



State of Delaware

**Department of Natural Resources and
Environmental Control**

Volkswagen Environmental Mitigation Plan

December 2018

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I. BACKGROUND

On October 18, 2016, an initial Partial Consent Decree was finalized between the U.S. Justice Department, the Volkswagen (VW) Corporation, and its subsidiaries regarding the installation and use of emissions testing defeat devices in approximately 590,000 2.0 and 3.0 liter engine vehicles sold and operated in the United States beginning with model 2009 through 2014. A second partial settlement was approved for the 3.0 liter engine class of vehicles on May 17, 2017. Use of these defeat devices has increased air emissions of nitrogen oxide (NOx), resulting in adverse impacts to air quality and violating the federal Clean Air Act. NOx emissions contribute to the formation of ground-level ozone, which impairs lung function and cardiovascular health.

The Environmental Mitigation Trust Agreement for State Beneficiaries (Trust) dated October 2, 2017 has been established as part of the Partial Consent Decrees. Funds are to be used for environmental mitigation projects that reduce emissions of nitrogen oxides (“NOx”) where the Subject Vehicles were, are, or will be operated. The Trust Agreement is intended to fully mitigate the total, lifetime excess NOx emissions from the Subject Vehicles where the Subject Vehicles were, are, or will be operated.

The State of Delaware has been allocated approximately \$9.6 million from the Environmental Mitigation Trust based on the number of affected vehicles in Delaware. Delaware applied for Beneficiary status on November 27, 2017 and officially became eligible to receive funds on January 29, 2018. Wilmington Trust, as the court appointed Trustee, holds all funds and will disburse the funds upon receiving a state submitted work plan and budget. The Trust establishes a process to administer and receive the funds, including the development of a mitigation plan, and the types of mitigation projects eligible for funding¹.

¹ Appendix D of the Partial Consent Decree MDL No. 2672 CRB (JSC)

In addition to projects that reduce NO_x emissions, under the partial consent decree, states may allocate up to 15% of the funds towards zero emission vehicle fueling and charging infrastructure (i.e. Hydrogen fueling and electric vehicle charging stations).

II. OVERVIEW, OBJECTIVES AND FUNDING PRIORITIES

On behalf of the State of Delaware, the Department of Natural Resources & Environmental Control (DNREC) has developed this Proposed Environmental Mitigation Plan to provide the public with insight into the state's vision and overall approach to use the mitigation trust funds. The primary goal of the State of Delaware's mitigation plan is to improve and protect ambient air quality by implementing eligible mitigation projects that will achieve significant and sustained reductions in NO_x emission exposures in the following:

- Areas with poor air quality;
- Areas with historical air quality issues; and
- Areas that receive a disproportionate quantity of air pollution from diesel vehicles.

In accordance with Appendix D of the Partial Consent Decree,² this Proposed Environmental Mitigation Plan specifically describes:

- The funding priorities established to guide the planning, solicitation, and project selection processes,

² Section 4.1 Beneficiary Mitigation Plan, Appendix D of the Partial Consent Decree MDL No. 2672 CRB (JSC).

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- The categories of eligible mitigation projects anticipated to be appropriate to achieve the stated goals and the assessment of the allocation of funds anticipated to be used for each type of eligible mitigation project,
 - How the state may consider the potential beneficial impact of the selected eligible mitigation projects on air quality in areas that historically bear a disproportionate share of the air pollution burden, and
 - The anticipated ranges of emission benefits that would be realized by implementation of the eligible mitigation projects identified in the Environmental Mitigation Plan.

In addition to the above listed Environmental Mitigation Plan components, DNREC will seek and consider public comments on the State of Delaware's Proposed Environmental Mitigation Plan, which will be included in the final plan as required by the Consent Decree³.

The State of Delaware has the discretion to adjust its objectives and specific spending plan when necessary to achieve the plan's goal; for that reason, this plan is a living document. The State of Delaware will provide updates of the mitigation plan to the Trustee and on DNREC's public webpage about Delaware's actions for meeting the requirements of the Partial Consent Decree and the Mitigation Trust, at:

<http://www.dnrec.delaware.gov/air/Pages/VWMitigationPlan.aspx>

This Proposed Environmental Mitigation Plan is not a solicitation for projects. As such, this plan does not include details on the competitive application.

