

Appendix E

Incentives



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Appendix E: Incentives

The San Joaquin Valley Air Pollution Control District (District) has increasingly relied on its advocacy efforts to secure state and federal funding sources, and locally-generated funding to implement incentive programs that have become a crucial component of the District's overall strategy for achieving the emissions reductions necessary to bring the Valley into attainment. These programs provide an effective way to accelerate emissions reductions and encourage technology advancement, particularly from mobile sources, a sector not directly under the District's regulatory jurisdiction. Given that over 80% of the nitrogen oxide (NOx) emissions in the San Joaquin Valley (Valley) come from mobile sources, these successful voluntary incentive grant programs help the Valley achieve highly cost-effective emissions reductions that are surplus of the regulatory emissions reductions.

E.1 DISTRICT EXPERIENCE TO DATE IN ADMINISTERING AND IMPLEMENTING INCENTIVE PROGRAMS

The District operates one of the largest and most well-respected voluntary incentive programs in California. Through strong advocacy at the state and federal levels, the District has appropriated \$564 million in incentive funding in the 2022-2023 District Budget.¹ Since the District's inception in 1992, the District has invested considerable funding into thousands of clean-air projects throughout the Valley. These projects have achieved significant emissions reductions with corresponding air quality and health benefits.

The District typically requires match funding of 30% to 70% from grant recipients. To date, grant recipients have provided \$2,323,139,000 in matching funds, with a combined District and grant recipient funding investment of more than \$4,229,374,000 billion.

Table E-1 Summary of Grant Expenditures and Results

District Incentive Funding (\$)	Grant Recipient Match Funding (\$)	Emissions Reductions (tons)	Cost-Effectiveness (\$/ton)
\$1,906,235,000	\$2,323,139,000	212,000	\$8,970

¹ SJVAPCD. Recommended Budget 2022-2023. p.86. June 16, 2022. Retrieved from https://www.valleyair.org/Board_meetings/GB/agenda_minutes/Agenda/2022/June/final/06.pdf

E.2 SIP CREDITABILITY FOR INCENTIVE-BASED EMISSIONS REDUCTIONS

Historically, states and local air agencies have not been able to obtain credit in state implementation plans (SIPs) for incentive-based emissions reductions. When given SIP credit, the District can use incentive-based emissions reductions alongside regulatory-based emissions reductions to meet federal Clean Air Act (CAA) requirements, such as demonstrating attainment with federal air quality standards at a future date or demonstrating that emissions reductions meet federal SIP reasonable further progress requirements. Given the substantial investment from the public and private sectors in replacing equipment under these voluntary incentives, establishing a general framework to receive SIP credit for these emissions reductions was critical. Recognizing the importance of this issue, the U.S. Environmental Protection Agency (EPA), California Air Resources Board (CARB), and the United States Department of Agriculture – Natural Resources Conservation Service (USDA-NRCS), worked together with the District and signed a Statement of Principles (MOU) in December 2010 that established a general framework for ensuring that reductions in air emissions resulting from voluntary incentives to replace off-road agricultural equipment received credit in the SIP. The MOU states that the District, NRCS, CARB and EPA would work collaboratively to develop a mechanism to provide SIP credit for emissions from incentive programs that are surplus, quantifiable, enforceable, and permanent. In continuing these efforts, in July 2012, EPA and USDA agreed to implement this concept to ensure that emissions reductions from incentive programs were given their proper credit in the SIP context.

As a result of these collaborative efforts, the District adopted Rule 9610 (State Implementation Plan Credit for Emission Reductions Generated Through Incentive Programs) on June 20, 2013. District Rule 9610 establishes the administrative mechanism through which SIP credit is quantified for emissions reduced in the Valley through incentives. EPA proposed a limited approval of Rule 9610 in May 2014², and finalized that approval on April 9, 2015.³

As with prohibitory rules, EPA guidance requires the District to demonstrate that emissions reductions achieved through voluntary incentive programs are surplus, quantifiable, permanent, and enforceable in order for those reductions to receive SIP credit. Additionally, EPA guidance requires extensive documentation of emissions reductions proposed for SIP credit with ongoing follow-up and tracking of the emissions reductions.

The District designed District incentive programs to meet the surplus-quantifiable-enforceable criteria. In order to be surplus, emissions reductions from voluntary incentive programs generally must not be required by any local, state, or federal regulations. Quantifiable emissions reductions are calculated using methodologies of state programs or other publically developed methodologies. To ensure enforceable

² Revision to the California State Implementation Plan; San Joaquin Valley Unified Air Pollution Control District; Quantification of Emission Reductions from Incentives. 79 Fed. Reg. 96 pp. 25650-28658. (2014, May 19) (to be codified at 40 CFR Part 52). <http://www.gpo.gov/fdsys/pkg/FR-2014-05-19/pdf/2014-11481.pdf>

³ Revision to the California State Implementation Plan; San Joaquin Valley Unified Air Pollution Control District; Quantification of Emission Reductions from Incentives. 80 Fed. Reg. 68 pp. 19020-19033. (2015, April 9) (to be codified at 40 CFR Part 52). <http://www.gpo.gov/fdsys/pkg/FR-2015-04-09/pdf/2015-07972.pdf>

and permanent emissions reductions, programs require mechanisms such as legally binding agreements with program participants and physical inspections to verify the completion of projects. Furthermore, all criteria and reporting mechanisms are transparent to the public.

