APPENDIX D-4
Beneficiary Eligible Mitigation Action Certification

BENEFICIARY ELIGIBLE MITIGATION ACTION CERTIFICATION

Beneficiary State of North Carolina

Lead Agency Authorized to Act on Behalf of the Beneficiary North Carolina Department of Environmental Quality
(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 - FY2019
Beneficiary's Project ID:	NCDEQ-DERA-FY19-01
Funding Request No.	*(sequential)* 1
Request Type: (select one or more)	☐ Reimbursement ■ Advance ☐ Other (specify):_____
Payment to be made to: (select one or more)	■ Beneficiary ☐ Other (specify):_____
Funding Request & Direction (Attachment A)	☐ Attached to this Certification ■ To be Provided Separately

SUMMARY

Eligible Mitigation Action Action Type	☐ Appendix D-2 item (specify): _____ ■ Item 10 - DERA Option (5.2.12) (specify and attach DERA Proposal): Attachment E
Explanation of how funding request fits into Beneficiary's Mitigation Plan (5.2.1):	North Carolina's Beneficiary Mitigation Plan includes DERA as an option in the $3,068,189 allocation for the clean heavy-duty off-road equipment program in Table 2.
Detailed Description of Mitigation Action Item Including Community and Air Quality Benefits (5.2.2):	North Carolina's work plan and budget for the FY2019 State DERA grant is attached. Under the grant program, North Carolina expects to install a Blended After Treatment System (BATS) on two passenger locomotives (F59) for the NC DOT Rail Division. This system has been certified to meet the requirements for Tier 3+ for all criteria pollutants. The Piedmont passenger rail locomotives run three daily round trips between Charlotte and Raleigh, with a fourth to be added in 2022 using eight locomotives. Greater than 50% of the population of North Carolina lives within a one-hour drive of the Piedmont Corridor.
Estimate of Anticipated NOx Reductions (5.2.3):	According to EPA's Diesel Emission Quantifier, the estimated NOx reductions from this project are 15.3 tons annually.
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):	North Carolina Department of Environmental Quality
Describe how the Beneficiary will make documentation publicly available (5.2.7.2).	See Attachment
Describe any cost share requirement to be placed on each NOx source proposed to be mitigated (5.2.8).	See Attachment
Describe how the Beneficiary complied with subparagraph 4.2.8, related to notice to U.S. Government Agencies (5.2.9).	See Attachment

If applicable, describe how the mitigation action will mitigate the impacts of NOx emissions on communities that have historically borne a disproportionate share of the adverse impacts of such emissions (5.2.10).

See Attachment E, DERA Programmatic Priorities.

ATTACHMENTS
(CHECK BOX IF ATTACHED)

☐	**Attachment A**	**Funding Request and Direction.**
☑	**Attachment B**	**Eligible Mitigation Action Management Plan Including Detailed Budget and Implementation and Expenditures Timeline (5.2.4).**
☑	**Attachment C**	**Detailed Plan for Reporting on Eligible Mitigation Action Implementation (5.2.11).**
☑	**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.]**
☑	**Attachment E**	**DERA Option (5.2.12). [Attach only if using DERA option.]**
☐	**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.]**

CERTIFICATIONS

By submitting this application, the Lead Agency makes the following certifications:

1. **This application is submitted on behalf of Beneficiary** North Carolina Department of Environmental Quality **, and the person executing this certification has authority to make this certification on behalf of the Lead Agency and Beneficiary, pursuant to the Certification for Beneficiary Status filed with the Court.**

2. **Beneficiary requests and directs that the Trustee make the payments described in this application and Attachment A to this Form.**

3. **This application contains all information and certifications required by Paragraph 5.2 of the Trust Agreement, and the Trustee may rely on this application, Attachment A, and related certifications in making disbursements of trust funds for the aforementioned Project ID.**

4. **Any vendors were or will be selected in accordance with a jurisdiction's public contracting law as applicable. (5.2.5)**

5. **Beneficiary will maintain and make publicly available all documentation submitted in**

support of this funding request and all records supporting all expenditures of eligible mitigation action funds subject to applicable laws governing the publication of confidential business information and personally identifiable information. (5.2.7.2)

DATED: 6/14/19

Michael A. Abraczinskas
Director, Division of Air Quality
Department of Environmental Quality
[LEAD AGENCY]

for
State of North Carolina
[BENEFICIARY]

D-4 Summary Attachment

Explanation of how funding request fits into Beneficiary's Mitigation Plan (5.2.1):

The North Carolina Department of Environmental Quality (NC DEQ) requests $328,887 in funds for the installation of blended-after treatment systems to two 59 locomotives which is eligible for funding using the DERA option. North Carolina's Beneficiary Mitigation Plan includes DERA as an option in the $3,068,189 allocation for the clean heavy-duty off-road equipment program in Table 2. This project will help achieve significant NOx emission reductions. (Page 9, State of North Carolina Volkswagen Mitigation Plan)

Detailed Description of Mitigation Action Item Including Community and Air Quality Benefits (5.2.2):

North Carolina's work plan and budget for the FY2019 State DERA grant is attached. Under the grant program, North Carolina expects to install a blended-after treatment system (BATS) on two passenger locomotives (F59) for the NC DOT Rail Division. This system has been certified to meet the requirements for Tier 3+ for all criteria pollutants. The Piedmont passenger rail locomotives run three daily round trips between Charlotte and Raleigh, with a fourth to be added in 2022 using eight locomotives. Greater than 50% of the population of North Carolina lives within a one-hour drive of the Piedmont Corridor.

Describe how the Beneficiary will make documentation publicly available (5.2.7.2).

