COMMONWEALTH OF VIRGINIA

MITIGATION PLAN FOR THE VOLKSWAGEN 2.0 LITER VEHICLE PARTIAL CONSENT DECREE, APPENDIX D

PREPARED BY THE VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

NOVEMBER 16, 2016

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I. BACKGROUND

On October 18, 2016, a 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 500,000 2.0 liter vehicles sold and operated in the United States beginning in 2009. 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.

An Environmental Mitigation Trust has been established as part of the partial Consent Decree (CD) that provides funds to the states to mitigate the air quality impacts of the higher vehicle emissions from the offending action. The initial share to Virginia from the Trust is up to $87.6 million dollars. The Trust establishes a process to administer the funds, a process for states and tribes to receive the funds, including the development of a mitigation plan, and the types of mitigation "actions" or projects eligible for funding under the Trust.[1]

II. MITIGATION PLAN OVERVIEW AND GOAL

On behalf of the Commonwealth of Virginia, the Department of Environmental Quality (DEQ) has developed a state mitigation plan to provide the public with insight into the Commonwealth's vision and overall approach for uses of the mitigation funds allocated under the Trust. As such, the primary goal of the Commonwealth's mitigation plan is to improve and protect ambient air quality by implementing eligible mitigation projects that will:

- Achieve significant and sustained reductions in diesel emissions in terms of tons of reductions in diesel emission exposures in areas designated as poor air quality areas, areas with historical air quality issues, and areas that receive a disproportionate quantity of air pollution from diesel fleets, and

- Expedite deployment and widespread adoption of zero emission and near-zero emission vehicles and engines.

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

In accordance with Appendix D of the Partial Consent Decree,[2] this mitigation plan specifically describes:

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

- 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 to 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 Mitigation Plan.

In addition to the above listed plan components, the process for seeking and considering public comments on the Commonwealth's plan will be included in the final state mitigation plan as required by the Consent Decree.

The Commonwealth 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 Commonwealth will provide updates of the mitigation plan to the Trustee and on DEQ's public webpage about Virginia's actions for meeting the requirements of the Partial Consent Decree and the Mitigation Trust at: www.deq.virginia.gov/Programs/Air/vwmitigation.aspx.

This mitigation plan is not a solicitation for projects. As such, this plan does not include detail on the competitive application or project selection process.

III. AVAILABLE FUNDING AND ELIGIBLE APPLICANTS

Virginia's initial allocation of Trust funds is $87,589,313 (3.24% of the total $2.7 billion in Trust funds made available to states and Tribes). DEQ anticipates that Trust funds will be made available for mitigation projects by the fall of 2017. The 2017 time frame is subject to change because the Partial Consent Decree requires certain federal actions prior to states being able to access the Trust funds.

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

Virginia may request one-third of its total allocation during the first year or two-thirds of its allocation during the first two years after the Trust is initially funded. 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 Virginia's procurement laws.

DEQ will maintain and make publically available all documentation submitted in the support of the funding request and all records supporting all expenditures of eligible mitigation project funds.

IV. FUNDING PRIORITIES FOR CATEGORIES OF ELIGIBLE MITIGATION PROJECT TYPES

The Commonwealth will ensure that projects ultimately funded support the plan's goal. This goal will be achieved by establishing funding priorities to guide the planning, solicitation, and project selection processes. The funding priorities in this plan are based on the assessment of current NOx emissions from mobile sources, demographic and locational data[3], anticipated NOx emissions reductions or offsets from mobile sources, historical and current ground level ozone (O_3) and fine particulate matter ($PM_{2.5}$) nonattainment or maintenance areas, existing air quality improvement measures and programs in Virginia, equity considerations for the distribution of the funds across the Commonwealth, capacity issues for certain sectors to implement programs in a timely and efficient manner, and other factors. Please note that these are funding priorities, not eligibility criteria. These funding priorities, include, but are not limited to:

- Sizeable projects designed to achieve the greatest NOx emission reduction or offset for the dollar (i.e., capital cost effectiveness in dollars/ton),

- Government and non-government entities with demonstrated experience and existing administrative and programmatic structure in place for implementing diesel reduction or offset projects,

- Projects with verified funding (i.e., for projects that require a cost-share) or leveraged funding,

- Projects that can be implemented within three years of the award date,

[3] See Appendix A: NO_X Emissions Data for Virginia.

