infrastructure at schools, offices, and warehouses. CARB will consider other project components, including, but not limited to, creation of an electric vehicle car sharing service for district employees; an electric vehicle demonstration fleet to go from school to school for teachers and staff to experience extended period ride and drives; zero-emission lawn and garden equipment; and supporting classroom curriculum.

ONE-STOP-SHOP FOR CARB'S EQUITY ZEV REPLACEMENT INCENTIVES

Recommended Allocation – No Funding Recommended

PROJECT GOALS

The Fiscal Year 2017-18 Funding Plan included the One-Stop-Shop pilot project as a new project aimed at directly addressing a core recommendation from CARB's Low-Income Barriers Study to increase awareness for low-income residents by expanding education and outreach on clean transportation and mobility options. The broader vision of the One-Stop-Shop pilot is to streamline access for low-income consumers to clean energy, transportation, housing, and other related consumer-based incentives and augment existing outreach and education on clean transportation and mobility options. However, this initial pilot focuses on the development and maintenance of a single application for low-income consumers to apply and qualify for CARB's Equity ZEV Replacement Incentives (e.g., CVRP, EFMP Plus-Up / Clean Cars 4 All, and Financing Assistance). This pilot also focuses 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.

CURRENT PROJECT STATUS

Fiscal Year 2017-18

- A competitive solicitation closes in May 2018. CARB will announce a grant award once a grant agreement is executed.

POTENTIAL PROJECT CHANGES FOR FY 2018-19

Staff does not recommend allocating any funding from FY 2018-19, because this project has not yet launched and the FY 2017-18 funding is intended to cover two fiscal cycles. Staff recommends that future funding cycles provide continuing support for this project in the form of direct expansion funding, financial support contributed by the projects served by One-Stop-Shop, or some combination of these approaches.

FUNDING RESERVE

Recommended Low Carbon Transportation Allocation – \$6 million

Staff recommends reserving up to \$6 million to be allocated in Spring 2019 to a transportation equity project(s) with the most demand. Possible project recipients include all projects listed above or the equity-related CVRP Rebates for Low-Income Households project.

HEAVY-DUTY VEHICLE AND OFF-ROAD EQUIPMENT INVESTMENTS

This section of the Discussion Document details staff's draft recommendations for heavy-duty vehicle and off-road equipment investments. This includes continued investments for the following projects:

- The Truck Loan Program;
- Our clean truck and bus voucher project, (HVIP and Low NOx Engines; and
- A reserve to be allocated based on demand between HVIP, the off-road zero-emission voucher project, and the zero- and near zero-emission freight facilities solicitation from the FY 2017-18 Funding Plan.

This year, staff is also recommending two new projects: A new innovative pilot to remove the barriers for zero-emission heavy-duty vehicle adoption, and a truck filter replacement project. It should be noted that the Governor's proposed budget for FY 2018-19 directs \$26 million from the Low Carbon Transportation funds to the Carl Moyer Memorial Air Quality Standards Attainment Program. This is to backfill a reallocation of the tire fees that the program typically receives, in order to keep that critical program whole.

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. CARB's Three-Year Plan² prioritizes our Low Carbon Transportation Investments on building successful beachheads, seeding promising next markets, and continuing to feed the innovation pipeline. We utilize our AQIP dollars to continue to support conventional technologies where other advanced technology incentive programs cannot address their needs – i.e. the truck loan program and the truck filter replacement project.

The recommended investments for FY 2018-19 are consistent with and support the priorities (e.g. SB 1204) 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 assessments³ developed by CARB, additional research where available, previous investments, recent market trends, and input from public work group meetings and industry.

We then used that foundation and focused on the concept of beachheads - technology footholds that can be built upon, enabling further expansion into follow-on applications -

² 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

³ California Air Resources Board, *Technology and Fuels Assessment Reports*, 2015-2016.

<https://www.arb.ca.gov/msprog/tech/report.htm>

to prioritize funding around those technologies and applications that have strong potential to transfer and spread to broader applications. The Three-Year plan consequently identified the required level of activity to move the zero-emission, low NOx engine, and efficiency pathways forward toward our 2030 goals over the next three years. These recommendations are shown in Table 10 below.