³ <https://www.epa.gov/enforcement/third-partial-and-30l-second-partial-and-20l-partial-and-amended-consent-decree>

III. PHASED FUNDING APPROACH AND ELIGIBLE APPLICANTS

DNREC is proposing a three-phase plan for the State of Delaware's allocation of funding. A phased plan will allow the state to:

- Build transparency and involve the public in reviewing and revising the plan between phases;
- Learn which projects work best, and modify requests for proposals in subsequent phases to focus on the most effective projects;
- Allow the state to identify environmental justice areas; and
- Allow the state to adjust priorities and investments based on the newest and most up-to-date vehicle technology.

The first phase of funding will be the first step in achieving our goals for the program. The three phases of funding are:

- **Phase 1: \$3,225,560.99 (2018/2021)** – DNREC proposes to replace old diesel school buses with new cleaner school buses.
- **Phase 2: \$3,225,560.00 (2019/2020)** – DNREC is proposing a competitive RFP for projects in all categories. Projects will be determined by eligibility criteria set forth in the plan.
- **Phase 3: \$3.2 million (2020/2021)** – DNREC will allocate 15% of the funds for electric vehicle supply equipment and evaluate Phase 1 and 2 to develop a path forward to best fit Delaware's needs with the remaining funds. Projects may consist of more school bus replacements or another RFP.

Delaware's allocation of Trust funds is \$9,676,682.97 (0.33% of the total \$2.9 billion in Trust funds made available to states and Tribes). DNREC anticipates that Trust funds will be made available for mitigation projects by the fall of 2018. A detailed project timeline can be found in **Table 1**.

Table 1 - Tentative Timeline of Events

Event	Time Frame
Court approves the partial settlement	October 25, 2016
Court Approves Trustee	March 15, 2017
Court Approves Trust	October 2, 2017
Delaware files Beneficiary Certification Application	November 27, 2017
Trustee Certifies Delaware as a Beneficiary	January 29, 2018
Public Comment on the draft Mitigation Plan	March 28, 2018
Delaware submits Mitigation Plan	Quarter 3 2018*
Delaware implements Phase 1 projects	Quarter 4 2018*
Delaware releases RFP – Phase 2	Quarter 1 2019*
Public Comment on Draft Mitigation Plan – Phase 2	Quarter 2 2019*
Delaware submits Phase 2 projects	Quarter 3 2019*
Delaware implements Phase 2 projects	Quarter 4 2019*
Delaware evaluates Phase 3 projects and releases an RFP, if required.	Quarter 1 2020*
Public Comment on Draft Mitigation Plan – Phase 3	Quarter 2 2020*
Delaware submits Phase 3 projects	Quarter 3 2020*
Delaware implements Phase 3 projects	Quarter 4 2020*

*Dates are estimates and are subject to change.

DNREC will maintain and make publically available all documentation submitted in the support of each funding request on the VW Settlement project website⁴.

⁴DNREC Website: <http://www.dnrec.delaware.gov/air/Pages/VWMitigationPlan.aspx>

IV. DETAILED SUMMARY OF THREE-PHASED SPENDING APPROACH

Phase 1 - School Bus Replacement Program:

The Department has recommended that Phase 1 funding be used to replace diesel school buses with cleaner school buses. DNREC's 2014 Emissions Inventory has concluded that up to 72% of in-state NO_x emissions can be attributed to the transportation sector. Delaware's emissions from heavy and medium duty vehicles (which include school buses) are becoming an increasingly larger source of overall mobile source emissions for nitrogen oxides (NO_x), as shown in Figure 1.

Research shows NO_x emissions will be reduced by 11 percent just by replacing a diesel school bus with a new propane school bus⁵.

