

FISCAL YEAR 2018

STATE CLEAN DIESEL GRANT PROGRAM

WORK PLAN AND BUDGET NARRATIVE

INSTRUCTIONS: States and territories applying for FY 2018 DERA State Clean Diesel Grant Program funding must use this template to prepare their Work Plan and Budget Narrative.

Please refer to the FY 2017-2018 STATE CLEAN DIESEL PROGRAM INFORMATION GUIDE for full Program details, eligibility criteria and funding restrictions, and application instructions.

SUMMARY PAGE

Project Title: New Hampshire State Clean Diesel FY2018 Program Plan

Project Manager and Contact Information

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Project Budget Overview:

	FY 2017*	FY 2018
EPA Base Allocation	\$ 225,984	\$ 274,366
State or Territory Matching Funds (if applicable)	\$ 225,984	\$ 274,366
EPA Match Incentive (if applicable)	\$ 112,992	\$ 137,183
Mandatory Cost-Share	\$ TBD	\$ TBD
TOTAL Project	\$ 564,960	\$ 685,915

*FY 2017 budget is only for states and territories with open FY 2017 State DERA grants

Project Period

October 1, 2018 – September 30, 2019

Summary Statement

New Hampshire’s State Clean Diesel program is a sub-grant program designed to reduce diesel emissions. The program will be applied broadly across various sectors in the state, employing a variety of diesel reduction strategies. The program will target primarily publicly-owned fleets that operate in highly populated areas, areas with sensitive receptor groups such as schools or hospitals, or areas that receive a disproportionate quantity of air pollution from diesel fleets, and in areas that are near non-attainment for other pollutants such as particulate matter. New

Hampshire intends to use Volkswagen Environmental Mitigation Trust funds (VW Trust Funds) to match the federal funds for the fiscal year 2018.

SCOPE OF WORK

New Hampshire Department of Environmental Services (NHDES) will institute a subgrant program to fund projects that reduce on-and non-road (including stationary) diesel engine emissions in the state. This will be accomplished via a solicitation whereby projects are rated on the basis of potential emission reduction, health benefit, location in the state and any ancillary benefits. Additionally, as stated in Appendix D-2 of the Partial Consent Decree for the *Volkswagen “Clean Diesel” Marketing, Sales Practices, and Products Liability Litigation*, use of VW Trust Funds as non-federal voluntary match is an eligible mitigation action expenditure. New Hampshire intends to use this option to match the federal funds for the fiscal year 2018 grant. Use of those funds will be in line with the scope of work outlined in this plan and the funding restrictions outlined in the [FY 2017-2018 State Clean Diesel Grant Program Information Guide](#).

STATE/TERRITORY GOALS AND PRIORITIES:

Even with today’s cleaner fuels and new heavy-duty greenhouse gas and fuel efficiency rules, millions of diesel engines already in use across the United States, continue to emit large amounts of nitrogen oxides, particulate matter and air toxics, which contribute to serious public health problems including asthma, lung cancer and various other cardiac and respiratory diseases. These emissions contribute to thousands of premature deaths, millions of lost work days, and numerous other negative health impacts every year. In 2012, the World Health Organization classified diesel exhaust as a Group 1 (human) carcinogen. In addition, older, less efficient diesel vehicles emit greater amounts of greenhouse gas emissions that contribute to climate change.

Principal pollutants of concern with diesel emissions are fine particulate matter (PM_{2.5}), air toxics, greenhouse gases, and oxides of nitrogen (NO_x) that contribute to the formation of ground level ozone. Currently, all of New Hampshire is unclassifiable/attainment under the 2008 8-Hour Ozone National Ambient Air Quality Standard (NAAQS).

Fine particulate levels have also decreased in the state since the early 1990s. Presently, New Hampshire is in attainment statewide for the current 2012 fine particulate NAAQS. While PM_{2.5} has generally been improving throughout New Hampshire, some areas periodically exceed the NAAQS threshold of 35µg/m³ for health.

Over the past five years, New Hampshire has experienced an annual average of 5.6 ozone “Air Quality Action Days;” days with unhealthy concentrations of ground-level ozone for sensitive individuals. In addition, concentrations of fine particle pollution over the same five year period have reached unhealthy levels in certain locations. Valley areas during cold-season temperature inversions are particularly susceptible to elevated PM_{2.5} concentrations.