- Projects in areas that receive a disproportionate quantity of air pollution from diesel fleets such as but not limited to ports, rail yards, truck stops, airports, terminals, and bus depots,

- Projects located in nonattainment or maintenance areas, or areas with historical issues concerning compliance with federal standards for $PM_{2.5}$ and/or ozone,

- Projects located in areas with toxic air pollution concerns, and

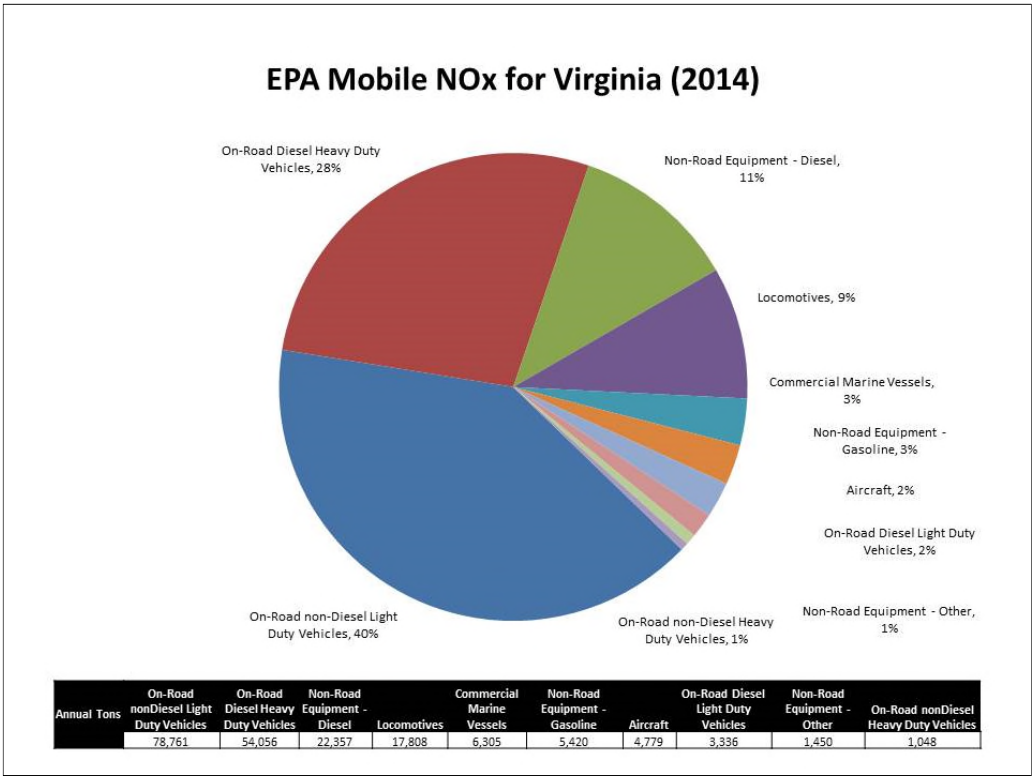
- Projects located in designated Federal Class I areas (Shenandoah National Park, and James River Face Wilderness).

The funding priorities in this plan are subject to change based on public input, new or supplemental air quality data or other data, and other factors.

V. FUNDING ALLOCATION FOR CATEGORIES OF ELIGIBLE MITIGATION PROJECT TYPES

The categories of eligible mitigation projects deemed appropriate to achieve the stated goal in this plan are based on mobile NOx emissions sources for Virginia as shown in Figure 1. Considerations informing the funding allocation approach for eligible mitigation projects, include but are not limited to: sources of mobile NOx emissions, sources of anticipated NOx emissions reductions, and options to maximize funding allowable for the deployment of zero emission vehicle supply equipment and to use Trust funds for projects not specifically enumerated in Appendix D-2 of the Trust but eligible under the Diesel Emission Reduction Act (DERA)[4].

[4] 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.



Annual Tons	On-Road nonDiesel Light Duty Vehicles	On-Road Diesel Heavy Duty Vehicles	Non-Road Equipment - Diesel	Locomotives	Commercial Marine Vessels	Non-Road Equipment - Gasoline	Aircraft	On-Road Diesel Light Duty Vehicles	Non-Road Equipment - Other	On-Road nonDiesel Heavy Duty Vehicles
	78,761	54,056	22,357	17,808	6,305	5,420	4,779	3,336	1,450	1,048

Figure 1: EPA Mobile NOx for Virginia 2014 National Emissions Inventory (2014 NEIv1).

This plan proposes to use up to 15%[5] of the Trust funds for the deployment of zero emission vehicle supply equipment to offset emissions from light duty diesel and non-diesel vehicles. The rest of the Trust funds will be allocated for the remaining categories of eligible projects, including DERA, based on the funding priorities delineated in this plan. Expenditures from the Trust can only be used for eligible non-government and government mitigation projects that are specified in Appendix D-2 of the Partial CD. The specific Trust expenditures under this plan, excluding cost caps for non-government projects, will subject to public input, solicitation criteria, actual projects received for funding consideration, and other factors.

The following information provides detail on the categories of eligible project types and anticipated benefits.

a. On-Road Heavy Duty Vehicles

On-road heavy duty vehicles emitted 55,104 tons or 29% of all mobile source NOx emissions in Virginia during 2014.