E.3 INCENTIVE FUNDING SOURCES

The District is engaged at every level of state and federal government to craft policy and funding targets that account for the Valley's unique challenges and need to accelerate emissions reductions, particularly from sources not under the District's regulatory authority. Therefore, the District works closely with the Valley's legislative delegation to ensure representation of the Valley's needs in discussions of where to focus funding throughout the state and the region as a whole. In addition, the District focuses on how to allocate the limited funding received for its incentive programs effectively.

In addition to aggressively pursuing funding from state funding sources such as the Carl Moyer Program, the District has been very successful in securing grants from the highly-competitive federal Diesel Emissions Reductions Act (DERA) and the state Assembly Bill (AB) 118 Air Quality Improvement Program (AQIP). Currently, the District actively engages with CARB, the California Energy Commission (CEC) and other state agencies to ensure representation of the Valley in project selections from the Greenhouse Gas (GHG) Reduction Fund.

As discussed in Chapter 4, recent state and federal budget and funding actions have created unprecedented opportunities for the San Joaquin Valley to receive much needed investments to reduce emissions from mobile sources. At the state level, the 2021-22 and 2022-23 budgets include \$53.9 billion in climate-related funding. At the federal level, recent authorizations under the Infrastructure Investment Jobs Act (IIJA) and Inflation Reduction Act (IRA) provide wide-ranging funding for a variety of important clean technology and infrastructure programs. Notably, IRA includes an estimated \$369 billion in funding for climate and energy-related programs, and many billions of additional funding for sustainable agriculture and programs of importance to the San Joaquin Valley. Given the Valley's air quality challenges and significant number of disadvantaged communities, it will be imperative that EPA and other federal agencies prioritize and integrate these new funding opportunities with SIPs for Extreme ozone nonattainment and Serious PM_{2.5} nonattainment areas.

E.4 INCENTIVE STRATEGY

Each of the funding sources administered by the District includes different guidelines and statutory requirements for using the funds. Beyond the specific guidelines of each funding source, the District considers the following common factors when deciding how and where to spend incentive funds:

E.4.1 Cost Effectiveness

An important factor when considering where to invest District funds is determining which types of projects and programs will give the District the greatest return on its investment (typically represented in dollars per ton of emissions reduced). While cost-effectiveness is a primary factor, the District also considers projects that may not have the highest cost-effectiveness, but that provide other benefits, such as the advancement of new technology or community involvement.

E.4.2 Inventory of Available Projects

This factor is critical in all District incentive programs. To date, the District has been extremely successful in designing incentive programs that have broad appeal and applicability across multiple industries. This level of interest has resulted in a substantial backlog of eligible projects waiting for funding. Unfortunately, in most cases, many of those on waiting lists have since moved into a regulated class, making them ineligible for funding. As a result, the District must continue to not only work within the existing regulations to find cost-effective, surplus project categories, but also to focus future funding in areas where a significant inventory of eligible projects still exists.

E.4.3 Required Expenditure Timeframes

Each funding source that the District administers generally requires obligation and expenditure by certain deadlines. These deadlines greatly impact funding priorities and choice of projects. The District may prioritize a funding category over others because of the timeframe associated with a particular funding source. For instance, the District may give priority to certain projects that can reasonably be expected to finish prior to the deadline for that specific fund over other projects of equal relevance or cost-effectiveness, but with longer expected completion times. Again, the flexibility of this option works in concert with the dynamic nature of the incentive programs, projects, and expenditure deadlines.

E.4.4 Upcoming Regulatory Deadlines

To ensure that incentive programs obtain the maximum SIP-creditable emissions reductions, the District performs a thorough analysis of all local, state, and federal regulations relating to the target categories. In addition, the District works proactively with the regulating agencies during the rule development process to understand the potential impacts of that rule on incentive projects and to ensure maximization of opportunities for early incentive funding. These analyses determine which types of projects can be funded, for how long projects can be funded, which also impacts the potential cost-effectiveness of certain projects.

E.4.5 Health Benefits

In addition to emissions reductions needed to attain air quality standards, the District also seeks incentive projects that provide direct health benefits to Valley residents. For

instance, the District's Electric School Bus Incentive Program focuses primarily on the localized toxic risk involved in children's exposure to diesel particulates. While not the largest source of regional particulate pollution, replacing aging school buses has an enormous impact on the toxic risk of school transportation.