NHDES chooses to support a variety of emission reduction strategies and project partners in order to maximize our success. In past years, grantees with the State Clean Diesel program favored idle reduction technology and vehicle replacements. In addition to continuing to support vehicle replacement projects that utilize new, cleaner diesel engines, NHDES will also encourage applicants to consider use of cleaner alternative fuels and exhaust controls.

VEHICLES AND TECHNOLOGIES:

1. Eligible Applicants and Vehicles

The solicitation will be open to municipal, State or regional agencies and departments and, as funds allow, to private sector businesses operating primarily in New Hampshire.

2. Eligible Diesel Vehicles, Engines and Equipment

- A. Buses (school buses Types A-D, medium and heavy duty transit);
- B. Medium-duty or heavy-duty trucks;
- C. Marine Engines;
- D. Locomotives, and
- E. Non-road engines, equipment or vehicles used in:
 - i. Construction;
 - ii. Handling of cargo (including at a port or airport);
 - iii. Agriculture;
 - iv. Mining; or
 - v. Energy production (including stationary generators and pumps, excluding those used intermittently or for emergencies).

3. Eligible Diesel Emission Reduction Solutions

Projects must include one or more of the following diesel emission reduction solutions and employ certified engine configurations and/or verified technologies. Technology changes will not be allowed after a proposal has been selected.

A. Exhaust Controls

Exhaust Controls include pollution control devices installed in the exhaust system (such as oxidation catalysts and particulate matter filters), or systems that include crankcase emission control (like a closed crankcase filtration system). NHDES will fund up to 100% of the cost (equipment) for an eligible verified emission control. NHDES will require that each applicant requesting diesel particulate filters data log the exhaust temperature of all vehicles to be considered before the application is submitted, so that there is evidence that the fleets can accommodate the technology.

A list of eligible, EPA verified exhaust control technologies is available at: https://www.afdc.energy.gov/vehicles/electric_availability.html; a list of eligible, California Air Resources Board (CARB) verified exhaust control technologies is available at: www.arb.ca.gov/diesel/verdev/vt/cvt.htm. The types (e.g., DOC, DPF, etc.) of exhaust control technologies proposed for funding under this category must exist on one of these lists for the specific vehicle/engine application specified in the proposal at

the time of proposal submission to NHDES. If selected for funding, the actual exhaust control technologies used by the grant recipient must be specifically named on EPA or CARB's Verified Exhaust Control Technologies lists at the time of acquisition, and used only for the vehicle/engine applications specified on the list, to be eligible for funding.

B. Engine Upgrades and Remanufacture Systems

Generally, an engine upgrade involves the removal of parts on an engine during a rebuild and replacement with parts that cause the engine to represent an engine configuration which is cleaner than the original engine. Some nonroad and marine engines can be upgraded to reduce their emissions by applying manufacturer upgrades that are retrofits currently verified by EPA or CARB as a package of components demonstrated to achieve specific levels of emission reductions. Some locomotives and marine engines can be upgraded through the application of a certified remanufacture system that is used to rebuild the engine to represent a cleaner engine configuration. Engine upgrades may not be available for all engines, and not all upgrades may achieve an emissions benefit. Proposals for upgrades should include a discussion of the availability of engine upgrade kits/systems and indicate the pre- and post-project emission standard levels of the engines to demonstrate that the upgrade will result in a significant emissions benefit.

NHDES will fund up to 40% of the cost (labor and equipment) of an eligible nonroad, locomotive or marine engine upgrade. To be eligible for funding, the upgrade must either be a verified retrofit as described above, or a certified remanufacture system that will result in a significant emissions benefit by rebuilding the engine to a cleaner engine configuration. For an engine to be eligible for an upgrade, the engine must be currently operating and performing its intended function. If a certified remanufacture system for a locomotive includes a full engine replacement, the funding restrictions concerning fleet expansion apply. If a certified remanufacture system is applied at the time of rebuild, funds under this award cannot be used for the entire cost of the engine rebuild, but only for the cost of the certified remanufacture system and associated labor costs for installation.