[5] Maximum percent allowable for zero emissions vehicle supply equipment per Appendix D of the Partial Consent Decree.

Eligible Mitigation Project Types: Class 8 Local Freight Trucks and Port Drayage Trucks (Large Trucks), Class 4-8 School Bus, Shuttle Bus, or Transit Bus (Buses), and Class 4-7 Local Freight Trucks (Medium Trucks).

Eligible trucks and buses include 1992 - 2009 engine model years. Eligible trucks and buses may be repowered with any new diesel or alternate fueled engine or all-electric engine, or may be replaced with any new diesel or alternate fueled or all-electric vehicle, with the engine model year in which the mitigation action occurs or one engine model year prior.

Expenditures for Non-government Owned Eligible Large and Medium Local Freight Truck, and Eligible Buses:

- Up to 40% of the cost of a repower with a new diesel or alternate fueled (e.g., compressed natural gas (CNG), propane, hybrid) engine, including the costs of installation of the engine,

- Up to 25% of the cost of a new diesel or alternate fueled (e.g., CNG, propane, hybrid) vehicle,

- Up to 75% of the cost of a repower with a new all-electric engine, including the costs of installation of such engine, and charging infrastructure associated with the new all-electric engine, and

- Up to 75% of the cost of a new all-electric vehicle, including charging infrastructure associated with the new all-electric vehicle.

Expenditures for Non-government Owned Eligible Drayage Trucks:

- Up to 40% of the cost for a repower with a new diesel or alternate fueled (e.g., CNG, propane, hybrid) engine, including the costs of installation of the engine,

- Up to 50% of the cost for a new diesel or alternate fueled (e.g., CNG, propane, hybrid) vehicle,

- Up to 75% of the cost for a repower with a new all-electric engine, including the costs of installation of such engine, and charging infrastructure associated with the new all-electric engine, and

- Up to 75% of the cost for a new all-electric vehicle, including charging infrastructure associated with the new all-electric vehicle.

Expenditures for Government-owned Eligible Large Trucks:

- Up to 100% of the cost of a repower with a new diesel or alternate fueled (e.g., CNG, propane, hybrid) engine, including the costs of installation of such engine,

- Up to 100% of the cost of a new diesel or alternate fueled (e.g., CNG, propane, hybrid) vehicle,

- Up to 100% of the cost of a repower with a new all-electric engine, including the costs of installation of such engine, and charging infrastructure associated with the new all-electric engine, and

- Up to 100% of the cost of a new all-electric vehicle, including charging infrastructure associated with the new all-electric vehicle.

Expected Benefits include, but are not limited to:

- Tons of pollution reduced over the lifetime of the engines/vehicles, specifically, NO_X, $PM_{2.5}$, greenhouse gases (GHGs) such as carbon dioxide ($CO_{2)}$ 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 near Federal Class I areas, 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.

b. Non-Road Equipment

Non-road equipment emitted 29,227 tons or 15% of all mobile source NOx emission in Virginia during 2014.

Eligible Project Types: Airport Ground Support Equipment, and Forklifts and Port Cargo Handling Equipment.

Eligible airport ground support equipment includes Tier 0, Tier 1, or Tier 2 diesel powered airport ground support equipment, and uncertified, or certified to 3 grams per brake horsepower-hour or higher emissions, spark ignition engine powered airport ground support equipment. Eligible forklifts include reach stackers, side loaders, and top loaders with greater than 8000 pounds lift capacity. Eligible port cargo handling equipment includes rubber-tired gantry cranes, straddle carriers, shuttle carriers, and terminal tractors, including yard hostlers and yard tractors that operate within ports.

Expenditures for Non-government Owned Eligible Airport Ground Support, and Forklifts and Port Cargo Handling Equipment:

- Up to 75% of the cost of a repower with a new all-electric engine, including the costs of installation of the engine, and charging infrastructure associated with the new all-electric engine, and

- Up to 75% of the cost of new all-electric equipment, including charging infrastructure associated with the new all-electric equipment.

Expenditures for Government Owned Eligible Expenditures Airport Ground Support, and Forklifts and Port Cargo Handling Equipment:

- Up to 100% of the cost of a repower with a new all-electric engine, including the costs of installation of such engine, and charging infrastructure associated with the new all-electric engine, and

- Up to 100% of the cost of new all-electric equipment, including charging infrastructure associated with the new all-electric equipment.

Expected Benefits include, but are not limited to:

- 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 CO_2 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 near Federal Class I areas, 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.

c. Locomotives

Locomotives emitted 17,808 tons or 9% of all mobile source NOx emission in Virginia during 2014.

Eligible Project Types: Eligible freight switchers include pre-Tier 4 switcher locomotives that operate 1000 or more hours per year.

