
DIESEL EMISSIONS REDUCTION ACT (DERA) FIFTH REPORT TO CONGRESS

Highlights of the Diesel Emissions Reduction Program
2008 - 2018



ACRONYMS AND ABBREVIATIONS

ARRA	American Recovery and Reinvestment Act of 2009
CO ₂	Carbon Dioxide
DERA	Diesel Emissions Reduction Act
DOC	Diesel Oxidation Catalyst
DPF	Diesel Particulate Filter
EPA	Environmental Protection Agency
HC	Hydrocarbons
NO _x	Nitrogen Oxides
PM	Particulate Matter
RFA	Request for Applications
VW	Volkswagen

PHOTO CREDITS

All photos in this report were taken by DERA funding recipients, EPA staff managing DERA awards, or EPA Chief Photographer Eric Vance, unless otherwise noted.

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EXECUTIVE SUMMARY

From transportation to energy generation, the diesel engine powers almost every sector of the American economy. Due to improved EPA diesel engine regulations and emissions standards over the past few decades, engines currently coming off the manufacturing line are now sixty times cleaner¹ than before. However, despite these tighter standards for new engines, the nearly eight million legacy diesel engines already in use continue to emit large amounts of PM_{2.5}² and NO_x.³ These air pollutants contribute to serious public health problems like asthma, lung disease, and various other cardiac and respiratory illnesses, which result in thousands of premature deaths, millions of lost workdays, and numerous other negative health impacts every year in the United States.

EPA's decades-long effort to reduce criteria pollutants, air toxics, and other harmful emissions from diesel fuel used in transportation has resulted in significant health and environmental benefits while advancing technology and minimizing cost. These benefits are a result of several programs that address diesel emissions and protect public health and air quality, including the Diesel Emissions Reduction Act (DERA) program.

A Decade of DERA

The “Diesel Emissions Reduction” program was originally proposed as the Diesel Emissions Reduction Act of 2005 by Senator Thomas Carper (DE) and the late Senator George Voinovich (OH) in June 2005. It was favorably voted out of the Environment and Public Works (EPW) Committee in September of that year and incorporated into The Energy Policy Act of 2005, thereby creating a financial assistance program dedicated to reducing diesel emissions—known as DERA. Enjoying bi-partisan support, the Diesel Emissions Reduction Act of 2010 reauthorized the program in early 2011. Most recently, in 2020, current EPW Committee Chairman Carper, then EPW Committee Chairman John Barrasso (WY), Senator James Inhofe (OK), current Ranking Member Shelley Moore Capito (WV) and then Clean Air and Nuclear Safety Subcommittee Ranking Member Sheldon Whitehouse (RI) were joined by their colleagues in the House of Representatives, Energy and Commerce Committee Chair Frank Pallone (NJ), Ranking Member Cathy McMorris Rodgers (WA), Subcommittee Chair Paul Tonko (NY), former Subcommittee Ranking Member John Shimkus (IL), current Ranking Member David McKinley (WV), Representatives Doris Matsui (CA), Billy Long (MO), Alan Lowenthal (CA) and Rob Wittman (VA) to collaborate on the latest provisions which reauthorized DERA through fiscal year 2024. Thanks to the efforts of these members of Congress, and the many stakeholders that have contributed their expertise to the program, DERA has provided years of environmental, economic, and public health benefits. This Report to Congress covers a decade's worth of benefits resulting from DERA funding.

The DERA program, originally authorized under the [Energy Policy Act of 2005](#), was reauthorized in the [Diesel Emissions Reduction Act of 2010](#) and in the [Consolidated Appropriations Act, 2021](#). DERA enables EPA to offer funding to accelerate the upgrade and turnover of legacy diesel fleets and is the only Federal government program dedicated to addressing legacy engines. The DERA program generally targets older, dirtier, diesel engines that lack modern emission control systems to be upgraded with new technologies, such as vehicle and/or engine replacements with new diesel, alternative fuel, and zero emission engines or idle reduction technologies. EPA's [Office of Transportation and Air Quality](#) administers the DERA program.

¹ <https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockkey=P100O9ZZ.pdf>

² PM_{2.5} will be referred to as PM for the rest of the report.

³ “Legacy diesel engines” are defined by the DERA program as the operating nonroad diesel and medium to heavy-duty highway diesel engines with engine model years 2009 and earlier. Previously, DERA defined legacy engines as 2006 and earlier, but this has been expanded to include 2007-2009 engines which do not meet current emission standards. The legacy diesel engine population estimate in this report is derived from EPA's MOVES3.0.1 model vehicle data for onroad and offroad equipment.

EPA prioritizes diesel emissions reduction projects that provide immediate and lasting health and environmental benefits while targeting areas of greatest need. The [DERA legislation](#) emphasizes maximizing health benefits, serving areas of poor air quality, such as non-attainment areas for PM and ozone, and conserving diesel fuel. Additionally, DERA supports environmental justice by prioritizing emissions reductions in areas receiving disproportionate impacts, particularly from fleets operating in areas designated by the Administrator as poor air quality areas. The graphic below highlights categories to be discussed in detail on the tangible benefits from the DERA program, since the first grants awarded from the program in 2008.



Funding opportunities for diesel emissions reduction projects are provided through an annual appropriation by Congress to DERA. EPA awarded the first DERA grants in 2008 and continues to award DERA grants and rebates each fiscal year. The Fourth Report to Congress, published in 2018, covered results from the DERA program for fiscal years 2008 to 2016. The following pages in this Fifth Report to Congress will discuss results from DERA for two additional fiscal years, 2017 and 2018, broken down by program funding opportunities. *Note: EPA has continued to award funding for fiscal years 2019 and 2020. A summary on these fiscal years is included in the 'Looking Ahead for the DERA Program' section of this document and will be covered in more detail in the next Report to Congress when these projects are finalized or close to completion.*

EXHIBIT 1: DERA OVERVIEW AND FUNDING OPPORTUNITIES



This 5th Report to Congress includes DERA data from 2008 to 2018 on awards and vehicles funded, emission pollutants reduced, and other program impacts.



DERA provides project funding to eligible entities to achieve significant reduction in diesel emissions in terms of pollution produced and diesel emissions exposure to protect human health and improve air quality.



Eligible diesel vehicles, engines, and equipment may include buses, heavy-duty highway vehicles, marine engines, locomotives, and nonroad engines, equipment, or vehicles.



Eligible diesel emissions reduction solutions include certified upgrades or replacements, verified idle reduction or aerodynamic technologies, verified low rolling resistance tires, and verified retrofit technologies.



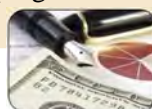
DERA has four current grant and rebate program funding opportunities:



State Grant Program



School Bus Rebate Program



National Grant Program













Tribal Grant Program

DERA PROGRAM OVERVIEW: FISCAL YEARS 2008 - 2018

The DERA program has achieved the following outcomes and range of benefits:

EXHIBIT 2: DERA PROGRAM OUTCOMES AND ACCOMPLISHMENTS⁴ (FISCAL YEAR 2008 TO FISCAL YEAR 2018)

Investment of DERA Program		Emission and Fuel Reductions	
	\$801 million funds appropriated		491,000 tons of NO _x
	73,700 engines or vehicle retrofitted or replaced		16,800 tons of PM
	Approximately \$8 billion in monetized health benefits		65,600 tons of carbon monoxide
	54% of projects targeted to areas with air quality challenges		5,307,100 tons of carbon dioxide
	2.1 to 1 leveraging of funds from non-federal sources		520 million gallons of diesel fuel saved

Each fiscal year, as stipulated in the [2005 Energy Policy Act](#), 30% of the DERA appropriation is allocated to the states and territories to fund programs for diesel emissions reduction projects. The remaining 70% of the DERA appropriation is used for competitive grants and rebates. The following chart shows the total DERA appropriation by fiscal year from 2008, when the first awards were made, through 2018.

Management and Oversight

Up to one percent of the DERA appropriation supports management and oversight (M&O) of the program. M&O funding may be used for outreach, the Diesel Emissions Quantifier (DEQ) to calculate diesel emissions benefits, grant tracking and analysis efforts, and other contracts that support and strengthen the DERA program administration.

EXHIBIT 3: DERA APPROPRIATION FUNDING (\$ M) BY FISCAL YEAR (FISCAL YEAR 2008 TO 2018)



⁴ Vehicle and engine information, health benefits, and emissions and fuel reductions included in this report are estimates. DERA grant and rebate recipients faced serious economic uncertainty at the start of the COVID-19 pandemic. To help accommodate this uncertainty, EPA offered extensions to open grants and rebates. Approximately 12% of DERA diesel emission vehicle records for fiscal years 2008 to 2018 in this report are considered 'proposed' records until the grant or rebate is closed and final vehicle data is submitted to EPA. After closeout, 'proposed' records will be updated to 'final' records to be included in future reports.

CLIMATE IMPACT MITIGATION AND FUEL SAVINGS

DERA projects awarded from fiscal years 2008 to 2018 are estimated to reduce 5,307,100 tons of carbon dioxide (CO₂) over the lifetime of the affected engines. In addition, these projects saved over 500 million gallons of diesel through the implementation of idle reduction and fuel-efficient technologies.

DERA projects can also provide immediate black carbon (BC) reductions by reducing PM emissions from the legacy diesel fleet. [Black carbon](#) is emitted by older diesel engines and is a key component of fine particulate matter (PM) air pollution. Roughly 7% of PM emissions from older diesel engines in the U.S. consist of BC. Black carbon also contributes to climate change by absorbing light and heating the atmosphere, which exacerbates global warming. Aside from the adverse environmental effects, BC can also cause poor health and premature death. Therefore, reducing transportation-related PM emissions is critical to reducing black carbon, the associated adverse health impacts, and finally the rate of warming occurring globally.⁵ DERA projects have reduced a total of 16,800 tons of PM over the lifetime of the projects covered in this report.

DERA funds zero emission vehicle engine and equipment replacements as part of its suite of approved projects. In 2016, EPA increased the federal cost share to 45%, and, in 2020, increased the rebate amount for zero emission school buses to \$65,000, the largest rebate available. EPA has funded more than 650 zero emission engine and vehicle replacements between 2008 and 2018 and expects to fund more due to increased applicant interest and more commercially available zero emission technologies.

AIR QUALITY AND PUBLIC HEALTH BENEFITS

DERA grants have funded projects that provide immediate and lasting health and environmental benefits. More than 73,700 engines in vehicles, vessels, locomotives, or other pieces of equipment were replaced or retrofitted with DERA funds during fiscal years 2008 to 2018. DERA projects during these years are estimated to reduce nearly 491,000 tons of NO_x (a precursor to secondarily-formed PM_{2.5}) and 16,800 tons of PM over the lifetime of the affected engines. EPA estimates that the total lifetime value of PM-related health benefits attributed to these reduced emissions range from \$8 billion to \$8.6 billion and account for approximately 850 fewer premature deaths over this same period. These diesel emission reduction projects are also estimated to reduce 19,000 tons of hydrocarbon (HC) and 65,600 tons of carbon monoxide (CO) over the lifetime of the affected engines.^{6,7}

⁵ U.S. EPA 2017 National Emission Inventory Modeling Platform v1. Fine particles (PM_{2.5}), which are 2.5 micrometers in diameter or smaller, are produced from all types of combustion, including motor vehicles, power plants, residential wood burning, wildfires, agricultural burning, and some industrial processes. Black carbon is a component of PM_{2.5}.

⁶ When a grant is awarded, estimated emissions reduction are calculated. As the grant progresses, DERA grant recipients are required to submit quarterly programmatic progress reports to EPA. Once a grant is completed, the recipient submits a final programmatic report which includes an overview of the project's implementation and a final accounting of project expenses and results. EPA evaluates the reports for consistency and accuracy. EPA estimates emissions reduction for each project through our web-based Diesel Emissions Quantifier (DEQ) using the information in the final grant reports. The DEQ relies on EPA emission models like MOVES3.0.2 as well as documents like regulatory impact analyses for its calculations. After the emission reductions are calculated, the information is tracked internally along with all grant recipient information. Final emissions data for each grant is totaled for each fiscal year and program.

⁷ EPA uses a reduced-form benefit-per-ton (BPT) approach as the basis for our assessment of PM_{2.5}-related health benefits. In this approach, the PM_{2.5}-related BPT values are the total monetized human health benefits (the sum of the economic value of the reduced risk of premature death and illness) that are expected from reducing one ton of directly emitted PM_{2.5} or a PM_{2.5} precursor, such as NO_x. For the mobile source emissions controlled by the DERA program, we apply national PM_{2.5}-related BPT values derived from those recently published in Wolfe et al., 2019 and available for download here: <https://www.epa.gov/benmap/mobile-sector-source->



Credit: FY18 National Program, Southeast Missouri Regional Planning Commission, Mississippi Lime Clean Diesel Project

EXHIBIT 4: DIESEL EXHAUST HEALTH EFFECTS

PM and NOx

Direct emissions from diesel engines, especially PM and NOx, and other air toxics, contribute to a wide variety of health problems. NOx contributes to the formation of PM and ozone through a series of chemical reactions. PM has been associated with an increased risk of premature mortality, increased hospital admissions for heart and lung disease, and increased respiratory symptoms. Long-term exposure to components of diesel exhaust, including diesel PM and diesel exhaust organic gases, is likely to pose a lung cancer hazard. Exposure to ozone can aggravate asthma and other respiratory symptoms, resulting in more asthma attacks, additional medication, lost school and workdays, increased emergency room visits and hospitalizations, and even premature mortality. Repeated exposure to ozone can increase susceptibility to respiratory infection and lung inflammation and can aggravate preexisting asthma. At sufficient concentrations, ozone can even cause permanent damage to the lungs, resulting in the development of chronic respiratory illnesses. Children, outdoor workers, those who exercise outside, people with heart and lung disease, and the elderly are most at risk.