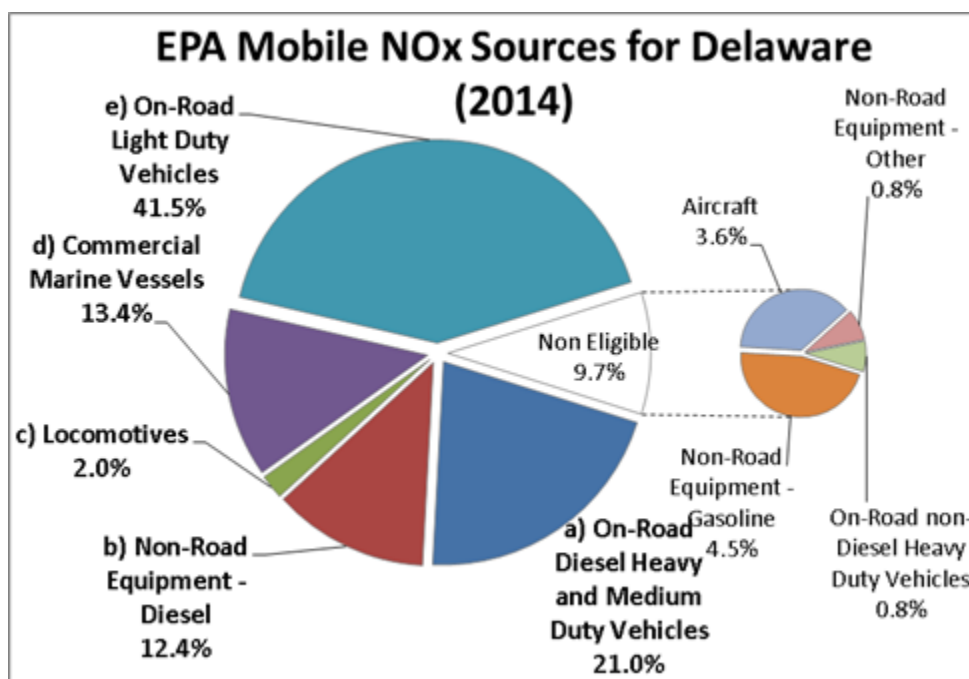


Figure 1 - Mobile NO_x Sources for Delaware (Source 2014 NEI v1)

⁵ Propane education and Research Council - <https://www.propanecouncil.org/>

Studies have demonstrated that older, more polluting diesel school buses present significant health risks for the students who typically ride the bus. This includes the exacerbation of pre-existing pulmonary disorders such as asthma. Asthma is the most common long-term childhood disease, making newer and cleaner buses an urgent priority. Additionally, children are more susceptible to air pollution because their respiratory systems are still developing and they have faster breathing rates than do adults⁶.

Lastly, replacing school buses with buses that operate on cleaner burning fuel will assist the Department in reducing emissions in Delaware's environmental justice (EJ) areas. Environmental Justice is the act of equity among all races, ethnicities, income and social classes of people and includes any census tract with a poverty level of 20% or higher and where 30% or more are considered minorities. The Department's mission relative to environmental justice ensures that no particular area receives disproportionate environmental impacts due to air pollution.

Phase 1 - Program Requirements:

In Phase 1, the Department proposes to use up to 1/3 of the allocated Trust funds or \$3,225,560.99 to provide funds to the Department of Education for the replacement of school buses with cleaner burning fuel. The Department is proposing a cost share of 30% for a school bus replacement.

To be eligible, each school bus being replaced must be:

- 1) Scrapped and destroyed at the time of replacement;
- 2) Owned and operated in Delaware;
- 3) Equipped with a model year 1992 to 2009 engine;

⁶ American Lung Association – <http://www.ala.org>

- 4) Serve a public school district or a charter school in Delaware where at least 40% of the students are disparately impacted as shown in **Table 2 and Table 3**;
- 5) Each new bus purchased must be of equivalent size as the bus being replaced;
- 6) The bus must be replaced with a model year 2018 or newer; and
- 7) The replaced school bus must be fueled by propane or clean diesel.