Eligible Freight Switchers may be repowered with any new diesel or alternate fueled or all-electric engines (including generator sets), or may be replaced with any new diesel or alternate fueled or all-electric (including generator sets) freight switchers that are certified to meet the applicable EPA emissions standards as published in the federal code for the engine model year in which the eligible freight switcher mitigation action occurs.

Expenditures for Non-government Owned Freight Switchers:

- Up to 40% of the cost for a repower with new diesel or alternate fueled (e.g., CNG, propane, hybrid) engines or generator sets, including the costs of installation,

- Up to 25% of the cost for a new diesel or alternate fueled (e.g., CNG, propane, Hybrid) freight switcher,

- Up to 75% of the cost for a repower with new all-electric engines, including

the costs of installation and associated charging infrastructure, and

- Up to 75% of the cost for new all-electric freight switchers, including associated charging infrastructure.

Expenditures for Government Owned Freight Switchers:

- Up to 100% of the cost for a repower with new diesel or alternate fueled (e.g., CNG, propane, hybrid) engines or generator sets, including the costs of installation,

- Up to 100% of the cost for a new diesel or alternate fueled (e.g., CNG, propane, hybrid) freight switcher,

- Up to 100% of the cost for a repower with new all-electric engines, including the costs of installation and associated charging infrastructure, and

- Up to 100% of the cost for new all-electric freight switchers, including associated charging infrastructure.

Expected Benefits include, but are not limited to:

- 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 CO_2 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 near Federal Class I areas, in nonattainment areas, in 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 EPA has classified as a likely human carcinogen.

d. Commercial Marine Vessels

Commercial marine vessels emitted 6,305 tons or 3% of all mobile source NOx emissions in Virginia during 2014.

Eligible Project Types: ferries or tugs, and shorepower for ocean-going vessels.

Eligible ferries or tugs include unregulated, Tier 1, or Tier 2 marine engines. Eligible ferries and/or tugs may be repowered with any new Tier 3 or Tier 4 diesel or alternate fueled engines, or with all-electric engines, or may be upgraded with an EPA Certified Remanufacture System or an EPA Verified Engine Upgrade. Eligible marine shorepower comprises systems that enable a compatible vessel's main and auxiliary engines to remain off while the vessel is at berth, and include cables, cable management systems, shore power coupler systems, distribution control systems, and power distribution.

Expenditures for Non-government Owned Eligible Ferries or Tugs and Shore Power for Ocean-going Vessels:

- Up to 40% of the cost of a repower with a new diesel or alternate fueled (e.g., CNG, propane, hybrid) engines, including the costs of installation of the engines for ferries or tugs,

- Up to 75% of the cost of a repower with new all-electric engines, including the costs of installation and associated charging infrastructure,

- Up to 25% for the costs associated with the shore-side system, including cables, cable management systems, shore power coupler systems, distribution control systems, installation, and power distribution systems.

Expenditures for Government-owned Eligible Ferries or Tugs and Shore Power for Ocean-going Vessels:

- Up to 100% of the cost of a repower with new diesel or alternate fueled (e.g., CNG, propane, hybrid) engines, including the costs of installation,

- Up to 100% of the cost of a repower with new all-electric engines, including the costs of installation and associated charging infrastructure, and

- Up to 100% for the costs associated with the shore-side system, including cables, cable management systems, shore power coupler systems, distribution control systems, installation, and power distribution systems.

Expected Benefits include, but are not limited to:

- 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 CO_2 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 near Federal Class I areas, in nonattainment areas, in 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 EPA has classified as a likely human carcinogen.

e. Light Duty Zero Emission Vehicle Supply Equipment – Up to 15%

Light duty vehicles emitted 82,097 tons or 41% of all mobile source NOx emission in Virginia during 2014. Infrastructure investments would expedite the deployment of zero emission vehicles (ZEVs) and help mitigate the largest source of NOx emissions in Virginia.

Eligible Project Types: Eligible light duty zero emission vehicle (ZEV) supply equipment includes Level 1, Level 2 or fast charging equipment (or analogous successor technologies) that is located in a public place, workplace, or multi-unit dwelling and is not consumer light duty electric vehicle supply equipment (i.e., not located at a private residential dwelling that is not a multi-unit dwelling); and light duty hydrogen fuel cell vehicle supply equipment includes hydrogen dispensing equipment capable of dispensing hydrogen at a pressure of 70 megapascals (or analogous successor technologies) that is located in a public place.

Expenditures for Eligible ZEV Supply Equipment:

- Up to 100% of the cost to purchase, install and maintain eligible light duty electric vehicle supply equipment that will be available to the public at a government owned property,

- Up to 80% of the cost to purchase, install and maintain eligible light duty electric vehicle supply equipment that will be available to the public at a non-government owned property,

- Up to 60% of the cost to purchase, install and maintain eligible light duty electric vehicle supply equipment that will be available at a multi-unit dwelling but not to the general public,

- Up to 33% of the cost to purchase, install and maintain eligible hydrogen fuel cell vehicle supply equipment capable of dispensing at least 250 kilograms per day (kg/day) that will be available to the public, and

- Up to 25% of the cost to purchase install and maintain eligible hydrogen fuel cell vehicle supply equipment capable of dispensing at least 100 kg/day that will be available to the public.

