Air Resources Board

Mary D. Nichols, Chairman
1001 I Street • P.O. Box 2815
Sacramento, California 95812 • www.arb.ca.gov

Matthew Rodriquez
Secretary for
Environmental Protection

Edmund G. Brown Jr.
Governor

TO: Erik White, Chief
Mobile Source Control Division
Air Resources Board

FROM: Cynthia Marvin, Chief
Transportation and Toxics Division
Air Resources Board

DATE: September 11, 2014

SUBJECT: GREENHOUSE GAS REDUCTION FUND: LOW CARBON TRANSPORTATION EXPENDITURE RECORD FOR FISCAL YEAR 2014-15

Thank you for submitting the final expenditure record (attached) for the Air Resources Board (ARB) Low-Carbon Transportation Program on September 11, 2014, to satisfy the requirements of Senate Bill 1018 (Budget and Fiscal Review Committee, Chapter 39, Statutes of 2012) for expenditures from the Greenhouse Gas Reduction Fund (Fund).

This memorandum documents that ARB staff concurred on September 11, 2014 that the record submitted on September 11, 2014 is consistent with the statutory requirements of Government Code Section 16428.9 and with ARB's expectations, as documented in the August 6, 2014 final ARB *Interim Guidance to Administering Agencies on Expenditure Record and Fiscal Procedures*.

The ARB Low-Carbon Transportation Expenditure Record for Fiscal Year 2014-15, along with this memorandum, will be published on the ARB Cap-and-Trade Auction Proceeds website at: www.arb.ca.gov/auctionproceeds.

If you have any questions concerning this memorandum, please call me at (916) 324-0062 or via email at Cynthia.Marvin@arb.ca.gov .

Attachment

cc: See next page.

cc: Lucina Negrete, Chief
Innovative Strategies Branch
Air Resources Board

Greenhouse Gas Reduction Fund: Expenditure Record

Fiscal Year: 2014-15

Authorizing Legislation:
Item 3900-101-3228 (Senate Bill (SB) 852, Chapter 25, Statutes of 2014) appropriated $197,266,000 to the Air Resources Board (ARB) from the Greenhouse Gas Reduction Fund (GGRF) for Low Carbon Transportation investments. The State Budget (SB 852) also appropriated $2,734,000 to ARB for State administrative costs associated with the Low Carbon Transportation investments for a total appropriation of $200 million.

Agency: ARB

Intended Recipients: Consumers who purchase light-duty passenger vehicles; public and private truck and equipment owners and fleets; transit fleets; school bus fleets; advanced technology vehicle and equipment manufacturers and dealers.

Project Category: Low Carbon Transportation

Program Description: The Low Carbon Transportation investments expand existing ARB clean transportation programs that provide incentives for zero-emission and plug-in hybrid passenger vehicles, clean trucks and buses, and advanced freight technology to achieve greenhouse gas (GHG) reductions along with criteria pollutant and air toxics co-benefits with an emphasis on investments that benefit disadvantaged communities.

Per Government Code §16428.9, prior to expending any moneys appropriated to it by the Legislature from the fund, a state agency shall prepare a record consisting of all of the following:

(1) A description of each expenditure proposed to be made by the state agency pursuant to the appropriation.

The fiscal year 2014-15 State budget appropriated $200 million from the GGRF to ARB for Low Carbon Transportation projects to reduce GHG emissions with an emphasis on investments that benefit disadvantaged communities. These investments expand existing ARB clean transportation incentive programs and are being implemented through the administrative framework established by ARB's Air Quality Improvement Program (AQIP).

Consistent with this budget appropriation, ARB approved the proposed *Fiscal Year 2014-15 Funding Plan for the Air Quality Improvement Program and Low Carbon Transportation Greenhouse Gas Reduction Fund Investments* (Funding Plan) at a public meeting on June 26, 2014.[1] The Board-approved Funding Plan describes in detail each of the Low Carbon Transportation expenditures that will be made pursuant to this appropriation. These projects are summarized in Table 1. For each of these projects, the State funding provided leverages significant private funding, with each $1 from GGRF leveraging up to $15 in private funding in some cases.