The NC DEQ, as lead agency for the state of North Carolina implementing the Environmental Mitigation Plan, has established a web page on the VW Trust and mitigation actions where documents will be made publicly available, https://deq.nc.gov/about/divisions/air-quality/motor-vehicles-and-air-quality/volkswagen-settlement.

Describe any cost share requirement to be placed on each NOx source proposed to be mitigated (5.2.8).
On June 18, 2019, EPA granted a waiver request to allow for funding of the BATS retrofit at 100% (see attached waiver letter). The FY 2019 DERA allocation, matching funds and bonus match will not fully cover the cost of two BATS system upgrades. Therefore, the applicant will incur a cost of $223,601.

Payments will be made on a reimbursement basis for eligible expenses incurred and paid by the grant recipient. A cost may not be considered incurred until the grant funded goods and services have been received and accepted by the grant recipient. Grant recipients will be required to provide documentation to show that equipment or services have been received and the expenses have been incurred and paid by the grant recipient before reimbursement is provided by the NC DEQ.

Describe how the Beneficiary complied with subparagraph 4.2.8, related to notice to U.S. Government Agencies (5.2.9).
On February 27, 2018, the NC DEQ sent e-mail notices of the availability of funds to representatives of the U.S. Department of Interior and the U.S. Department of Agriculture listed in subparagraph 4.2.8 of the Trust Agreement.

If applicable, describe how the mitigation action will mitigate the impacts of NOx emissions on communities that have historically borne a disproportionate share of the adverse impacts of such emissions (5.2.10).

EPA has identified the following areas as priority locations for the DERA program.

EPA 2019 Priority County List for North Carolina

Buncombe	Cabarrus	Caldwell	Catawba
Durham	Gaston	Iredell	Lincoln
Mecklenburg	Robeson	Rowan	Union
Wake	Wilson		

The NC DOT Piedmont Rail Service travels from Raleigh to Charlotte through the following counties three times daily (with a fourth trip to be added in 2022):

- Alamance
- Cabarrus*
- Davidson
- Durham*
- Orange
- Guilford
- Mecklenburg*
- Randolph
- Rowan*
- Wake*

* indicates EPA priority county

In addition, greater than 50% of the population of NC lives within a one-hour drive of the Piedmont Rail Service corridor.

NC DOT Piedmont Rail Service moves people round trip from Raleigh to Charlotte three times a day saving approximately 28 million passenger miles per year.

Therefore, the use of DERA funding to complete this project meets the requirements of being a DERA programmatic priority.

Attachment B

Project Budget

Period of Performance: FY 2019				
Budget Category	**Total Approved Budget**	**Share of Total Budget to be Funded by the Trust**	**Share of Total Budget paid by Federal DERA program**	**Cost-Share paid by fleet owners**
1. Equipment Expenditure	$1,020,000	$328,887	$467,512	$223,601
2. Contractor Support *(provide list of Approved Contractors as Attachment with approved funding ceilings)*	$0	$0	$0	$0
3. Subrecipient Support *(Provide List of Approved Subrecipients or Grant Awardees as Attachment with approved funding ceilings)*	$0	$0	$0	$0
4. Administrative[1]	$25,819	$0	$25,819	$0
Project Totals	$1,045,819	$328,887	$493,331	$223,601
Percentage	100%	31.4%	47.2%	21.4%

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

TIMELINE AND MILESTONES:

Task	Date Completed
NC DEQ selects grant recipients	June 2019
NC DEQ submits D-4 and other required forms to Trustee	June 7, 2019
DERA application submittal due on www.Grants.gov	June 18, 2019
Trustee acknowledges receipt of funding request	August 7, 2019
State Clean Diesel Award received from EPA	October 1, 2019
NC DEQ submits Attachment A to Trustee	October 1, 2019
Trustee allocates share of state funds	Transfer Date
Prepare contracts for awardees	October 1, 2019
Contracts with awardees signed	October 31, 2019
Public notification of awarded projects	October 31, 2019
Subgrantees begin project work	November 1, 2019
NC DEQ submits 1st quarterly report for 2020	January 2020
NC DEQ submits 2nd quarterly report for 2020	April 2020
NC DEQ submits 3rd quarterly report for 2020	July 2020
NC DEQ submits 4th quarterly report 2020	October 2020
NC DEQ submits 1st quarterly report 2021	January 2021
NC DEQ submits 2nd quarterly report for 2021	April 2021
NC DEQ submits 3rd quarterly report for 2021	July 2021
NC DEQ submits 4th quarterly report for 2021	October 2021
Monitoring and oversight of project implementation	October 2021
Subgrantee submits final reports with proof of destruction to NC DEQ	September 30, 2021
NC DEQ submits final report	No later than 90 days after September 30, 2021

PROJECTED TRUST ALLOCATIONS

	2019
1. Anticipated Annual Project Funding Request to be paid through the Trust	$ 328,887
2. Anticipated Annual Cost Share	$ 223,601
2b. Anticipated EPA State Clean Diesel State Allocation	$ 493,331
3. Anticipated Total Project Funding by Year (line 1 plus lines 2 and 2b)	$1,045,819
4. Cumulative Trustee Payments Requested/Made to Date Against Cumulative Approved Beneficiary Allocation	$ 0
5. Current Beneficiary Project Funding to be paid through the Trust (line 1)	$328,887
6. Total Funding Allocated to for Beneficiary, inclusive of Current Action by Year (line 4 plus line 5)	$328,887
7. Beneficiary Share of Estimated Funds Remaining in Trust	$92,045,658
8. Net Beneficiary Funds Remaining in Trust, net of cumulative Beneficiary Funding Actions (line 7 minus line 6)	$91,716,771

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

The NC DEQ will provide detailed reporting on this funding request under the DERA option in three ways:

1. Timely updates to the NC DEQ's Volkswagen Diesel Settlement website,
2. Quarterly Reports submitted to the Environmental Protection Agency on the FY 2019 Clean Diesel State Grant, and
3. Semi-annual reporting to the Trustee as required by subparagraph 5.3 of the Environmental Mitigation Trust for State Beneficiaries.