Table 2 - Percentage of Disparately Impacted Students by School District

County	School District	Disparately Impacted (%)
New Castle County	Appoquinimink	13.2
	Brandywine	29.8
	Christina	42.9
	Colonial	39.8
	New Castle Co. Vo-Tech	27.6
	Red Clay	34.1
	Smyrna	24.9
Kent County	Caesar Rodney	30.5
	Capital	48.9
	Lake Forest	39.4
	Milford	41.2
	Polytech Vo-Tech	17.0
Sussex County	Cape Henlopen	29.0
	Delmar	14.2
	Indian River	36.0
	Laurel	47.4
	Seaford	47.7
	Sussex Technical	16.6
	Woodbridge	41.9

Table 3 - Percentage of Disparately Impacted Students by Charter School

County	Charter School	Disparately Impacted (%)
New Castle County	Academia Antonia Alonso	57.3
	Charter School of New Castle	51.4
	Delaware Academy of Public Safety and Security	39.9
	Delaware Design-Lab High School	29.9
	East Side Charter School	79.3
	First State Montessori Academy	11.6
	Freire Charter School	48.9
	Gateway Lab School	42.3
	Great Oaks Charter School	55.8
	Kuumba Academy Charter School	62.2
	Las Americas Aspira Academy	25.4
	MOT Charter School	5.3
	Moyer (Maurice J.) Academy	20.0
	Newark Charter School	8.0
Odyssey Charter School	14.4	
Prestige Academy	73.4	
Kent County	Academy of Dover	67.8
	Campus Community Charter School	40.0
	Early College High School at Delaware State University	33.1
	First State Military Academy	24.9
	Positive Outcomes Charter School	30.2
	Providence Creek Academy Charter School	18.0
Sussex County	Sussex Academy	9.0

Phase 2 - Competitive RFP Program:

In phase 2 of the plan, the Department will provide up to 1/3 of the allocated Trust funds or \$3,225,560.99 in 2019 for the replacement of eligible mitigation actions.

The Department will issue a competitive request for proposals (RFP) for projects that reduce nitrogen oxide (NOx) emissions from the transportation sector.

The following mitigation project types will be eligible for use of the VW Settlement Funds per the Trust Agreement found in Appendix D-2:

- 1.) Class 8 Local Freight Trucks and Port Drayage Trucks (Eligible Large Trucks)**
- 2.) Class 4-8 School Bus, Shuttle Bus, or Transit Bus (Eligible Buses)**
- 3.) Freight Switchers**
- 4.) Ferries/Tugs**
- 5.) Ocean Going Vessels (OGV) Shorepower**
- 6.) Class 4-7 Local Freight Trucks (Medium Trucks)**
- 7.) Airport Ground Support Equipment**
- 8.) Forklifts and Port Cargo Handling Equipment**

Environmental Benefits:

The retrofit, repower, or replacement of eligible vehicles and equipment may provide a wide range of emission benefits based on many variables, including the type of vehicle or engine replaced, the initial age of the engine, and the engine power rating.

Each of the 8 project categories outlined in the VW Settlement Environmental Mitigation Plan will result in the following combined environmental benefits:

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- Tons of pollution reduced or avoided over the lifetime of the zero emissions vehicle supply equipment, specifically, NO_x, PM_{2.5}, GHGs such as CO₂ and black carbon,
 - Net reduction in gallons of diesel fuel and/or other fossil fuels used,
 - Improved ambient air quality and human health in communities located in nonattainment areas, areas with historical air quality issues, or in areas that bear a disproportionate share of the air pollution burden, as well as benefits to the local economy, and the welfare of residents in such communities, and
 - Reduced public exposure to diesel particulate matter, which the U.S. EPA has classified as a likely human carcinogen.

Additionally, based on current EPA exhaust emission standards for NO_x:⁷

- Heavy duty highway vehicles may provide up to a 96% reduction in NO_x emissions per vehicle, based on replacing a model year 1992 engine with a model year 2007 engine,
- Non-road equipment replacements, depending on the type of equipment and engine power rating, may provide between a 20% and 95% reduction in NO_x emissions per engine,
- In locomotives, replacing the oldest (Tier 0) engine with the newest (Tier 4) engine may provide up to an 89% NO_x reduction per engine,

⁷ EPA exhaust emission standard data retrieved from: <https://www.epa.gov/emission-standards-reference-guide>.

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- In commercial marine vessels, an upgrade or repower of a ferry or tug engine may provide up to an 80% NOx reduction for each vessel, and
 - Shorepower projects may reduce all NOx exhaust emissions from many ocean-going vessels.