Expected Benefits include, but are not limited to:

- Tons of pollution reduced over the lifetime of the engines/vehicles, specifically, NOX, PM2.5, GHGs such as CO2 and black carbon,

- Net avoided diesel or gasoline used,

- Improved ambient air quality and human health in communities located near Federal Class I areas, in nonattainment areas, in 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 EPA has classified as a likely human carcinogen.

f. Diesel Emission Reduction Act (DERA) Option

The tons or percentage of NOx emitted is dependent on the actual source or sector. The anticipated emissions reduction is dependent on the source and actual project type.

Potential heavy duty diesel emission source types not specifically enumerated in Appendix D-2 of the Trust but eligible for funding through DERA

include but not limited to:

- Long-haul locomotives
- Non-road engines, equipment, and vehicles used in:
    - Agriculture
    - Construction
    - Cargo Handling (includes ports and airports)
    - Energy production
    - Mining

Potentially eligible diesel reduction mitigation projects may include:

- Exhaust controls
- Engine upgrades
- Cleaner fuel use
- Verified idle reduction technologies (e.g., truck stop electrification)
- Verified aerodynamic technologies and verified low rolling resistance tires
- Vehicle and equipment replacement including replacement with newer cleaner diesel or hybrid or alternative fuel equipment/vehicles
- Clean alternative fuel conversions

This is not an exhaustive list of source types and projects eligible for applying for funding under Virginia's DERA State Clean Diesel Grant Program. 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 criteria, eligible project and administrative expenditures, cost-share, and funding restrictions.

Expected Benefits include, but are not limited to:

- 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 CO_2 and black carbon,

- Net reductions or avoided diesel used,

- Improved ambient air quality and human health in communities located near Federal Class I areas, in nonattainment areas, in 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,

- Reduced public exposure to diesel particulate matter, which EPA has classified as a likely human carcinogen, and

VI. ANTICIPATED 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. Based on current EPA exhaust emission standards for NOx:[6]

- Heavy duty highway vehicles may provide up to a 96% reduction in NOx 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 NOx emissions for each engine,

- Locomotives, replacing the oldest (Tier 0) engine with the newest (Tier 4) engine may provide up to an 89% NOx reduction per engine,

- Commercial marine vessels, an upgrade or repower of a ferry or tug engine may

[6] EPA exhaust emission standard data retrieved from: https://www.epa.gov/emission-standards-reference-guide.

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).