NC DEQ Website

The NC DEQ maintains a website describing the activities associated with the Volkswagen Diesel Emissions Environmental Mitigation Trust for State Beneficiaries. The website may be found here: deq.nc.gov/VWsettlement. Information associated with NC DEQ's VW programs, applications and application guides, as well as a description of the VW Beneficiary Mitigation Plan, community outreach activities and copies of award decisions will be posted here. This website will also be used to track the status, progress, and results for projects under this funding category.

All application materials, reimbursement requests and other required documentation submitted by applicants will be available to the public through the NC DEQ Volkswagen webpage or upon request. Funding recipients' executed contracts for the NC DEQ's DERA program are archived in the NC DEQ Internet-Based Enterprise Application Management system.

DERA Quarterly Reports

NC DEQ has and will continue to submit quarterly reports to the EPA on the progress of projects under the 2019 Clean Diesel State Grant (DERA). These reports include technical details of the individual diesel emission reduction projects (vehicles and equipment being replaced as well as the replacement vehicles and equipment), estimates of emissions reductions, project progress and timelines, and financial reporting.

Semi-Annual Reports to the Trustee

As required by subparagraph 5.3 of the Environmental Mitigation Trust Agreement for State Beneficiaries, NC DEQ will submit a report to the Trustee within 6 months of the first disbursement and thereafter no later than January 30 and July 30 for the preceding 6-month periods. These reports will describe the progress implementing this and any other Eligible Mitigation Action ongoing during the reporting period. These reports will include a summary of all costs expended and a complete description of the status (including the actual or projected termination date), development, implementation, and any modification of the Eligible Mitigation Action. Reports covering the DERA program actions described in this funding request will include the quarterly reports to EPA described above. These semi-annual reports to the Trustee will be posted on the NC DEQ website, deq.nc.gov/VWsettlement, for public access.

ATTACHMENT D
DERA Option (5.2.6)

Blended after-treatment system (BATS) itemized cost

Component	Cost
Custom dynamic brake and SCR hatch	$97,500
Pair of dynamic brake blowers with integral VFD	$60,000
Pair of custom dynamic brake grids	$12,000
Selective catalytic reduction chamber with substrates	$147,000
Turbine outlet and flexible main exhaust coupling	$35,000
Diesel exhaust fluid tank and pump box	$33,500
Exhaust heater, fuses, contactor and power regulator	$18,500
HEP exhaust plumbing and flexible couplings	$15,750
DEF injector, stainless plumbing, compressed air control	$8,500
SCR control system and sensors	$28,000
Radiator hatch spacer, modified plumbing and fans	$41,000
Auxiliary installation parts	$13,250
TOTAL	$510,000

VFD = variable frequency drive
HEP = head end power
DEF = diesel exhaust fluid

ATTACHMENT E
DERA Option (5.2.12)

FISCAL YEAR 2019

STATE CLEAN DIESEL GRANT PROGRAM

WORK PLAN AND BUDGET NARRATIVE TEMPLATE

INSTRUCTIONS: States and territories applying for FY 2019 DERA State Clean Diesel Grant Program funding must use this template to prepare their Work Plan and Budget Narrative.

Please refer to the FY 2019 STATE CLEAN DIESEL PROGRAM INFORMATION GUIDE for full Program details, eligibility criteria and funding restrictions, and application instructions.

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SUMMARY PAGE

Project Title: 2019 Phase 1 of the NC VW Settlement Clean Heavy-Duty Off-road Equipment Program DERA Option

Project Manager and Contact Information

Organization Name: NC Department of Environmental Quality – Division of Air Quality

Project Manager: Jill B. Vitas

Mailing Address: 1641 Mail Service Center, Raleigh, NC 27699-1641

Phone: 919-707-8424

Fax: 919-707-8424

Email: jill.vitas@ncdenr.gov

Project Budget Overview:

	FY 2019
EPA Base Allocation	$328,887
State or Territory Voluntary Matching Funds (if applicable)*	$328,887
EPA Match Incentive (Bonus) (if applicable)	$164,444
Mandatory Cost-Share	$
TOTAL Project Cost	**$822,218**
Other Leveraged Funds	$223,601

* State matching funds will be from the North Carolina VW Settlement allocation using the DERA Option

Project Period

October 1, 2019 – September 30, 2021

Summary Statement

Funds granted through the 2019 State Clean Diesel Grant Program will be used for diesel emissions reduction projects throughout the state through Phase 1 of the NC VW Settlement Clean Heavy-Duty Off-road Equipment Program DERA Option. A portion of the 2019 State Clean Diesel Grant allocation will be used to fund 0.25 FTE (personnel, fringe benefits and indirect costs) to manage this program. Previous projects funded through the State Clean Diesel Grant Program may be found at: http://deq.nc.gov/about/divisions/air-quality/motor-vehicles-air-quality/mobile-source-emissions-reduction-grants.

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SCOPE OF WORK

The North Carolina Division of Air Quality (NC DAQ) intends to utilize the 2019 State Clean Diesel Grant Program to fund projects that are allowable under the DERA Option in the VW Settlement Consent Decree. These projects include diesel emission reduction solutions for locomotives, marine engines and off-road engines, equipment or vehicles used in construction, cargo handling, agriculture, mining or energy production (including stationary generators and pumps) and idle reduction technologies.