A list of eligible, EPA verified engine upgrade technologies is available at: www.epa.gov/verified-diesel-tech/verified-technologies-list-clean-diesel. Lists of certified remanufacture systems for locomotives and marine engines are available at: www.epa.gov/compliance-and-fuel-economy-data/engine-certification-data, and additional information on remanufacture systems, are available at: www.epa.gov/vehicle-and-engine-certification/remanufacture-systems-category-1-and-2-marine-diesel-engines. The actual engine upgrades or remanufacture systems used by the grant recipient must be specifically named on EPA's list of certified remanufacture systems or EPA or CARB's Verified Exhaust Control Technologies lists at the time of acquisition, and used only for the vehicle/engine applications specified on the lists, to be eligible for funding.

C. Cleaner Fuel Use

Cleaner fuels include, but are not limited to, biodiesel and other certified alternative fuels. NHDES will not fund stand-alone cleaner fuel use. For new or expanded use of a cleaner fuel, this funding can cover the cost differential between the cleaner fuel and conventional diesel fuel if that cleaner fuel is used in combination, and on the same vehicle, with a new eligible verified exhaust control or an eligible engine upgrade or an eligible certified engine replacement or an eligible certified vehicle/equipment replacement funded under this program, as described in this Section. Funds cannot be used for equipment necessary to store or deliver the fuel.

D. Verified Idle Reduction Technologies

An idle reduction project is generally defined as the installation of a technology or device that reduces unnecessary idling of diesel vehicles or equipment and/or is designed to provide services (such as heat, air conditioning, and/or electricity) to vehicles and equipment that would otherwise require the operation of the main drive or auxiliary engine(s) while the vehicle is temporarily parked or remains stationary. The reduction in idling will conserve diesel fuel and must also lower emissions.

Lists of eligible, EPA verified idle reduction technologies are available at: www.epa.gov/verified-diesel-tech/smartway-technology. The technology categories include: Auxiliary power units and generator sets, battery air conditioning systems, thermal storage systems, electrified parking spaces (truck stop electrification), fuel operated heaters, and automatic shutdown/start-up systems for locomotives. The actual idle reduction technologies used must be specifically named on EPA's SmartWay Verified Technologies list at the time of acquisition, and used only for the vehicle/engine applications specified on the list, to be eligible for funding. Please note that technologies for the electrification of engines/vehicles/equipment other than those specifically listed on EPA's SmartWay Verified Technologies list, cannot be considered verified idle reduction technologies.

- a) *Verified Idle Reduction Technologies on Locomotives*: NHDES will fund up to 40% of the cost (labor and equipment) of eligible verified idle reduction technologies on locomotives.
- b) *Electrified Parking Spaces*: Electrified Parking Spaces (EPS), also known as Truck Stop Electrification (TSE), operate independent of the truck's engine and allows the truck engine to be turned off as the EPS system supplies heating, cooling, and/or electrical power. The EPS system provides off-board electrical power to operate either:
 - an independent heating, cooling, and electrical power system, or
 - a truck-integrated heating and cooling system, or
 - a plug-in refrigeration system that would otherwise be powered by an engine.

NHDES will fund up to 30% of the cost (labor and equipment) of eligible electrified parking space technologies, including the cost of modifications,

attachments, accessories, or auxiliary apparatus necessary to make the equipment functional. Examples of eligible EPS costs include, but are not limited to, the purchase and installation of electrical infrastructure or equipment to provide heating, cooling, and cab power for parked trucks, or to provide power for transport refrigeration units (TRUs) and auxiliary power systems at distribution centers, intermodal facilities, and other places where trucks congregate. Examples of ineligible costs for EPS include, but are not limited to: on-board auxiliary power units and other equipment installed on trucks; equipment and services unrelated to heating and cooling (e.g., telephone, internet, television, etc.); TRUs; electricity costs; and operation and maintenance costs.

- c) *Highway Idle Reduction Technologies*: NHDES will fund up to 25% of the cost (labor and equipment) of eligible, verified idle reduction technologies on long-haul trucks that operate primarily in New Hampshire and school buses serving a New Hampshire school system.

E. Verified Aerodynamic Technologies and Verified Low Rolling Resistance Tires

To improve fuel efficiency, long haul Class 8 trucks can be retrofitted with aerodynamic trailer fairings or the fairings can be provided as new equipment options. Certain tire models can provide a reduction in NOx emissions and fuel savings, relative to the “standard” new tires for long haul Class 8 trucks, when used on all axles.