Table 10: Recommendations for Investment Priorities to Advance Long-Term Pathways

THREE-YEAR HEAVY-DUTY STRATEGY INVESTMENT PLAN*			
	FY 2018-19	FY 2019-20	FY 2020-21
Demos	\$70-135 Million Focus: ZE/PHEV Drayage Trucks, Advanced Powertrains, ZE/Hybrid Heavy Cargo Handling Equipment	\$50-80 Million Focus: PHEV/ Extended Range M/HD Delivery Trucks, Advanced Powertrains, ZE/Hybrid Heavy Cargo Handling Equipment	\$55-85 Million Focus: ZE/PHEV HD Regional Delivery Trucks, ZE/Hybrid Construction Equipment
Pilots	\$110-225 Million Focus: ZE M/HD Delivery Trucks, Fuel Cell Transit Bus, ZE/Hybrid Cargo Handling Equipment, ZE Facilities	\$150-250 Million Focus: ZE/PHEV Drayage and M/HD Delivery Trucks, Fuel Cell Transit Bus; ZE/Hybrid Heavy Cargo Handling Equipment, ZE Facilities	\$160-275 Million Focus: ZE/PHEV Drayage and Regional Delivery Trucks, ZE/Hybrid Heavy Cargo Handling Equipment, ZE Facilities
Commercial <i>(includes HVIP and Off-Road Freight Voucher Programs)</i>	\$175-280 Million Focus: ZE/PHEV Transit Bus, Low NOx Regional Trucks, ZE/Hybrid Yard Hostlers, Ground Support Equipment, Cargo Handling Equipment	\$240-425 Million Focus: ZE Transit Bus and Delivery Trucks, Low NOx Regional Trucks, ZE/Hybrid Yard Hostlers, Ground Support Equipment, Cargo Handling Equipment	\$335-595 Million Focus: ZE HD Delivery Trucks, Fuel Cell Transit Bus, Low NOx Linehaul Trucks, Fuel Cell TRUs, Low NOx Cargo Handling Equipment, Construction Equipment
Total Funding	\$355-640 Million*	\$440-755 Million*	\$550-955 Million*

Three-year funding plan investment priorities define yearly focus areas and propose funding that aligns with progress required for key pathways.

** 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.*

A summary of the FY 2018-19 allocations is shown below in Table 11. Staff recognize that it is critical to reduce possible disruptions to the first-come, first-served projects as funding gaps in these projects have chilling effects on the market, sometimes long-term effects. Taking this under consideration, staff is proposing to make sure that the on-road truck and bus voucher project is fully funded based on current projections. Staff is then proposing a reserve fund to focus on maintaining CARB’s ongoing projects. This will ensure flexibility in the coming year, and touch on many of the areas of focus identified in the demonstration, pilot, and commercial categories for FY 2018-19.

Table 11: Summary of Proposed Heavy-Duty Vehicle and Off-Road Equipment Project Allocations

Project Category	Low Carbon Transportation (M)	AQIP (M)	Total (M)
Clean Truck and Bus Vouchers (HVIP + Low NOx Engines)	\$68		\$68
Innovative Solutions Pilot for Zero-Emission Vehicle Adoption	\$10		\$10
Funding Reserve	\$56		\$56
Truck Loan Assistance Program		\$25.6	\$25.6
Truck Filter Replacements		\$3	\$3
Heavy-Duty Vehicle and Off-Road Equipment Investment Total	\$134	\$28.6	\$162.6

To ensure that CARB continues to meet its goal of advancing technology and establishing sustainable markets for these technologies faster, staff is proposing to update 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 a workgroup with interested stakeholders in Summer 2018.

CLEAN TRUCK AND BUS VOUCHERS (HVIP AND LOW NOX ENGINE INCENTIVES)

Recommended Low Carbon Transportation Allocation – \$68 million

PROJECT GOALS

Clean truck and bus voucher incentives are 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 recommended 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. We expect to significantly exceed the 20 percent requirement in SB 1204 through the investments made in this project.

CURRENT PROJECT STATUS

HVIP and Low NOx Engine Incentives have supported the purchase of 936 zero-emission trucks and buses, 2,385 hybrid trucks, 644 low NOx engines, and 133 trucks outfitted with electric power take off systems (ePTOs) by California fleets through March 31, 2018. Market demand for battery-electric trucks and buses continue to increase. Requests for hybrid truck vouchers have remained steady. 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 \$8 million of voucher requests per month.

POTENTIAL CHANGES FOR FY 2018-19

The advanced clean heavy-duty vehicle sector is growing but 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, and working with CARB's HVIP administrator, staff recommends the following changes to the project criteria:

Eliminate funding for lead acid battery technologies: Staff recommends that lead acid batteries no longer be used for ePTO operation or traction power. However, lead acid batteries may be used to power accessories or other justified uses.

