



Missouri Department of dnr.mo.gov

NATURAL RESOURCES

Michael L. Parson, Governor

Dru Buntin, Director

October 19, 2021

Russell L. Crane
Volkswagen Environmental Mitigation Trust
c/o Wilmington Trust, N.A. as Trustee
1100 North Market Street
Attn: Capital Markets & Agency Services
Wilmington, DE 19890

Dear Russell Crane:

The Missouri Department of Natural Resources has enclosed Missouri's 29th funding request through the Volkswagen Environmental Mitigation Trust (Project ID: Cat 7-EMA10 FY22-001). The department is sending the enclosed electronically through Intralinks. Due to the pandemic, Wilmington Trust has waived the requirement to send a hard copy required by paragraph 5.2 of the Trust Agreement. As such, the department does not intend to send a hard copy. If circumstances change and a hard copy is required, please let us know and we will send one as soon as possible.

Thank you for attention to this matter. If you have any questions regarding this submission, please contact Emily Wilbur, with the department's Air Pollution Control Program at P.O. Box 176, Jefferson City, MO 65102 or by phone at (573) 751-7840 or email at emily.wilbur@dnr.mo.gov.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Stephen M. Hall
Director

SMH:cm

Enclosure



APPENDIX D-4
Beneficiary Eligible Mitigation Action Certification

Missouri Funding Request #29

Project ID: Cat 7-EMA10 FY22-001

BENEFICIARY ELIGIBLE MITIGATION ACTION CERTIFICATION

Beneficiary State of Missouri

Lead Agency Authorized to Act on Behalf of the Beneficiary: Missouri Department of Natural Resources
(Any authorized person with delegation of such authority to direct the Trustee delivered to the Trustee pursuant to a Delegation of Authority and Certificate of Incumbency)

Action Title:	DERA Award Category – Federal Program Year 2020
Beneficiary’s Project ID:	Cat 7-EMA10 FY22-001
Funding Request No.	29
Request Type: (select one or more)	<input checked="" type="checkbox"/> Reimbursement <input checked="" type="checkbox"/> Advance <input type="checkbox"/> Other (specify): _____
Payment to be made to: (select one or more)	<input checked="" type="checkbox"/> Beneficiary <input type="checkbox"/> Other (specify): _____
Funding Request & Direction (Attachment A)	<input type="checkbox"/> Attached to this Certification <input checked="" type="checkbox"/> To be Provided Separately

SUMMARY

Eligible Mitigation Action Type	<input type="checkbox"/> Appendix D-2 item (specify): <input checked="" type="checkbox"/> Item 10 - DERA Option (5.2.12) (Match for 2020 Missouri State Clean Diesel Program):
Explanation of how funding request fits into Beneficiary’s Mitigation Plan (5.2.1):	
Missouri’s allocates \$3 million to provide the state’s match to the state allocated Diesel Emission Reduction Act (DERA) grant each year throughout the ten-year period of the VW Trust. This funding request will provide the state’s match for Missouri’s state DERA grant for EPA’s 2020 program year. Under this grant program, Missouri plans to provide funding for the replacement of vehicles and equipment in accordance with DERA requirements.	
Detailed Description of Mitigation Action Item Including Community and Air Quality Benefits (5.2.2):	
Missouri’s work plan and budget for the 2020 Missouri State Clean Diesel Program is attached. Under the grant program, Missouri expects to implement replacements and repowers for onroad and nonroad equipment.	
Estimate of Anticipated NO_x Reductions (5.2.3):	
The department will use specific equipment replacement information and the EPA Diesel Emissions Quantifier to determine the magnitude of NO _x reduction over the lifetimes of these projects.	
Identification of Governmental Entity Responsible for Reviewing and Auditing Expenditures of Eligible Mitigation Action Funds to Ensure Compliance with Applicable Law (5.2.7.1):	
Missouri Department of Natural Resources	
Describe how the Beneficiary will make documentation publicly available (5.2.7.2).	
The Missouri Department of Natural Resources, as lead agency for the state of Missouri implementing the Environmental Mitigation Plan, has established a webpage on the VW Trust and mitigation actions, https://dnr.mo.gov/env/apcp/vw .	
Describe any cost share requirement to be placed on each NO_x source proposed to be mitigated (5.2.8).	
Missouri’s DERA grant dollars will be used to fund a portion of the equipment, vehicle, and engine replacement projects. Using the grant dollars and the Trust dollars, the department will provide a percentage of the cost of the new equipment and the equipment owners will pay the remaining cost in accordance with DERA and VW Trust requirements.	
Describe how the Beneficiary complied with subparagraph 4.2.8, related to notice to U.S. Government Agencies (5.2.9).	
On February 28, 2018, the Department notified the Department of Interior, including the National Park Service and U.S. Fish and Wildlife Service, and the Department of Agriculture, including the Forest Service of the availability of VW funds for locations within Missouri. The Department did not receive notice from any other federal agency indicating interest in these funds.	
If applicable, describe how the mitigation action will mitigate the impacts of NO_x emissions on communities that have historically borne a disproportionate share of the adverse impacts of such emissions (5.2.10).	
School bus replacement projects operate primarily around school-aged children, which are a sensitive population. As a sensitive population, children bear an increased share of air pollution burden.	