E.4.6 Environmental Justice

The District places a strong emphasis in providing funding in a manner that benefits environmental justice communities. The District has worked cooperatively with the Environmental Justice Advisory Group to understand the Valley's environmental justice issues and to craft programs that reduce emissions in these areas.

E.4.7 Community Involvement and Benefits

The District develops and administers programs with an emphasis on community involvement. Some examples of these are the Clean-Green-Yard-Machine program, Drive Clean! Rebate program, Burn Cleaner program, and Transit Pass Subsidy program.

E.5 STATUTORY CONSTRAINTS ON INCENTIVE FUNDING

The District receives its current incentive funding from a range of local, state, and federal funding sources. These funding sources contain restrictions on the types of projects eligible for funding, funding limitations, expenditure deadlines, and the administrative approach for funding distribution. These requirements vary significantly from one funding source to another, resulting in a complex matrix of funding categories and program requirements. Table E-2 below summarizes some key examples.

Table E-2 Statutory Constraints on Incentive Funding

Funding Source/ Category	Program Requirements
Proposition 1B Goods Movement	Funding must be dedicated to heavy-duty trucks and locomotives. Program procedures require use of a Request-for-Proposals (RFP) process and priority be given to the most cost-effective projects.
Carl Moyer	Funding is primarily used on heavy-duty diesel equipment projects. Program has strict funding and cost-effectiveness requirements.
Community Air Protection	Funding is used for various state approved projects in or benefitting disadvantaged communities.
DMV Funds	Funding is used primarily for on-road and off-road mobile sources. Portions of funds must follow Carl Moyer guidelines.
Advanced Emission Reduction Option Funds	The District's Governing Board has discretion as to where to apply these funds through the District's annual budget process.
Indirect Source Review (ISR) Funds	Funding preference is given to emissions reductions opportunities near development projects.

E.6 DISTRICT INCENTIVE PROGRAMS

The District's incentive programs continue to be a model for other agencies throughout the state. Recent audits noted the District's efficient and effective use of incentive grant funds in reducing air pollution. The District has collaborated extensively with EPA, CARB and USDA-NRCS to develop the mechanism to take credit in SIPs for emission reductions generated through incentive programs that satisfy the four federal criteria for SIP creditability – surplus, quantifiable, enforceable and permanent.

Historically, states and local air agencies have not been able to obtain SIP credit for incentive-based emissions reductions. When given SIP credit, the District can use incentive-based emissions reductions alongside regulatory-based emissions reductions to meet federal CAA requirements, such as demonstrating attainment with federal air quality standards at a future date or demonstrating that emissions reductions meet federal SIP reasonable further progress requirements. Given the heavy investment from the public and private sectors in replacing equipment under these voluntary incentives, establishing a general framework to receive SIP credit for these emissions reductions was critical for ensuring the continued success of these programs. Working together with EPA, CARB, and the USDA-NRCS, the District adopted Rule 9610 (State Implementation Credit for Emission Reductions Generated Through Incentive Programs) on June 20, 2013.

E.6.1 2021-2022 Incentive Spending Priorities

Table E-3 summarizes the current incentive priorities in the 2022-2023 District Budget Incentive Spending Plan⁴.

Table E-3 District Incentive Priorities (2022-2023 Budget)	
Community Incentives	
	Bicycle Lane Infrastructure
	Burn Cleaner/Woodsmoke Reduction
	Commercial Lawn and Garden
	Drive Clean Rebate Program
	Drive Clean Repair Program (Tune In Tune Up, EFMP)
	Drive Clean Replacement Program
	Miscellaneous Incentives
	Residential Lawn and Garden
Heavy Duty Equipment Programs	
	Proposition 1B Heavy Duty Trucks
	Locomotives
	Agricultural Equipment Replacement
	Agricultural Pump Replacement
	Alternative Fuel Infrastructure
	Dairy Feed Mixer Electrification Program
	Electric Ag UTV

⁴ SJVAPCD. Fiscal Year 2022-23 Recommended Budget, pp. 90-92. June 16, 2022.
https://www.valleyair.org/Board_meetings/GB/agenda_minutes/Agenda/2022/June/final/06.pdf