DERA grants fund a range of technologies, from zero emission vehicles to new diesel vehicles which can reduce emissions up to 95%. PM and NOx controls have been the primary focus for the time of this Report. For more information on health effects, see [Health Assessment Document for Diesel Engine Exhaust](#), which examines information regarding the health hazards associated with exposure to diesel engine exhaust.

apportionment-air-quality-and-benefits-ton. EPA estimates that the total lifetime value of PM_{2.5}-related health benefits from emissions reductions associated with fiscal year 2008 through fiscal year 2018 DERA awards range from \$8 billion to \$8.6 billion (in 2020 dollars). This range reflects the use of either a three or seven percent discount rate to account for a lag between the change in PM exposures and the total realization of changes in mortality effects (the “mortality cessation lag”). Estimation of total lifetime benefits also assumes either a three or seven percent discount rate. EPA estimates that the emissions reductions achieved over the lifetime of the affected engines will help avoid approximately 850 premature deaths. Premature deaths avoided were estimated using PM-related mortality incidence-per-ton estimates derived from Wolfe et al., 2019. The mortality incidence-per-ton estimates assume a mortality risk estimate derived from the American Cancer Society cohort study (Krewski et al., 2009). In the prior DERA Fourth Report to Congress, health benefits were calculated using two different mortality studies – the American Cancer Society cohort study (Krewski et al., 2009) and the Harvard Six Cities study (Lepeule et al., 2012). After a recent review of the health impacts literature for the 2021 Revised Cross-State Air Pollution Rule Update for the 2008 ozone National Ambient Air Quality Standards Final Rulemaking, the Agency retained use of the American Cancer Society cohort and removed the Harvard Six Cities study from its analyses. More information regarding EPA’s PM-related health benefits methodology can be found here: https://www.epa.gov/sites/default/files/2021-03/documents/estimating_pm2.5-_and_ozone-attributable_health_benefits_tsd.pdf.

According to EPA's calculations of health benefits, diesel emissions reduction projects are cost-effective, with monetized health benefits estimated to exceed federal funding by a factor of 10. Each federal dollar invested in diesel emissions reduction projects has leveraged an average of \$2.10 in funding from other government agencies, private organizations, industries, and nonprofit organizations to amplify project results. Federal dollars invested in DERA ultimately resulted in over 520 million gallons of fuel saved over the lifetime of the vehicles. DERA funding has accelerated upgrades and replacements for diesel vehicles and equipment, improving the public and private diesel fleets that are critical to the economy.

ENVIRONMENTAL JUSTICE FOCUS

Environmental justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. DERA supports environmental justice by prioritizing emissions reductions in areas that suffer disproportionate impacts from diesel fleets to provide an environment where all people enjoy the same degree of protection from environmental and health hazards.

Priority for DERA funding is given to projects which promote environmental justice.

Disproportionate and adverse environmental and human health impacts result when greater pollution, climate, or cumulative burdens affect people of color, low income, tribal and indigenous, or other vulnerable communities or populations. The impacts may result from historical trends and policy decisions. DERA competitive grant applications are awarded points for how the project benefits these communities and populations, as well as to the extent to which the project addresses engagement, especially with local residents, to ensure their meaningful participation with respect to the design, project planning, and performance of the project.

Under DERA, goods-movement projects are also prioritized because they tend to take place in communities that are disproportionately impacted by higher levels of diesel exhaust, such as those near ports, rail yards, and distribution centers. In fiscal year 2017, awarded grants for seaport projects totaled approximately \$14.5 million.⁸ In addition, \$9.3 million was awarded for goods movement projects near seaports, and \$1.7 million for airports. In fiscal year 2018, approximately \$19 million was awarded for projects in and around ports, approximately \$3 million was awarded for airport projects, and \$4 million for locomotive projects.⁹ Diesel emissions reduction projects lessen exposure for people living and working in these communities, and the improved air quality provides immediate health benefits. DERA promotes environmental justice by prioritizing emissions reductions in areas that suffer disproportionate and adverse impacts from diesel fleets to provide an environment where all people enjoy the same degree of protection from environmental and health hazards.

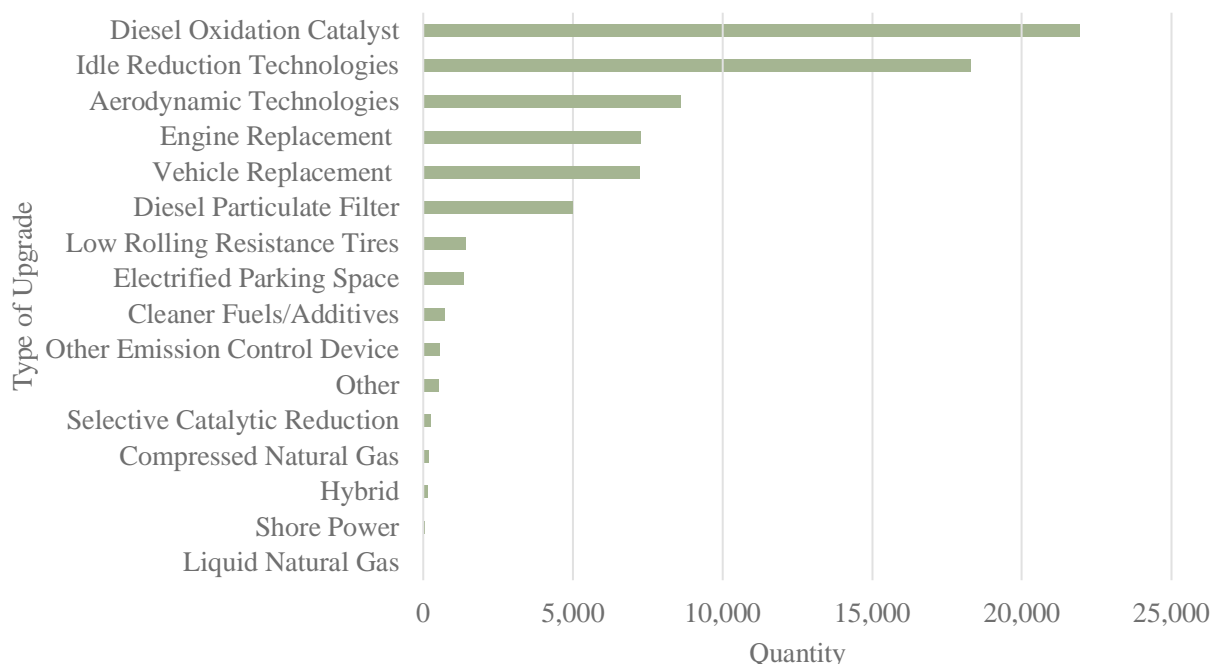
VEHICLES AND EQUIPMENT FUNDED BY SECTORS AND TECHNOLOGIES

In the early years of DERA, many applicants requested funding primarily for retrofits of on-highway vehicles, especially long-haul trucks, and school buses, and EPA funded thousands of retrofits. As the DERA program progressed over the years and EPA's on-highway 2007 standards were implemented, applicant interest shifted towards the replacement of vehicles, vessels, and equipment in ports and rail yards. Exhibit 5 below shows the most frequently funded technologies for fiscal years 2008 through 2018.

⁸ https://www.epa.gov/sites/default/files/2018-04/documents/usepa_fy17_environmental_justice_progress_report.pdf

⁹ https://www.epa.gov/sites/default/files/2019-08/documents/ejprogress_report_fy2018-11.pdf

EXHIBIT 5: DERA FUNDED PROJECTS - TECHNOLOGY TYPE BY QUANTITY
(FISCAL YEAR 2008 TO 2018)



DERA has funded projects in diverse sectors and project locations as noted in Exhibit 6. The sector with the largest number of upgrades, at 43%, is school buses, directly helping provide the safest transportation to and from school. Freight sector projects, at 36%, are comprised of various vehicles, including over 17,000 long-haul combination truck upgrades. Construction, port, municipal, other (industrial, mining, rail yard, and stationary), agriculture, airport, and transit account for the remaining 21% of funded sector upgrades.

EXHIBIT 6: DERA FUNDED PROJECTS: UPGRADES BY SECTOR
(FISCAL YEAR 2008 TO 2018)

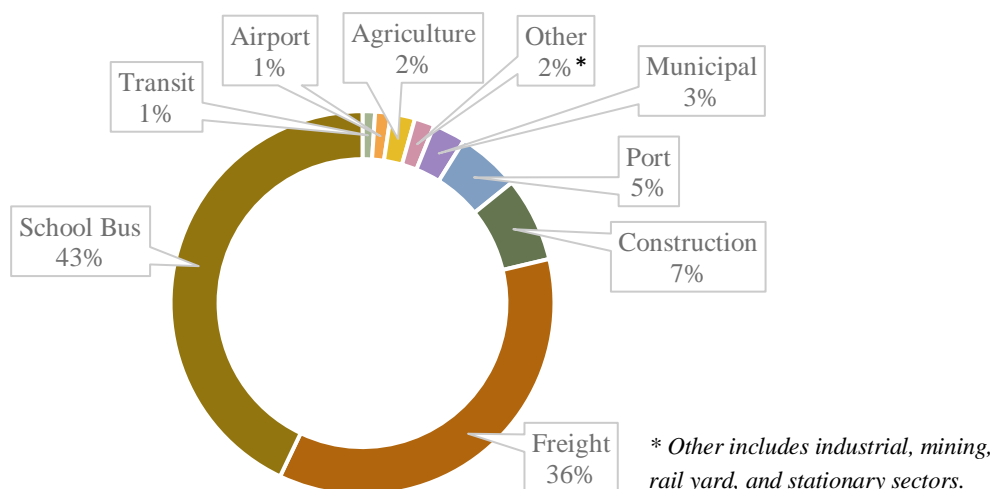
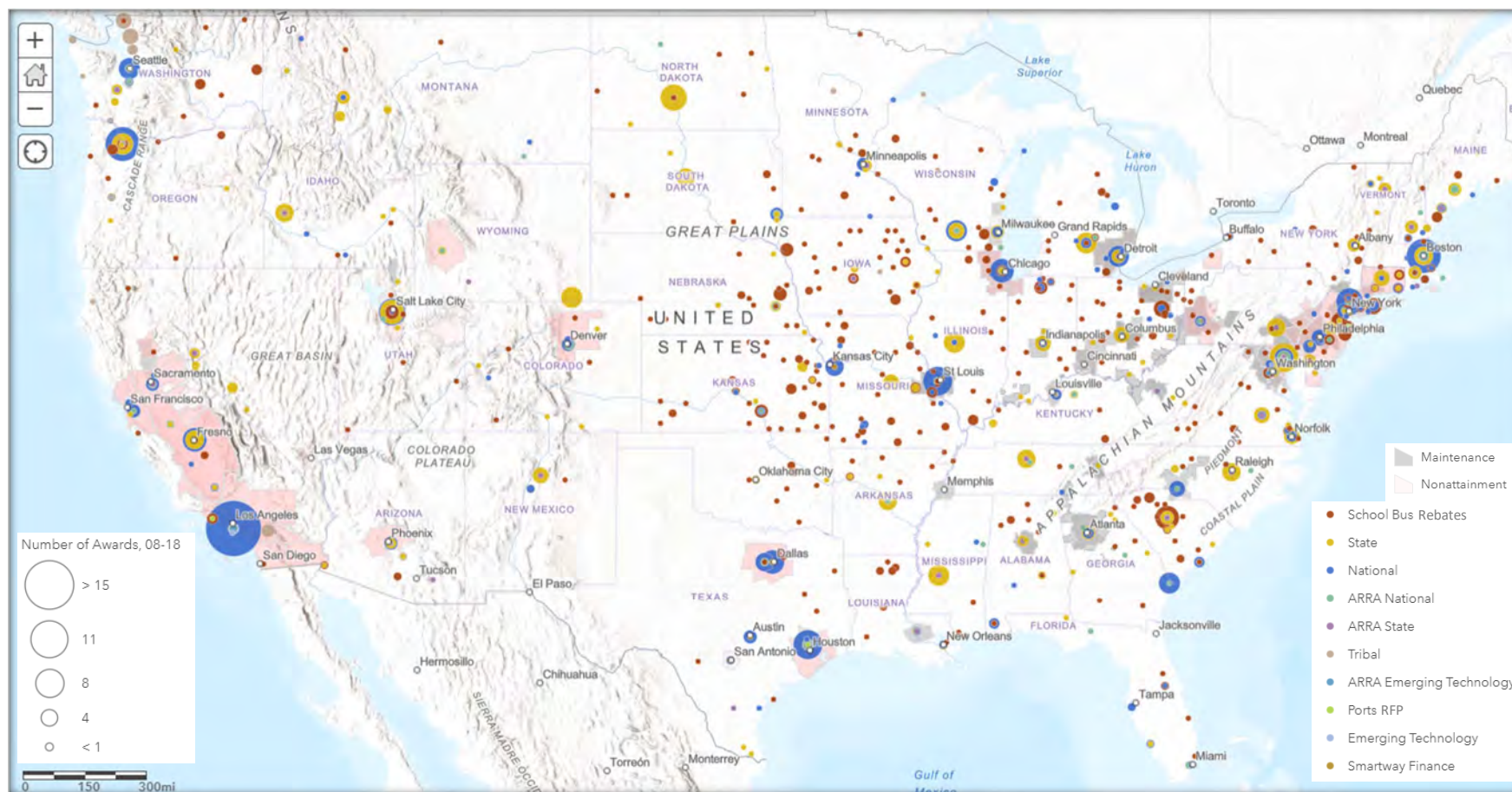


EXHIBIT 7: FUNDED DERA GRANTS AND REBATES BY LOCATION AND COUNTY LEVEL AREAS (2008 TO 2018)



The maps above and below provide a visual summary of the number of DERA awards by place of performance (county) for all DERA programs, from 2008-2018. The primary area where affected vehicles/engines operate, or the primary area where the emissions benefits of the project will be realized, is defined as the “project area”. Nonattainment areas for criteria pollutants are delineated, as identified in the EPA Green Book, which provides detailed information about area National Ambient Air Quality Standards (NAAQS) designations, classifications, and nonattainment status. To receive points under one evaluation criteria of the DERA RFA, vehicles or equipment proposed for funding must be operated a majority of the time in one of these priority diesel PM areas that contains at least one census tract where the modeled ambient diesel PM concentration from the 2014 National Air Toxics Assessment (<https://www.epa.gov/national-air-toxics-assessment>) is above the 80th percentile ($0.68 \mu\text{g}/\text{m}^3$) for census tracts nationwide. NATA is a screening tool and there are limitations and uncertainties; see: <https://www.epa.gov/national-air-toxics-assessment/natalimitations>.