These anticipated ranges of emission benefits were used to inform the plan's funding priorities, categories of eligible mitigation projects, and funding allocation considerations for each category of eligible mitigation projects. It is important to note that the range of emission benefits mentioned above are for individual engines and actual NOx emissions reductions will vary based on the type of projects received for funding consideration and the eligible mitigation projects ultimately funded. However, in order to achieve the goal of the state mitigation plan, it is a priority to fund sizeable projects designed to achieve the greatest emission reduction for the dollar (i.e., capital cost effectiveness in dollars/ton).

The cost shares and requirements involved for each vehicle or equipment repower or replacement will be equivalent to the terms of the Diesel Emission Reduction (DERA)⁸ grant. Cost shares identified in **Table 4** are based on the FY2017 State Clean Diesel Program Guide⁹.

⁸ The DERA program is a Congressionally-authorized project that enables the U.S. EPA to offer assistance for actions reducing diesel emissions. Thirty percent of the annual DERA funds are allocated to the DERA Clean Diesel State Grant Program. States and territories that match the base amount dollar per dollar receive an additional amount of EPA DERA funding to add to the grant (50% of the base amount). Trust funds can be used for states or territories non-federal match on a 1:1 basis.

⁹ 2017 FY2017 State Clean Diesel Program Guide - <https://www.epa.gov/sites/production/files/2017-02/documents/fy17-state-program-guide-2017-02.pdf>

Table 4 - Cost Shares for Eligible Mitigation Actions

Eligible Mitigation Action	Activity	Vehicle and Equipment Eligibility (Engine Model Year or Tier)	Proposed VW Funding	Cost Share Required
Class 8 Local Freight Trucks and Port Drayage Trucks (Eligible Large Trucks) & Class 4-7 Local Freight Trucks (Eligible Medium Trucks)	Engine replacement with new diesel or alternate fueled engine	1992-2009	40%	60%
	Engine replacement with new all-electric engine	1992-2009	60%	40%
	Vehicle replacement with new diesel or alternate fueled vehicle	1992-2009	25% (50% for Drayage)	75% (50% for Drayage)
	Vehicle Replacement with all-electric vehicle	1992-2009	45%	55%
Class 4-8 School Bus, Shuttle Bus, or Transit Bus (Eligible Buses)	Engine replacement with new diesel or alternate fueled engine	2009 and older	40%	60%
	Engine replacement with new all-electric engine	2009 and older	60%	40%
	Vehicle replacement with new diesel or alternate fueled vehicle	2009 and older	25%	75%
	Vehicle Replacement with all-electric vehicle	2009 and older	45%	55%
Freight Switchers	Engine replacement with new diesel or alternate fueled engine or generator sets that are EPA certified	Pre-Tier 4	40%	60%
	Engine replacement with new all-electric engine	Pre-Tier 4	60%	40%
	Locomotive replacement with new diesel or alternate fueled freight switcher that is EPA certified	Pre-Tier 4	25%	75%
	Locomotive replacement with new all-electric freight switcher	Pre-Tier 4	45%	55%

Eligible Mitigation Action	Activity	Vehicle and Equipment Eligibility (Engine Model Year or Tier)	Proposed VW Funding	Cost Share Required
Ferries/Tugs	Engine replacement with new Tier 3 or 4 diesel or alternate fueled engine	Pre-Tier 3	40%	60%
	Engine replacement with new all-electric engine	Pre-Tier 3	60%	40%
	Certified Remanufacture System or Verified Engine Upgrade	Pre-Tier 3	40%	60%
Ocean Going Vessels	Costs associated with shore-side system	n/a	25%	75%
Airport Ground Support Equipment	Engine replacement with new all-electric engine	Pre-Tier 3	60%	40%
Forklifts and Port Cargo Handling Equipment	Equipment replacement with new all-electric equipment	8000+ lbs lift capacity	45%	55%

Non-government and government entities are eligible to apply for funding to implement mitigation projects. Project funding will be awarded through a competitive process in accordance with Delaware's procurement laws¹⁰. Any unspent funds remaining at the end of Phase 2 will be rolled into Phase 3.