Table E-3 District Incentive Priorities (2022-2023 Budget)
Electric Yard Trucks
Emergency Vehicle Replacement
Low-Dust Nut Harvester Equipment Replacement
Truck Replacement Program
Community Air Protection Funds
Board-Approved CERP Funds
Ag Equipment Replacement
Ag Pump Replacement
Alternative Fuel Infrastructure
Bicycle Lane Infrastructure
Burn Cleaner
Car Sharing Program
Charge Up Program
Commercial Lawn and Garden
Drive Clean Repair Program (Tune-In Tune-Up)
Drive Clean Replacement Program
Education Training for EV Mechanics
Electric Yard Trucks
Locomotives (Railcar Movers and Switchers)
Low-Dust Nut Harvester Equipment Replacement
On-field Alternatives to Open Burning
Public Benefits
Residential Lawn and Garden
Road Dust Paving and Sidewalk Installations
School Bus Replacement and Retrofit
Truck Replacement Program
Truck Rerouting Study
Urban Greening
Vegetative Barriers
Other Community Air Protection Funds
Valleywide Zero-Emission School Bus Programs
Community Air Protection Fund Programs
Advanced Transportation/Vehicles
CARB – Flexible Solutions for Freight Facilities
CARB – Frito Lay Freight Facility
Public Benefit Grants
Charge Up Program
Volkswagen Mitigation Trust
Non-Mobile Programs
Alternatives to Agricultural Open Burning
Clean Air Centers Program
Technology Advancement
Technology Advancement Program
Contingencies
Air Toxics

E.6.2 Heavy Duty Trucks

The District has administered numerous incentive programs targeted at on-road heavy-duty trucks, one of the biggest sources of NO_x emissions in the Valley. Through the state's Proposition 1B Goods Movement Emission Reduction Program, Carl Moyer Voucher Incentive Program (VIP), and the District's Truck Replacement Program (TRP) funded by grants from EPA and locally generated incentive funds, the District has replaced hundreds of older, high-polluting trucks with cleaner trucks certified to meet the latest EPA emission standards.

In 2012, the District's Governing Board authorized the creation of the District's Truck Voucher Program (TVP), which the District designed to provide an alternative source of incentive funding for heavy-duty truck operators that were unable to obtain funding through the proposition 1B program⁵. This program has had a particular emphasis on assisting small Valley fleets and single owner operators that, at the time, had few other options. This was because timelines associated with the Statewide Truck and Bus Regulation gave more compliance options to larger fleets, often shutting out smaller fleets. This program filled a void left by other state incentive programs and allowed the District to replace more trucks earlier and realize emission reductions that would have not otherwise occurred. The District contracted with Valley dealerships and made the review and approval process efficient and streamlined to provide vouchers to truck owners. The District provided up to 35% of the cost of a new truck that meets or exceeds the 2010 emission standard for heavy-duty trucks.

In March 2018, the Governing Board approved enhancements to the TVP to incorporate requirements of new state funding and to ensure cost-effectiveness and SIP creditability of the resulting emission reductions⁶. The enhancements approved by the Board included rebranding the program under one name, the Truck Replacement Program, in order to be more intuitive and inclusive of all District truck programs. Additionally, these enhancements were designed to further support the District's need for reductions beyond the rule-required 2010 engine technology and actively promote and incentivize the early adoption of near-zero and zero emission technology. In recent years, the District's Truck Replacement Program has focused on replacing model year 2009 and older engines with engines meeting the optional low NO_x standard engine or zero-emission trucks. While these expanded program options target compliant fleets willing to invest in near-zero and zero emission technology, given the impending regulatory compliance deadline of January 1, 2023, opportunities for funding these truck replacements have been exhausted.

In April of 2022, in response to the regulatory compliance requirement deadline, the District adopted additional enhancements to the program to fully align with the State's recently updated Carl Moyer Program Guidelines. These updates included necessary

⁵ SJVAPCD. Approve New On-Road Heavy-Duty Truck Voucher Incentive Program in the San Joaquin Valley. March 15, 2012.

http://www.valleyair.org/Board_meetings/GB/agenda_minutes/Agenda/2012/March/FinalGBItem6_OnRoadVoucher_031512.pdf

⁶ SJVAPCD. Consider Enhancements to District's Heavy-Duty Truck Incentive Programs. March 15, 2018.

http://www.valleyair.org/Board_meetings/GB/agenda_minutes/Agenda/2018/March/final/10.pdf

flexibility to fund truck replacement projects moving forward including enhanced incentives for near-zero and zero emission new trucks as well as the following model year eligibility and funding cap increases:

- Updated existing vehicle engine model year eligibility requirements:
 - Engine model year must be six or more years of age (for example, replace a 2016 model year engine in 2022)
- Increased state funding caps:
 - Up to \$160,000 for near-zero low NOx standard (0.02 g/bhp-hr)
 - Up to \$410,000 for zero emission technology
 - Funding amounts vary based on fleet size (small fleets receive higher percentage), cost-effectiveness, and use
- Increased Cost Effectiveness limits:
 - Up to \$200,000 for near-zero low NOx standard (0.02 g/bhp-hr)
 - Up to \$500,000 for zero emission technology

The District has funded the replacement of over 2,500 heavy-duty trucks, with more applications coming in every day. The program is very popular with Valley based heavy-duty truck dealers because the program operates very efficiently.