A list of eligible, EPA verified aerodynamic technologies is available at: www.epa.gov/verified-diesel-tech/smartway-verified-list-aerodynamic-devices, and includes:

- a) gap fairings that reduce the gap between the tractor and the trailer to reduce turbulence;
- b) trailer side skirts that minimize wind under the trailer; and
- c) trailer rear fairings that reduce turbulence and pressure drop at the rear of the trailer.

A list of EPA verified low rolling resistance tires is available at: www.epa.gov/verified-diesel-tech/smartway-verified-list-low-rolling-resistance-lrr-new-and-retread-tire, and includes both dual tires and single wide tires (single wide tires replace the double tire on each end of a drive or trailer axle, in effect turning an "18" wheeler into a "10" wheeler). Low rolling resistance tires can be used with lower-weight aluminum wheels to further improve fuel savings, however aluminum wheels are not eligible for funding under this program. The technologies/tires used by the grant recipient must be specifically named on EPA’s SmartWay Verified Technologies list at the time of acquisition, and used only for the vehicle/engine applications specified on the list, to be eligible for funding. NHDES will not fund stand-alone aerodynamic technologies or low rolling resistance tires. NHDES will fund up to 100% of the cost (labor and equipment) for verified aerodynamic technologies or verified low rolling resistance tires installed on long haul Class 8 trucks operating primarily in New Hampshire, if combined on the same vehicle

with the new installation of one or more of the Verified Exhaust Controls funded under this program.

F. Certified Engine Replacement

Engine Replacement includes, but is not limited to, diesel engine replacement with an engine certified for use with diesel or a clean alternative fuel, diesel engine replacement with an electric power source (grid, battery or fuel cell), and/or diesel engine replacement with an electric generator(s) (genset). All-electric (i.e., zero emission) engine replacements do not require EPA or CARB certification.

The eligible expenses for an engine replacement project include the cost of modifications, attachments, accessories, or auxiliary apparatus necessary to make the equipment functional, including related labor expenses. Charges for equipment and parts on engine replacement projects are only eligible for funding if they are included in the certified engine configuration and/or are required to ensure the effective installation and functioning of the new technology, but are not part of typical vehicle or equipment maintenance or repair. Examples of ineligible engine replacement costs include, but are not limited to: tires, cabs, axles, paint, brakes, and mufflers. For engine replacement with battery, fuel cell, and grid electric, examples of eligible engine replacement costs include, but are not limited to: electric motors, electric inverters, battery assembly, direct drive transmission/gearbox, regenerative braking system, vehicle control/central processing unit, vehicle instrument cluster, hydrogen storage tank, hydrogen management system, fuel cell stack assembly, and the purchase and installation of electrical infrastructure or equipment to enable the use of power. Examples of ineligible costs include, but are not limited to, electricity, and operation and maintenance costs.

No funds awarded under the Program may be used for the purchase of engines to expand a fleet. Engine replacement projects are eligible for funding on the condition that the following criteria are satisfied:

- The replacement engine will continue to perform the same function and operation as the engine that is being replaced.
- The replacement engine will be of the same type and similar gross vehicle weight rating or horsepower as the engine being replaced.
- The engine being replaced must be scrapped or rendered permanently disabled within ninety (90) days of being replaced.

a) Locomotive, Marine, and Nonroad Diesel Vehicles and Equipment:

- i. NHDES will fund up to 40% of the cost (labor and equipment) of replacing a diesel engine with a 2017 model year or newer engine certified to 2017 EPA emission standards. Previous engine model year engines may be used if the engine is certified to the same emission standards applicable to a MY 2017 engine. Nonroad, locomotive, and marine engine emission standards are on EPA's website at: www.epa.gov/emission-standards-reference-guide/epa-emission-standards-nonroad-engines-and-vehicles.
- ii. NHDES will fund up to 60% of the cost (labor and equipment) of replacing a diesel engine with an electric motor or electric power source.

- iii. Funds cannot be used to replace a non-road engine that runs for less than 500 hours per year. Funds cannot be used to replace a marine or locomotive engine that runs less than 1,000 hours per year.

b) *Highway Diesel Vehicles:*

- i. NHDES will fund up to 40% of the cost (labor and equipment) of replacing a diesel engine with a 2017 model year or newer engine certified to 2017 EPA emission standards. Highway engine emission standards are on EPA's website at: www.epa.gov/emission-standards-reference-guide/epa-emission-standards-heavy-duty-highway-engines-and-vehicles.
- ii. NHDES will fund up to 50% of the cost (labor and equipment) of replacing a diesel engine with a 2017 model year or newer engine that is certified to CARB's Optional Low-NOx Standards of 0.1 g/bhp-hr, 0.05 g/bhp-hr, or 0.02 g/bhp-hr NOx. Engines certified to CARB's Optional Low NOx Standards may be found by searching CARB's Executive Orders for Heavy-duty Engines and Vehicles, found at: www.arb.ca.gov/msprog/onroad/cert/cert.php.
- iii. NHDES will fund up to 60% of the cost (labor and equipment) of replacing a diesel engine with an electric motor or an electric power source.