APPENDIXES A-D

APPENDIX A: NO_X EMISSIONS DATA FOR VIRGINIA

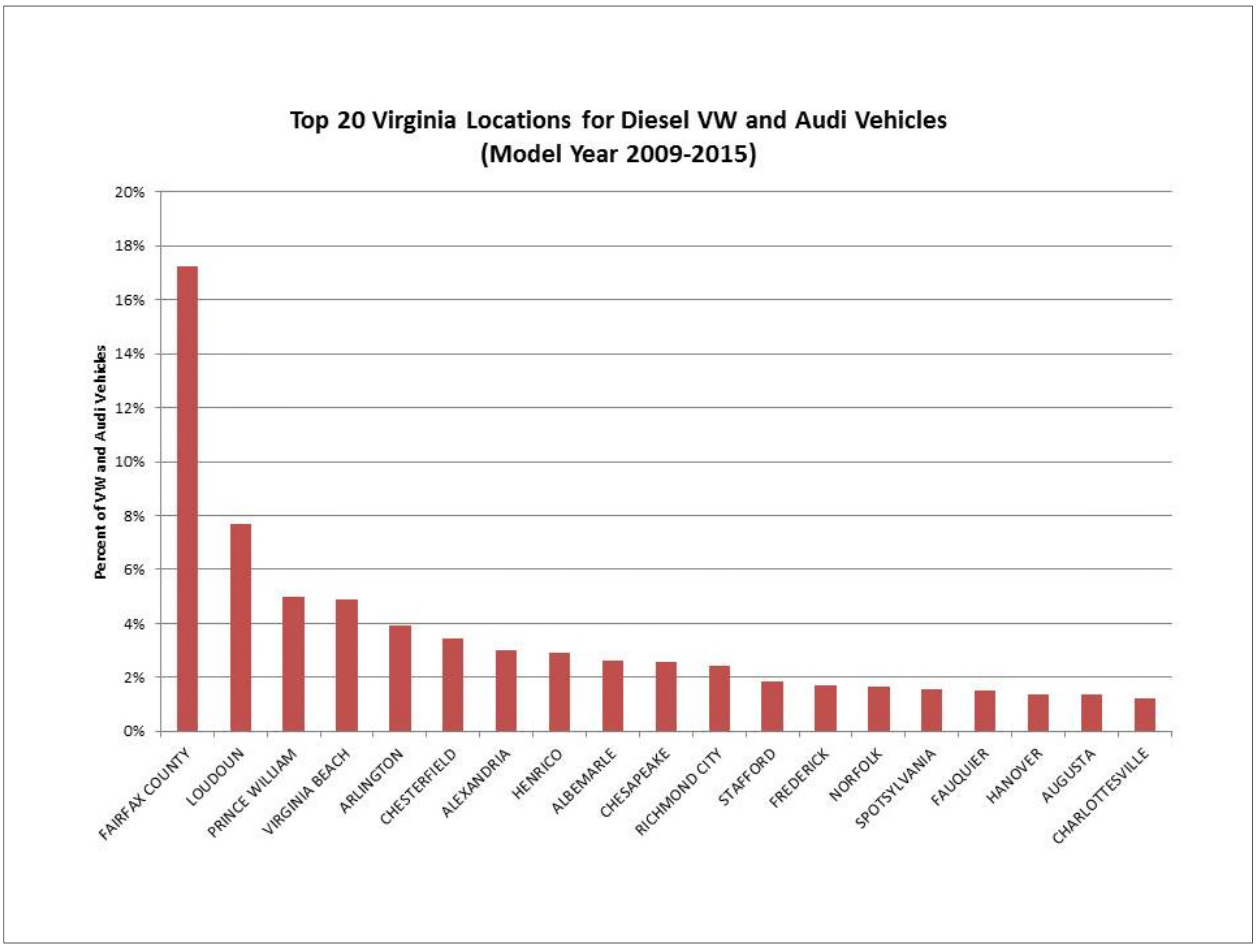