E.6.3 Agricultural Pumping Engines

The District provides up to 85% funding for farmers looking to replace older, dirtier diesel engines with low-emission Tier 4 engines or zero-emission electric motors. Agriculture accounts for a majority of the local economy, and this program not only provides for significant emissions reductions from agricultural operations, but also provides economic relief to Valley farmers, ranchers, and dairy operators. Eligible projects are funded with local, state, and federal sources, including but not limited to District Indirect Source Review (ISR) mitigation fees, Carl Moyer Program funding, AB 923 funding, Federal Designated Funding, and Federal Diesel Air Shed Grant funding. In the past, collaboration with the California Public Utilities Commission (PUC) and local utilities has allowed for additional incentives on electric line extensions and special rate schedules, enhancing participation in the District's replacement program.

The District has funded the replacement of over 7,000 agricultural pump engines, with more projects currently in the queue. Over 2,500 of these replacements involved replacing older diesel engines with electric motors. The District has seen an increased demand for emissions-compliant diesel-engine repowers to electric motors in recent years. This option is ideal for both parties, since the District achieves the maximum emissions reductions with electric motor repowers and farmers lower their operating costs by switching to electricity, a more affordable fuel source. The District will consider pursuing a renewed public/private collaborative partnership similar to the previously mentioned partnership to provide further incentives for replacing remaining agricultural internal combustion engines with electric motors, potentially including assistance for line extensions for remotely located wells.

For a typical irrigation pump project, the District will verify that the old engine is operational and eligible. If so, the District offers the engine owner the incentive, who must have the new engine or motor installed, making sure that the old engine is sufficiently disabled. The District conducts a post-inspection prior to payment to document the new engine or motor's specifications and to ensure the emissions reductions are accurate. Ongoing monitoring and reporting ensures the projects meet contracted emissions reductions targets.

E.6.4 Agricultural Equipment

Off-road agricultural equipment replacements and repowers play a crucial role in reducing emissions. These equipment units, including tractors, backhoes, wheel loaders, and other off-road farming vehicles are widely used in the Valley, and are essentially uncontrolled and unregulated. Eligible projects are funded with local, state, and federal sources, including but not limited to ISR, Carl Moyer funding, AB923 funding, Federal Designated funding, and Federal Diesel Air-Shed Grant.

The District has funded the repower and replacement of over 11,700 off-road agricultural vehicles, with a significant number of additional projects currently in the queue. Whether a farmer wishes to repower the current equipment with a cleaner engine or replace the equipment altogether, this program allows the District to achieve surplus emissions reductions while also facilitating the early equipment retirement and fleet turnover, both of which result in more efficient farming operations with less overall hours of operation.

In both repower and replacement projects, the farmer enters into an agreement with the District to replace the old, dirty engine or vehicle with newer, cleaner technology. The District first performs a pre-inspection to determine that the equipment and engine are operational. District staff perform a final inspection to verify the new equipment, as well as witness the old equipment and engine's destruction at a District-approved recycling or scrapping facility, ensuring the old equipment and engine will never be put back into service. Ongoing monitoring and reporting ensure the expected emissions reductions and operation of the equipment meet the grant agreement requirements.

E.6.5 Alternatives to Open Agricultural Burning Incentive Program

To support the Valley's ongoing phase-out of agricultural open burning, in 2018, the District's Governing Board authorized the creation of the Alternatives to Agricultural Open Burning Incentive Program.⁷ This program provides financial incentives to commercial agricultural operations located within the District boundaries to chip agricultural material. The chipped material is then used for soil incorporation, land application, or approved off-site beneficial re-use such as mulch, composting, land application near roadways for dust suppression, and other District approved re-use of the chipped material as an alternative to the open burning of the agricultural materials.

⁷ District Alternatives to Agricultural Open Burning Incentive Program. Retrieved from: <http://valleyair.org/grants/alt-ag-burning.htm>

Since 2018, the District Governing Board has allocated \$25,309,504 in local District funding to this program.

On August 19, 2021, the District accepted \$178,200,000 in additional state funding to be utilized in the District's Alternatives to Agricultural Open Burning Incentive Program.⁸ To ensure adequate capacity to accommodate the increase in agricultural chipping throughout the Valley in the coming years, particularly for smaller agricultural operations, the District allocated \$30,000,000 of the new state funding to expand the Alternatives to Agricultural Open Burning Incentive Program to include a new program option that provides incentives for the purchase of new chipping/grinding equipment. This funding is the result of significant advocacy from the District and Valley agricultural stakeholders and is designated to assist the District in developing new alternative practices, increase fleet capacity for chipping in the Valley, and offset the significant incremental cost of implementing new alternatives to open burning.

Overall, the program has resulted in the deployment of alternative practices at over 139,000 acres, for over 3,800,000 tons of agricultural materials, resulting in the reduction of 7,558 tons of NO_x, 13,905 tons of PM and 11,712 tons of ROG emissions.