STATE/TERRITORY GOALS AND PRIORITIES:

North Carolina is a very diverse State with varied sources contributing to the air pollution. Specifically, for diesel emissions, the main sources are locomotives, commercial marine vessels, diesel off-road equipment and on-road diesel heavy-duty vehicles. Below is a table summarizing the statewide nitrogen oxides (NOx) and fine particulate matter ($PM_{2.5}$) for these categories. The emissions were obtained from the latest emissions data available, the 2014 National Emissions Inventory (NEI) version 2.

	NOx (tons/year)	**$PM_{2.5}$ (tons/year)**
Locomotives	7,304	213
Commercial Marine Vessels	10,953	303
Diesel Off-road Equipment	23,439	1,887
On-Road Diesel Heavy Duty Vehicles	49,716	2,314

For the purposes of this Program, NC DAQ is focusing on reducing NOx and $PM_{2.5}$ because the State is currently in maintenance for both of these pollutants. Focusing on further reducing NOx and $PM_{2.5}$ will help NC DAQ achieve their goals of continuously improving air quality, specifically in the areas that are in maintenance for ozone (NOx is a precursor for ozone) and particulate matter. Even though on-road diesel heavy-duty vehicles, which includes trucks, is the largest contributor of both NOx and $PM_{2.5}$ emissions, DERA program funds are not being used for this category because NC DAQ will address those emissions reductions using the VW Settlement funding.

VEHICLES AND TECHNOLOGIES:

Phase 1 of the NC VW Settlement Clean Heavy-Duty Off-road Equipment Program DERA Option will fund emissions reduction projects for locomotives. NC DAQ has determined that a focused approach to reducing diesel emissions will provide the greatest cost effectiveness of the projects eligible for grant funds.

With this as the guiding principle, NC DAQ will fund the addition of a blended after-treatment system (BATS) on two passenger locomotives used in the NC DOT Piedmont Passenger Service

between Raleigh and Charlotte. The passenger rail runs three daily round trips (with a fourth round trip planned to begin in 2022) using eight locomotives (three additional locomotives have been purchased from California with a requirement to be brought to Tier 4 prior to placing in service in NC) resulting in approximately 28 million passenger miles per year (at current 3 round trips daily).

Pursuant to 42 U.S.C. 16132(d)(2), no funds awarded under this program shall be used to fund the costs of emissions reductions that are mandated under federal law. Existing regulations for locomotives that would apply to these F59 locomotives are for the remanufacturing of the engines not for the addition of exhaust control technology such as the blended after-treatment system that will be installed with this funding. All emissions reductions associated with the installation of the BATS on these locomotives are voluntary/elective measures that have been taken by NC DOT. Therefore, this funding restriction does not apply to this project.

The BATS has been proven to improve emissions from a Tier 0+ to Tier 3+ for all criteria pollutants. NC DOT is the first in the country to successfully install this technology at a fraction of the cost of a new locomotive certified to Tier 4. The F59 locomotive has been EPA Certified in 2018 (Tier 4 for NOx, HC and CO and Tier 3+ for PM) and recertified in 2019 (see attached certificate).

NC DAQ has a history with the addition of control technologies on F59 locomotives. In FY 2014 with DERA funding, NC DOT began the process of the addition of certified control technologies on a F59 locomotive with the addition of selective catalytic reduction (SCR) to the engine. In FY 2015 NC DOT added a diesel particulate filter (DPF) to the controls on the same F59 engine which was also funded through DERA. Finally using FY2016 DERA funding, the blended after-treatment system was added to the controls on the same F59 engine which allowed for the engine to be certified to Tier 3+ for all criteria pollutants. The table below shows the emission benefits of each tier and the BATS alternative. This work from FY2014-FY2016 was completed in California to allow for the formal EPA certification to take place. This first of its kind, F59 locomotive ran in service testing in California for six months and is anticipated to arrive in NC to be put into full time service in July 2019. NC DOT is planning to use biodiesel fuel to get the additional PM if necessary after in use testing is completed once the locomotive arrives in July 2019 to reach Tier 4 status.

		g/bhp·hr			
		NOx	**HC**	**CO**	**PM**
	BATS	1.29	0.04	0.2	0.061
New locomotives	**Tier 4**	1.3	0.14	1.5	0.03
	Tier 3	5.5	0.30	1.5	0.10
	Tier 2	5.5	0.30	1.5	0.10
	Tier 1	7.4	0.55	2.2	0.22
NC DOT current locomotives	**Tier 0**	8.0	1.0	5.0	0.22

A second locomotive has been awarded an FY 2018 DERA grant through NC DAQ for BATS installation to be completed by September 30, 2019. NC DOT is currently implementing BATS in three additional locomotives through Clean Fuel Advanced Technology (CFAT) funding and plans to complete conversion of the remaining locomotives by 2021 if funding can be secured. NC DOT has developed an established method for the installation of the entire system (SCR, DPF, and BATS) so that future retrofits can be completed quickly.

On June 18, 2019, EPA granted a waiver request to allow for funding of the BATS retrofit at 100% (see attached waiver letter). Currently NC DOT estimates the BATS retrofit at $510,000. NC DAQ is committing $796,399 to the installation of BATS on two locomotives, NC DOT will contribute the additional $223,601 through other funding channels. By focusing the 2019 DERA grants to specific projects, no request for proposal will be issued and the contract with the NC DOT can be initiated immediately and the completion of the project well within the current grant cycle. In addition, NC DOT is working with North Carolina manufacturers to establish the ability to complete the retrofit of the engines in North Carolina so that future engines will not need to be transported to California.

ROLES AND RESPONSIBILITIES:

There are several personnel throughout the Department of Environmental Quality (NC DEQ) and the Division of Air Quality and the responsible for overseeing various aspects of the grant process. They are briefly outlined below.