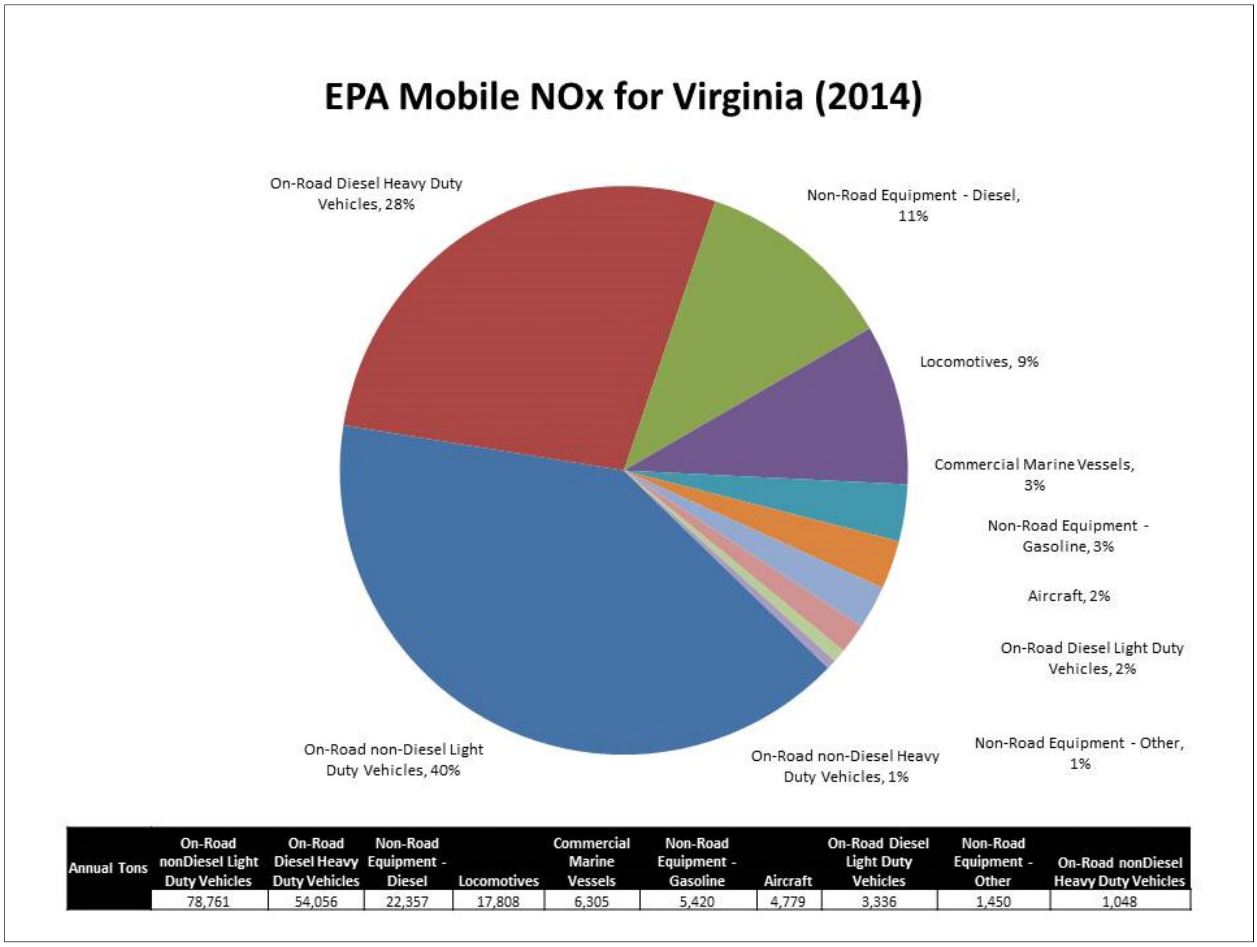
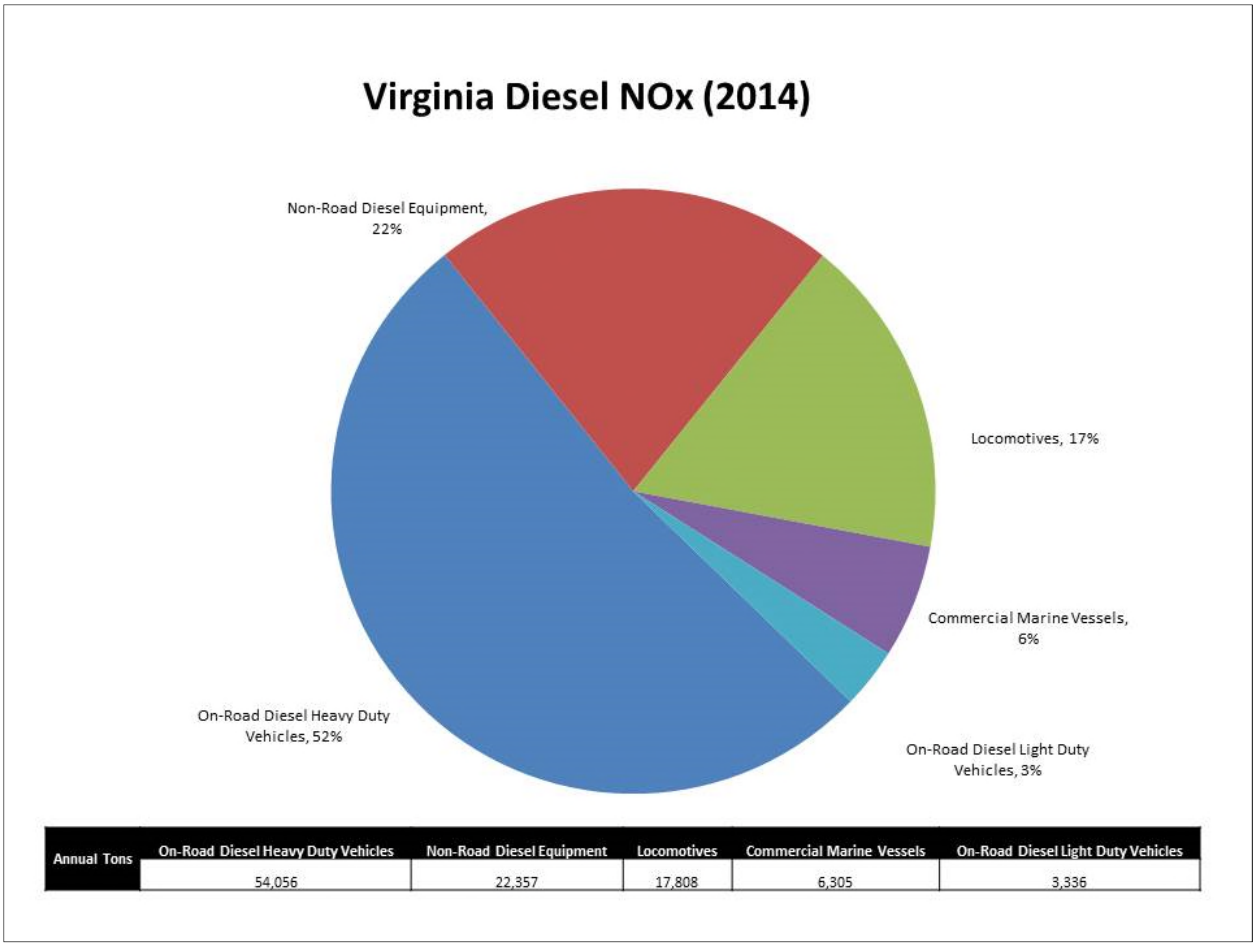