E.6.6 Locomotives

The emissions from goods movement are a significant source of diesel particulate matter (PM) in the Valley and the state, and many of the larger cities in the Valley are home to locomotive rail yards. Locomotives, in particular, present a considerable health risk from diesel PM emissions. Residential areas located close to rail yards have shown a significant increase in cancer risk and can equal or exceed the regional background or regional health risk levels.⁹ The locomotive component of the Heavy-Duty Engine Program awards up to 85% grant funding for newer, cleaner diesel locomotive engines and locomotive replacements. The District funds eligible projects with local, state, and federal sources, including but not limited to the Carl Moyer Program, the Federal Diesel Air Shed Grant, and DERA funding.

The District has funded the repower or replacement of 66 locomotives, with more projects currently in the queue. One of the major benefits to the locomotive repower and replacement program is increased efficiency and longevity as a result of the revolutionary GenSet engine technology. The GenSet system uses multiple smaller off-road tier-4 emission level engines mounted on a single chassis. This system allows for each of the engines to be fired up individually so that in low-power demand situations only one of the engines can be used, helping to reduce unnecessary emissions. In addition, this system comes equipped with idle reduction technology that will shut down the engine during periods of inactivity.

⁸ SJVAPCD. *Accept and Appropriate \$178,200,000 in State Funding and Approve Enhancements to Alternatives to Agricultural Open Burning Incentive Program*. (August 19, 2021). Retrieved from:

https://www.valleyair.org/Board_meetings/GB/agenda_minutes/Agenda/2021/August/final/10.pdf

⁹ CARB. *Railyard Health Risk Assessment and Mitigation Measures*. Retrieved on 9/1/2022 from

<https://ww2.arb.ca.gov/resources/documents/railyard-health-risk-assessments-and-mitigation-measures>

The District funds locomotive repower or replacement projects through an RFP procurement process, and reviews and selects recipients based on established scoring criteria. During the pre-inspections, District inspectors verify all necessary locomotive engine information and document digital photographs. Upon verification of all information, the District enters into an agreement with the recipient for the project. Once the operator purchases the replacement switcher locomotive engine and dismantles the original engine, the recipient will complete and return the claim-for-payment packet, and a post-inspection is performed, prior to payment, to verify the new information. Monitoring and reporting continue for the duration of the agreement to ensure the emissions reductions expected from the project occur.

E.6.7 Electric School Bus Replacement

School bus replacements and retrofits play a vital role in reducing school children's exposure to both cancer-causing and smog-forming pollution. The Electric School Bus Replacement program provides grant funding for new, cleaner zero-emission school buses. Eligible applicants include public school districts, Joint Powers Authority (JPA) and privately owned yellow school buses contracted with a public school to transport public school children. The District funds eligible projects with local, state, and federal funds.

The District has provided funding to retrofit over 2,300 school buses and replace 654 school buses. New buses purchased to replace older buses may be fueled with diesel or an alternative fuel, such as compressed natural gas (CNG), provided that the required emissions standards specified in the current guidelines for the Lower-Emission School Bus Program are met. Funds are also available for replacing on-board CNG tanks on older school buses and for updating deteriorating natural gas fueling infrastructure. Commercially available hybrid-electric school buses may be eligible for partial funding.

The District selects eligible school buses based on specific program requirements, including replacing the oldest models first. After determining eligibility, school districts are awarded contracts that provide a reasonable time period for project completion. The applicant must submit a claim-for-payment form in order to receive awarded funds.

E.6.8 Alternative Fuel Infrastructure

At the District's 2015 Study Session in May 2015, the District discussed a multi-faceted action plan for promoting the deployment for near-zero emission natural gas (NG) vehicles and infrastructure in the Valley¹⁰. One component of this action plan includes providing additional incentives for NG vehicles and infrastructure.

Providing incentives is an important component of promoting the use of natural gas vehicles due to the current lack of NG infrastructure and higher incremental costs for

¹⁰ SJVAPCD. Review and Approve Action Plan for Promoting the Use of Natural Gas Technology for Goods Movement in the San Joaquin Valley. May 6, 2015.
http://www.valleyair.org/Board_meetings/GB/agenda_minutes/Agenda/2015/May/StudySession/final/05.pdf

NG vehicles. The incremental cost of a NG truck can be as much as \$60,000 more than a comparable diesel model. However, since the cost and maintenance of NG is less than diesel, there will eventually be a return on investment for the truck owner. Unfortunately, large fleets tend to turn their trucks over every 4-5 years, and the cost differential between NG and diesel is currently much lower than in the past based on lower diesel fuel costs. Truck owners therefore have little time to realize the cost benefits of NG vehicles. New incentives to reduce the incremental cost associated with NG vehicles would help overcome this market barrier and begin to create a larger market for NG vehicles in the Valley. As the deployment of NG vehicles increases, a secondary used truck market would emerge in the Valley that would further assist in increasing the overall deployment of NG vehicles. The District is taking incentive-based actions as summarized below.