Grant Administrator (Environmental Engineer):

- Responds to inquiries regarding grant process and procedures
- Calculates the emissions reductions
- Generates the grant award letters
- Coordinates with the chosen grant awardees the required documentation for the grant contractual agreement as well as uploading the documentation into the State Contracts and Processing System
- Submits quarterly reports to EPA Region 4
- Oversees the subgrantee expenditures
- Reviews, for accuracy, and submits subgrantee invoices to the Budget Office for payment
- Maintains the DAQ DERG website, including subgrantee updates and news releases
- Coordinates with the subgrantees throughout the grant process to receive quarterly updates

Environmental Senior Specialist:

- Quality assures the Grant Administrator reports, emissions reductions calculations and invoice submittals
- Coordinates subgrantee site visits

Environmental Specialist:

- Quality assures emissions reductions calculations

Mobile Sources Compliance Branch Supervisor:

- Reviews selected grant applications
- Quality assures contract paperwork, quarterly reports and subgrantee invoices for Grant Administrator
- Provides guidance and feedback, as needed

NC DAQ Budget Officer:

- Reviews and approves for payment all subgrantee invoices
- Prepares all required financial forms and assists with the State procurement process
- Provides monthly financial reports to Grant Administrator for the quarterly reports

NC DEQ Contracts and Purchasing:

- Generates all of the grant contracts for the subgrantees and all contract amendments
- Provides payments to the subgrantees, once payment is approved by the NC DAQ Budget Officer

NC DEQ Secretary:

- Reviews and approves all grant awards for the State

All grant award letters are signed by the NC DEQ Secretary.

TIMELINE AND MILESTONES:

Task	Date Completed
State Clean Diesel Award received	October 1, 2019
Formal contract agreement preparation and processing	October 2019 – December 2019
Subgrantees begin project work	January 2020
NC DAQ submits 1st quarterly report to EPA for 2020	January 2020
NC DAQ submits 2nd quarterly report to EPA for 2020	April 2020
NC DAQ submits 3rd quarterly report to EPA for 2020	July 2020
NC DAQ submits 4th quarterly report to EPA for 2020	October 2020
NC DAQ submits 1st quarterly report to EPA for 2021	January 2021
NC DAQ submits 2nd quarterly report to EPA for 2021	April 2021
NC DAQ submits 3rd quarterly report to EPA for 2021	July 2021
NC DAQ submits 4th quarterly report to EPA for 2021	October 2021
Subgrantee submits final reports to NC DAQ	September 30, 2021
NC DAQ submits final report to EPA	No later than 90 days after September 30, 2021

DERA PROGRAMMATIC PRIORITIES:

The project in this work plan addresses the following DERA programmatic priorities.

Are in areas with nonattainment/maintenance or poor air quality areas - According to the 2010 US Census, North Carolina is the 10th most populace state in the union. Compared to the other EPA Region 4 states, North Carolina is the 3rd most populous state. EPA has identified the following areas as priority locations for the DERA program.

EPA 2019 Priority County List for North Carolina

Buncombe	Cabarrus	Caldwell	Catawba
Durham	Gaston	Iredell	Lincoln
Mecklenburg	Robeson	Rowan	Union
Wake	Wilson		

The NC DOT Piedmont Rail Service travels from Raleigh to Charlotte through the following counties three times daily (with a fourth trip to be added in 2022):

- Alamance
- Cabarrus*
- Davidson
- Durham*
- Orange
- Guilford
- Mecklenburg*
- Randolph
- Rowan*
- Wake*

* indicates EPA priority county

In addition, greater than 50% of the population of NC lives within a one-hour drive of the Piedmont Rail Service corridor.

Are in areas that are located at, or service goods movement facilities – NC DOT Piedmont Rail Service moves people round trip from Raleigh to Charlotte three times a day saving approximately 28 million passenger miles per year.

Therefore, the use of DERA funding to complete this project meets the requirements of being a DERA programmatic priority.

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

The activities to be funded under this work plan support EPA's FY 2018-22 Strategic Plan. The award made under this work plan will support Goal 1, "Core Mission: Deliver real results to provide Americans with clean air, land, and water, and ensure chemical safety," Objective 1.1, "Improve Air Quality." Under this objective, EPA will "Work with states and tribes to accurately measure air quality and ensure that more Americans are living and working in areas that meet high air quality standards."

The locomotive project, as stated earlier, will impact greater than 50% of North Carolina's population. The current air quality in North Carolina is attainment/maintenance throughout the state and the implementation of this project will continue to allow for North Carolinians to experience good air quality.

It is anticipated that the following outcomes will occur during the FY2019-2020 DERA award cycle:

Short-term Outcomes

Outcome	Tracking Mechanism
Increase knowledge of diesel emission reduction strategies by subgrant applicants.	Keep interested parties abreast of new diesel emissions technologies through updates to NC DAQ website of success of projects implemented.
Increase knowledge of diesel emission reduction strategies by the NC DAQ grant staff.	NC DAQ staff's participation in workshops, conferences, site visits, and other interactions.

Medium-term Outcomes

The projects funded by this program will assist subgrantees by providing equipment, vehicles or technology that will be more competitive in the future and by saving diesel fuel and reducing maintenance costs. These metrics will be tracked through subgrantee's quarterly and final reports.

Long-term Outcomes

Reducing diesel emissions from locomotives will aid North Carolina in its goal of improving the ambient air quality across the State. In addition, the cleaner diesel locomotive results in workers operating in a healthier environment. While this is not easy to track, studies have repeatedly shown the increased health risks for operators from working near diesel engines. Prior results from subgrantees' final reports show improved health of those working with the cleaner diesel vehicles and equipment. The Phase 1 of the NC VW Settlement Clean Heavy-Duty Off-road Equipment Program DERA Option will advance NC DAQ's effort to maintain and improve upon the air quality across the State.