G. **Vehicle and Equipment Replacements**

Nonroad and highway diesel vehicles and equipment can be replaced under this program with newer, cleaner vehicles and equipment that operate on diesel or alternative fuels and use engines certified by EPA and, if applicable, CARB to meet a more stringent set of engine emission standards. Replacement includes, but is not limited to, diesel vehicle/equipment replacement with newer, cleaner diesel, electric (grid, battery or fuel cell), hybrid or alternative fuel vehicles/equipment. All-electric (i.e. zero emission) vehicles and equipment do not require EPA or CARB certification. Marine vessels are not eligible for full vessel replacement.

The eligible cost of a vehicle/equipment replacement includes the cost of modifications, attachments, accessories, or auxiliary apparatus necessary to make the equipment functional. The cost of additional "optional" components or "add-ons" that significantly increase the cost of the vehicle may not be eligible for funding under the grant; the replacement vehicle should resemble the replaced vehicle in form and function. For grid electric powered equipment replacements, examples of eligible replacement costs include, but are not limited to, the purchase and installation of electrical infrastructure or equipment to enable the use of power. Examples of ineligible costs include, but are not limited to, electricity, and operation and maintenance costs.

No funds awarded under the Program may be used for the purchase of vehicles or equipment to expand a fleet. Vehicle or equipment replacement projects are eligible for funding on the condition that the following criteria are satisfied:

- The replacement vehicle or equipment will continue to perform the same function and operation as the vehicle or equipment that is being replaced.

- The replacement vehicle or equipment will be of the same type and similar gross vehicle weight rating or horsepower as the vehicle or equipment being replaced.
- The vehicle or equipment being replaced must be scrapped or rendered permanently disabled within ninety (90) days of being replaced.

a) *Locomotives and Nonroad Diesel Vehicles and Equipment:*

- i. NHDES will fund up to 25% of the cost of a replacement vehicle or piece of equipment powered by a 2017 model year or newer engine certified to EPA 2017 emission standards. Previous engine model year engines may be used if the engine is certified to the same emission standards applicable to EMY 2017. Nonroad and locomotive engine emission standards are on EPA's website at: www.epa.gov/emission-standards-reference-guide/epa-emission-standards-nonroad-engines-and-vehicles.
- ii. NHDES will fund up to 45% of the cost of a new, all-electric nonroad vehicle or piece of equipment.
- iii. Funds cannot be used to replace a non-road vehicle that runs for less than 500 hours per year. Funds cannot be used to replace a locomotive that runs less than 1,000 hours per year.

b) Highway Diesel Vehicles and Buses (other than Drayage):

- i. NHDES will fund up to 25% of the cost of a replacement vehicle powered by a 2017 model year or newer engine certified to EPA 2017 emission standards. Highway engine emission standards are on EPA's website at: www.epa.gov/emission-standards-reference-guide/epa-emission-standards-heavy-duty-highway-engines-and-vehicles.
- ii. NHDES will fund up to 35% of the cost of a replacement vehicle powered by a 2017 model year or newer engine certified to meet CARB's Optional Low-NOx Standards of 0.1 g/bhp-hr, 0.05 g/bhp-hr, or 0.02 g/bhp-hr NOx. Engines certified to CARB's Optional Low NOx Standards may be found by searching CARB's Executive Orders for Heavy-duty Engines and Vehicles, found at: www.arb.ca.gov/msprog/onroad/cert/cert.php.
- iii. NHDES will fund up to 45% of the cost of an all-electric replacement vehicle.

c) Drayage Vehicles:

NHDES will fund up to 50% of the cost of a replacement drayage truck powered by a 2012 model year or newer certified engine.

- i. Definition of Drayage Truck: A "Drayage Truck" means any Class 8 (GVWR greater than 33,000) highway vehicle operating on or transgressing through port or intermodal rail yard property for the purpose of loading, unloading or transporting cargo, such as containerized, bulk or break-bulk goods.