ATTACHMENTS

(CHECK BOX IF ATTACHED)

- | | | |
|-------------------------------------|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> | Attachment A | Funding Request and Direction. |
| <input checked="" type="checkbox"/> | Attachment B | Eligible Mitigation Action Management Plan Including Detailed Budget and Implementation and Expenditures Timeline (5.2.4). |
| <input checked="" type="checkbox"/> | Attachment C | Detailed Plan for Reporting on Eligible Mitigation Action Implementation (5.2.11). |
| <input checked="" type="checkbox"/> | Attachment D | Detailed cost estimates from selected or potential vendors for each proposed expenditure exceeding \$25,000 (5.2.6). [Attach only if project involves vendor expenditures exceeding \$25,000.] |
| <input checked="" type="checkbox"/> | Attachment E | DERA Option (5.2.12). [Attach only if using DERA option.] |
| <input type="checkbox"/> | Attachment F | Attachment specifying amount of requested funding to be debited against each beneficiary's allocation (5.2.13). [Attach only if this is a joint application involving multiple beneficiaries.] |

ATTACHMENT B

Beneficiary Eligible Mitigation Action Certification – Missouri Funding Request #29
Project ID: Cat 7-EMA10 FY22-001

Eligible Mitigation Action Management Plan Including Detailed Budget and Implementation and Expenditures Timeline

PROJECT MANAGEMENT PLAN

PROJECT SCHEDULE AND MILESTONES

Milestone	Date
DNR provides notice of availability of mitigation action funds	Aug/Sept 2019
Due date for project sponsors to submit proposals to lead agency	Oct/Nov, 2019
DNR provides approval of successful project sponsors' proposals	Dec 2019/Jan 2020
Project sponsors complete procurement and submit purchase orders	Project approval + 1 month
DNR submits attachment A to cover annual admin and project awards	Project approval +1 month
Trustee provides funds to DNR as requested in the attachment A	Project approval +1.5 months
Vehicles delivered to project sponsors	Project approval + 3 months
Project sponsors submit evidence of vehicle scrapping, invoices, proof of payment, and other documents required for reimbursement	Project approval + 3.5 months
DNR reviews, requests corrections if necessary, certifies project completion, and provides reimbursement	Project approval + 4 months
DNR reports to Trustee on status of and expenditures with mitigation actions completed and underway	Jan. 31 and July 31 each year

PROJECT BUDGET

	Period of Performance: <u>March 2021 – June 2022</u>			
Budget Category	Total Approved Budget	Share of Total Budget to be Funded by the Trust	Cost-Share, if applicable (DERA Grant)	Cost-Share, if applicable (Project Sponsors)
1. Equipment Expenditure	\$2,593,147	\$259,314.75	\$388,972	\$1,944,860.25
2. Contractor Support <i>(Provide List of Approved Contractors as Attachment with approved funding ceilings)</i>	\$0	\$0	\$0	\$0
3. Subrecipient Support <i>(Provide List of Approved Subrecipients or Grant Awardees as Attachment with approved funding ceilings)</i>	\$0	\$0	\$0	\$0
4. Administrative ¹	\$0	\$0	\$0	\$0
Project Totals	\$2,593,147	\$259,314.75	\$388,972	\$1,944,860.25
Percentage	100%	10%	15%	75%

¹ Subject to Appendix D-2 15% administrative cap.

Beneficiary Eligible Mitigation Action Certification – Missouri Funding Request #29
Project ID: Cat 7-EMA10 FY22-001

PROJECTED TRUST ALLOCATIONS

	FY 2022	FY 2023-28
1. Anticipated Annual Project Funding Requests to be paid through Trust	\$ 14,500,000	\$ 6,895,504
2. Anticipated Annual Cost Share	\$ 12,884,650	\$ 8,762,000
3. Anticipated Total Project Funding by Year (line 1 plus line 2)	\$ 27,384,650	\$ 15,657,504
4. Cumulative Trustee Payments made to Date Against Cumulative Approved Beneficiary Allocation	\$ 19,756,547	\$ 34,256,547
5. Current Beneficiary Project Funding to be paid through the Trust (line 1)	\$ 14,500,000	\$ 6,895,504
6. Total Funding Allocated to Beneficiary, inclusive of Current Action by Year (line 4 plus line 5)	\$ 34,256,547	\$ 41,152,051
7. Beneficiary Share of Estimated Funds Remaining in Trust	\$ 21,395,504	\$ -
8. Net Beneficiary Funds Remaining in Trust, net of cumulative Beneficiary Funding Actions (line 7 minus line 5)	\$ 6,895,504	\$ -

ATTACHMENT C

Detailed Plan for Reporting on Eligible Mitigation Action Implementation (5.2.11)

Records of the applicant, selected projects, and financial reports will be made available on the department's VW webpage in the form of a report to coincide with reporting requirements listed in the trust. Records may also be obtained through the state sunshine request portal.