E.6.8.1 Continue to fund new electric, hydrogen and natural gas infrastructure through District's Heavy-Duty Program

Through the Clean Vehicle Fueling Infrastructure Program, entities can receive funding for the installation of new alternative fueling infrastructure, conversion of an existing station, or expansion of existing infrastructure to support their vehicle deployment goals. One recent example of new fueling infrastructure under this program includes the construction a new public-access compressed NG fueling station in partnership with Kruse Western Renewable Fuels, LLC. Under the Truck Replacement Program component, truck fleets can receive funding for the purchase of new alternative fuel vehicles with a gross vehicle weight rating (GVWR) of 14,001 pounds or more. Fleets purchase NG heavy-duty vehicles to add to their existing fleets and supplant the duties of diesel-powered vehicles.

Another recent example under this program includes the construction of new private use battery charging stations for zero-emission school buses. Under the Zero-Emission School Bus Infrastructure Program, school districts and private transportation providers serving school districts within designated disadvantaged or low-income communities can receive funding for up to 100% of eligible costs for the purchase and installation of charging infrastructure. Applicants may also receive funding to accommodate future electric school bus deployment.

E.6.8.2 Provide higher incentives for alternative fuel technologies that meet near-zero and the zero-emission optional emissions standards

Under the District's Truck Replacement Program, the District currently provides up to 35% of the cost of a new 2010-certified truck, not to exceed \$50,000. The District now provides higher incentive levels for alternative fuel vehicles that meet the recently adopted near-zero and zero-emission optional emissions standards.

E.6.8.3 Continue providing incentives for fleet expansions with new alternative fuel trucks

The District supports alternative fuel vehicle fleet expansion in which incentives are provided for new vehicle purchases without the requirement to scrap an existing vehicle. As with the above, higher incentive levels are provided for alternative fuel truck technologies certified to the near zero and zero-emission option emissions standards.

E.7 COMMUNITY BASED INCENTIVES

While all of the District's incentive programs are open to residents of the Valley, there are a number of programs, such as the Heavy-Duty Engine Program and the Truck Replacement Program, which the District designed for Valley businesses. These programs focus on replacing or retrofitting large diesel-powered equipment such as trucks, tractors, and agricultural irrigation pump engines. These programs are highly efficient and extremely cost-effective. Of equal importance, the District currently operates several incentive programs designed for the general public. These programs give the general public the opportunity to contribute to the goal of cleaner air for all Valley residents. The District's community incentives include a wide range of project types and source categories.

E.7.1 Drive Clean in the San Joaquin (Repair and Replace)

Through the Drive Clean in the San Joaquin program the District provides financial incentives to repair or replace eligible high emitting vehicles operating within the Valley. Weekend Tune In Tune Up (TITU) events are held throughout the Valley to provide emissions tests of vehicles to determine the likelihood of failing a smog test. The District provides vouchers to vehicles failing this test, to redeem at participating qualified smog shops for up to \$850 in smog related repairs plus the cost of necessary smog checks and diagnostic time. In addition, opportunities exist to qualify for vehicle replacement incentive funding for 2006 vehicles whose owners meet program eligibility requirements including vehicle model year and household income. To date the Drive Clean in the San Joaquin program has replaced 3,751 high emitting vehicles with new, cleaner vehicles, retired 505 additional vehicles, and repaired over 58,000 vehicles. The Drive Clean in the San Joaquin program has primarily been supported with locally generated incentive funds; however, a portion of the funding for a portion of the vehicle replacement projects was provided by CARB through the Enhanced Fleet Modernization Program (EFMP) as well as the Clean Cars 4 All (CC4A) program.

E.7.2 Clean Green Yard Machine

The Clean-Green-Yard-Machine (CGYM) program reduces emissions at the neighborhood level by providing incentives to residents and commercial lawn care operators who elect to purchase and utilize electric lawn care equipment. Residents can apply for a simple rebate for the purchase of eligible lawn care equipment, or

replace their existing old lawn mower with a new electric unit for a higher incentive. For commercial lawn care operators, the District provides incentives to replace their current gas powered equipment such as edgers, trimmers, blowers, etc. with new electric models. The program has used locally generated incentive funds as well as funding from the State's AQIP. The CGYM program has successfully replaced over 9,000 residential gas lawn mowers with clean electric models and 460 pieces of commercial lawn care equipment with new clean electric models. The CGYM program has also provided over 1,400 rebates to Valley residents, for new electric residential lawn care tools such as trimmers and chainsaws, etc., to encourage residents to purchase electric models instead of gas-powered options.