DERA PROJECTS PRIORITIZED IN LOCATIONS WITH POOR AIR QUALITY

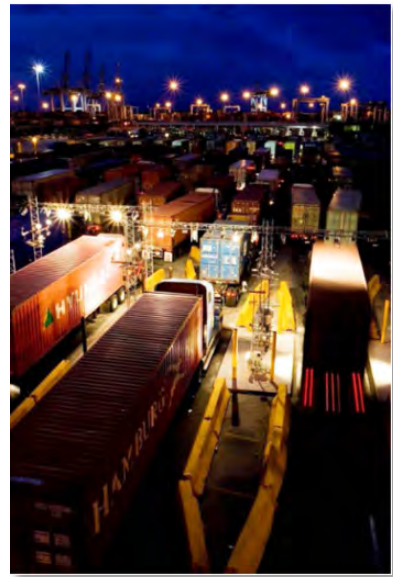
DERA grants and rebates have been funded nationally with priority given to vehicles, engines, and equipment operating in areas designated as having poor air quality.¹⁰ Ever since the funding of the first DERA grants in 2008, EPA has focused attention on PM and ozone nonattainment areas and areas with elevated air toxic exposure to achieve maximum benefits for every dollar spent. A total of 54% of projects awarded in fiscal years 2008 to 2018 were located in areas with these air quality challenges.

¹⁰ To receive points under this criterion, vehicles or equipment proposed for funding must be operated a majority of the time in one or more of the priority project locations based on designations for nonattainment areas or maintenance areas for the following National Ambient Air Quality Standards (sourced from EPA's Green Book of Nonattainment Areas for Criteria Pollutants) and National Air Toxics Assessment (NATA).

LOCAL DEMAND FOR THE DERA PROGRAM

Stakeholders have shown a tremendous amount of interest in EPA-funded diesel emissions reduction projects. Ever since the inception of DERA, funding request amounts have exceeded funding availability. In fiscal years 2017 and 2018, grant and rebate applications requested \$170 million more in funds than available from DERA appropriations. These exceeded funding requests highlight the interest in using the DERA program to meet the nation's need for diesel emissions reduction and fleet turnover incentives.

The DERA grant program is designed to meet individual grantee needs by providing flexibility on eligible diesel vehicles, engines, and equipment allowing a grantee to target vehicle(s) or equipment that best meets their needs and circumstances. EPA is committed to the long-lasting engagement of local communities through unique diesel emissions reduction projects that will be able to continue to provide benefits after the project period has closed. Cost-effective, targeted to disproportionately affected communities, and supported, the DERA program continues to evolve with market and stakeholder demands.



Credit: FY17 National Program, Georgia Ports Authority, Drayage Truck Rebate Replacement

THE DERA OPTION IN THE VOLKSWAGEN SETTLEMENT

The U.S. government and Volkswagen (VW) resolved allegations that VW violated the Clean Air Act by selling approximately 590,000 vehicles equipped with defeat devices. As part of this settlement, VW was required to provide \$2.7 billion for the 2.0-liter violating engines and \$225 million for the 3.0-liter violating engines to an environmental trust to fully remediate the amount of excess NO_x emissions from the affected vehicles. The two mitigation trust agreements (one for states, Puerto Rico, and the District of Columbia, and one for federally recognized Indian tribes) are administered by an independent trustee. The purpose of the mitigation trusts is to fund mitigation actions that replace diesel emission sources with cleaner technology, thereby offsetting the excess emissions of NO_x caused by the violating 2.0- and 3.0-liter vehicles. The trust agreements, effective October 2, 2017, provided a broad array of ten Eligible Mitigation Actions (EMAs) that beneficiaries (states, Puerto Rico, District of Columbia and Indian tribes) could implement. EMAs 1-9 may be implemented directly by the beneficiary.

Environmental Mitigation Action 10, the Diesel Emission Reduction Act (DERA) Option, allows beneficiaries to use mitigation trust funds under specific EPA DERA grants. Beneficiaries may use trust funds for their nonfederal voluntary match, pursuant to Title VII, Subtitle G, Section 793 of the DERA program in the Energy Policy Act of 2005 (codified at 42 U.S.C. §16133) or Section 792 (codified at 42 U.S.C. §16132). Starting in fiscal year 2017, Tribes had the option to use their allocation of the VW Environmental Mitigation Trust funds to match DERA Tribal grants. This allows beneficiaries to use such trust funds for actions not specifically enumerated in the consent decree, but otherwise eligible under DERA pursuant to all DERA guidance documents available through the EPA. Trust funds will not be used to meet the nonfederal mandatory cost share requirements, as defined in applicable DERA program guidance, of any DERA grant. For more information on the Volkswagen Settlement and the DERA option, visit [Volkswagen \(VW\) Settlement: DERA Option | US EPA](#).

THE DERA PROGRAM

2017 - 2018

\$129 MILLION FUNDED ACROSS THE COUNTRY IN FISCAL YEARS 2017 AND 2018 TO REPLACE OR RETROFIT NEARLY 5,700 DIESEL ENGINES AND VEHICLES, RESULTING IN EMISSIONS REDUCTIONS OF OVER 17,500 TONS OF NO_x AND 1,300 TONS OF PM.











The following four sections of this report identify recent fiscal year 2017 and 2018 activities for the National grant program, Tribal grant program, State grant program, and School Bus rebate program. The 4th Report to Congress provided detailed

activity data for fiscal years 2014, 2015, and 2016. The remaining sections of this report will focus on fiscal years 2017, 2018¹¹, and beyond, as defined in the reporting requirements in the DERA statute.

In fiscal year 2017 and 2018, EPA funded approximately \$129 million across the country via competitive grants, state grants, and school bus rebates to replace or retrofit approximately 5,700 diesel engines and vehicles. These grants and rebates fund equipment and engines in multiple sectors, including school buses, ports, and freight, and covered a variety of upgrade types, including vehicle and engine replacements.

Vehicle and engine information, health benefits, and emissions and fuel reductions included in this report are estimates. DERA grant and rebate recipients faced serious economic uncertainty at the start of the COVID-19 pandemic. To help accommodate this uncertainty, EPA offered extensions to open grants and rebates. Approximately 85% of DERA diesel emission vehicle records for fiscal years 2017 and 2018 in this report are considered ‘proposed’ records until the grant or rebate is closed and final vehicle data is submitted to EPA. After closeout, ‘proposed’ records will be updated to ‘final’ records to be included in future reports.¹²

EXHIBIT 8: DERA PROGRAM OUTCOMES (FISCAL YEARS 2017 AND 2018)

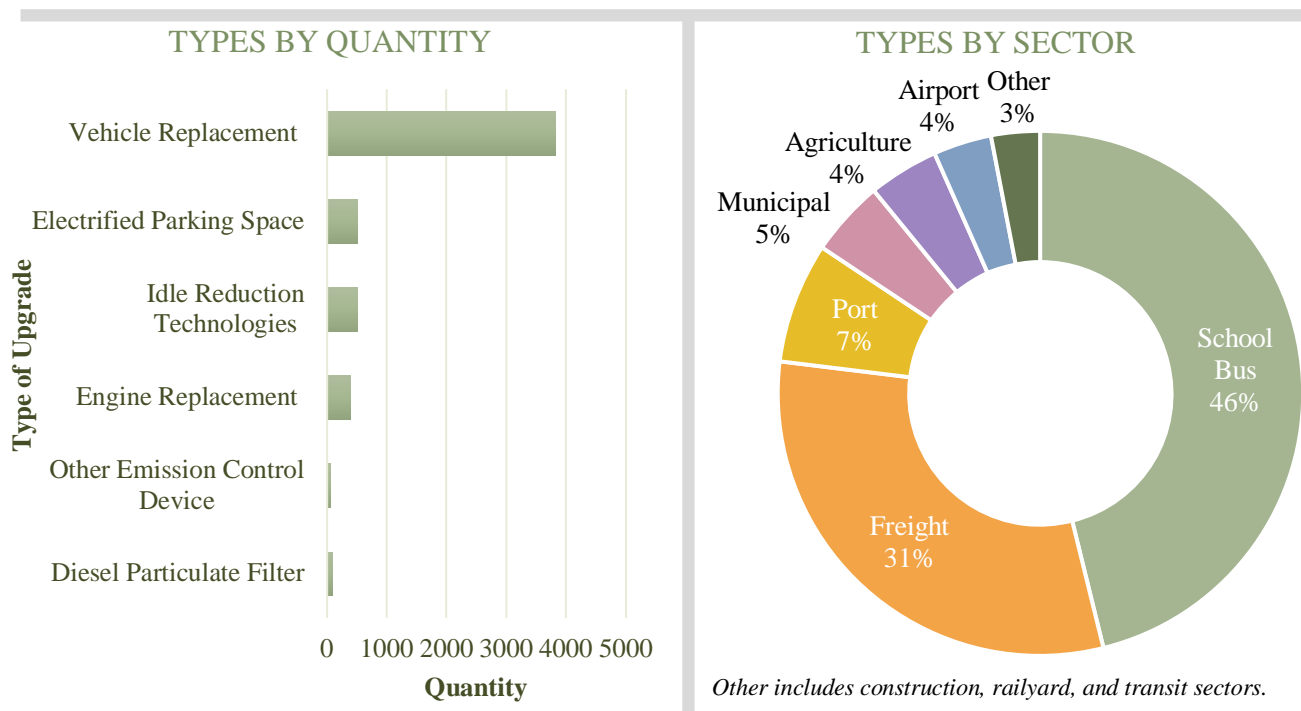
Emission and Fuel Reductions		Investment of DERA Program	
	17,500 tons of NO _x		\$129 million funds awarded
	1,300 tons of PM		84 national competitive grants awarded
	3,600 tons of carbon monoxide		11 tribal competitive grants awarded
	225,400 tons of carbon dioxide		53 of 56 eligible states and territories were awarded grants
	22 million gallons of diesel saved		5,700 engines or vehicle retrofitted or replaced

¹¹ The Tribal grant program combined fiscal years 2018 and 2019 into a single grant competition, indicating that 2019 data is included in the DERA program estimates in this report only for the Tribal grant program.

¹² Program result specifics, like emissions reduction, vary depending on multiple variables, including legal changes, applicant request, and other factors.

Exhibit 8 specifies emission reductions and investment details of the DERA program for fiscal years 2017 and 2018. EPA estimates a reduction of 17,500 tons of NO_x, 1,300 tons of PM, 1,000 tons of HC, 3,600 tons of CO, 225,400 tons of CO₂, and 22 million gallons of diesel fuel over the lifetime of the engines and vehicles funded under fiscal years 2017 and 2018 of the DERA program. See Exhibit 7 for further identification of vehicle and engine upgrades.

EXHIBIT 9: DERA PROJECTS: VEHICLE AND ENGINE UPGRADES (FISCAL YEARS 2017 AND 2018)



DERA NATIONAL GRANTS

2017 - 2018

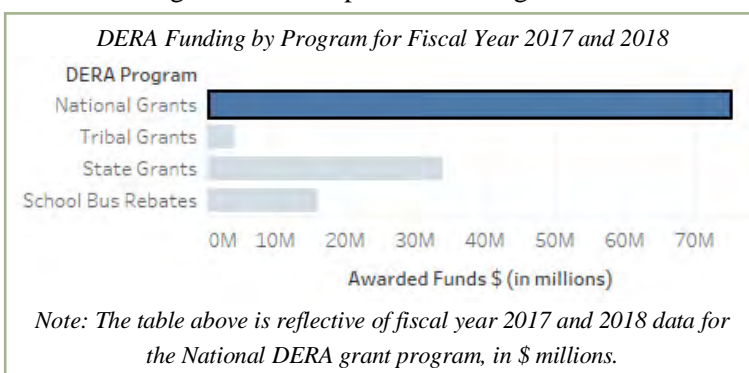
\$74.9 MILLION FUNDED 84 NATIONAL GRANTS ACROSS THE COUNTRY IN FISCAL YEARS 2017 AND 2018 TO REPLACE OR RETROFIT NEARLY 3,000 DIESEL ENGINES AND VEHICLES, RESULTING IN EMISSIONS REDUCTIONS OF OVER 13,000 TONS OF NO_x AND 1,100 TONS OF PM.