ATTACHMENT D

Detailed cost estimates from selected or potential vendors for each proposed expenditure exceeding \$25,000 (5.2.6)

Beneficiary Eligible Mitigation Action Certification – Missouri Funding Request #29

Project IDs: Cat 7-EMA10 FY22-001

Nonroad Engine Replacement Project

Vehicle/Equipment Type	Diesel
Stationary Baler	\$21,000 - \$32,000

Nonroad Vehicle/Equipment Replacement Projects

Vehicle/Equipment Type	Diesel
40 Ton Haul Truck	\$780,000 - \$117,000
Forklift	\$56,000 - \$84,000
Loader	\$140,000 - \$210,000
Backhoe	\$80,000 - \$120,000

School Bus Replacement Projects

Bus Style	Diesel	Propane	Compressed Natural Gas
Type A	\$60,000 - \$85,000	\$65,000 - \$95,000	\$75,000 - \$105,000
Type B	NA	NA	NA
Type C	\$88,000 - \$120,000	\$100,000 - \$130,000	\$110,000 - \$150,000
Type D	\$100,000 - \$140,000	NA	NA

The department reviewed invoices for school bus purchases that schools have made in recent grants the department administered. School buses are classified by type that reflects passenger capacity and body style. Nonroad equipment price estimates based on submission by program applicants, and are classified by project type and vehicle/equipment use. All projects funded with Volkswagen Trust funds in this EMA are diesel powered.

2020 Diesel Emissions Reduction Act (DERA) State Grants Work Plan and Budget Narrative Template

SUMMARY PAGE

Project Title: 2019-2020 Missouri State Clean Diesel Program

Project Manager and Contact Information

Organization Name: Missouri Department of Natural Resources

Project Manager: Seanmichael Stanley

Mailing Address: P.O. Box 176, Jefferson City, MO 65102-0176

Phone: (573) 751-4817

Fax: (573) 751-2706

Email: seanmichael.stanley@dnr.mo.gov

Project Budget Overview:

	2019*	2020
EPA Base Allocation	\$323,511	\$345,753
EPA Match Bonus (if applicable)	\$161,756	\$172,877
State or Territory Voluntary Matching Funds (if applicable)	\$323,511	\$345,753
Mandatory Cost-Share	\$0	\$0
TOTAL Project Cost	\$808,778	\$864,383

*If state participated in 2019

Project Period

October 1, 2019 – September 30, 2021

Summary Statement

The Missouri Department of Natural Resources plans to implement a rebate program allowing for all eligible DERA projects in accordance with EPA's 2019-2020 Diesel Emissions Reduction Act (DERA) State Grants Program Guide and associated grant requirements. The department will solicit applications for projects no later than October 31, 2020. The department will select program beneficiaries by lottery from the pool of applications. The department will offer participant support costs to applicants in the order drawn using the available DERA funding. The department will keep the remaining applications as alternatives in case any of the initially selected beneficiaries decide not to participate in the program. Applicants will not be disqualified from participating in future State DERA programs for applying for funding under the current program or accepting or declining an offered rebate.

The department intends to use Volkswagen Environmental Mitigation Trust funds (VW Trust Funds) to match the federal funds for the fiscal year 2020 DERA grant pursuant to the "DERA Option" specified in Appendix D-2 of the Missouri's Beneficiary Mitigation Plan for the Volkswagen Trust. Any voluntary cost share generated during the project period will be counted toward the voluntary match.

Use of all funds will be in line with the scope of work outlined in this plan and Missouri's [Volkswagen Trust Diesel Emissions Reduction Act Program Requirements](#).

SCOPE OF WORK

As described above, the department plans to implement a rebate program allowing for all eligible DERA projects in accordance with EPA's 2019-2020 Diesel Emissions Reduction Act (DERA) State Grants Program Guide and associated grant requirements.

STATE/TERRITORY GOALS AND PRIORITIES: Missouri contains a portion of the bi-state St. Louis nonattainment area. The area consists of St. Louis City, St. Louis County, St. Charles County, and a portion of Franklin County and is designated as nonattainment under the 2015 Ozone National Ambient Air Quality Standards (NAAQS). Mobile source emissions comprise a significant percentage of the pollutants that contribute to fine particulate matter and ozone formation, with over 20 billion vehicle miles traveled annually in the St. Louis area.

In addition to the St. Louis 2015 8-hour ozone nonattainment area, Jefferson county and the entirety of Franklin county are identified in EPA's 2020 Priority County List since they are maintenance areas under the 1997 PM_{2.5} and 2008 8-hour Ozone Standards. There are also four Ozone Advance areas in Missouri including Kansas City, Joplin, Springfield, and Southeastern Missouri.

Diesel fleets across the state vary widely. The Missouri River runs through the middle of the state from Kansas City to St. Louis, which generates diesel traffic from locomotives, marine engines, and other industry. Kansas City and St. Louis each contain international airports, major railroad hubs, marine ports, and significant on-road diesel vehicle traffic. The entire eastern edge

of the state borders the Mississippi River, which likewise generates diesel traffic from marine, rail, and other industries. There are dozens of smaller regional airports throughout the state. Missouri has more than 550 public school districts, nearly all of which offer transportation to students. Numerous cities around the state offer transportation services via diesel-powered public transit buses. Greater than 100 incorporated cities offer public and/or contracted refuse-hauling services. Missouri contains over 1,100 miles of interstate highway and approximately 40,000 miles of total roadway system. This complex system generates billions of vehicle miles traveled annually and accommodates tens of thousands of public and commercial diesel trucks.