[1] *Fiscal Year 2014-15 Funding Plan for the Air Quality Improvement Program and Low Carbon Transportation Greenhouse Gas Reduction Fund Investments;* http://www.arb.ca.gov/msprog/aqip/fundplan/fundplan.htm.
Press release; http://www.arb.ca.gov/newsrel/newsrelease.php?id=632.

Table 1: Board-Approved Low Carbon Transportation Project Allocations

Project Name	Project Allocation* (million)	*Percentage of Total to Benefit Disadvantaged Communities (million)*
Light-Duty Vehicle Projects – $120		
• Clean Vehicle Rebate Project (CVRP)	$111	*10% = $11*
• Pilot Projects in Disadvantaged Communities	$9	*100% = $9*
Heavy-Duty Vehicle and Equipment Projects – $80		
• Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP)	$5-$10	*100% = $10*
• Zero-Emission Truck and Bus Pilots	$20-$25	*100% = $20*
• Advanced Technology Freight Demonstrations	$50	*100% = $50*
Total	**$200***	*50% = $100*

*Includes $2.734 million in State administrative costs.

As shown in the table, 50 percent of ARB's $200 million Low Carbon Transportation appropriation will be targeted to provide benefits for disadvantaged communities. This will help the State meet the SB 535 (Chapter 837, Statutes of 2012) disadvantaged communities investment requirements.

Each of the Low Carbon Transportation Projects, awarded primarily via competitive solicitation, is described briefly below.

Clean Vehicle Rebate Project (CVRP): This project provides consumer rebates, available on a first come first serve basis statewide, for the purchase of new zero–emission and plug-in hybrid passenger vehicles. CVRP has operated since 2010, and the FY 2014-15 GGRF funding will enable the project to expand to meet increasing consumer demand. This project provides GHG benefits because the eligible zero–emission and plug-in hybrid passenger vehicles emit less GHGs on a lifecycle basis than conventionally fueled models.

Light-Duty Pilot Projects in Disadvantaged Communities: These new projects, which complement CVRP, are aimed at increasing use of the cleanest light-duty vehicles in disadvantaged communities and lower-income households. These pilot projects provide GHG benefits by enabling the purchase of lower GHG emitting passenger vehicles. Four separate pilot projects include:

- Increased Incentives for Public Fleets in Disadvantaged Communities: This pilot will provide higher CVRP rebates for public fleet purchases of zero–emission and plug-in hybrid light-duty vehicles in or benefiting disadvantaged communities.

- Targeted Car Sharing in Disadvantaged Communities: This pilot will implement car share projects for advanced clean vehicles (i.e., hybrids, plug-in hybrids, and/or zero-emission vehicles) and associated infrastructure in or benefiting

disadvantaged communities to offer an alternative mode of transportation and encourage the use of clean cars. Projects could include traditional car sharing models as well as vanpooling, shuttles, and other advanced technology mobility options.

- Vehicle Retirement and Replacement Plus-up: This pilot will be operated in conjunction with the Enhanced Fleet Modernization Program (EFMP), the voluntary vehicle retirement (car scrap) and replacement program implemented by the Bureau of Automotive Repair in coordination with ARB. The pilot will provide additional incentives above the base EFMP incentive for lower-income consumers who retire older vehicles and replace them with used or new hybrid, plug-in hybrid, or zero-emission vehicles. The pilot will be limited to areas that provide benefits to disadvantaged communities within the San Joaquin Valley and South Coast Air Basins – California's two extreme nonattainment areas for the federal ozone standard.

- Financing Assistance: This pilot will provide financing assistance, such as loan loss guarantees or interest rate buy-down programs for lower-income consumers interested in moving into a cleaner vehicle. This may help some consumers who would not typically qualify for conventional financing better afford an advanced technology vehicle.