EPA's Office of Transportation and Air Quality solicits applications nationwide through the DERA National competitive grant program for projects that achieve significant reduction in diesel emissions.

DERA grants provide funding to eligible

recipients so that they may implement programs which incentivize and accelerate the upgrade or retirement of the legacy diesel fleet. Eligible activities include the retrofit or replacement of existing diesel engines, vehicles, and equipment with EPA and California Air Resources Board (CARB) certified engine configurations and verified retrofit and idle reduction technologies. Aside from the National competitive program, DERA has two other competitive funding opportunities: the DERA School Bus Rebates program, and the DERA Tribal grants program, discussed later in this report. While replacing a school bus is one of many eligible activities under the DERA National grant program, the DERA School Bus Rebates program provides funding only for school bus vehicle replacements. Additionally, states are allocated appropriated DERA funding to implement projects for fleets within their states and details are discussed later in this report.

Applications in the National and Tribal competitions are evaluated based on the extent to which they demonstrate how the project effectively addresses the disproportionate and adverse cumulative impacts (human health, environmental, climate-related and others) that have affected and/or currently affect people/communities of color, low income, tribal, and indigenous populations, and, if applicable, other vulnerable populations such as the elderly, children, and those with pre-existing medical conditions. Evaluation criteria also considers the accompanying economic challenges of these impacts, including the lack of resources or other impediments to addressing the adverse impacts that these communities and/or populations may experience. Applicants must describe the extent to which the project addresses engagement with these communities and/or populations, especially local residents, to ensure their meaningful participation with respect to the design, planning, and performance of the project.



Priority for funding under this program is given to fleets operating in areas designated as having poor air quality and fleets which service goods movement facilities. Further priority for funding is given to projects with outcomes that benefit affected communities, those that engage affected communities in the design and performance of the project, and those which demonstrate the ability to promote and continue efforts to reduce emissions after the project has ended.

DERA NATIONAL PROGRAM FISCAL YEAR 2017 ACTIVITIES

In fiscal year 2017, a total of 91 applications were received requesting over \$86 million, more than twice the available funding. EPA funded 38 national competitive grants to reduce emissions from 800 diesel engines or pieces of equipment for a total of \$31.5 million. The competitive program provided grants for equipment and engines in multiple sectors, including school buses, ports, and freight, and covered a variety of upgrade types, including vehicle and engine replacements.

In fiscal year 2017, EPA awarded **\$31.5 million** on DERA national program competitive grants.

EXHIBIT 10: DERA NATIONAL PROGRAM OUTCOMES (FISCAL YEAR 2017)

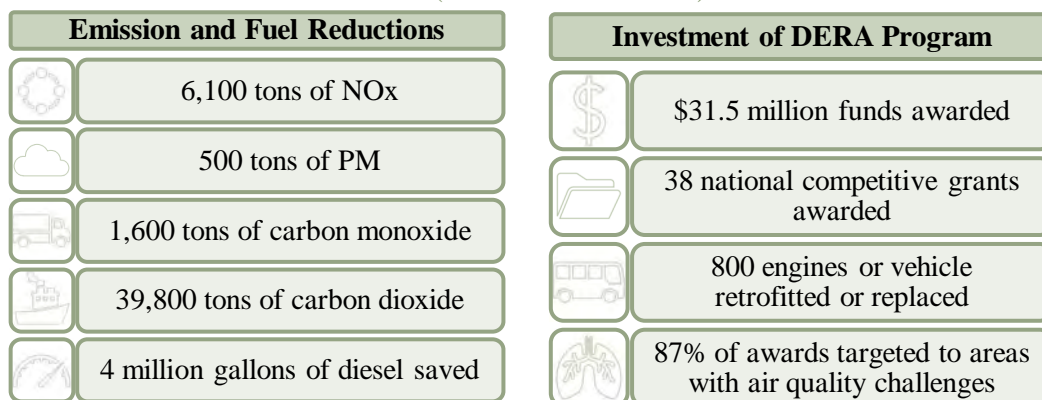
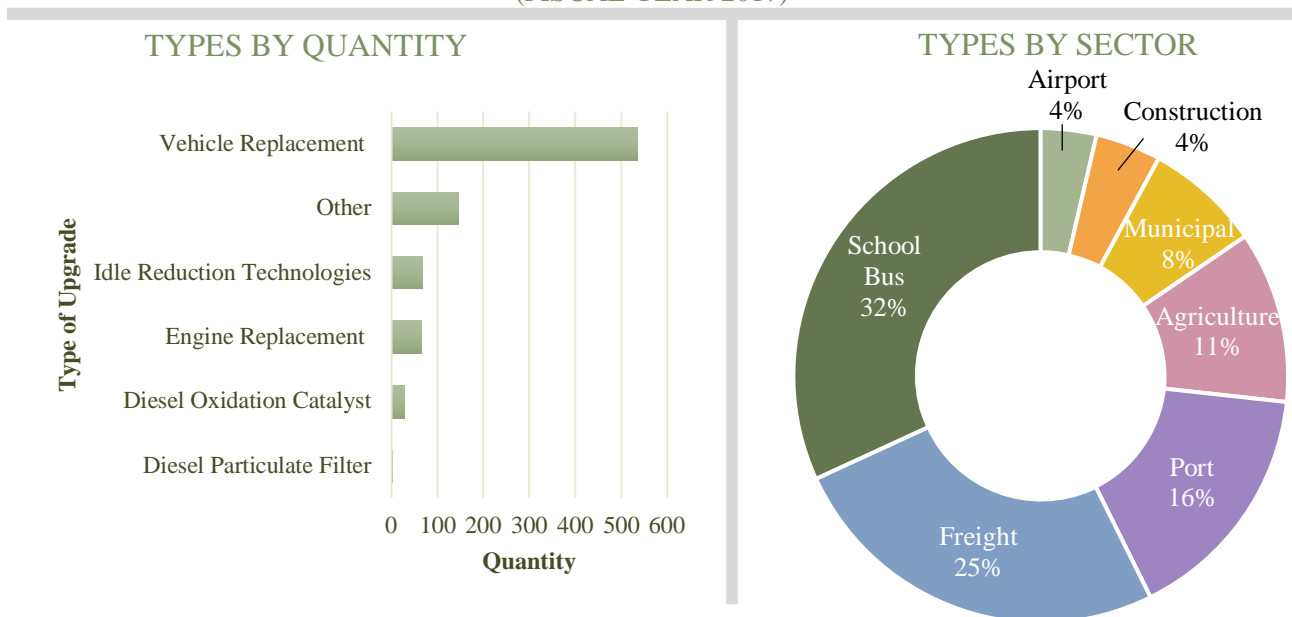


Exhibit 10 specifies emission reductions and investment details of the DERA National program. EPA estimates a reduction of 6,100 tons of NO_x, 500 tons of PM, 300 tons of HC, 1,600 tons of CO, 39,800 tons of CO₂, and 4,000,000 gallons of diesel fuel over the lifetime of the engines and vehicles funded under the fiscal year 2017 National program. See Exhibit 7 for further identification of vehicle and engine upgrades.

EXHIBIT 11: DERA NATIONAL PROJECTS: VEHICLE AND ENGINE UPGRADES (FISCAL YEAR 2017)



DERA NATIONAL PROGRAM FISCAL YEAR 2018 ACTIVITIES

In fiscal year 2018, a total of 84 applications were received requesting approximately \$96 million, more than twice the available funding. In fiscal year 2018, EPA funded 46 national competitive grants to reduce emissions from 2,100 diesel engines or pieces of equipment for a total of \$43.4 million. The competitive program provided grants for equipment and engines in multiple sectors, including school buses, ports, and freight, and covered a variety of upgrade types, including vehicle and engine replacements.

In fiscal year 2018, EPA awarded **\$43.4 million** on DERA national program competitive grants.

EXHIBIT 12: DERA NATIONAL PROGRAM OUTCOMES (FISCAL YEAR 2018)

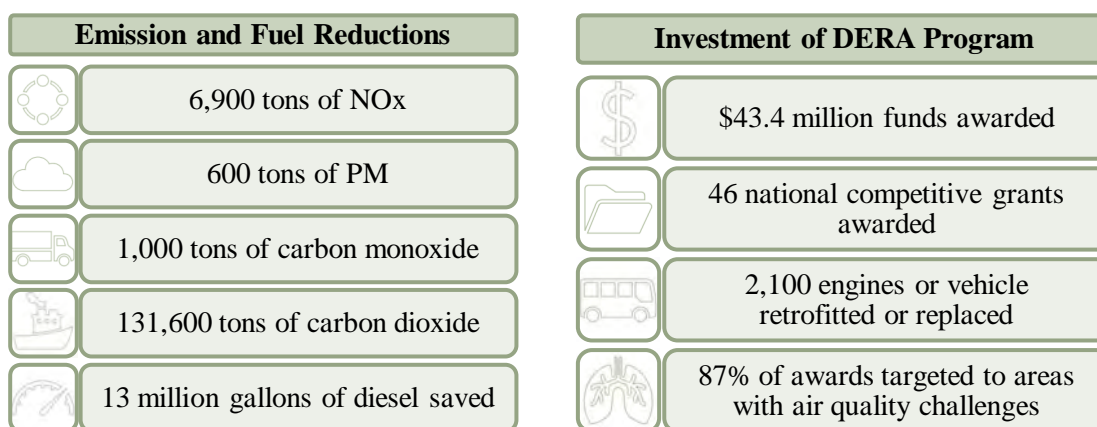
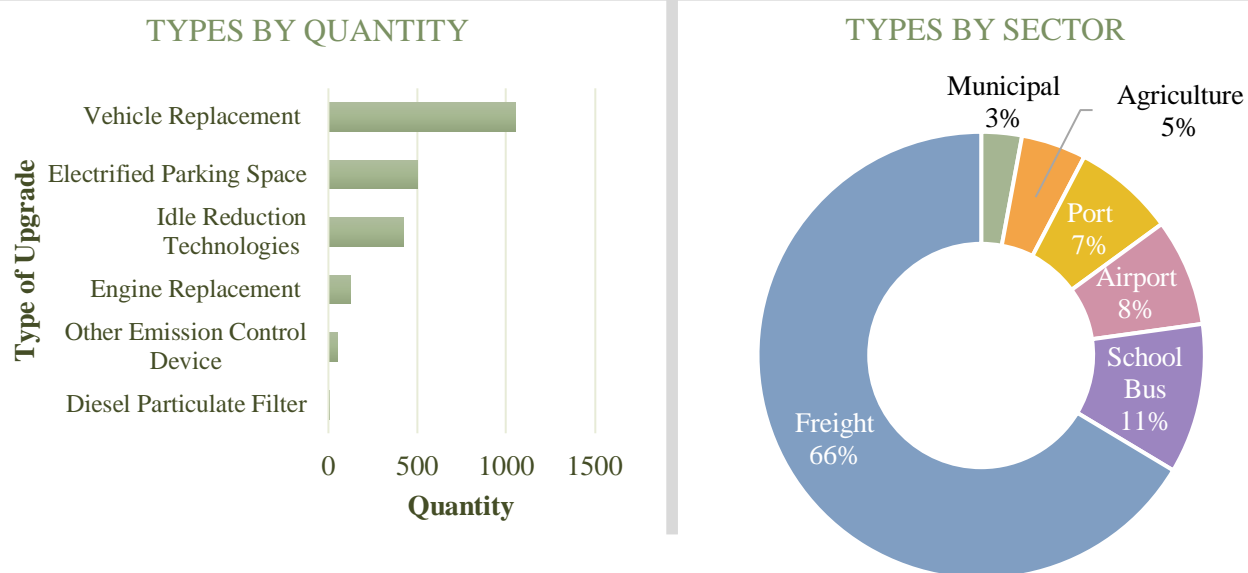


Exhibit 12 specifies emission reductions and investment details of the DERA National program. EPA estimates a reduction of 6,900 tons of NOx, 600 tons of PM, 500 tons of HC, 1,000 tons of CO, 131,600 tons of CO₂, and 13 million gallons of diesel fuel over the lifetime of the engines and vehicles funded under the fiscal year 2018 National program. See Exhibit 13 for further identification of vehicle and engine upgrades.

EXHIBIT 13: DERA NATIONAL PROJECTS: VEHICLE AND ENGINE UPGRADES (FISCAL YEAR 2018)



During fiscal years 2017 and 2018, the DERA National program funded diverse projects in multiple sectors and varied technology upgrade types. While the school bus and freight sectors together accounted for the majority of vehicle and engine upgrades in both 2017 and 2018, airport, agriculture, construction, municipal, and ports accounted for the remaining vehicle and engine upgrades.

MOVING FORWARD – NATIONAL GRANT PROGRAM

EPA continues to target DERA funds to maximize cost-effectiveness and make significant emissions reductions in areas disproportionately exposed to diesel exhaust. The agency continues to target those engines in the remaining fleet that have significant useful life left but are heavy emitters. These engines are often found at ports and are used for goods movement. Each funding opportunity has been crafted to attract and fund the most impactful projects, often in the goods movement sector. These projects may be in urban or rural areas.