Using the EPA's Diesel Emissions Quantifier, NC DAQ has calculated the emission reductions from the addition of the BATS technology to be as follows:

Projected Annual Emissions from Diesel Reductions

	NOx (tons/year)	**$PM_{2.5}$ (tons/year)**	**CO (tons/year)**	**CO_2 (tons/year)**	**HC (tons/year)**	**Dollar per ton of Emissions Reduced ($/ton)/year**
Locomotive retrofit	15.3	0.4	2.7	0	0.9	$1,395

SUSTAINABILITY OF THE PROGRAM:

The NC DAQ routinely publicizes the availability of grants through the NC DAQ grant website, email distribution list and presentations during meetings and conferences. Additionally, previous years' grants success stories are available on the NC DAQ website at http://deq.nc.gov/about/divisions/air-quality/motor-vehicles-air-quality/mobile-source-emissions-reduction-grants. The NC DAQ readily complies with publicizing the grant awardees within 60 days of being awarded. By using these various conduits, NC DAQ's goal is to incentivize other

interested parties on the advantages and benefits of embarking upon a diesel emissions reduction project. Additionally, NC DAQ's management is very supportive of the long-term benefits of this program.

In July 2019, the first blended after-treatment system locomotive will be bought back into service on the Piedmont corridor. This locomotive was retrofitted with this advanced control technology through funding provided by the FY 2014-FY 2016 DERA grant. A public event to inform NC citizens of the benefits that will be achieved in air quality will be scheduled.

As stated earlier, NC DOT will continue to implement the BATS retrofit to the remaining locomotives on the Piedmont Rail to be completed by the end of 2021.

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BUDGET NARRATIVE

This section of the work plan should include a detailed itemized budget proposal (in addition to the Standard Form 424A), using the table below. Justify the expenses for each of the categories being performed within the grant/project period. Indicate which costs will be paid by the state's or territory's allocation from EPA (which would include the bonus match, if applicable) and which costs will be paid by the state's or territory's voluntary matching funds, if applicable.

Applicants must **itemize** costs related to personnel, fringe benefits, travel, equipment, supplies, contractual costs, other direct costs, indirect costs, and total costs. If the project budget includes any cost-share, mandatory or voluntary, the budget detail portion of the work plan must include a detailed description of how the applicant will obtain the cost-share and how the cost-share funding will be used.

Mandatory cost-share funds must be in the form of cash contributions to the Equipment Category. If EPA accepts an offer for a voluntary cost-share, applicants must meet their sharing commitment in order to receive EPA funding. If the proposed cost-share is to be provided by a third-party, a letter of commitment is encouraged. Any form of cost-share included in the budget detail must also be included on the SF-424 and SF-424A, with the exception of Other Leveraged Funds, which should not be included in the SF-424 or SF-424A.

Applicants should use the following instructions, budget category descriptions and example table to complete the budget detail section of the work plan. Detailed sample budgets representing various mandatory cost-share versus state voluntary match scenarios are available at: www.epa.gov/cleandiesel/clean-diesel-state-allocations.

Itemized Project Budget

Budget Category	EPA Allocation	Mandatory Cost-Share	Voluntary Match (if applicable)		Line Total
			VW Mitigation Trust Funds	Other Funds	
1. Personnel	$15,688				$15,688
2. Fringe Benefits	$5,685				$5,685
3. Travel	$2,000				$2,000
4. Equipment	$0				$0
5. Supplies	$250				$250
6. Contractual	$0				$0
7. Other	$467,512		$328,887		$796,399
8. Total Direct Charges (sum 1-7)	$491,135		$328,887		$820,022
9. Indirect Charges	$2,196				$2,196
10. Total (Indirect + Direct)	$493,331		$328,887		$822,218
11. Program Income					
12. Other Leveraged Funds*		$223,601			$223,601

*Do not include Other Leveraged Funds on SF-424 or SF-424A

Explanation of Budget Framework

- **Personnel - List all staff positions by title. Give annual salary, percentage of time assigned to the project, and total cost for the budget period.** This category includes only direct costs for the salaries of those individuals who will perform work directly for the project (generally, paid employees of the applicant organization). If the applicant organization is including staff time (in-kind services) as a cost share, this should be included as Personnel costs. Personnel costs do not include: (1) costs for services of consultants, contractors, consortia members, or other partner organizations, which are included in the "Contractual" category; (2) costs for employees of subrecipients under subawards, which are included in the "Other" category; or (3) effort that is nor directly in support of the proposed project, which may be covered by the organization's negotiated indirect cost rate. The budget detail must identify the personnel category type by Full Time Equivalent (FTE), including percentage of FTE for part-time employees, number of personnel proposed for each category, and the estimated funding amounts.

  Scott Albright, Environmental Specialist (annual salary $43,635) spends about 5% of his time on this grant. Jill Vitas, Environmental Engineer (annual salary $67,527) will spend 20% of her time on this grant. The combined total will be $15,688. Please see the SF 424A form and Budget Justification Worksheet for additional details.

- **Fringe Benefits - Identify the percentage used, the basis for its computation, and the types of benefits included**. Fringe benefits are allowances and services provided by employers to their employees as compensation in addition to regular salaries and wages. Fringe benefits include, but are not limited to the cost of leave, employee insurance, pensions and unemployment benefit plans.

  For fringe benefits, medical reflects 25% of the annual cost of medical benefits which is $1,526. Retirement is 18.86% of each staff member's salary added together, and Social Security is 7.65% of each salary added together. The total for all fringe benefits is $5,685.