- ii. Drayage Operating Guidelines: If a proposal for the replacement of drayage trucks is selected for funding, the grant recipient will be required to establish guidelines to ensure that any existing truck replaced with grant funds has a history of operating on a frequent basis over the prior year as a drayage truck, and to ensure any new truck purchased with grant funds is operated in a manner consistent with the definition of a drayage truck, as defined above. For an example of sample guidelines, see <https://www.epa.gov/cleandiesel/clean-diesel-state-allocations>.

ROLES AND RESPONSIBILITIES:

As with prior projects, NHDES will collaborate with other state agencies, municipalities and school districts, public and private transit companies, and marine operators and private fleets. As noted, we believe that making the sub-grants and participant support costs available to the widest possible audience will help with our success. Subawards will be disbursed through a solicitation for projects and the participant support costs will be disbursed through a rebate type program. Use of VW Trust Funds to match the federal fiscal year 2018 funds for will likely focus on municipal and state owned fleets as well as other publicly owned fleets.

TIMELINE AND MILESTONES:

- 10/01/18 – A Request for Proposals (RFP) by NHDES will be released. In addition to posting on the NHDES website, the open solicitation will be publicized via a monthly newsletter geared to municipalities, and via relationships with NH Local Energy Solutions Workgroup, New Hampshire School Transportation Association, NH Local Government Center, NH Municipal Association and NH Association of Counties, NH Motor Transit Association, NH Association of General Contractors, Granite State Clean Cities Coalition and others. The list of publications to target and groups to contact will be developed prior to the project start date.
- Fall 2018 – NHDES will explore the option of a rebate program under the participant support costs program outlined in the [FY 2017-2018 State Clean Diesel Grant Program Information Guide](#).
- Early Winter 2018 – Round 2 RFP – If all program funding is not obligated during an initial round, a subsequent RF will be released.
- 12/31/18 – Submit Round 1 grant agreements for approval by Governor and Council.
- Spring 2019 – Submit Round 2 grant agreements for approval by Governor and Council.

- 01/01/19 – 08/31/19 – Round 1 and Round 2 project implementation. All projects will be completed by September 30, 2019.
- 01/31/19, 04/30/19, 07/31/19 and 10/31/19 – Submit quarterly reports to EPA.
- 12/31/19 – Submit final report to EPA.

Following the effective date of their agreement, project awardees will be responsible for submitting quarterly status reports to NHDES for a period of one year beginning with the first quarter following the completion of the work or by 10/15/19, whichever comes first. Beginning one year after completion of the final quarterly report, awardees will be responsible for submitting annual reports to NHDES for a period of three years.

In order to ensure that up to date project information continues to be available, periodic reviews and updates of program information on the NHDES website will be completed.

DERA PROGRAMMATIC PRIORITIES:

New Hampshire will ensure that the programmatic priorities, as outlined in the [FY 2017-2018 State Clean Diesel Grant Program Information Guide](#) will be met by selecting diesel emission reduction projects that achieve significant reductions in diesel emissions and reductions in diesel emission exposure from vehicles, engines, and equipment. Additionally, EPA’s priorities include projects located in areas that receive a disproportionate quantity of air pollution from diesel fleets, including: truck stops; ports; rail yards’ terminals; construction sites; and school bus depots/yards. NH’s Clean Diesel Program will prioritize projects for diesel vehicles and equipment operating in highly populated areas, areas with sensitive receptor groups such as schools or hospitals, or areas that receive a disproportionate quantity of air pollution from diesel fleets, and in areas that are near non-attainment for other pollutants such as particulate matter. EPA has identified a list of priority counties and areas, which can be found here <https://www.epa.gov/sites/production/files/2018-04/documents/fy18-priority-counties-national.pdf>. In New Hampshire, Rockingham County is identified as a priority county as an area with toxic air pollutant concerns as identified from the National Air Toxics Assessment data.