Hybrid and Zero Emission Truck and Bus Voucher Incentive Project (HVIP): This project provides vouchers, available on a first come first serve basis statewide, to help California fleets offset the higher up-front cost of purchasing medium- and heavy-duty hybrid and zero-emission trucks and buses. HVIP has operated since 2010, and the FY 2014-15 GGRF funding will enable the project to expand to meet increasing demand and target disadvantaged communities. This project provides GHG benefits because the eligible zero–emission and hybrid trucks and buses emit less GHGs on a lifecycle basis than conventional diesel-fueled models.

Zero-Emission Truck and Bus Pilot: This pilot program complements HVIP by supporting pilot deployment of larger numbers of zero-emission truck, transit bus, or school bus projects operating in areas that benefit disadvantaged communities, including potential funding for charging or fueling infrastructure. Project fleets will operate within a concentrated, well-defined geographic area where commercial zero-emission vehicles, charging or refueling stations, energy storage devices, communications systems and support networks allow fleets to optimize the participation of zero-emission vehicles. The pilot project provides GHG benefits because the eligible zero–emission trucks and buses emit less GHGs on a lifecycle basis than conventional diesel-fueled models.

Advanced Technology Freight Demonstration Projects: These projects are intended to accelerate the introduction of advanced GHG emission reduction technologies for the freight sector. Targeting significant funding for pre-commercial demonstrations of advanced freight technologies can have a direct and immediate

impact on the current state of technology and provide real benefits to communities that are located near facilities that are the backbone of California's freight network.
FY 2014-15 funding will focus on:

- Zero-emission drayage trucks operating in or near disadvantaged communities.
- Multi-source facility projects to demonstrate zero- and near zero-emission technologies in various applications at centralized facilities such as distribution centers, warehouses, and intermodal facilities in or near disadvantaged communities.
- Other advanced technology freight-focused projects operating in or near disadvantaged communities as funding allows.

These advanced technology freight projects provide direct GHG benefits by demonstrating zero- or near-zero vehicles and equipment that emit less GHGs on a lifecycle basis than conventional diesel-fueled models, but more importantly should lead to commercialization and deployment of larger numbers of cleaner vehicles and equipment if successful.

(2) A description of how a proposed expenditure will further the regulatory purposes of Division 25.5 (commencing with Section 38500) of the Health and Safety Code, including, but not limited to, the limit established under Part 3 (commencing with Section 38550) and other applicable requirements of law.

Direct GHG Emission Reductions: These Low Carbon Transportation investments will further the purposes of AB 32 by directly reducing GHG emissions. Each project provides funding for the purchase or demonstration of zero or near-zero emission vehicles or equipment which emit less GHG emissions than comparable conventionally fueled vehicles or equipment. Additional information on the methodology for estimating emission benefits for these projects can be found in the *Fiscal Year 2014-15 Funding Plan for the Air Quality Improvement Program and Low Carbon Transportation Greenhouse Gas Reduction Fund Investments,* Appendix A.

Consistent with Investment Plan: Health and Safety Code section 39718 requires that all GGRF moneys be appropriated in a manner that is consistent with the Administration's three year Investment Plan. The 2013 *Cap-and-Trade Auction Proceeds Investment Plan: Fiscal Years 2013-14 through 2015-16*[2] (Investment Plan) identified clean transportation as a priority investment category because the transportation sector is the largest source of both GHG emissions and criteria pollutant precursor emissions (i.e., the emissions that form ozone and particulate matter air pollution). Appendix B of the Investment Plan describes the recommended types of projects that could be funded in the Low Carbon Transportation category. These

[2] *Cap-and-Trade Auction Proceeds Investment Plan: Fiscal Years 2013-14 through 2015-16*, Release Date: May 14, 2013 http://www.arb.ca.gov/cc/capandtrade/auctionproceeds/final_investment_plan.pdf

include funding for zero- and near zero emission passenger vehicles and transit buses and low-carbon freight development, demonstration, and deployment projects. The Investment Plan also identifies ARB's AQIP as a program that could serve as a model or mechanism to implement these incentives. Therefore, the expenditures described in this record are consistent with the Investment Plan and align with the priorities presented in the Plan.