For the national competitive program, demand from applicants continues to exceed program resources. During fiscal years 2017 and 2018, applications submitted for the DERA national program totaled \$182 million, leaving more than \$107 million requested from applicants unfunded. The large amount of interest in the program continues to show a demand for older vehicle upgrades from various fleets, such as transit buses, short haul/delivery trucks, refuse haulers, locomotives, agriculture, construction, city/county vehicles, school buses, marine, ports and airports, and long-haul trucks.



Credit: FY17 National Program, Georgia Ports Authority, Drayage Truck Rebate Replacement

CASE STUDY 1

NATIONAL GRANT PROGRAM – FISCAL YEAR 2017

New Hampshire Department of Transportation (NHDOT) Offroad and Construction Equipment Replacements

The New Hampshire Department of Transportation (NHDOT) used \$560,310 from a 2017 DERA National grant to replace old diesel equipment used for roadway maintenance. NHDOT replaced an engine model year 1998 roadway grader with a new Tier 4 John Deere Grader. NHDOT also replaced 18 engine model year 1998-2006 diesel front-end loaders with 18 new Tier 4 John Deere loaders that are used for moving material around the maintenance patrol yards, assisting in operation's construction projects, and loading winter highway maintenance material such as salt and sand into the spreader trucks. The vehicles operate year-round throughout the State of New Hampshire.

NHDOT employs an anti-idling policy that has been in effect since December 2007. All the Department's heavy trucks are set up from the factory with a programmed maximum idle time before the engine shuts down, except for some vehicles such as aerial, cranes, or other trucks, where it is necessary to continue to run. Additionally, all operators of NHDOT vehicles are encouraged to shut off their equipment when not in production mode unless they are operating under certain conditions that require the vehicle to remain on.

NHDOT consistently operates within a shortfall of funding appropriations so the equipment would not have been replaced without the funding provided. The total cost-share from NHDOT was \$1,959,145.

REGION 1

NEW HAMPSHIRE

FRONT-END
LOADERS

ROADWAY GRADER

ANTI-IDLING POLICY



Credit: FY17 National Program, New Hampshire Department of Transportation, Offroad and Construction Equipment Replacements

CASE STUDY 2

NATIONAL GRANT PROGRAM – FISCAL YEAR 2017

Moving Towards Electric for Sustainable and Resilient Supply Chains

The American Lung Association (ALA) recently completed a project in partnership with Waste Management and Firefly Transportation Services, LLC¹³ to reduce harmful diesel emissions in the Cleveland and Columbus, Ohio areas. Funding for this project was awarded to the ALA by EPA through the 2017 DERA National grants program. This project included the replacement of seven old diesel refuse haulers with new CNG refuse haulers for Waste Management in Geauga County, Ohio, and the replacement of three old diesel terminal trucks with zero emission electric terminal tractors for Firefly at the Kraft Heinz distribution center in Franklin County, Ohio. Firefly will operate three Orange EV pure electric terminal trucks to do work formerly accomplished by five diesel trucks. With this deployment, Kraft Heinz plans to virtually eliminate diesel terminal truck emissions at their distribution center.

“This decision by Kraft Heinz demonstrates thoughtful mitigation of the extremely high operational, economic, and environmental costs of using diesel trucks,” said Mike Saxton, Orange EV chief commercial officer. “With this deployment, Kraft Heinz becomes the first site in Ohio to fully commit to pure electric in their heavy duty, Class 8 terminal truck fleet.”



Credit: FY 17 National Program, American Lung Association, Moving Towards Electric for Sustainable and Resilient Supply Chains

REGION 5

OHIO

ELECTRIC
TERMINAL
TRACTOR

WASTE
MANAGEMENT

SUSTAINABILITY

¹³ Firefly's operation at the Kraft Heinz location has recently been acquired by Lazer Spot, INC, a logistics company that shares Firefly's commitment to creating a more sustainable and resilient supply chain for its business by opting for electric over diesel engines.

DERA TRIBAL GRANTS

2017 – 2019

\$4.2 MILLION FUNDED 11 TRIBAL GRANTS IN MULTIPLE STATES IN FISCAL YEARS 2017 TO 2019 TO REPLACE OR RETROFIT 37 DIESEL ENGINES AND VEHICLES, RESULTING IN EMISSION REDUCTIONS OF OVER 70 TONS OF NO_x AND 6 TONS OF PM.

emissions reduction projects. A priority for the DERA program is to work with Tribes to reduce diesel emissions. The United States maintains a government-to-government relationship with the 574 federally recognized Native American Indian tribes and Alaska Native entities.¹⁴



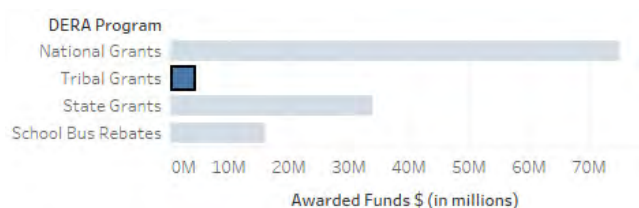
Credit: EPA; Chignik Bay, Alaska, 2021

Starting in fiscal year 2017, Tribes had the option to use their allocation of the VW Environmental Mitigation Trust funds to match their DERA Tribal grants. Tribes opting to use some or all of their allocation of Volkswagen trust funds for the available “DERA Option” have had a broader list of diesel emission reduction projects to choose from than are available under the other nine eligible mitigation actions under the VW Environmental Mitigation Trust (see [Volkswagen \(VW\) Settlement: DERA Option](#) for more information).

Competitive grants for tribal governments (including intertribal consortia) and Alaska Native Villages, which have jurisdiction over transportation or air quality, fund a wide variety of diesel

During fiscal years 2009 through 2013, Tribal funding was offered as a “set-aside” within the framework of the National grant program. Recognizing that tribes may have various administrative, technical, and financial considerations that national applicants may not, EPA began a separate competition for tribes in 2014 to address the unique needs and concerns of tribal grantees. In fiscal year 2017 to 2019, a total of 12 applications were received requesting more than \$4 million. During fiscal years 2017 to 2019, EPA funded 11 DERA Tribal grants in Alaska, California, and Washington to reduce emissions from 37 diesel engines or pieces of equipment for a total of \$4.2 million. Funding for fiscal years 2018 and 2019 were combined in the same grant cycle.

*DERA Funding by Program for Fiscal Year 2017 and 2018**



*Note: The table above is reflective of fiscal year 2017 and 2018 data for the DERA grant program, in \$ millions. *Tribal grants include 2019 funding, as fiscal years 2018 and 2019 were combined into a single RFA, defined further in this section.*

¹⁴ <https://www.doi.gov/international/what-we-do/tribes>

The DERA Tribal grant program funds equipment and engines in multiple sectors, including power generation, ports, and freight, and covered a variety of upgrade types, including vehicle and engine replacements.

EXHIBIT 14: DERA TRIBAL PROGRAM OUTCOMES

(FISCAL YEARS 2017 TO 2019)










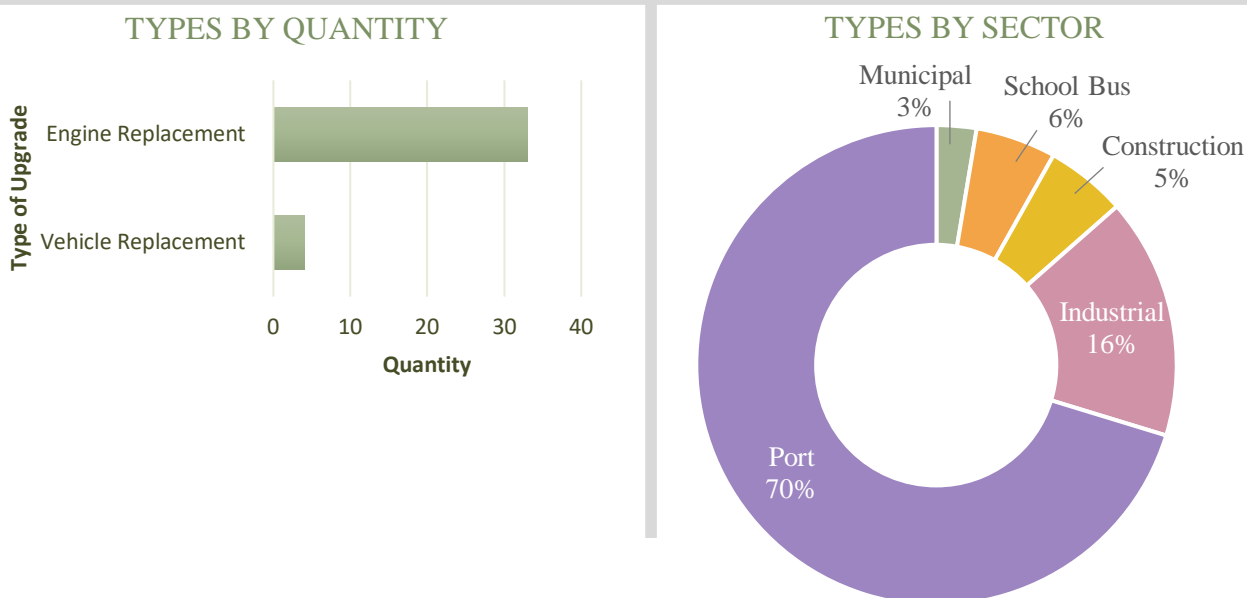
Emission and Fuel Reductions		Investment of DERA Program	
	70 tons of NO _x		\$4.2 million funds awarded
	6 tons of PM		11 tribal competitive grants awarded
	10 tons of carbon monoxide		37 engines or vehicle retrofitted or replaced
	5,100 tons of carbon dioxide		<i>Note: Fiscal years 2018 and 2019 were combined</i>
	500,000 gallons of diesel saved		

Exhibit 14 specifies emission reductions and investment details of the DERA National program. EPA estimates a reduction of 70 tons of NO_x, 6 tons of PM, four tons of HC, 10 tons of CO, 5,100 tons of CO₂, and 500,000 gallons of diesel fuel over the lifetime of the engines and vehicles funded under the tribal program for fiscal years 2017 to 2019. See Exhibit 15 for further identification of vehicle and engine upgrades. The largest upgrade sector for the tribal program was port, which included auxiliary and propulsion engine replacements, while the second largest sector, industrial, was comprised of stationary generators.

EXHIBIT 15: DERA TRIBAL PROJECTS: VEHICLE AND ENGINE UPGRADES

(FISCAL YEARS 2017 TO 2019)



MOVING FORWARD – TRIBAL GRANTS

EPA appreciates stakeholder feedback, which has largely supported stand-alone Request for Applications (RFAs) for tribes. Based on stakeholder input, EPA made two major changes in 2021 to the Tribal grants program. The first change was to waive the mandatory cost share requirement for the Tribal grants program, which makes DERA funding more accessible to applicants that face severe financial constraints. The second change allowed DERA to offer a separate funding opportunity for the U.S. territories of Guam, U.S. Virgin Islands, the Northern Mariana Islands, and American Samoa to encourage their participation in the DERA grant program. To that end, EPA offered the first DERA Tribal and Insular Area RFA in 2021.

EPA limits eligibility under the Tribal RFA to allow eligible entities to compete for DERA grant funds and implement diesel emissions reduction projects. The following variations from the National program encourage competition from tribal and insular areas: 1) longer application period; 2) less stringent eligibility requirements for vehicles and equipment; and 3) no mandatory cost shares. Although funds are competed under a single RFA, Tribal applicants only compete against Tribal applicants, and insular areas only compete against other insular area applicants. EPA is committed to strengthening partnerships with Tribal communities and insular areas. Contingent upon future appropriations and Congressional direction, EPA plans to continue to offer a stand-alone RFA for Tribes and insular areas with targeted outreach.

CASE STUDY 3

TRIBAL GRANT PROGRAM – FISCAL YEAR 2017

Chalkyitsik Village Diesel Generator Replacement

Chalkyitsik Village Council operates a small community powerhouse that supplies power to the entire community of Chalkyitsik. The community is located north of the Arctic Circle and the powerhouse provides prime power for all residents, the community airport, clinic, and school; it is a vital piece of local infrastructure.

The powerhouse has three (3) generators, two (2) of which were older Tier 1 and Tier 0 generators. The diesel generators run a combined 8,760 hours per year and are located within 100 yards of the Chalkyitsik School. This project replaced the two Tier 0 generators with marine jacketed Tier 3 diesel generators that are significantly cleaner and operate more efficiently. In addition to the electricity produced from the generators, the marine jackets send heat to a heat loop, which then heats the nearby school. According to the power plant operator and school maintenance manager, the school's fuel usage dropped by about 50% since the new engines were installed. Anecdotally, the project is seen as a great success in the eyes of both the school and the community. This project also highlights an example of a successful environmental justice initiative, as it achieved significant emissions reduction and improved air quality and public health in an underserved Tribal community.

As a result, both Beaver and Stevens Village (downriver from Chalkyitsik) expressed interest in completing diesel generator upgrades and applied for both VW Settlement funds and EPA Tribal DERA funds to complete similar projects led by Tanana Chiefs Conference. They both received funding through the fiscal year 2017 Tribal DERA solicitation.