Diesel exhaust is a complex mixture of pollutants including particulate matter, nitrogen oxides and volatile organic compounds which contribute to smog, acid rain, climate change, and a range of health problems. Truck drivers, railroad workers and equipment operators may have an increased risk of health related issues from occupational exposure to diesel exhaust. The PM_{2.5} and toxic chemicals found in diesel exhaust can lead to respiratory problems and exacerbate asthma. According to “Asthma Burden Report New Hampshire 2014,” New Hampshire has a “significantly higher” asthma prevalence rate when compared to the rest of the nation, with approximately 11 percent of adults and 10.6 percent of children currently afflicted with the disease. EPA indicates the fine particles in diesel exhaust can aggravate asthma and cause lung damage and premature death. In 2012, the World Health Organization declared diesel exhaust to be carcinogenic to humans.

Vehicle replacements are an effective option because they eliminate the need for matching retrofit equipment to the engine or vehicle, and provide the highest emission reduction over the useful life of the engine. Alternative fuel vehicles accomplish emission reductions and promote the use of alternative fuels in the region. Replacing a diesel powered vehicle with a vehicle fueled by propane, CNG or electricity eliminates the high maintenance costs associated with the newer diesel engine systems.

Engine replacements can be a cost effective means of reducing emissions in existing vehicles, particularly for non-road equipment. Exhaust controls are another lower cost option, but they do not offer the economic incentive of fuel savings or maximizing the useful life of the vehicle or engine. NHDES seeks to promote all diesel reduction strategies outlined in this document, to promote emissions reduction and further the improvement of promising technologies.

New Hampshire intends to use VW Trust Funds to match the federal funds for the federal fiscal year 2018 grant. Projects utilizing VW Trust Funds will reduce emissions of NOx and support the goals of the New Hampshire Beneficiary Environmental Mitigation Plan.

EPA'S STRATEGIC PLAN LINKAGE AND ANTICIPATED OUTCOMES/OUTPUTS:

1. Linkage to EPA Strategic Plan

NHDES intends to reduce emissions from older diesel vehicles through implementation of this program and in doing so will assist in reducing the amount of NOx and PM that is emitted to the air. This aligns with Objective 1.1 in the EPA's FY 2018-22 Strategic Plan is to improve air quality. As part of its mission to protect human health and the environment, EPA is dedicated to improving the quality of the nation's air.

2. Outputs

Some specific outputs of the NH Clean Diesel Program include:

- A. NHDES will issue an RFP as described in the Project Description section of this work plan. NHDES will evaluate the proposals based on program goals.
- B. The Diesel Emission Quantifier (DEQ) and / or Motor Vehicle Emission Simulator (MOVES) will be used to quantify project benefits before project selections are made.
- C. NHDES will encourage the use of the funds for municipal and state fleets as well as other publically owned fleets.
- D. NHDES will continue to support the Granite Sate Clean Cities Coalition and engage its stakeholders when requesting project proposals.
- E. NHDES will produce quarterly reports to the EPA identifying the progress of the program
- F. Program Completion Report: NHDES will undertake a full evaluation of the program. The program completion report will include the number of miles or hours retrofitted or replaced units have been in service since the project occurred, fuel consumption since the beginning of the project, emissions reduced or eliminated, maintenance issues (if any), and documentation of outreach conducted in support of the project.
- G. Notification of grants awarded will be posted on a public facing website along with a complete list of awardees.

3. Outcomes

Some specific outcomes of the NH Clean Diesel Program include:

- A. Potential Outcomes presented below were estimated using the Diesel Emissions Quantifier:
- Engine Repower: Engine repowers can provide up to one ton of NO_x and 500 lbs. PM_{2.5} of annual emission reductions.
 - Idle Reduction: Transit buses and long distance haulers can provide 4 and 6 tons respectively of NO_x emission reductions in their lifetime. Idle reduction devices also provide cost effective reductions in greenhouse gas and result in fuel savings.
 - Vehicle Replacements: Vehicle replacements can yield cost-effective NO_x reductions and can provide sustained clean air benefits in a community. Deployment of alternative fuel vehicles and associated infrastructure promotes adoption by others and reduces petroleum imports.
- B. Community engagement and partnership;
- C. Better understanding, knowledge and acceptance of currently available pollution control technology and equipment by state and municipal fleet managers, fleet owners and the public and school transportation sectors;
- D. Increased data and information on verified control equipment/technology for use by other potential users;
- E. Expansion of alternative fuel vehicle use in the state;
- F. Increased awareness of the health and climate change benefits of particulate controls, alternative fuels, and reduced idling in the state's transportation sector and by the traveling public who will be made aware of the program through outreach;
- G. Sustained or improved air quality in NH;

SUSTAINABILITY OF THE PROGRAM:

NHDES' Mobile Sources Section includes a grant manager with extensive experience who also serves as New Hampshire's Clean Cities Coordinator. This individual is acquainted with many of the state's public and private fleet managers and will manage the program. Technical support is provided by the other Mobile Sources staff.