Revise funding for ePTOs: Currently, funding for ePTOs are based on gross vehicle weight rating (GVWR). Staff recommends that ePTO funding be based on system sizes, and work site performance, rather than chassis GVWR. Additionally, staff recommends funding levels to cover approximately half of the ePTO cost.

Transition funding support for terminal, yard and other off-road use trucks to the Zero-Emission Off-Road Freight Voucher Incentive Project: Staff recommends that once the Off-Road Zero-Emission Freight Voucher Project is operational, all terminal, yard, and other off-road use trucks will be transferred into this project. These trucks are predominantly off-road and will be well suited for the Off-Road Zero-Emission Freight Voucher Project.

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 recommends eliminating the infrastructure voucher enhancements after the 2018-19 fiscal year.

Revised funding structure for hydrogen fuel cell trucks: The current funding structure provides funding for Class 8 hydrogen fuel cell trucks, and hydrogen fuel cell buses 40 feet in length and longer. In an effort to broaden the range of funding to account for all HVIP eligible weight classes and bus lengths, staff recommends developing a tiered allocation for hydrogen fuel cell trucks based on GVWR, and a tiered allocation for hydrogen fuel cell buses based on length.

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 90 percent of the total vehicle cost (excluding taxes and fees) are allowed for private fleets. For public fleets it is 100 percent. This option has not been used often for private fleets. 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. Staff recommends that private fleets no longer have the opportunity to combine HVIP funds with other incentives using public funds. However, 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.

Remove "first three" voucher enhancements: Last year the Board approved staff's proposal of removing the "first three" voucher enhancement for new hybrid vehicles. This option was never available for hybrid conversions or Low NOx engines. HVIP voucher incentives provide funding for a substantial portion of incremental cost and probably does not significantly influence a fleet in making a purchasing decision. Staff recommends the removal of the "first three" voucher enhancement for the remaining two technologies in HVIP (ePTOs and zero-emission vehicles) that currently receive the enhancement.

Revisions to 8.9L low NOx engine incentives (continued discussion to occur at Jun 11th work group meeting): Staff will continue discussions regarding voucher amounts for low NOx incentives. Staff is exploring the option of allowing repowers using both the 8.9 liter and 11.9 liter Cummins Westport low NOx engines.

Three additional potential changes will be considered as part of discussion at an upcoming June 11, 2018 work group meeting:

- *New hybrid and hybrid conversion vehicle eligibility criteria*
- *Battery electric and hydrogen infrastructure funding*
- *Targeted outreach*

Terms and Conditions for HVIP and Low NOx Engine Incentives: HVIP Terms and Conditions are intended to notify potential participants of the core requirements of the program prior to submitting an application. Additionally, CARB and the project administrator developed an Implementation Manual to further define these rules and explain roles and responsibilities. The current Terms and Conditions and Implementation Manual for HVIP are available at <https://www.californiahvip.org/wp-content/uploads/2018/01/Final-IM-01172018.pdf>.

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, 2018, about 56 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.

Project Solicitation for HVIP and Low NOx Engine Incentives: CARB held a competitive solicitation for the selection of a HVIP and Low NOx Engine Incentives Grantee in November 2016. The Grantee (CALSTART) to administer the project was selected in January 2017. CARB selected a Grantee to administer FY 2016-17 HVIP and Low NOx Engine Incentives funding via a three-year competitive solicitation with the option of adding the FY 2017-18 and FY 2018-19 funds with an updated grant agreement. CARB used this option for FY 2017-18 and the agreement was executed with CALSTART in January 2018. Again, staff proposes to utilize this option; and therefore, CARB would not issue a new solicitation for FY 2018-19 HVIP and Low NOx Engine Incentives. The next competitive solicitation is planned for FY 2019-20.

INNOVATIVE SOLUTIONS PILOT FOR ZERO-EMISSION VEHICLE ADOPTION

Recommended Low Carbon Transportation Allocation – \$10 million

PROJECT GOALS

CARB's goals require ongoing evaluation in order to understand the barriers to zero-emission vehicle adoption and a collaborative process to develop the most effective solutions with available resources. CARB funding programs have aggressively targeted the most formidable barrier: cost. Zero-emission vehicles cost more than their conventional counterparts and also require new fueling infrastructure. Funding programs like HVIP have worked to address incremental costs and increase ZEV affordability for end users. However, CARB is aware that there are a number of other barriers to ZEV adoption beyond vehicle cost, such as perceived risk associated with owning and maintaining new technologies, training of maintenance staff and drivers, adaptation of operations, and others.