REGION 10

ALASKA

DIESEL GENERATORS

SCHOOL HEAT

GENERATOR ELECTRICITY

Old Tier 0 Diesel Generator



New Tier 3 Diesel Generators



Credit: FY 17 Tribal Program, Chalkyitsik Village Council, Diesel Generator Replacement

DERA STATE GRANTS

2017 - 2018

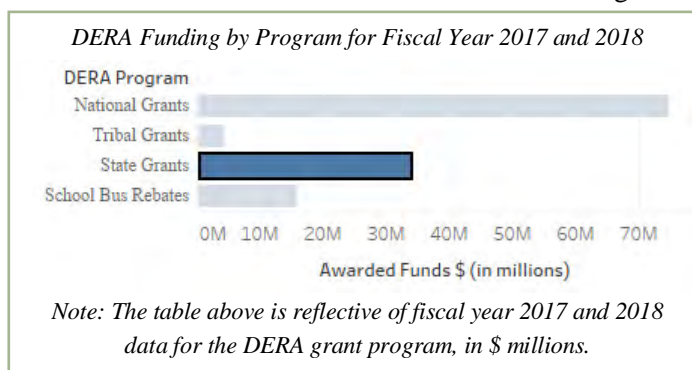
\$33.8 MILLION FUNDED GRANTS IN 53 OF 56 ELIGIBLE STATES AND TERRITORIES IN FISCAL YEARS 2017 AND 2018 TO REPLACE OR RETROFIT OVER 1,600 DIESEL ENGINES AND VEHICLES, RESULTING IN EMISSION REDUCTIONS OF OVER 4,000 TONS OF NO_x AND 200 TONS OF PM.

The DERA legislation requires EPA to offer 30% of the annual appropriation to states and territories to implement their own diesel emissions reduction programs. Eligible entities include government agencies in the fifty states, the District of Columbia, Puerto Rico, the U.S. Virgin

Islands, Guam, American Samoa, and the Commonwealth of the Northern Mariana Islands. Per the DERA statute, EPA offers states and territories a base funding amount. If the state or territory matches this amount dollar-for-dollar, EPA offers additional DERA funds equal to 50% of the base amount. Agencies run their own programs to implement projects and offer funding to fleets within their states. State agencies must select projects according to EPA's eligibility and cost-share requirements, but the selections are made entirely by the states to best fit state and local needs.

The principal objective of funding assistance to be awarded under the state program is to achieve significant reductions in diesel emissions in terms of tons of pollution produced and reductions in diesel emissions exposure from vehicles, engines, and equipment operating in areas designated as poor air quality areas. Each state's workplan must discuss how the state will ensure that projects selected for funding support the programmatic priorities listed in the DERA state grants program guide. In total, states and territories received \$33.8 million in fiscal year 2017 and 2018 funds.¹⁵ EPA awarded grants to 53 of 56 eligible states and territories in fiscal years 2017 and 2018 to fund projects highlighted below.

Starting in fiscal year 2017, states had the option to use their allocation of the VW Environmental Mitigation Trust funds to match their DERA State grants. While these funds cannot cover the mandatory cost-shares for DERA projects, states opting to use some or all of their allocation of Volkswagen trust funds for the available [“DERA Option”](#) have had a broader list of diesel emission reduction projects to choose from than are available under the other nine eligible mitigation actions under the VW Environmental Mitigation Trust (see [Volkswagen \(VW\) Settlement: DERA Option](#) for more information).



¹⁵ Fiscal year 2017 and 2018 state grant results are combined because fiscal year 2018 funds were awarded as a supplemental amendment and extension to the fiscal year 2017 grant awards.

EXHIBIT 16: DERA STATE PROGRAM OUTCOMES (FISCAL YEAR 2017 AND 2018)

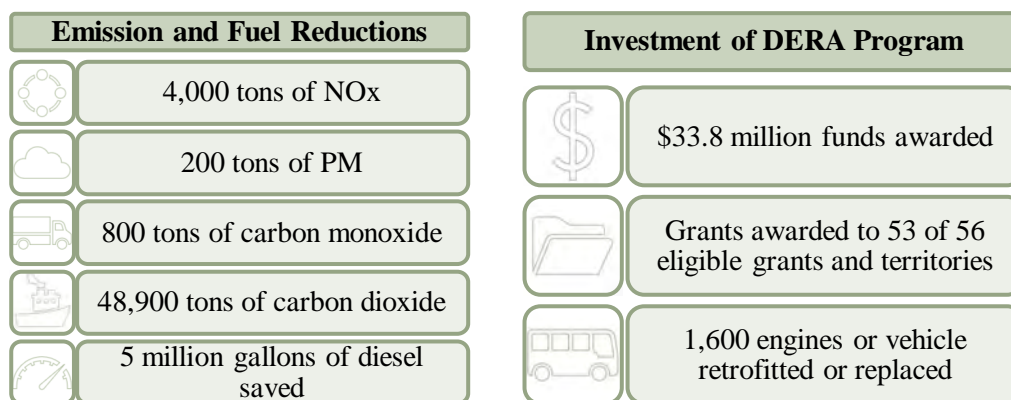
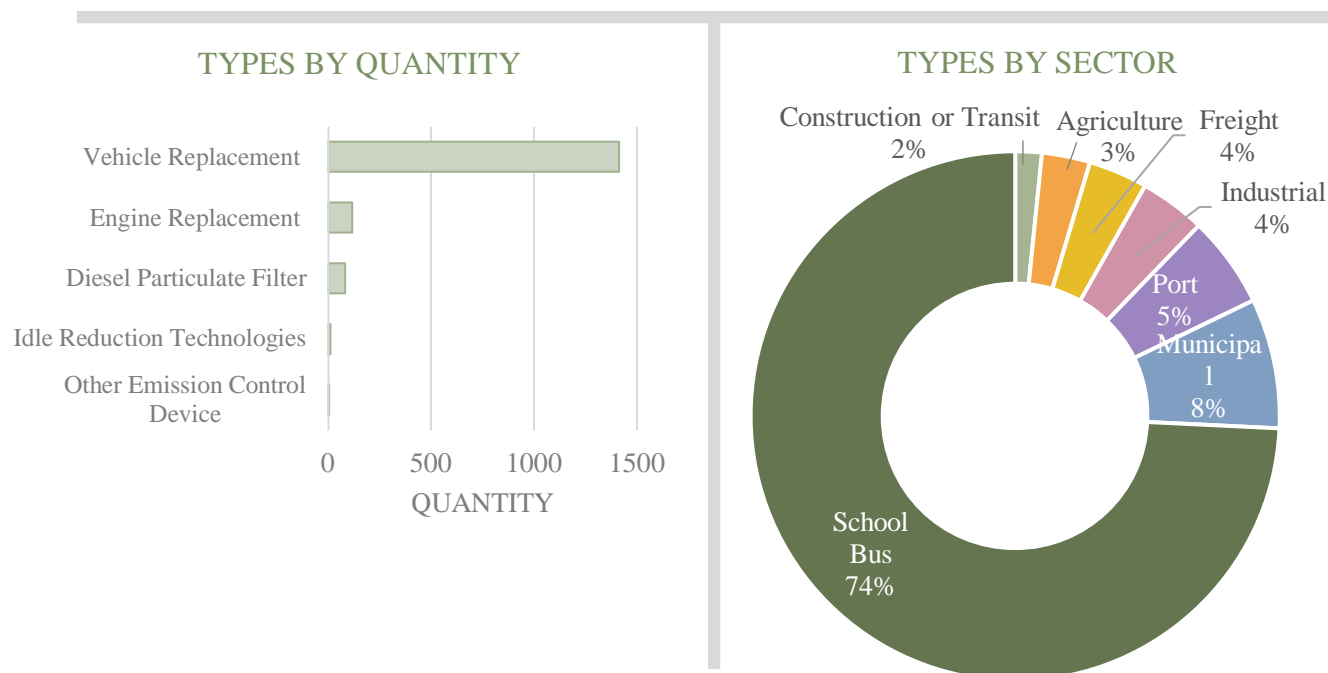


Exhibit 16 specifies emission reductions and investments details of the DERA State program. EPA estimates a reduction of 4,000 tons of NO_x, 200 tons of PM, 300 tons of HC, 800 tons of CO, 48,900 tons of CO₂, and 5 million gallons of diesel fuel over the lifetime of the engines and vehicles funded under the state program during fiscal years 2017 and 2018. See Exhibit 17 for further identification of vehicle and engine upgrades.

EXHIBIT 17: DERA STATE PROJECTS: VEHICLE AND ENGINE UPGRADES (FISCAL YEAR 2017 AND 2018)



MOVING FORWARD – STATE GRANTS

The DERA State program continues to be popular in diverse sections and regions. Between 2019 and 2020, 55 out of 56 states and territories requested funding to pursue their own diesel emission reduction programs. EPA continues to respond to feedback from the states and territories in the program.

CASE STUDY 4

STATE GRANT PROGRAM – FISCAL YEAR 2017-2018

School Bus and Public Works Vehicle Replacements from a DERA State Grant and Volkswagen (VW) Funds

The Nevada Division of Environmental Protection (NDEP) created a school bus and public works vehicle replacement project. This project was implemented using 1) over \$760,000 in 2017-2018 DERA State grant funding, 2) nearly \$507,000 in matching funds from Nevada Division of Environmental Protection (NDEP) and the Volkswagen Environmental Mitigation Trust, and 3) more than \$3.8 million in cost-share funds from participating fleet partners: Clark County School District and the City of Reno Public Works Department.

NDEP and its partners replaced 23 older diesel school buses and five older diesel public works vehicles with new diesel vehicles that are more fuel efficient and significantly reduce harmful emissions because of their modern emission control systems.

REGION 7

NEVADA

SCHOOL BUS
REPLACEMENT

PUBLIC WORKS
VEHICLE
REPLACEMENT



Caption: The photos above represent the diverse vehicle upgrades under this grant including the replacement of school buses and public works vehicles. The top left is an old school bus being scrapped. The remaining three photos represent new Reno Public Works Department trucks.

DERA SCHOOL BUS REBATE PROGRAM

2017 - 2018

\$16.1 MILLION FUNDED 820 SCHOOL BUS VEHICLE RETROFITS OR REPLACEMENTS IN FISCAL YEARS 2017 AND 2018, RESULTING IN EMISSION REDUCTIONS OF OVER 400 TONS OF NO_x AND 40 TONS OF PM.

profit organizations, and private entities that have a license, lease, or contract with an eligible public organization. The [School Bus Rebate Program](#) was the first-ever rebate program within EPA.

Rebates and grants differ in a variety of ways. One distinction is the simplified one-page rebate application compared to the more complex grant application process. The amount of the rebates is specified up-front, and selections are made using a lottery process. Once the selected applicant has completed all required work and submitted all documentation, they are reimbursed with the rebate funds. The simple rebate process allows EPA to run each rebate funding opportunity in a short timeline, with the timespan between the application deadline and disbursement of funds typically as less than one year.

School buses collectively travel over four billion miles each year, providing the safest transportation to and from school for more than 25,000,000 American children every day. However, despite how otherwise safe school bus travel is, diesel exhaust from these buses has a negative impact on human health. Children are particularly vulnerable to the negative impacts of diesel exhaust, as they generally have faster breathing rates than adults and their lungs are not yet fully developed. EPA designed this rebate program to encourage school bus fleet turnover so more children can ride buses meeting the cleanest emissions standards. These new buses can reduce pollution like NO_x and PM by over 90%, compared to older diesel buses. This results in cleaner air on the bus, in bus loading areas, and throughout the communities in which they operate.

The Diesel Emissions Reduction Act of 2010, signed in January 2011, provided EPA with the authority to award rebates, in addition to grants. Rebates may be awarded to public institutions, some non-



Credit: Eric Vance, EPA Photographer, Idaho

School buses play an integral role in reducing emissions and improving public health of children, a high priority in the DERA program.








EPA has a long and successful history implementing diesel emissions reduction projects in the school bus sector. Ever since the inaugural year for the School Bus Rebate Program in fiscal year 2012, school bus fleets have showed overwhelming interest in participating in the program. Since then, EPA has adapted the program to offer more funding for school bus replacements as appropriation funding is available. These funding

opportunities are targeted at school bus fleet owners who are seeking to replace their existing pre-2007 engine model year diesel buses with new school buses that utilize modern exhaust control technologies. Eligible replacement school buses may operate on ultra-low sulfur diesel, battery, or alternative fuels, like propane or compressed natural gas. Health benefits are achieved by scrapping the old buses and replacing them with cleaner ones.

During fiscal year 2017 and fiscal year 2018, EPA received over 900 school bus rebate applications that requested \$80 million dollars in rebate funds. In total, EPA awarded \$16.1 million in rebates for 244 fleets to replace 820 school buses under the DERA school bus rebate program. EPA estimates a reduction of 400 tons of NO_x, 40 tons of PM, 70 tons of HC, 200 tons of CO, and 1 ton of CO₂ over the lifetime of the engines and vehicles funded under the DERA School Bus Rebate Program for fiscal years 2017 and 2018.

In fiscal years 2017 and 2018, EPA awarded **\$16.1 million** through the School Bus Rebate program to fund **820 school buses**.