NHDES is committed to continue to educate diesel equipment users about the environmental, health, and monetary benefits of utilizing emission reduction technology, cleaner fuels, cleaner vehicles, and modifying driver behavior.

BUDGET NARRATIVE

Itemized Project Budget

FY 2018				
Budget Category	EPA Allocation	Voluntary Match (if applicable)	Mandatory Cost-Share (if applicable)	Total
1. Personnel	\$41,655.40			\$41,655.40
2. Fringe Benefits	\$18,364.64			\$18,364.64
3. Travel				
4. Supplies				
5. Equipment				
6. Contractual				
7. Program Income				
8. Other	\$349,890.41	\$274,366.00	To Be Determined	\$624,256.41
9. Total Direct Charges	\$409,910.45	\$274,366.00	To Be Determined	\$684,276.45
10. Indirect Charges	\$1,638.55			\$1,638.55
Grand Total	\$411,549.00	\$274,366.00	To Be Determined	\$ 685,915.00

Explanation of Budget Framework

- **Personnel –**

	Annual Salary	% of Time	Total Salary
Grant Manager	\$56,238.00	32%	\$18,025.00
Transportation Program Specialist	\$63,999.00	37%	\$23,630.40
		Total	\$41,655.40

- **Fringe Benefits –**
 FICA: 6.2%
 Health Insurance: Percentage Varies
 Medicare: 1.45%
 Retirement: 12.5%
 Dental: Percentage Varies

Life Insurance: Percentage Varies

	Benefits - % of Salary	Total
Grant Manager	56.0	\$10,094.00
Transportation Program Specialist	35.0	\$8,270.64
	Total	\$18,364.64

- **Travel –**
No travel expenses will be charged to this grant for program implementation. Existing state funds will be used to cover such expenses if any are incurred.
- **Equipment –**
No equipment purchases beyond the subawards for equipment specified under “other” below will be made using these funds.
- **Supplies –**
No supplies will be purchased using these funds.
- **Contractual –**
No contractual/consultant services are anticipated to be needed for this project.
- **Other –**
Subawards and participant support costs will be made under this category and the details of those subawards and costs will not be known prior to the completion of a solicitation for project proposals. NHDES intends to issue subawards via grant agreements with eligible applicants and for eligible projects as described in New Hampshire’s Program Plan, which is consistent with EPA’s DERA program requirements. All subawards will be made according to the Terms and Conditions of the award agreement.

Category	Amount
Subawards	\$624,256.41
Total	\$624,256.41

- **Indirect Charges -**
Indirect Costs = 2.73% of the sum of personnel and fringe benefits.

	Total Indirect Costs
Grant Manager	\$767.65
Transportation Program Specialist	\$870.90
Total	\$1,638.55

Administrative Costs Expense Cap

Based on the calculations completed in the tables above, the administrative costs are below the 15% allowable cap.

Matching Funds and Cost-Share Funds

As stated in Appendix D-2 of the Partial Consent Decree for the Volkswagen “Clean Diesel” Marketing, Sales Practices, and Products Liability Litigation, an eligible mitigation action expenditure is to utilize trust funds for the non-federal voluntary match of the Diesel Emission Reduction Act (DERA) grant. New Hampshire intends to use this option to match the federal funds for the fiscal year 2018 grant using the Volkswagen Trust Funds, provided they are available in time.

In the event that the Volkswagen settlement funds are not made available during the project period of this assistance agreement and New Hampshire decides to not match the DERA base allocation, the State will submit an amendment to the award to decrease the total award amount down to the EPA base allotment of \$274,366 and return the state Match Bonus funds totaling \$137,183.

The mandatory cost-share funds will be determined after a solicitation of projects has been completed. The solicitation of projects will be completed with a focus on public fleets (municipal and state) and the cost share funds will be provided by the subaward grantees.

Funding Partnerships

NHDES will collaborate with other state agencies, municipalities and school districts, public and private transit companies, and marine operators and private fleets. As noted, we believe that making the sub-grants and participant support costs available to the widest possible audience will help with our success.