VEHICLES AND TECHNOLOGIES: This solicitation will be open to all Missouri municipal and state agencies and departments, and to private sector businesses operating in Missouri. The department anticipates the majority of projects to be vehicle replacements.

A. Eligible Diesel Vehicles, Engines, and Equipment: Projects may include, but are not limited to, diesel emission reduction solutions from the following heavy-duty diesel emission source types:

1. Buses;
2. Medium-duty or heavy-duty trucks;
3. Marine Engines;
4. Locomotives; and
5. Nonroad engines, equipment or vehicles used in:
 - a) Construction;
 - b) Handling of cargo (including at a port or airport);
 - c) Agriculture;
 - d) Mining; or
 - e) Energy production (including stationary generators and pumps).

B. Eligible Diesel Emission Reduction Solutions: Projects must include one or more of the following diesel emission reduction solutions that utilize a certified engine configuration and/or a verified technology.

- 1. Diesel Engine Retrofit Technologies:** Diesel engine retrofits are one of the most cost-effective solutions for reducing diesel engine emissions. Retrofits include pollution control devices installed in the exhaust system, such as diesel oxidation catalysts (DOCs) and diesel particulate filters (DPFs), or systems that include closed crankcase ventilation (CCV) filtration systems. Older, heavy-duty diesel vehicles that will not be scrapped, retired or replaced for several years are good candidates for retrofits.

This funding can cover up to 100% of the cost (labor and equipment) for an eligible verified diesel engine retrofit technology. The eligible cost of retrofits includes the cost of modifications, attachments, accessories, or auxiliary apparatus necessary to make the equipment functional, including related labor expenses. Examples of eligible retrofit costs include, but are not limited to: DPF cleaning machines, spare

DPFs for maintenance rotation, replacement CCV filters, mechanic training, and filter cleaning contracts.

A list of eligible, EPA verified diesel engine retrofit technologies is available at: www.epa.gov/verified-diesel-tech/verified-technologies-list-clean-diesel; a list of eligible, California Air Resources Board (CARB) verified diesel engine retrofit technologies is available at: www.arb.ca.gov/diesel/verdev/vt/cvt.htm. The types (e.g., DOC, DPF, etc.) of retrofits proposed for funding under this category must exist on one of these lists for the specific vehicle/engine application specified in the application at the time of application submission to the department. If selected for funding, the actual engine retrofit technologies used by the awardee must be specifically named on EPA or CARB's Verified Technologies lists at the time of acquisition and used only for the vehicle/engine applications specified on the list, to be eligible for funding. The department suggests that each applicant requesting diesel particulate filters consult with retrofit suppliers to confirm that the proposed vehicles/engines and their duty-cycles are good candidates for DPFs.

- 2. 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 diesel engine retrofits currently verified by EPA or CARB as a package of components demonstrated to achieve specific levels of emissions 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. Applications 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.

Funding can cover 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 fleet expansion funding restrictions will apply (see Section IX.G of [2019-2020 DERA State Grants Program Guide](#) for more information). 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. Engine upgrades proposed for funding under this category must exist on one of these lists for the specific vehicle/engine application specified in the application at the time of application submission to the department. If selected for funding, the actual engine upgrades used by the awardee must be specifically named on EPA's list of certified remanufacture systems or EPA or CARB's Verified Technologies lists at the time of acquisition and used only for the vehicle/engine applications specified on the lists, to be eligible for funding.

- 3. Cleaner Fuels and Additives:** Eligible cleaner fuels and additives are limited to those verified by EPA and/or CARB to achieve emissions reductions when applied to an existing diesel engine. The department will not fund stand-alone cleaner fuel/additive use. For new or expanded use, this funding can cover the cost differential between the cleaner fuel/additive and conventional diesel fuel if that cleaner fuel is used in combination, and on the same vehicle, with a new eligible verified engine retrofit 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.

A list of eligible, EPA-verified cleaner fuels and additives is available at: www.epa.gov/verified-diesel-tech/verified-technologies-list-clean-diesel; a list of eligible, CARB-verified cleaner fuels and additives is available at: www.arb.ca.gov/diesel/verdev/vt/cvt.htm. The types of fuels and additives (e.g., biodiesel, cetane enhancers) proposed for funding under this category must exist on one of these lists for the specific vehicle/engine application specified in the application and used only for the vehicle/engine applications specified on the list to be eligible for funding.

- 4. 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 types of idle reduction technologies proposed for funding under this category must exist on this list for the vehicle/engine application specified in the application at the time of application submission to EPA. 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, shore connection systems and alternative maritime power, shore connection systems for locomotives, 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.