EXHIBIT 18: DERA SCHOOL BUS REBATE PROGRAM OUTCOMES (FISCAL YEAR 2017 AND 2018)

Emission and Fuel Reductions		Investment of DERA Program	
	400 tons of NO _x		\$16.1 million funds awarded
	40 tons of PM		244 fleets awarded funding
	200 tons of carbon monoxide		820 vehicles retrofitted or replaced
	1 ton of carbon dioxide		

MOVING FORWARD - REBATES

Rebates for school bus replacements continue to be one of the most popular projects funded under DERA. Since 2018, EPA has seen more interest from applicants in replacing their old diesel buses with alternative fueled buses, like propane. In the 2019 School Bus Rebate Program, EPA funded the first zero-emission battery-electric school bus replacement in the program. To better accommodate cleaner zero-emission and alternative fueled buses that have higher up-front costs, EPA revised the rebate compensation for fiscal year 2020 to offer four rebate amounts for school buses between \$20,000 to \$65,000. Instead of basing the rebate amount on bus size, the rebate amount is now based on the fuel type of the replacement bus, with zero-emission vehicles receiving the highest possible rebate amount. As a result, EPA will now be funding more electric buses in fiscal year 2020 rebate program than in all other years combined. These rebates make a visible impact in communities across the country by providing children with healthier rides to school.

CASE STUDY 5

SCHOOL BUS REBATE PROGRAM – FISCAL YEAR 2018

Frederick County Public Schools Rebate Project

Frederick County Public Schools (FCPS) in Maryland received funds in the 2018 DERA School Bus Rebate program. The \$200,000 awarded through this program helped the school purchase 10 new diesel school buses, equipped with modern emission controls, that are much cleaner for the community and the students of FCPS. Following the guidelines of the program, FCPS scrapped the 10 buses that were replaced. By scrapping these buses, FCPS was able to ensure the older, dirty buses would not be placed back into use, where they could pollute other communities.



Credit: FY 18, Frederick County Public Schools, Purchased 10 New Diesel School Buses

REGION 3

MARYLAND

SCHOOL BUS REPLACEMENT

SCHOOL DIESEL EMISSIONS

MODERN EMISSION CONTROLS

DERA FUNDING AT PORTS

Ports play a significant role in the nation's transportation system and goods movement supply chain. Many ports are located near low-income populations and communities of color, which are often disproportionately impacted by diesel emissions associated with port activities. Ships, harbor craft, cargo handling equipment, drayage trucks, and locomotives can be significant contributors to diesel pollution at ports. Port authorities, terminal operators, fleet owners, drayage truckers, and rail operators all have a role in reducing diesel emissions at ports and nearby communities where millions of people live and work. Reducing exposure to diesel exhaust in and near ports is key for public health and the environment.

Port projects, as discussed here, refer to projects occurring in places alongside navigable water with facilities for the loading and unloading of passengers and/or cargo from ships, ferries, and other vessels. DERA grants have also been awarded for projects taking place at inland ports, railyards, and other goods movement facilities. Since 2008, fleets at coastal and inland water ports have been a priority for DERA

funding with nearly \$143 million (including over \$30 million from ARRA) going to ports projects from fiscal years 2008 to 2018. An additional 74 grants have been awarded through DERA to multi-sector projects that involve ports (note that only a portion of the \$79 million of funds for these projects goes to the port sector). In fiscal year 2013, EPA set aside \$4 million for the first year of a stand-alone Ports DERA RFA. In fiscal year 2014, EPA issued a second stand-alone Ports RFA and received 15 applications requesting over \$15 million in funding. EPA awarded \$5 million for four projects that replaced drayage trucks, retrofitted cargo handling equipment, replaced a diesel crane with an electric crane, and replaced ferry engines. Eligible entities included public port authorities at coastal or inland water ports. EPA awarded points to applicants that partnered with community groups and encouraged partnerships with local governments, terminal operators, shipping carriers, and other business entities involved in port operations.

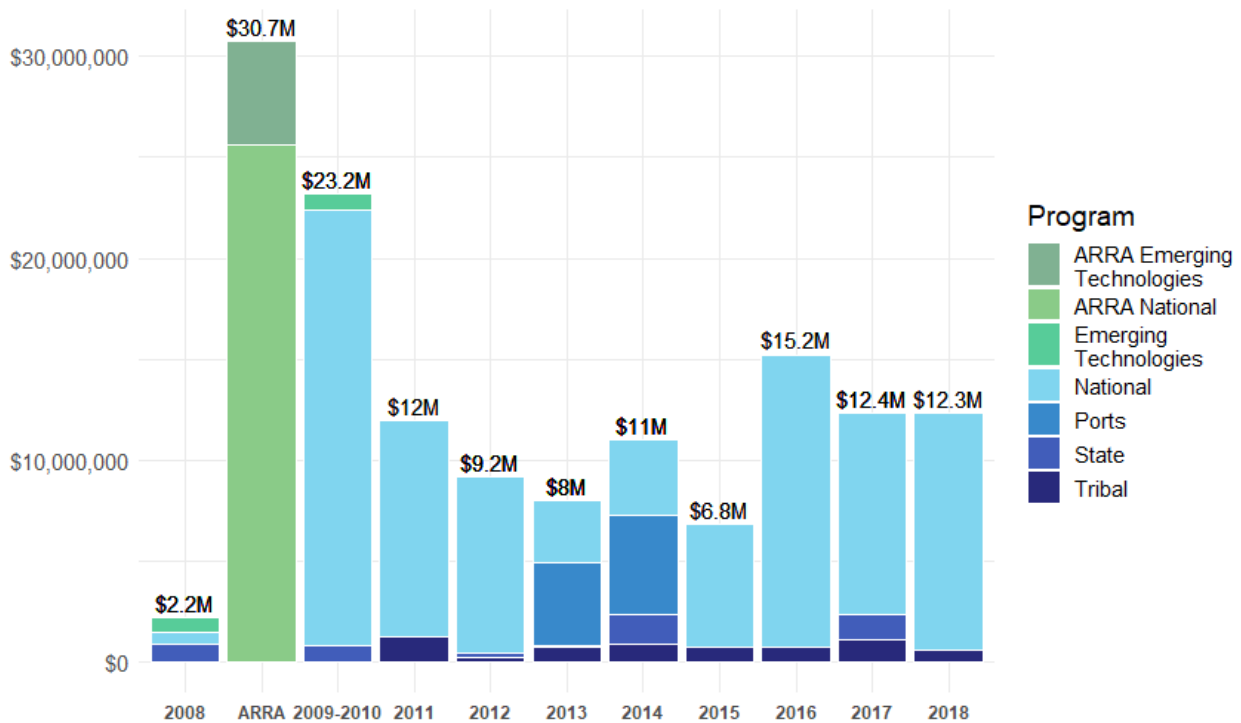
In subsequent years, EPA did not issue a stand-alone ports RFA to reduce the burden associated with multiple grant opportunities. Instead, ports and goods movement were prioritized in the DERA National grant program by awarding additional points for ports and goods movement projects. EPA funded over \$24 million in DERA awards to ports projects under the National, Tribal, and State grant programs in fiscal years 2017 and 2018. A full list of port sector DERA grants from fiscal year 2008 to 2018 is available at <https://www.epa.gov/ports-initiative/overview-dera-grants-awarded-port-projects>.

Shore Power

One strategy to reduce emissions at ports is shore power. Shore power technology allows marine vessels to plug into the local electricity grid while at-dock. While connected to shore power, auxiliary systems (such as lighting, air conditioning, and crew berths) source energy from the local electrical grid. Since these auxiliary systems would otherwise be powered by diesel engines, engines that utilize shore power typically produce zero onsite emissions. In 2017, EPA published the *Shore Power Technology Assessment* at U.S. Ports that included a calculator for ports to estimate emission reductions from shore power installations. For more information on shore power, the Shore Power Technology Assessment, and the Shore Power Emissions Calculator, visit <https://www.epa.gov/ports-initiative/shore-power-technology-assessment-us-ports>.

The figure below shows an overview of DERA funding by year for port projects (multi-sector projects including the port sector are excluded from this depiction). This figure displays DERA grants awarded through all programs including National, Tribal, Ports, Emerging Technologies and American Recovery and Reinvestment Act (ARRA) programs as well as allocations to states. Port projects have been eligible under all DERA grant programs since 2008, and a separate DERA Ports solicitation was offered in 2013 and 2014.

EXHIBIT 19: DERA GRANT FUNDS AWARDED TO PORT PROJECTS NATIONAL, TRIBAL, AND STATE DERA PROGRAMS (FISCAL YEARS 2008 TO 2018)



Note: Data in this figure are considered proposed until the grant is closed, and final data is submitted to EPA. Final award amounts and project descriptions may change as grants are implemented and completed. Multi-year awards are shown in this figure by the first fiscal year of the grant. Open grants from the State program and all multi-sector grants that include the port sector are excluded from this figure because funding amounts by sector are not readily available for these grants.

MOVING FORWARD - PORTS

DERA funding has been instrumental in supporting emissions reduction through ports-related diesel emissions reduction projects. EPA anticipates that DERA will continue to prioritize diesel emissions reduction at ports and other freight distribution centers to complement the work being done by the port industry, communities, and all levels of government to improve air quality at ports. Further priority is given to projects whose leaders engage and partner with affected communities with environmental justice concerns to directly address those needs and concerns and where the applicant or their partner(s) have or commit to creating a policy or process to engage communities on operations and projects that impact air quality beyond the specific DERA project. EPA encourages prospective DERA grant applicants to take advantage of a series of community-port collaboration materials¹⁶, published by EPA's Ports Initiative, including case studies on four community-port collaboration pilot projects that took place in Seattle, New Orleans, Savannah, and Providence¹⁷.

EPA's Ports Initiative works in tandem with the DERA program to address diesel emissions at ports. In partnership with port stakeholders, EPA's Ports Initiative provides tools and assistance to help accelerate adoption of cleaner technologies, clean air planning practices such as emissions inventories, and community



Credit: EPA Region 4; Dale Aspy, Port Everglades, Broward County, Florida; 2015

engagement to address diesel emissions at ports across the country. Informed by the 2016 recommendations from the Clean Air Act Advisory Committee, the program has developed a number of resources including updated port emissions inventory guidance, emissions reduction strategy assessments such as the National Port Strategy Assessment, an interactive map highlighting clean air practices being implemented at some of the busiest ports across the U.S., and tools to promote community-port collaboration for more effective planning.

¹⁶ For more information, please visit: <https://www.epa.gov/community-port-collaboration/community-port-collaboration-toolkit>.¹⁷
For more information, please visit: <https://www.epa.gov/ports-initiative/case-studies-improving-environmental-performance-and-economic-prosperity-ports-and>.

CASE STUDY 6

PORT PROJECT - NATIONAL PROGRAM

Virginia Port Authority Terminal Optimization Via Diesel with Hybrid Straddle Carriers

Under the 2017 DERA National grants, the Port of Virginia (POV) Virginia Port Authority replaced nine diesel straddle carriers at Norfolk International Terminals (NIT) with nine new hybrid shuttle carriers. This project supports a terminal optimization at the southern portion of NIT, moving from a predominately diesel-powered operation to an electrified operation supported by hybrid cargo handling equipment.

The hybrid shuttle carriers were purchased from Kalmar USA, Inc. for a total of \$8,136,000. The \$2,000,000 in grant funding received under the DERA program accounted for slightly less than 25% of the purchase price. The port provided \$6,136,000 in matching funds. This project builds upon the previous deployment of hybrid shuttle carriers at the port's terminal in Portsmouth, Virginia – Virginia International Gateway (VIG) Port of Virginia. In 2014, the port successfully deployed three [hybrid shuttle carriers at VIG](#) with the assistance of DERA grant funding that resulted in NO_x and PM reductions of over 95 percent from older diesel shuttle carriers. The success measured during this demonstration and of hybrid technology has further solidified the port's commitment to providing an efficient level of service in a more environmentally sustainable manner.

This project also supports POV sustainability efforts in demonstrating and advancing the use of hybrid, electric, capacitor, and other clean fuel/energy technologies. This is another example of projects involving a partnership between the Virginia Port Authority and the EPA.



Credit: FY17 National Program Port Project, Port of Virginia, Terminal Optimization Via Diesel with Hybrid Straddle Carriers

REGION 3

VIRGINIA

HYBRID STRADLE CARRIERS

CLEAN ENERGY TECHNOLOGIES

PORT TERMINAL

SUSTAINABILITY COMMITMENTS

CASE STUDY 7

PORT PROJECT - NATIONAL PROGRAM

Gees Bend Ferry Converted from Diesel to Electric Power in Alabama

The Alabama Department of Transportation received a \$1 million 2016 DERA National grant to convert the Gees Bend Ferry from diesel power to battery-electric power. The ferry connects the community of Gees Bend, which is surrounded by the Alabama River on three sides, with the county seat of Camden. This ferry is historically significant due to the area's involvement in civil rights. In 2012, the U. S. Census Bureau listed Wilcox County as having the lowest median household income in the nation at \$22,126. The seven hundred or so residents of this small, rural community are mostly descendants of enslaved people. Prior to the current ferry service, there were only two ways for the residents of Gees Bend to get to Camden. One way was to drive approximately 40 miles to cross the river and the other way was to take a cable operated ferry several hundred yards across the river. That ferry stopped operating in 1962, and reduced access for Gees Bend citizens to get to Camden. In the 1990s, Congress allocated funding to pay for a ferry service and its operating costs. However, due to a variety of issues diesel ferry service did not begin until 2006. Now, the successful electrification of this ferry enabled passengers on the ferry to journey between the two communities without being exposed to diesel emissions. The project also served to reduce diesel emissions in the area as the ferry no longer must idle its engines between crossings.