CARB is working with stakeholders to develop a new pilot intended to remove these barriers and increase ZEV access with LCT funds. Projects that emerge from this goal should:

- Make ZEVs more affordable to procure
- Increase access for small fleets
- Instill confidence in new technologies
- Target sectors, companies, vocations, or ownership models not ideally served by existing funding programs

FUNDING RESERVE

Recommended Low Carbon Transportation Allocation – \$56 million

PROJECT GOALS

Program continuity is an important consideration as end users rely on incentives for the purchase of new advanced technology vehicles and equipment. Lapses in funding availability with first-come, first-served programs can shake market confidence and discourage the adoption of advanced technologies. CARB aims to avoid any such lapses that disrupt market momentum. As such, we recommend allocating \$56 million to be allocated based on demand. First priority for these dollars would be our two first-come, first-served voucher programs. We are then recommending, if there are funds remaining and projects that score well enough, to continue to fund projects submitted under the Zero- and Near Zero-Emission Freight Facilities solicitation. The evaluation for demand on the first-come, first-served projects will occur no later than March 2019 in order to ensure that there is time to enter into grant agreements for freight facilities projects before encumbrance deadlines. Please note that status updates for the Zero-Emission Off-Road Freight Voucher Project and the Zero- and Near Zero-Emission Freight Facilities Pilot project are in Table 11.

TRUCK LOAN ASSISTANCE PROGRAM

Recommended AQIP Allocation – \$25.6 million

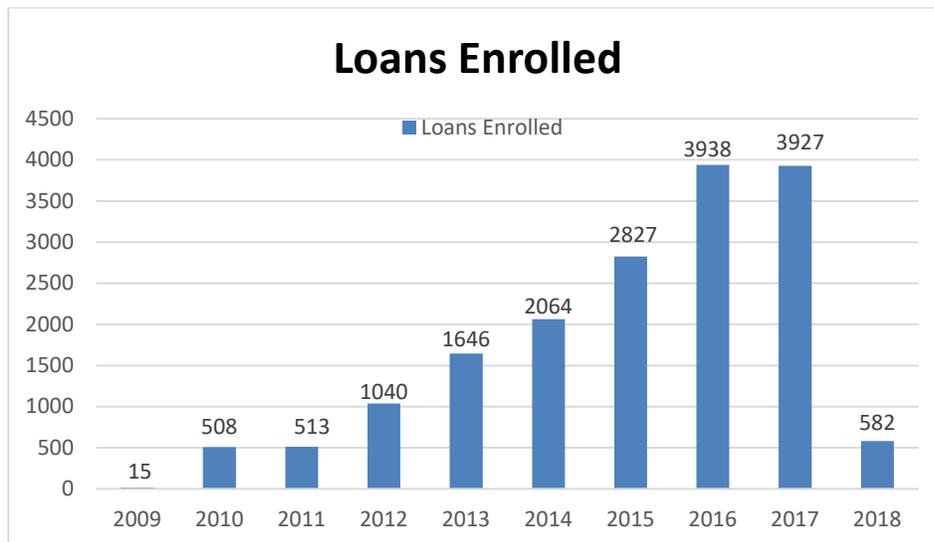
PROJECT GOALS

Launched in 2009, the Truck Loan Assistance Program utilizes AQIP funds to help small-business fleet owners affected by CARB's In-Use Truck and Bus Regulation to secure financing for upgrading their fleets with newer trucks or with diesel exhaust retrofits. The program, implemented in partnership with the California Pollution Control Financing Authority (CPCFA) through its California Capital Access Program (CalCAP), 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 only source of CARB funding available for this program.

CURRENT PROJECT STATUS

As of February 28, 2018, approximately \$94.8 million in Truck Loan Assistance Program funding has been expended to provide almost \$1.1 billion in financing to small-business truckers for the purchase of approximately 18,500 cleaner trucks, exhaust retrofits, and trailers. Demand by truck owners has generally increased, as shown in Figure 2. 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 2: Loan Activity by Calendar Year



To meet consumer demand and to ensure that the program would remain fully funded, CARB increased the original FY 2016-17 AQIP allocation of \$22 million by \$3 million during the fiscal year and allocated \$20 million for the program for FY 2017-18.

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, 2017, the first deposit of approximately \$5 million in recaptured funds into the program account is expected to occur by May 2018. The quantity of recaptured funds from matured loans will be determined after the conclusion of each fiscal year.

Table 12 provides a summary of financing provided to date. About 40 percent of enrolled loans have been issued to owner operators with one truck, and nearly 96 percent of enrolled loans have been issued to fleet owners with 10 or fewer employees.