- a) **Locomotive Idle Reduction Technologies:** Funding can cover up to 40% of the cost (labor and equipment) of eligible verified idle reduction technologies for locomotives.
- b) **Electrified Parking Spaces:** Electrified Parking Spaces (EPS), also known as Truck Stop Electrification (TSE), operates 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.

Funding can cover 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 enable heating, cooling, and the use of cab power for parked trucks, or to enable the use of 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) **Marine Shore Power Connection Systems:** Shore power systems allow maritime vessels to "plug into" an electrical power source instead of using diesel main or auxiliary engines while at port. This funding can cover up to 25% of the cost (labor and equipment) of eligible marine shore power connection systems, including the cost of modifications, attachments, accessories, or auxiliary apparatus necessary to make the equipment functional. Examples of eligible marine shore power connection costs include but are not limited to various components such as cables, cable management systems, shore power coupler systems, distribution control systems, transformers, grounding switches, service breakers, capacitor banks, and power distribution. Funding may support new installations, or expansions of existing shore power systems. Examples of ineligible costs for marine shore power connection systems include, but are not

limited to, shipside modifications to accept shore-based electrical power, electricity costs, and operation and maintenance costs. Due to the unique nature and custom design of marine shore power connection systems, the department will review and approve the marine shore power connection system proposed by the applicant on a case-by-case basis.

- d) Highway Idle Reduction Technologies:** Funding can cover up to 100% of the cost (labor and equipment) for verified idle reduction technologies installed on long haul Class 8 trucks and school buses, if combined on the same vehicle with the new installation of one or more of the Verified Engine Retrofit Technologies funded under this Program, as described in this Section. Funding can cover up to 100% of the cost (labor and equipment) for verified idle reduction technologies installed on long haul Class 8 trucks and school buses with model year 2006 or older engines that have been previously retrofitted with a verified emission control device. Funding can cover up to 25% of the cost (labor and equipment) of stand-alone installations of eligible, verified idle reduction technologies on long-haul trucks and school buses.

- 5. 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 NO_x 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 actual 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, in order to be eligible for funding. The department will not fund stand-alone aerodynamic technologies or low

rolling resistance tires. Funding can cover 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, if combined on the same vehicle with the new installation of one or more of the Verified Engine Retrofit Technologies funded under this program, as described in this Section. Note: Low rolling resistance tires are not eligible for funding where these types of tires have already been installed on the truck.

- 6. Engine Replacement:** Engine Replacement includes, but is not limited to, diesel engine replacement with an engine certified for use with diesel or an alternative fuel (e.g., gasoline, CNG, propane), diesel engine replacement with a zero tailpipe emissions power source (grid, battery or fuel cell), and/or diesel engine replacement with an electric generator(s) (genset). Zero tailpipe emissions engine replacements do not require EPA or CARB certification.

The eligible cost of engine replacement includes 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.

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

- i.** Funding can cover up to 40% of the cost (labor and equipment) of replacing a diesel engine with a 2019 model year or newer engine certified to EPA emission standards. Previous engine model year engines may be used if the engine is certified to the same emission standards applicable to the engine in EMY 2019. 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.** Funding can cover up to 60% of the cost (labor and equipment) of replacing a diesel engine with a zero tailpipe emissions power source.

b) Highway Diesel Vehicles:

- i.** Funding can cover up to 40% of the cost (labor and equipment) of replacing a diesel engine with a 2016 model year or newer engine certified to 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. Funding can cover up to 50% of the cost (labor and equipment) of replacing a diesel engine with a 2016 model year or newer engine that is certified to CARB's Optional Low-NO_x Standards of 0.1 g/bhp-hr, 0.05 g/bhp-hr, or 0.02 g/bhp-hr NO_x. Please see the "How to Identify Low NO_x Certified Engines" document on EPA's website: www.epa.gov/cleandiesel/clean-diesel-state-allocations
- iii. Funding can cover up to 60% of the cost (labor and equipment) of replacing a diesel engine with a zero tailpipe emissions power source.

- 7. Vehicle and Equipment Replacements:** Nonroad and highway diesel vehicles and equipment, locomotives, and marine vessels 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, zero tailpipe emission (grid, battery or fuel cell), hybrid or alternative fuel (e.g., gasoline, CNG, propane) vehicles/equipment. Zero tailpipe emissions vehicles and equipment do not require EPA or CARB certification.

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.

a) Locomotives, Marine Vessels and Nonroad Diesel Vehicles and Equipment:

- i. Funding can cover up to 25% of the cost of a replacement locomotive, marine vessel, or nonroad vehicle or piece of equipment powered by a 2019 model year or newer engine certified to EPA emission standards. Previous engine model year engines may be used if the engine is certified to the same emission standards applicable to EMY 2019. 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. Funding can cover up to 45% of the cost of a new, zero tailpipe emissions locomotive, marine vessel, or nonroad vehicle or piece of equipment.