REGION 4

ALABAMA

BATTERY-ELECTRIC FERRY

DIESEL EMISSIONS REDUCTION

Gees Bend Ferry Prior to Diesel Engine Replacement



Gees Bend Ferry Under Battery-Electric Power



Credit: FY 16 National Program Port Project, Alabama Department of Transportation, Historic Gees Bend Ferry Converted from Diesel to Electric Power

CONTINUOUS IMPROVEMENT IN THE DERA PROGRAM

STRONG FISCAL STEWARDSHIP

The DERA program is committed to continuously strengthening the management and oversight of the program. Following recommendations from the [U.S. EPA's Office of Inspector General's 2014 report](#), the program revised methodologies for emissions reporting, offered yearly project officer and grantee training, created technical guidance related to DERA-specific assistance agreement management, and continued baseline and advanced monitoring on the DERA program.

EPA staff conducted site visits to ensure that the new buses are in use and available, and between 2018 and 2019, a third-party audit was conducted for the school bus rebate program. The audit contract completed site visits for 40 rebate selectees in 15 states. A total of 175 out of 176 replacement buses were verified to be on site. The only absent bus was later verified to have been on a field trip at the time of the site visit. The program continuously monitors success and lessons learned from the program and welcomes feedback from potential beneficiaries through the DERA [website](#), [helplines](#), [regional collaboratives](#), conferences, and webinars.

IMPROVEMENTS TO EMISSIONS CALCULATIONS

DERA has continually updated its web-based emissions reduction calculator, the Diesel Emissions Quantifier (DEQ), to improve the accuracy of its emissions reduction estimates. These updates include emission factors based on EPA's [MOVES model](#). Due to changes in demand for retrofits, improvements to our emissions calculator, and reduction in the pool of the oldest, dirtiest legacy diesel vehicles over time, the cost per ton of emissions reduction of the DERA program has increased slightly. However, even with these changes, DERA remains a highly cost-effective program for reducing harmful emissions.



Credit: FY18, National Program, Fulton County Schools, Propane-Powered School Bus Expansion Project

DERA EVOLVES WITH TECHNOLOGY IMPROVEMENTS

The DERA program has continuously been responsive to changes in technology and applicant interest in adopting new technology. The most common projects in the early years of DERA were diesel exhaust retrofits like diesel particulate filters (DPF) and diesel oxidation catalysts (DOC). While DERA continues to offer financial support for these highly cost-effective projects, applicant interest has shifted more towards vehicle replacements that meet current EPA emission standards. New alternative fuel and battery-electric vehicles can easily outperform those EPA emission standards, but the equipment often has higher up-front costs. In response to the increased availability and applicant interest in these technologies, DERA has increased its funding cost-shares for both alternative fuel vehicles meeting California Air Resource Board's optional low-NOx emission standards and zero emission vehicles. DERA will continue to monitor and incorporate advancements in cleaner medium- and heavy-duty equipment to ensure that applicants can benefit from these new technologies.

WORKING TOWARD ENVIRONMENTAL JUSTICE

Beyond technology improvements to the program, DERA continuously seeks to improve sustainability opportunities and environmental justice impacts.

- First, the mandatory cost share requirement can limit applicants with severe financial or resource constraints. EPA made the decision to waive the cost share requirement for the Tribal grants program to make DERA funding more accessible. In addition, DERA offers a separate funding opportunity under the tribal competition for insular areas to encourage participation.
- Second, community engagement is vital to sustainability of a successful DERA project. EPA added sustainability criteria to the RFA evaluation to award points to projects that have committed to community engagement and the extent to which the project addresses engagement with these communities and/or populations, especially local residents, to ensure their meaningful participation with respect to the design, planning, and performance of the project.

EPA prioritizes environmental justice and diesel emissions reduction projects that provide immediate health and environmental benefits and target areas of greatest need. The DERA legislation emphasizes maximizing health benefits, serving areas of poor air quality, and reducing diesel fuel. DERA funding has accelerated upgrades and replacements for diesel vehicles and equipment, improving the public and private diesel fleets that are critical to the economy.

COVID-19: DERA grant and rebate recipients faced serious economic uncertainty at the start of the COVID-19 pandemic. To help accommodate this uncertainty, EPA offered one-year extensions to open grants and rebates. This allowed DERA funding recipients time to assess their ability to continue with the grant or rebate, adjust, and complete their projects and achieve the emissions reduction.

LOOKING AHEAD FOR THE DERA PROGRAM

Even with implementation of EPA's stringent standards for new on-highway and nonroad engines, EPA estimates that millions of engines from the legacy fleet will remain in use by the end of the decade in 2030. These engines will continue to affect the environment and public health. Some of these engines will be decades old, pre-dating modern engine technology, yet still in use. In fact, EPA estimates that in 2023, mobile sources will still make up about 48% of total NO_x sources, with the legacy fleet contributing 15% of mobile source NO_x emissions. In addition, mobile sources will represent about 3% of the direct PM emissions, with the legacy fleet contributing approximately 21% of the direct PM emissions from mobile sources in the year 2023.¹⁸ The DERA program is designed to target retrofit, removal, and replacement of these remaining engines of the legacy fleet to protect public health and the environment.

DERA is not alone in the effort to clean up old diesel engines. Longstanding programs like the [Texas Emissions Reduction Plan \(TERP\)](#), California's [Carl Moyer program](#), the Department of Transportation's [Congestion Mitigation and Air Quality Improvement \(CMAQ\) Program](#), and the Federal Transit Administration's [Low or No Emission Vehicle Program](#) all provide financial incentives to help to reduce the size of the legacy diesel fleet.

One major source of funding that was available to states and Tribes, effective October 2, 2017, was the Volkswagen Environmental Mitigation Trusts. These Trusts offered nearly \$3 billion to fully mitigate the total lifetime excess NO_x emissions from the violating vehicles involved in the Volkswagen settlements. Tribes had the option to use their allocation of the VW Environmental Mitigation Trust funds to match their DERA Tribal grants for yearly funding cycles through 2021. Beneficiaries to the Trusts could use these funds for the replacement or repower of medium- and heavy-duty diesel engines or pieces of equipment and light-duty zero emission vehicle supply equipment. EPA will continue to support state projects that apply VW trust funding to their DERA state grants until the trust timeframe concludes.



*Credit: Eric Vance, EPA Photographer,
West Virginia*

¹⁸ The onroad and nonroad inventories are based on MOVES3 (<https://www.epa.gov/moves/latest-version-motor-vehicle-emission-simulator-moves>); the rest of the mobile sources (rail, aircraft, CMV) and the non-mobile sources are from the 2016v1 Emissions Modeling Platform (<https://www.epa.gov/air-emissions-modeling/2016v1-platform>).

DERA ACTIVITIES FOR FISCAL YEARS 2019 AND 2020

The Diesel Emissions Reduction Act received annual appropriations of \$84 million in fiscal year 2019 and \$87 million in fiscal year 2020. In fiscal year 2019, EPA awarded 42 grants under the National Program, 53 awards under the State Program, 8 grants under the Tribal Program, and

funds for 586 school bus replacements in the School Bus Rebate Program. EPA will report on the results of fiscal year 2019 and fiscal year 2020 DERA projects in the next Report to Congress, when the projects are finalized or close to completion. EPA will continue to target funding to areas that suffer from poor air quality and prioritize projects that engage local communities and provide lasting benefits. In addition to prioritizing projects that benefit communities that are disproportionately impacted by environmental pollution, the DERA program will continue to focus on environmental justice and opportunities to improve community engagement.

DERA Reauthorization in 2020

In 2020, DERA was reauthorized under Division S – Innovation for the Environment section of the Consolidated Appropriations Act, 2021 for up to \$100 million annually through 2024. The program will continue to award grants and rebates to achieve diesel emissions reduction.

2021 AMERICAN RESCUE PLAN

The 2021 American Rescue Plan (ARP) appropriated \$100 million to the Environmental Protection Agency. Of this funding, \$50 million was specifically allocated towards grants and contracts that identify and address disproportionate environmental or public health harms and risks in minority populations or low-income populations. A total of seven million of the ARP funding will fund a rebate program through DERA to address priority environmental justice issues for reducing diesel pollution. This DERA rebate program will fund electric school buses in low-income communities.

ZERO EMISSION VEHICLES (ZEV)



Credit: 2016 EPA DERA Staff; Jason Wilcox, Washington, D.C.

To make electric vehicles more accessible to applicants, the cost share for zero emissions vehicle replacements was increased to 45% under the National, State, and Tribal programs. In fiscal years 2017 and 2018, DERA funded approximately 300 electric engine and vehicle replacements under the National and State programs. As more communities and fleets become interested in zero-emission technologies, the program will seek to balance the types of technologies available in relation to the resources available. The program has adapted as technologies and demands change.

The 2021 American Rescue Plan (ARP) Electric School Bus Rebate Program offers a higher cost share for these electric school buses and eligibility is limited to low-income school districts. This rebate program for electric buses is in addition to the DERA School Bus Rebate program cycle, which provides approximately \$10,000,000 annually to fund new diesel, alternative fuels (propane, gas, CNG), or ZEV buses. The lessons learned from the 2021 ARP Electric School Bus Rebate Program will help inform future DERA funding opportunities including setting appropriate cost share, limiting eligibility to low-income communities, and ensuring that outreach efforts reach all potential applicants.

2021 BIPARTISAN INFRASTRUCTURE LAW (BIL)

Title XI: Clean School Buses and Ferries of the Bipartisan Infrastructure Law (BIL), signed in November 2021, provides \$5 billion over five years (FY22-26) for the replacement of existing school buses with clean school buses and zero-emission school buses. This funding supports communities across the United States, especially populations that have been historically underserved. Half of the total available funding is dedicated for “zero-emission school buses”, and the other half is dedicated for “clean school buses,” which include low- and no-emission buses. Eligible recipients are state or local government entities, eligible contractors, nonprofit school transportation associations, and tribes, tribal organizations, or tribally controlled schools. Funding may be available via competitive grants and rebates to eligible recipients for bus replacement. EPA opened the first funding opportunity on May 20, 2022.

JUSTICE40

Justice40 is a whole-of-government effort to ensure that federal agencies work with states and local communities to make good on President Biden's promise to deliver at least 40% of the overall benefits from federal investments in climate and clean energy to disadvantaged communities.¹⁹ DERA, along with the Ports Initiative, is one of six programs participating in the Justice40 pilot across federal agencies. EPA is seeking input from stakeholders as part of this effort. Benefits from DERA and the Ports Initiative program include direct diesel emission reductions and associated health benefits from DERA-funded projects and enhanced capacity for additional diesel emission reductions beyond DERA-funded projects. To maximize benefits in underserved and disadvantaged communities, DERA will continue to prioritize Justice40 goals in regular updates to the DERA funding programs, while building capacity of prospective grantees and promoting additional emissions reductions in communities with environmental justice concerns. Environmental justice has been a priority in DERA for many years, and EPA will continue to ensure that funds reach communities with the most need.

¹⁹ <https://www.whitehouse.gov/omb/briefing-room/2021/07/20/the-path-to-achieving-justice40/>

CONCLUSION

From the onset of the Energy Policy Act of 2005 until the recently reauthorized Consolidated Appropriations Act of 2021, the DERA program's wide-reaching benefits have positively impacted human health, local air quality, and the global climate. EPA prioritizes diesel emissions reduction projects that provide immediate health and environmental benefits and target areas of greatest need. The DERA legislation emphasizes maximizing health benefits, conserving diesel fuel, and serving areas of poor air quality.

As the program looks ahead to the challenges of cleaner goods movement through the nation's supply chain, reducing black carbon pollution, and assisting disproportionately impacted communities, the DERA program will continue to prioritize the following statutory and programmatic goals and objectives:

Target areas and populations with disproportionate levels of exposure to diesel exhaust while maximizing cost-effectiveness.	Prioritize children's health with a goal of every child riding to school in a bus that meets the latest on-highway standards.	Target projects that reduce emissions from engines involved in goods movements and freight and frequently found operating at ports.
Design each DERA program opportunity to fund the most beneficial projects and maximize cost-effectiveness.	Continue building partnerships and sharing information with key stakeholders to achieve program goals.	Aid state and local governments in the development of their own diesel emissions reduction programs.
Continue to strive to maximize performance of emissions reduction technologies in the field.	Maximize health benefits from diesel emissions reduction projects.	Seek sustainable projects which promote community driven solutions in those communities most impacted by diesel emissions.

DERA prioritizes environmental justice and emissions reductions in areas receiving disproportionate impacts from diesel fleets to provide an environment where all people enjoy the same degree of protection from environmental and health hazards. By concentrating on these objectives, the DERA program will continue to prioritize the most vulnerable communities and populations while further reducing emissions from diesel engines in the legacy fleet that cause adverse health impacts.

APPENDIX: LIST OF DERA AWARDS

A full list of DERA awarded grants and rebates from fiscal years 2008 to 2020 can be found on the DERA website at <https://www.epa.gov/dera>. The specific links for each DERA program award list is provided below from A.1 to A.4.

A.1 National Grant Program: <https://www.epa.gov/dera/national-dera-awarded-grants>

A.2 Tribal Grant Program: <https://www.epa.gov/dera/tribal-dera-awarded-grants>

A.3 State Grant Program: <https://www.epa.gov/dera/state-allocations>

A.4 School Bus Rebate Program: <https://www.epa.gov/dera/awarded-dera-rebates>

For other information about the DERA funding opportunities, please see www.epa.gov/dera.