Diesel Emission Reduction Act (DERA):

The Department may leverage the projects in all phases in order to received additional Diesel Emission Reduction Act (DERA) grant funding. Any source type applying for grant funding will be subject to the requirements of the DERA State Clean Diesel Grant Program, including but not limited to general eligibility, project evaluation

¹⁰ Delaware Procurement laws can be found at <http://mymarketplace.delaware.gov/>

criteria, eligible project and administrative expenditures, cost-share, and funding restrictions.

The projects submitted via the RFP will be reviewed by a Department established Project Selection Committee. The committee will select and rank project applications based on a set “Project Scoring Criteria/Matrix” developed by the Department as shown in **Table 5** expressly for this purpose.

Phase 2 Program Requirements:

To be eligible, each vehicle or piece of equipment to be repowered or replaced must be:

- 1) Scrapped and destroyed at the time of replacement;
- 2) Owned and operated in Delaware;
- 3) Equipped with an eligible model year engine or Tier level;
- 4) Serve an environmental justice area;
- 5) Each new vehicle or engine purchased must be of appropriate /equivalent size as the vehicle or engine being replaced; and
- 6) The new vehicle must be replaced with a model year 2018 or newer.

Volkswagen RFP Scoring Matrix:

The Department has developed a project RFP scoring criteria/matrix. Each application submitted will be scored based on the factors outlined in the matrix in **Table 5**. The number of projects that are selected for funding in phases 2 and 3 will depend on the applications received and interest by vehicle and equipment owners.

The following criteria will be used by the grant Review Committee to review and score applications received for the VW Mitigation Funds:

Table 5 - VW Settlement RFP Award Criteria

Project Award Criteria	Points Possible	Points Awarded	Comments
<p>Measurable, verifiable reduction in NOx emissions</p> <ul style="list-style-type: none"> - The project will produce a net reduction in NOx emissions in the State and result in a measurable, verifiable reduction in NOx per ton of emissions using the Diesel Emission Quantifier. - Projects must meet eligibility requirements of Appendix D-2 of the VW Mitigation Plan 	30		
<p>Project Budget</p> <ul style="list-style-type: none"> -The proposed budget is thorough, robust, realistic and cost effective. - The applicant must show a detailed budget with all cost shares explained. 	15		
<p>Proposed Project Location</p> <ul style="list-style-type: none"> - The project is sited near a major highway or transportation corridor, shipping route, or near a shipping logistics center. - This project will address an environmental justice (EJ) area or related location that receives a disparate proportion of environmental impacts. - The project avoids environmentally sensitive areas or areas containing critical habitats. -Priority will be given to projects in non-attainment and air quality maintenance areas. 	15		
<p>Project Timeline</p> <p>The proposed project must define when the project will commence and will end.</p>	15		

Project Award Criteria	Points Possible	Points Awarded	Comments
Ability to be Replicated throughout the State - The proposed project has the ability to be replicated throughout the state with other fleets or for public access.	10		
Collaboration with other Entities in the State - The project includes collaborative efforts between the applicant and project team (an anchor fleet or fleets, utility/fuel provider, vehicle dealer, or manufacturer).	10		
Economic Development - The project creates and/or retains local jobs for Delawareans. - The project serves as an economic development engine for local Delaware based companies.	5		
Total Points	100		

Phase 3 - A Hybrid Program:

During Phase 3 of this funding, DNREC's Division of Energy and Climate will receive 15% or \$1,451,502.45 of the Trust funds (2020) for the deployment of electric vehicle supply equipment. These funds will be distributed through an RFP process. Project eligibility and scoring criteria will be finalized closer to Phase 3 to ensure that the most up-to-date technology (i.e. higher powered stations) and charging station gaps are being considered.

In addition to the funding for electric vehicle charging stations, the Department will evaluate the effectiveness of both Phases 1 and 2 to determine the best path forward (ie: whether the Department should continue to pursue retrofitting additional school buses or whether the funds would be better spent on one of the 8 eligible mitigation project categories).

The Department will direct the final allocation (\$1,774,058.54) to eligible NOx reducing projects. Any remaining Trust funds from Phase 1 and Phase 2 will be allocated for the remaining categories of eligible projects, based on the funding priorities delineated in this plan. The Department reserves the right to continue replacing school buses as a priority, if sufficient eligible project applications are not received. Any unspent funds remaining after Phase 3 may result in the Department proposing an additional request for projects via the same competitive process previously described.