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

- i. Funding can cover up to 25% (up to \$22,500 for school buses) of the cost of a replacement vehicle powered by a 2016 model year or newer engine certified to 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. Funding can cover up to 35% of the cost of a replacement vehicle powered by a 2016 model year or newer engine certified to meet CARB's Optional Low-NO_x Standards of 0.1 g/bhp-hr, 0.05 g/bhp-hr, or 0.02 g/bhp-hr NO_x. Please see the "How to Identify Low NO_x Certified Engines" document on EPA's website: www.epa.gov/cleandiesel/clean-diesel-state-allocations
 - iii. Funding can cover up to 45% of the cost of a new, zero tailpipe emissions replacement vehicle.
- c) **Drayage Vehicles:** Funding can cover up to 50% of the cost of a replacement drayage truck powered by a 2013 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 an application 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.

8. **Clean Alternative Fuel Conversions:** Conventional, original equipment manufacturer (OEM) highway diesel vehicles and engines that are altered to operate on alternative fuels such as propane or natural gas are classified as aftermarket clean alternative fuel conversions. Clean alternative fuel conversions are accomplished by applying a certified or compliant alternative fuel conversion "kit" to an existing highway diesel engine.

Funding can cover up to 40% of the cost (labor and equipment) of an eligible certified or compliant clean alternative fuel conversion. Eligible conversions are limited to those systems that have been certified by EPA and/or CARB, and those systems that have been approved by EPA for Intermediate-Age engines. EPA's lists of "Certified Conversion Systems for New Vehicles and Engines" and "Conversion Systems for Intermediate-Age Vehicles and Engines" are available at www.epa.gov/vehicle-and-engine-certification/lists-epa-compliant-alternative-fuel-conversion-systems; CARB's list of "Approved Alternate Fuel Retrofit Systems" are available at: www.arb.ca.gov/msprog/aftermkt/altfuel/altfuel.htm.

To be eligible for funding, conversion systems for engine model years 1995-2006 must achieve at least a 30% NO_x reduction and a 10% PM reduction from the applicable certified emission standards of the original engine. To be eligible for

funding, conversion systems for engine model years 2007-2009 must achieve at least a 20% NO_x reduction with no increase in PM from the applicable certified emission standards of the original engine. Applications for clean alternative fuel conversions should include a discussion of the availability of conversion systems and indicate the pre- and post-project emission standard levels of the engines to demonstrate that the conversions result in the required emissions benefit.

ROLES AND RESPONSIBILITIES:

Program Requirements and Application Period

The department will ensure the Program Requirements are in accordance with EPA's state DERA requirements, including mandatory cost-share funding levels. The department intends to allow a maximum rebate of \$22,500 for school bus replacement projects exceeding \$90,000. Any funds required over the \$22,500 maximum and over the mandatory match will be provided by the program beneficiary as voluntary match. The Program Requirements explain the eligibility requirements, funding levels, project milestone requirements, and implementation procedures. The department will provide an application for funding.

The department will make the Program Requirements available on the department's website, along with applicable closing dates, project period dates, and instructions explaining how to apply. The website will also include information about the benefits of clean diesel projects and activities.

In addition to notification of the application period on our website, the department will send out emails to the following groups: the department's email list-serve for the state clean diesel webpage, the list-serve for Missouri's Volkswagen Trust webpage, and regional planning organizations. The emails will inform the groups of the opportunities available and encourage the groups to pass the information along to interested parties.

The department will review each application submission for completeness and ensure that applicants meet all the eligibility requirements. If the department determines any applications to be incomplete or ineligible, the department will return the application to the applicant with an explanation. The department will enter the applications into a random drawing. The department will automatically select the first application drawn as a program beneficiary, and the department will continue selecting applications for program beneficiaries in their corresponding drawing order until the available funding runs out. The department will maintain a list of the order in which non-selected applications were drawn, which the department will use in the event that additional funds become available due to projects that may withdraw from participating in the program.

Project Implementation

The department does not intend to include any project partners to help implement the 2019-2020 State DERA Program. The department will work with each selected program beneficiary individually as a partner under the 2019-2020 program. The department will provide technical

assistance and oversight as needed to ensure the successful implementation of projects. The department will distribute funds in the form of rebates upon completion of each project. The signed application form will serve as the agreement for program beneficiaries to comply with the requirements of this program, including the milestones, which if not met, could result in forfeiture of the award, in which case the department would offer funding to the next application drawn in the lottery. The newly offered applicant will need to be able to complete their project on an expedited schedule if this occurs later in the project period.

The program beneficiaries must submit an invoice with the cost of new vehicle or equipment and “before” photos of the vehicle or equipment they are replacing, if applicable. The department will review the photo documentation and verify project eligibility. After approval, the department will inform the beneficiary they may order the new vehicle or equipment. Program beneficiaries will be expected to pay for 100% of the cost of the new vehicle or equipment upfront and provide proof of payment to the department.

For applicable projects, program beneficiaries must disable their old vehicles or engines within 60 days of the receipt and acceptance of the new vehicle or engine. Disabling requires the chassis to be cut in half, and a hole to be drilled/cut through the engine block. The department plans to allow scrapping the entire vehicle as an acceptable method of disabling. Scrapping entails the crushing/breaking/tearing apart the engine and body/chassis of the vehicles and engines, as is typically done at numerous scrap metal recycling yards. Photos will document the disabling process for each vehicle and engine. If the program beneficiary generates income by selling the disabled vehicle and engine for scrap value or by salvaging/selling non-engine/non-chassis parts, the awardee will document the program income. The department expects that if a beneficiary generates program income in this fashion, they will use it to recover a portion of their cost-share for their project.