Table 12: 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)
17,068	17,513	Truck Purchases	\$94.8	\$1.1
	617	Exhaust Retrofits		
	346	Trailers		

Based on data through February 28, 2018.

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

STAFF PROPOSAL FOR FY 2018-19

CARB staff recommends an allocation of \$25.6 million for the Truck Loan Assistance Program for the FY 2018-19 cycle. 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. Program need and popularity is expected to grow more in the coming years because the Road Repair and Accountability Act of 2017 (SB 1) will, beginning in 2020, only allow clean trucks in compliance with CARB’s Truck and Bus Regulation to be registered by the 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. For many small fleets, this loan program may offer the only viable option to achieve compliance.

To ensure the sustainability of the program and continuous availability of funding to participating lenders, staff is working with CPCFA on program modifications to address both short and long-term cash flow and meet demand. Strategies being pursued will improve leverage, help cover temporary funding shortfalls, and seek to acquire funding to handle the future demand expected by SB 1 and the Truck and Bus Regulation. These include:

- *Alignment of contribution rates consistent with the State CalCAP Program:* CPCFA may obtain input from lenders on the feasibility of introducing lender and borrower fees to realign the contribution rates to those currently offered under the regular small business program. This will improve program leverage.
- *Short-term cash flow:* Because the AQIP revenues accrue throughout the fiscal year, the demand for funding for the Truck Loan Assistance Program may from time-to-time precede the availability of funds to advance to CPCFA. CARB staff will assess whether there are any sources of funding that may be available to cover any temporary lack of funding. The current interagency agreement includes a provision of a \$5 million bridge loan from CPCFA to cover temporary funding needs. The funding leftover from FY 2017-18 should be enough to cover the potential gap due to temporary lack of AQIP funding which typically occurs at the start of each fiscal year for about three months.
- *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 greatly exceed forecasted funding allocations after 2020. CARB staff is continuing to search for future sources of funding to meet anticipated increases in demand.

CARB staff will continue to closely monitor program demand and work with CPCFA staff, participating lenders, and other stakeholders to evaluate whether to implement program changes to balance available funding with meeting the needs of the fleets. If changes are warranted, they would be developed and implemented through a public process resulting in an amended interagency agreement between CARB and CPCFA.

Though nearly all AQIP funds are directed to the Truck Loan Assistance Program, and staff continues to pursue actions to further leverage funds, forecasted demand is expected to exceed available AQIP funds before 2020.

TRUCK FILTER REPLACEMENTS

Recommended AQIP Allocation – \$3 million

PROJECT GOALS

In September 2012, Cleaire Advanced Emission Controls, Incorporated (Cleaire) voluntarily recalled its LongMile diesel PM filter system. During the recall, Cleaire replaced the LongMile with either a certified silicon carbide core, a Cleaire Muffler Module (CMM™), or removed the entire system. However, several months later Cleaire ceased operation and their assets were subsequently acquired by ESW CleanTech Incorporated (ESW CleanTech), a manufacturer of verified on-road and off-road diesel emissions control strategies. ESW CleanTech has provided product support of the Cleaire product line since the closure.

Between May 2015 to March 2017 the Sacramento Metropolitan Air Quality Management District (SMAQMD) and ESW CleanTech entered into a Grant Agreement to provide reimbursement for up to \$6.3 million in filter substrate replacements through the Proposition 1B Goods Movement Emission Reduction Program. However, some fleets could not qualify for Proposition 1B funding or could not meet required temperature or engine family criteria.

The goal of this project is to provide funds on a first-come, first-served basis to support filter substrate replacements for existing heavy-duty vehicles equipped with a certified CMM. The proposed AQIP funds for truck filter replacements reduce uncontrolled criteria and toxic air contaminant emissions by helping replace remaining CMMs.

STAFF PROPOSAL FOR FY 2018-19

As with the Proposition 1B project, the certified silicon carbide ESW CleanTech, LongMile-S is proposed for substrate replacements. The funds will also cover new diesel PM filters for vehicles that do not have the required duty cycle for the LongMile-S. Based on results from the Proposition 1B project, the proposed \$3 million will cover 270 to 500 substrate replacements or about 150 new diesel particulate filter systems (DPFs). Substrate replacement costs vary according to the horsepower of the engine with higher costs for higher horsepower engines. For new diesel particulate systems staff used an average of \$20,000 per system. Staff estimate that 1,061 CMMs need replacement and based on failure rates from the Proposition 1B project, approximately 38 percent of the CMMs will need new DPFs instead of a substrate replacement. This project will cover the costs of the substrate, new systems where needed, spare parts, and installation labor.