- **Travel - Specify the mileage, per diem, estimated number of trips in-State and out-of-State, number of travelers, and other costs for each type of travel.** Travel may be integral to the purpose of the proposed project (e.g. inspections) or related to proposed project activities (e.g. attendance at meetings). Travel costs do not include: (1) costs for travel of consultants, contractors, consortia members, or other partner organizations, which are included in the "Contractual" category; (2) travel costs for employees of subrecipients under subawards, which are included in the "Other" category.

  Travel is estimated at the cost of the Environmental Engineer and Environmental Specialist to attend the annual SEDC conference. Annual SEDC Conference – airfare for two personnel ($700), hotel expenses for two personnel ($600), cost per diem at three days @ $41.00/day for two personnel ($246), and ground transportation and parking costs ($200).

Also, other diesel related conferences or site visits may be covered by these travel costs. Generally, site visits are accomplished by day trips using the assigned State vehicle mileage and per diem costs total $254. Unused travel and supplies budgeted funds will be used to fund additional idle reduction rebates.

- **Supplies - "Supplies" means all tangible personal property other than "equipment".** The budget detail should identify categories of supplies to be procured (e.g., laboratory supplies or office supplies). Non-tangible goods and services associated with supplies, such as printing service, photocopy services, and rental costs should be included in the "Other" category.

  Supplies are used for color printer cartridges for printing promotional photos and posters, art paper and general office supplies, $250.

- **Equipment - Identify each item to be purchased which has an estimated acquisition cost of $5,000 or more per unit and a useful life of more than one year.** Equipment also includes accessories necessary to make the equipment operational. Equipment does not include: (1) equipment planned to be leased/rented, including lease/purchase agreement; or (2) equipment service or maintenance contracts. These types of proposed costs should be included in the "Other" category. Items with a unit cost of less than $5,000 should be categorized as supplies, pursuant to 2 CFR Part 200. The budget detail must include an itemized listing of all equipment proposed under the project.

  No equipment will be purchased.

- **Contractual - Identify each proposed contract and specify its purpose and estimated cost.** Contractual/consultant services are those services to be carried out by an individual or organization, other than the applicant, in the form of a procurement relationship. Leased or rented goods (equipment or supplies) should be included in the "Other" category. The applicant should list the proposed contract activities along with a brief description of the scope of work or services to be provided, proposed duration, and proposed procurement method (competitive or non-competitive), if known.

  No contractual or consultant services will be required.

- **Other - List each item in sufficient detail for EPA to determine the reasonableness and allowability of its cost.** This category should include only those types of direct costs that do not fit in any of the other budget categories. Examples of costs that may be in this category are: insurance, rental/lease of equipment or supplies, equipment service or maintenance contracts, printing or photocopying, rebates, and subaward costs. Subawards (e.g., subgrants) are a distinct type of cost under this category. The term "subaward" means an award of financial assistance (money or property) by any legal agreement made by the recipient to an eligible subrecipient. This term does not include procurement purchases, technical assistance in the form of services instead of money, or other assistance in the form of revenue sharing, loans, loan guarantees, interest subsidies, insurance, or direct

appropriations. Subcontracts are not subawards and belong in the contractual category. Applicants must provide the aggregate amount they propose to issue as subaward work and a description of the types of activities to be supported.

All subgrants and rebates in this work plan will be under the "Other" category. Funding for NC Diesel Emissions Reductions Grant – used to fund subgrantees' projects, $796,399.

- **Indirect Charges - If indirect charges are budgeted, indicate the approved rate and base.** Indirect costs are those incurred by the grantee for a common or joint purpose that benefit more than one cost objective or project, and are not readily assignable to specific cost objectives or projects as a direct cost. In order for indirect costs to be allowable, the applicant must have a federal or state negotiated indirect cost rate (e.g., fixed, predetermined, final or provisional), or must have submitted a proposal to the cognizant Federal or State agency. Examples of Indirect Cost Rate calculations are shown below:
    - Personnel (Indirect Rate x Personnel = Indirect Costs)
    - Personnel and Fringe (Indirect Rate x Personnel & Fringe = Indirect Costs)
    - Total Direct Costs (Indirect Rate x Total direct costs = Indirect Costs)
    - Direct Costs minus distorting or other factors such as contracts and equipment (Indirect Rate x (total direct cost – distorting factors) = Indirect Costs)

  Indirect charges: Personnel (Indirect Rate x Personnel = Indirect Costs)

  (Indirect Rate: 14%)

  Indirect Charges: $15,688.00 x 0.14 = $2,196

Administrative Costs Expense Cap

States and territories must demonstrate that no more than 15% of a state's or territory's total project costs are being used to cover administrative costs as identified in OMB Circular A-87 Appendix B (e.g. personnel, benefits, travel, supplies). Total project costs include the federal share as well as any cost-share provided by the state. However, Regions have the discretion to allow state matching funds to exceed the 15% cap if the state provides justification for unique circumstances. The 15% maximum does not include indirect cost rates or funds assigned to projects, and total cost for the budget period.

Administrative costs for North Carolina are less than 5% of the total program costs (total administrative costs $23,623).

Matching Funds and Cost-Share Funds

States and territories must provide a detailed description of the source of funding for any voluntary match or mandatory cost-share funds included in the project budget, if applicable. Include details on when the match will be available for use. If applicable, include letters of financial support, which specifically indicate how supporting organizations will assist in the project.

See Sections V.D and X of the Program Guide for more information on the voluntary matching incentive and mandatory cost-share funds.