Either the awardee or the department (if the department decides to witness the disabling process) will take photographs documenting the disabling procedures. The department will also require photographs of each of the new vehicle, engine, and equipment purchased. The department will require status reports from awardees throughout the duration of the project. The department will complete and submit quarterly progress reports and a final report to EPA using EPA approved reporting templates.

Issuing Program Funds

Upon completion, the department will verify all required documentation. If all documentation requirements are fulfilled, participating program beneficiaries will be eligible to receive a one-time, lump-sum reimbursement for up to the allowable cost share of eligible equipment and installation costs of their projects. The department will reimburse program beneficiaries, dependent on their project, up to the percentages or cost share maximum outlined in the Program Requirements. For school bus replacement projects, any funds required over the \$22,500 cost share maximum and over the program beneficiary’s mandatory cost share will be provided by the beneficiary as voluntary match.

TIMELINE AND MILESTONES: The following table includes a timeline of expected target dates, milestones, and completion dates to achieve specific tasks and accomplishments during the budget and project period.

2020 Program

Milestone	Expected Date
Department updates Program Requirements, application forms, and website	June – August 2020
Program Requirements and applications released to the public, and posted on the department’s website	September – October 2020
Department selects projects	November 2020 – January 2021
Pre documentation approvals	November 2020 – February 2021
Equipment order deadline (or funding rolls to the next applicant)	April 30, 2021
Vehicle and engine disabling	January 2021 – August 2021
Site inspections for vehicles and engines being disabled	January 2021 – August 2021
Participant support costs issued to program beneficiaries	After completion of each individual project (No later than September 2021)
Program beneficiaries submit status reports to the Department	Every quarter of the project
Department submits quarterly progress reports to EPA	Every quarter of the project
Projects completed	September 30, 2021
Missouri submits final report to EPA	December 31, 2021

DERA PROGRAMMATIC PRIORITIES: The primary objective of this program is to reduce diesel emissions resulting in reduced diesel particulate matter and precursor (NO_x) emissions that lead to the formation of ground-level ozone. The department expects the 2019-2020 program to reduce diesel emissions throughout the state, including areas in Missouri facing air quality challenges. The emission reductions will be achieved through utilization of EPA certified engine configurations that replace engines that meet less stringent emission standards and additional equipment that improves fuel efficiency. Reducing diesel emissions can help reduce the frequency of negative health symptoms for anyone with asthma or other respiratory diseases. Diesel emission reductions can also contribute to achieving or maintaining attainment of the PM_{2.5} and Ozone NAAQS.

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

The department expects the 2019-2020 program to reduce diesel emissions throughout the state, including areas in Missouri facing air quality challenges. The emission reductions will be achieved through utilization of EPA certified engine configurations that replace engines that meet less stringent emission standards and additional equipment that improves fuel efficiency. By reducing diesel emissions throughout Missouri, it is expected to protect public health and improve air quality throughout Missouri including several areas that are struggling to achieve and maintain air quality in compliance with the National Ambient Air Quality Standards.

Outputs

Based on the 2019 State DERA Program and the departments estimated projects for the 2020 State DERA Program, the department anticipates the following emission reductions:

<i>Annual Results (short tons)</i>	NO_x	PM2.5	HC	CO	CO₂	Fuel
Baseline for Upgraded Vehicles/Engines	18.885	2.604	1.689	11.102	2,189.8	194,646
Amount Reduced After Upgrades	13.772	2.524	1.159	10.657	3.1	273
Percent Reduced After Upgrades	72.9%	96.9%	68.6%	96.0%	0.1%	0.1%

<i>Lifetime Results (short tons)</i>						
Baseline for Upgraded Vehicles/Engines	123.988	17.215	11.230	75.149	14,336.0	1,274,308
Amount Reduced After Upgrades	88.847	16.685	7.719	72.250	15.4	1,365
Percent Reduced After Upgrades	71.7%	96.9%	68.7%	96.1%	0.1%	0.1%

Outcomes

• **Short-term outcomes:** The 2020 program will help wide variety of owners of diesel engines upgrade or replace engines or add equipment that will reduce diesel emissions and conserve diesel fuel. It will provide both public and private owners an opportunity to implement early replacements with the goal of reducing diesel emissions and fuel consumption, without paying full price for the equipment. The new engine configurations include the latest and most stringent emission control technologies factory installed. As the fleet owners grow accustomed to these technologies, they could decide to use their own funding to replace additional vehicles, upgrade engines, or add equipment.

• **Medium-term outcomes:** By successfully implementing the projects under the 2020 program, other fleet owners will see the fuel economy improvements, the reduced operational costs, and the environmental benefits and subsequently decide to implement similar projects.

• **Long-term outcomes:** Through these projects, improved air quality measurements are expected in the future, and are anticipated to result in a decrease in the number of asthma attacks and other health issues exasperated by air pollution in and around the state of Missouri.