Implements Climate Change Scoping Plan Recommendation: The *First Update to the Climate Change Scoping Plan*, released in May 2014, identified key strategies and recommendations to continue reducing GHG emissions and achieve the goals and purposes of AB 32. One of the key recommended actions for the transportation system is:

> "ARB, CEC, CPUC, and CDFA will support growing markets for clean passenger transportation, advanced technology trucks and equipment, and low-carbon transportation fuels and energy, including any necessary infrastructure."[3]

The Low Carbon Transportation expenditures described in the record will help implement this Scoping Plan recommendation.

(3) A description of how a proposed expenditure will contribute to achieving and maintaining greenhouse gas emission reductions pursuant to Division 25.5 (commencing with Section 38500) of the Health and Safety Code.

These expenditures will provide both immediate and longer-term GHG emission reductions. Information on the methodology for estimating emission benefits for these projects can be found in the *Fiscal Year 2014-15 Funding Plan for the Air Quality Improvement Program and Low Carbon Transportation Greenhouse Gas Reduction Fund Investments,* Appendix A. ARB will develop GGRF calculation and reporting guidance over the next year. Once that guidance is complete, the emission benefits of the Low Carbon Transportation investments will be calculated and reported in accordance with the guidance.

CVRP is oversubscribed with consumer demand for clean vehicle rebates growing each year. FY 2014-15 funding for CVRP will start yielding GHG reductions in 2014 via rebates for clean cars and will maintain these benefits for the estimated 15 year life of the vehicles funded. The related light-duty pilot projects to benefit disadvantaged communities will likely start providing GHG reductions in 2015.

FY 2014-15 funding for HVIP will start yielding GHG reductions in 2014 or the first quarter of 2015 via vouchers for clean trucks and buses and will maintain these benefits for the estimated 15 year life of the trucks and buses funded. The related zero-emission truck and bus pilot project will likely start providing GHG reductions in 2015 and will

[3] *First Update to the Climate Change Scoping Plan: Building on the Framework Pursuant to AB 32 The California Global Warming Solutions Act of 2006,* May 2014 http://www.arb.ca.gov/cc/scopingplan/2013_update/first_update_climate_change_scoping_plan.pdf (see page 56)

maintain these benefits for the estimated 15year life of the trucks and buses funded.

The advanced technology demonstration projects for freight will likely start receiving FY 2014-15 funding during the 2015 calendar year. Because these projects fund new technologies in the pre-commercial stage, the first phase of these projects involves building the advanced technology vehicles and equipment. There will be some time lag between project kickoff and vehicle deployment, at which time GHG reductions will be realized because these advanced technology vehicles will emit less GHGs than the vehicles they replace if the demonstrations prove successful. GHG reductions from these projects should start in late 2015 or 2016 and be maintained over the demonstration period of each vehicle funded which typically runs several years. If these vehicles and equipment are successfully commercialized, they would expect to have useful lives of 15 years or greater.

In addition to the direct GHG emission reductions from the vehicles funded in each of these projects, these expenditures set the stage for greater, indirect reductions in the future by accelerating large-scale market penetration of advanced lower GHG-emitting transportation technologies. These longer-term program benefits accrue primarily from overcoming deployment barriers, reducing production costs, promoting consumer acceptance, and accelerating technology transfer to other sectors.

(4) A description of how the state agency considered the applicability and feasibility of other nongreenhouse gas reduction objectives of Division 25.5 (commencing with Section 38500) of the Health and Safety Code.

In addition to reducing GHG benefits, these expenditures will provide air quality, public health, disadvantaged community, and economic benefits.