Voluntary match funds for North Carolina will be from Phase 1 of the VW Settlement funds that North Carolina is to receive. NC DAQ has submitted a D-4 to the Beneficiary for approval and disbursement of the funds ($328,887).

Funding Partnerships

If a DERA grant recipient intends to fund target fleets that they do not own and operate, they have the option to (1) make a **subaward** or (2) provide **participant support costs** to a project partner. Both options can fund a project partner's equipment and installation costs, but only subawards can fund a project partner's direct and indirect costs such as personnel and travel. If the DERA grant recipient is only funding a project partner's equipment and installation costs, they may instead choose to provide participant support costs rather than a subaward to avoid the extensive subaward monitoring and management requirements.

For more information on categorizing costs for funding partnerships, please refer to Section XIII of the Program Guide.

No funding partnerships will be included in this program for North Carolina.

Other Leveraged Funds

Other leveraged funds are resources contributed to the project that are not identified as a mandatory or voluntary cost share and are not part of the total project cost under the grant award. This form of leveraging may include funding from another federal grant (if authorized), from an applicant's own resources, or resources from other third-party sources, and do not need to be eligible and allowable project costs under the EPA assistance agreement.

It is appropriate to include other leveraged funds in the budget if the applicant is proposing to implement a rebate program for equipment and vehicle purchases. EPA funds may be used to issue a rebate up to the mandatory cost-share funding limitations listed in Section X of the Program Guide. In the budget, the EPA funds for the rebate are appropriately listed under the Other budget category as "Participant Support Costs." However, the program participant's share of the vehicle that is not covered by the rebate is not considered a mandatory nor voluntary cost share; the program participant's share of the vehicle that is not covered by the rebate is considered other leveraged funds.

For example, EPA will fund up to 25% of the cost of an eligible vehicle powered by an engine certified to EPA emission standards. If a truck owner purchased a new truck for $100,000 they could receive a rebate for $25,000. In the budget, the rebate (e.g. $25,000) is appropriately listed under the Other budget category as "Participant Support Costs." The program participant's share of the vehicle (e.g. $75,000) is considered other leveraged funds.

Other leveraged funds should NOT be included in the official grant project budget (i.e. the SF424 and SF424A), however the Budget Detail section of the Project Narrative should account

for other leveraged funds where Participant Support Costs are included in the budget. Please see Appendix B for a sample Budget Detail, and Appendix E for more information on Participant Support Costs.

If applicants propose to provide other leveraged funds, EPA expects them to make the effort to secure the leveraged resources described in their applications. If the proposed leveraging does not materialize during grant performance, then EPA may reconsider the legitimacy of the award and/or take other appropriate action as authorized by 2 CFR Part 200, as applicable. Applications will not be evaluated based on the inclusion of Other Leveraged Funds under this RFA.

For the installation of the BATS technology on two F59 locomotives a total of $1,020,000 will be required for the equipment. Of that total, NC DAQ through this program will provide $796,399. The other leveraged funds from NC DOT will be $223,601.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

JUN 18 2019

OFFICE OF
AIR AND RADIATION

Michael A. Abraczinskas
Director, Division of Air Quality
North Carolina Department of Environmental Quality
217 West Jones Street
Raleigh, North Carolina 27699

Dear Michael A. Abraczinskas:

Thank you for your June 14, 2019 letter to the U.S. Environmental Protection Agency (EPA) requesting a waiver from the FY 2018 and FY 2019 State Diesel Emission Reduction Act (DERA) Grant requirements that exhaust retrofits be verified by EPA.

Per your letter, the North Carolina Department of Environmental Quality (NCDEQ) wants to fund a certified locomotive remanufacture kit without the 60% mandatory cost-share required in EPA's FY 17-18 and FY19 State Clean Diesel Program Guides. NCDEQ has instead proposed categorizing the remanufacture kit as an exhaust retrofit which do not have mandatory cost-shares in these funding opportunities. NCDEQ has provided EPA certificates of conformity for the Rail Propulsion Systems Blended After-Treatment System (BATS) remanufacture kit, diagrams of the system, and information on the cost of parts and installation for the system on Tier 0 locomotives. NCDEQ states that the BATS installation on Tier 0 passenger locomotives will bring the locomotives up to Tier 3+ and estimates reductions in NOx of 15.3 tons/year along the Piedmont rail corridor. Your letter states that Rail Propulsion Systems will pursue EPA verification of the BATS technology on top of the existing EPA certification.

Rather than grant a waiver for the verification requirement of exhaust retrofits, EPA is granting a waiver to the 60% mandatory cost-share requirement for EPA certified remanufacture kits. This waiver allows FY 17-18 and FY 19 EPA State DERA funds and voluntary matching funds to be used to fund up to 100% of the parts and installation of the BATS technology on North Carolina Department of Transportation (NCDOT) Tier 0 passenger locomotives to bring these locomotives up to the Tier 3+ emission level. EPA may reevaluate the mandatory cost-share requirements for certified remanufacture systems in future funding opportunities.

Please note, the mandated measures requirements in the FY 17-18 and FY 19 State Clean Diesel Program Guides that state that "no funds awarded under this program shall be used to fund the costs of emissions reductions that are mandated under federal law" still apply to projects funded under these funding opportunities. Likewise, if a certified remanufacture system is applied at the time of rebuild, funds 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.

If you have further questions, please contact me or your staff may call Jason Wilcox, the DERA State Clean Diesel Program Coordinator, at 202-343-9571.

Sincerely,

Jennifer Keller, Director
Legacy Fleet Incentives and Assessment Center

cc: Carol Kemker, Region 4
Amber Davis, Region 4
William Carnright, Region 4
Artra Cooper, Region 4
Jason Wilcox, OTAQ Headquarters
Faye Swift, OTAQ Headquarters