E.7.3 Drive Clean! Rebate Program

This grant program encourages Valley residents to drive advanced clean vehicles, including electric and other alternative-fueled vehicles. Since the launch of the Drive Clean! Rebate Program in March 2012, the District has issued over 17,300 rebates, totaling more than \$47.6 million in grant funding.

E.7.4 Public Benefit Grants Program

The Public Benefit Grants Program provides funding to Valley cities, counties, and other public agencies for a wide variety of clean-air, public-benefit projects. Eligible applicants are cities, counties, special districts (e.g. water districts and irrigation districts), and public educational institutions (e.g. school districts, community colleges, and state universities) located within the Valley. In April 2018, the District's Governing Board approved program enhancements that expanded the eligibility of program participants to include Community Action Agencies.

Through the Public Benefit Grants Program Components, the following accomplishments have been achieved:

- **New Alternative Fuel Vehicle Purchase:** \$49.4 million has been awarded for the purchase of clean alternative fuel vehicles such as zero-emission motorcycles, plug-in electric vehicles, and all-electric off-road utility terrain vehicles
- **Enhanced Transportation Strategies:** \$5.7 million has been awarded to support local projects that incorporate advanced transit and transportation strategies that reduce emissions such as large-scale bicycle networks and bus rapid transit
- **Alternative Fuel Infrastructure:** \$8.8 million has been awarded to support the installation of new NG fueling infrastructure or expansion of existing in-use stations to further the use of NG vehicles, and transit electrical vehicle infrastructure
- **Community Improvement Projects that Reduce Vehicle Use Emissions:** \$4.8 million has been awarded to support affordable housing projects that implement mitigation measures to reduce vehicle miles traveled from tenants

E.7.5 REduce MOtor Vehicle Emissions (REMOVE)

The REMOVE program provides incentives for specific projects that will reduce the Valley's motor vehicle emissions, including e-mobility (video-telecommunications), bicycle infrastructure, alternative fuel vehicle mechanics training, and public transportation subsidies. The District has funded over 70 projects for over \$3.8 million. Types of projects that have been funded include the construction of new Class I and II bikeways, subsidizing transit passes for new riders, and the installation of new electronic operating systems to allow the general public to pay bills and apply for permits and licenses online in lieu of driving to an office. The program allocates funds to cost-effective projects that have the greatest motor vehicle emissions reductions resulting in long-term impacts on air pollution problems in the Valley. All projects must have a direct air quality benefit in the Valley.

E.7.6 Vanpool Voucher Incentive Program

The Valley is an expansive region and many of its residents make long commutes for work on a daily basis. To offset some of these miles traveled, the Vanpool Voucher Incentive program provides incentives to Valley residents to participate in vanpools in lieu of using single occupant vehicle commutes to work. The program encourages commuter rideshare practices among frequent long distance riders (greater than 20 miles) in the Valley. The District has issued over 131,000 vouchers to Valley commuters for \$4.8 million.

E.7.7 Charge Up! Program

To supplement the Drive Clean! Rebate Program, the District recently launched the Charge Up! Program, which provides funding for the purchase and installation of publically accessible electric vehicle (EV) chargers. EV charging infrastructure is severely lacking in the Valley in comparison to other regions of the state, making it difficult for the technology to grow and sustain in the Valley as residents are hesitant to purchase EVs without the ability to easily refuel. The program aims to address these concerns of existing EV owners and promote the use of EVs with potentially new consumers. Since the launch of the program in June 2015, the District has awarded more than \$6.5 million in incentives for the siting and installation of 351 level 2 and level 3 electric vehicle chargers.

E.8 TECHNOLOGY ADVANCEMENT

Despite major reductions in emissions and corresponding improvements in air quality, the San Joaquin Valley continues to face difficult challenges in meeting the federal ambient air quality standards. Achieving attainment of EPA's increasingly stringent ambient air quality standards will require the development and implementation of transformative zero/near-zero emissions technology over the coming decades.

On March 18, 2010, the District's Governing Board approved the District's Technology Advancement Program (TAP), a strategic and comprehensive program to identify, solicit, and support technology advancement opportunities. The program's primary goal has been to advance technology and accelerate the deployment of innovative clean air technologies that can bring about emission reductions as rapidly as practicable. To date, the District has undergone four rounds of Request for Proposals (RFPs) resulting in the successful demonstration of numerous innovative technologies.

To encourage the development of technologies in source categories critical to the Valley's attainment goals, the District's Governing Board established technology focus areas on alternatives to open burning, renewable energy, waste solutions, and mobile sources. To date, the District has completed four Technology Advancement Program competitive funding RFPs, receiving over 135 proposals for clean technology demonstration projects through these RFPs. In total, the District's Governing Board has approved 35 of the proposed projects for total funding of over \$12 million, with successful demonstrations of zero-emissions yard trucks, electric composting, ultra-low NOx biogas engines, and other technologies.

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