Air Quality and Public Health Benefits: All clean vehicle projects will reduce criteria pollutant forming emissions of nitrogen oxides (NOx), reactive organic gases (ROG), and particulate matter that contribute to ozone and particulate matter air pollution. By reducing NOx, ROG, and particulate matter emissions, these projects help California meet the health-based air quality standards. Several of the project solicitations will be designed to either limit participation to, or provide preference to, projects operating in the regions of California with the worst air quality in order to maximize air quality and public health benefits.

Clean truck, bus, and freight projects will also reduce emissions of diesel particulate matter, a toxic air contaminant, thereby reducing toxic risk to Californians.

Disadvantaged Communities Benefits: As shown in Table 1, 50 percent of ARB's Low Carbon Transportation investment for FY 2014-15 will be targeted to provide benefits to disadvantaged communities. Solicitations for light-duty pilots, truck and bus pilots, and advanced technology freight demonstrations will limit participation to those projects that provide a benefit to disadvantaged communities, as defined by ARB's disadvantaged

community investment guidance currently under development[4]. None of these project solicitations will be issued until ARB guidance for determining benefits to disadvantaged communities is finalized. In addition, HVIP provides higher voucher incentive levels for zero-emission trucks and buses that are domiciled and operated in disadvantaged communities as an additional mechanism to encourage the purchase of these vehicles in disadvantaged communities.

Economic Benefits: Several companies that manufacture vehicles eligible for ARB Low Carbon Transportation funding are located in California. The incentives which encourage the purchase of these vehicles provide an economic benefit to these companies and support California jobs. For example, Electric Vehicles International (EVI) manufactures zero-emission trucks eligible for HVIP vouchers at a facility in Stockton, located within one of the census tracts under consideration to be identified as a disadvantaged community by the California Environmental Protection Agency. Tesla Motors manufactures zero-emission passenger vehicles eligible for CVRP rebates at a facility in Fremont.

(5) A description of how the state agency will document the result achieved from the expenditure to comply with Division 25.5 (commencing with Section 35800) of the Health and Safety Code.

ARB will use several mechanisms to both prospectively estimate project benefits and retrospectively document the results achieved from its expenditures.

ARB has already provided preliminary estimates of potential benefits of proposed projects in response to Legislative inquiries in April and May 2014 in advance of Board approval of the FY 2014-15 Funding Plan. These provide a rough estimate of the potential benefits of ARB's expenditures which will be refined in the future based on several factors. Benefit estimates, such as GHG reductions, from the Low Carbon Transportation funding will updated using the consistent GGRF calculation guidance being developed over the next year by ARB staff. As detailed project solicitations are developed and projects are implemented, ARB may also need to further refine benefit estimates in order to reflect more precisely project implementation details.

In addition to these prospective benefits estimates, ARB will design each project to collect all data necessary to document the emission reductions achieved. ARB will include data collection and reporting requirements for funding recipients as part of its project solicitations and grant agreements or other appropriate enforceable agreements. This will include all information necessary to document the benefits for disadvantaged communities, consistent with ARB guidance on disadvantaged community benefits currently under development.

ARB will provide regular updates on its Low Carbon Transportation expenditures, project status, and benefits in reports prepared according to forthcoming GGRF

[4] Cap-and-Trade Auction Proceeds website, including ARB guidance: www.arb.ca.gov/auctionproceeds

reporting guidelines. At a minimum, these reports will include expenditure amounts, current estimates of GHG emission reductions, and quantification of co-benefits including criteria pollutant emission reductions.

Furthermore, two of ARB's Low Carbon Transportation projects, CVRP and HVIP, already have project websites which provide information about available funding and eligibility requirements for potential vehicle purchasers as well as demographic information about the vehicles funded to document results to the public.[5] This provides a mechanism for the public to see project status and results on an ongoing basis.

[5] CVRP website: http://energycenter.org/programs/clean_vehicle_rebate_project
CVRP statistics website: http://energycenter.org/clean-vehicle-rebate-project/cvrp-project-statistics
HVIP website: http://www.californiahvip.org/
HVIP statistics website: https://mapsengine.google.com/map/edit?mid=zMdBRupU80tU.klc6gde8I48k