SUSTAINABILITY OF THE PROGRAM: The department anticipates the emission reductions realized through the 2020 program to continue after the project period. EPA certified engine configurations have long expected useful lives, and the improvement in operating costs expected by some of the fleets involved could stimulate investments in technologies that improve fuel economy and reduce emissions. The fleet owners will also grow more accustomed to modern mobile source emission control equipment, which will improve acceptance of the new equipment and best practices for maintenance of such equipment.

BUDGET NARRATIVE

Itemized Project Budget

Fiscal Year 2019

Budget Category	EPA Allocation	Mandatory Cost-Share	Voluntary Match (if applicable)		Line Total
			VW Mitigation Trust Funds	Other Funds	
1. Personnel	\$29,721				\$29,721
2. Fringe Benefits	\$16,382				\$16,382
3. Travel	\$750				\$750
4. Equipment	\$0				0
5. Supplies	\$0				0
6. Contractual	\$0				0
7. Other/PSD	\$426,489		\$323,511		\$750,000
8. Total Direct Charges (sum 1-7)	\$473,342		\$323,511		\$796,853
9. Indirect Charges	\$11,925				\$11,925
10. Total (Indirect + Direct)	\$485,267		\$323,511		\$808,778
11. Program Income					

Fiscal Year 2020

Budget Category	EPA Allocation	Mandatory Cost-Share	Voluntary Match (if applicable)		Line Total
			VW Mitigation Trust Funds	Other Funds	
1. Personnel	\$30,612				\$30,612
2. Fringe Benefits	\$16,875				\$16,875
3. Travel	\$750				\$750
4. Equipment	\$0				\$0
5. Supplies	\$0				\$0
6. Contractual	\$0				\$0
7. Other/PSC	\$458,116		\$345,753		\$803,869
8. Total Direct Charges (sum 1-7)	\$506,353		\$345,753		\$852,106
9. Indirect Charges	\$12,277				\$12,277
10. Total (Indirect + Direct)	\$518,630		\$345,753		\$864,383
11. Program Income					

Explanation of Budget Framework

1. Personnel

	FY 2019	
Category	EPA	State or Territory Match (if applicable)
Environmental Specialist, Project Manager \$20.90/hr x 832 hrs	\$17,392	\$0
Administrative Clerical (payment processing, documentation review etc.), \$14.11/hr x 210 hrs	\$2,966	
Financial & Administrative Manager, \$25.72/hr x 364 hrs	\$9,363	\$0

	FY 2020	
Category	EPA	State or Territory Match (if applicable)
Environmental Specialist, Project Manager \$21.53/hr x 832 hrs	\$17,914	\$0
Administrative Clerical (payment processing, documentation review etc.), \$14.54/hr x 210 hrs	\$3,054	
Financial & Administrative Manager, \$26.49/hr x 364 hrs	\$9,644	\$0

2. Fringe Benefits

	FY 2019	
Category	EPA	State or Territory Match (if applicable)
Social Security @ 7.65%	\$2,274	\$0
Health Insurance @ 27.14%	\$8,066	\$0
Retirement @ 20.33%	\$6,042	\$0

	FY 2020	
Category	EPA	State or Territory Match (if applicable)
Social Security @ 7.65%	\$2,342	\$0
Health Insurance @ 27.14%	\$8,309	\$0
Retirement @ 20.33%	\$6,224	\$0

3. Travel

FY 2019		
Category	EPA	State or Territory Match (if applicable)
<i>Site visits</i>		
Local Travel Mileage - 2,885 miles x \$0.26	\$750	\$0

FY 2020		
Category	EPA	State or Territory Match (if applicable)
<i>Site visits</i>		
Local Travel Mileage - 2,885 miles x \$0.26	\$750	\$0

4. Equipment - \$0 - There is no equipment in this grant except for the diesel emission reduction equipment that awardees will purchase. The department reports those costs under the "other" (PSD) award category.

5. Supplies

FY 2019 and FY 2020		
Category	EPA	State or Territory Match (if applicable)
NA		

6. Contractual

FY 2019 and FY 2020		
Category	EPA	State or Territory Match (if applicable)
NA		

7. Other

FY 2019		
Category	EPA	State or Territory Match (if applicable)
Other - PSD	\$426,489	\$323,511

FY 2020		

Category	EPA	State or Territory Match (if applicable)
Other - Participant Support Costs	\$458,116	\$345,753

8. Total Direct Charges

FY 2019		
Category	EPA	State or Territory Match (if applicable)
Direct	\$473,342	\$323,511

FY 2020		
Category	EPA	State or Territory Match (if applicable)
Direct	\$506,353	\$345,753

9. Indirect Charges

FY 2019		
Category	EPA	State or Territory Match (if applicable)
Indirect Rate 25.45%	\$11,925	

Note: Indirect is not applied to the Other/PSD category above.

FY 2020		
Category	EPA	State or Territory Match (if applicable)
Indirect Rate 25.45%	\$12,277	

Note: Indirect is not applied to the Other/PSC category above.