Figure A-1: Top Virginia Counties for Diesel VW and Audi Vehicles



Annual Tons	On-Road nonDiesel Light Duty Vehicles	On-Road Diesel Heavy Duty Vehicles	Non-Road Equipment - Diesel	Locomotives	Commercial Marine Vessels	Non-Road Equipment - Gasoline	Aircraft	On-Road Diesel Light Duty Vehicles	Non-Road Equipment - Other	On-Road nonDiesel Heavy Duty Vehicles
	78,761	54,056	22,357	17,808	6,305	5,420	4,779	3,336	1,450	1,048

Figure A-2: EPA Percent Mobile NOx for Virginia, 2014 National Emissions Inventory Data



Annual Tons	On-Road Diesel Heavy Duty Vehicles	Non-Road Diesel Equipment	Locomotives	Commercial Marine Vessels	On-Road Diesel Light Duty Vehicles
	54,056	22,357	17,808	6,305	3,336

Figure A-3: Virginia Percent Diesel NOx, 2014 National Emissions Inventory Data

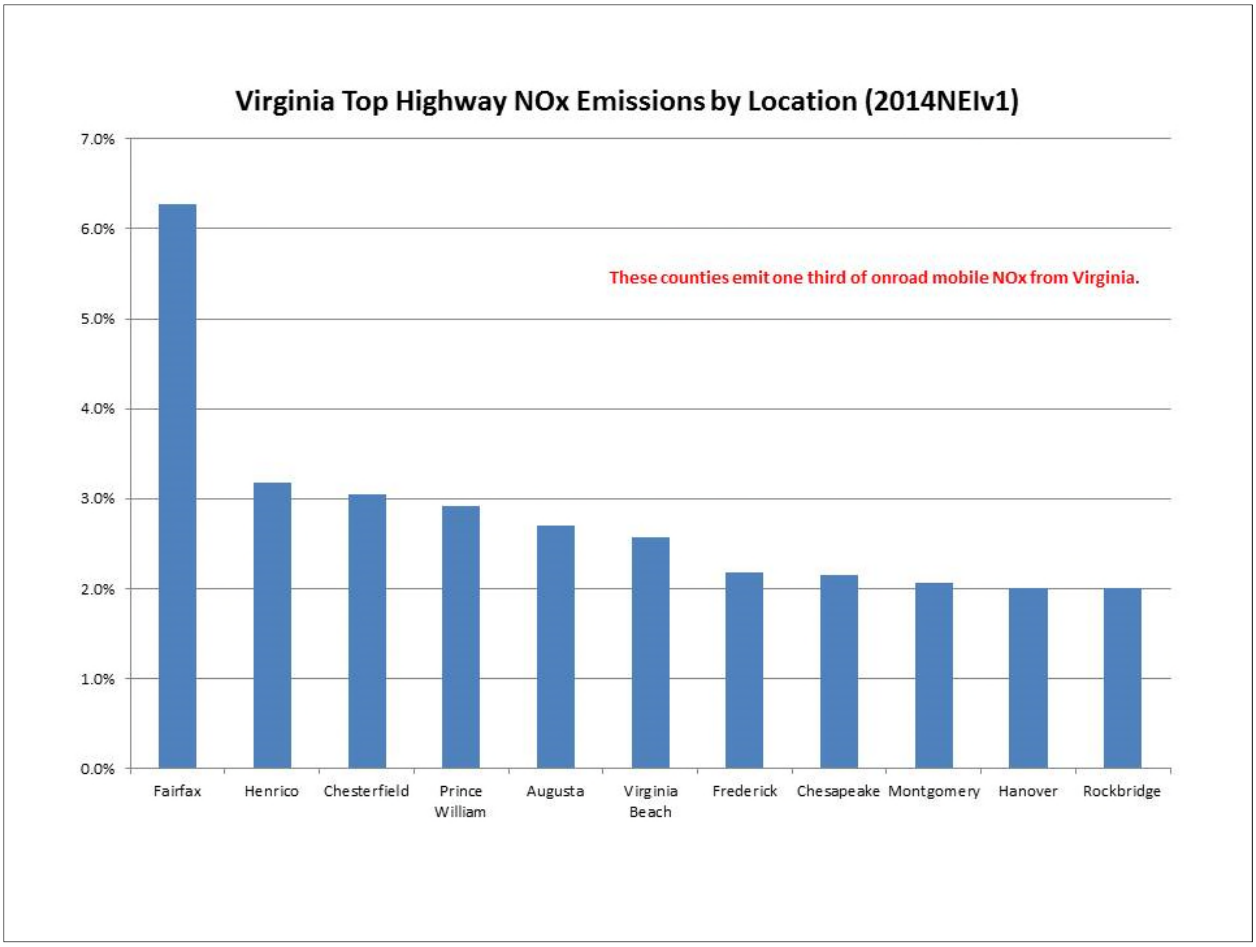


Figure A-4: Virginia Top Highway Percent NOx Emissions by County, 2014 National Emissions Inventory Data

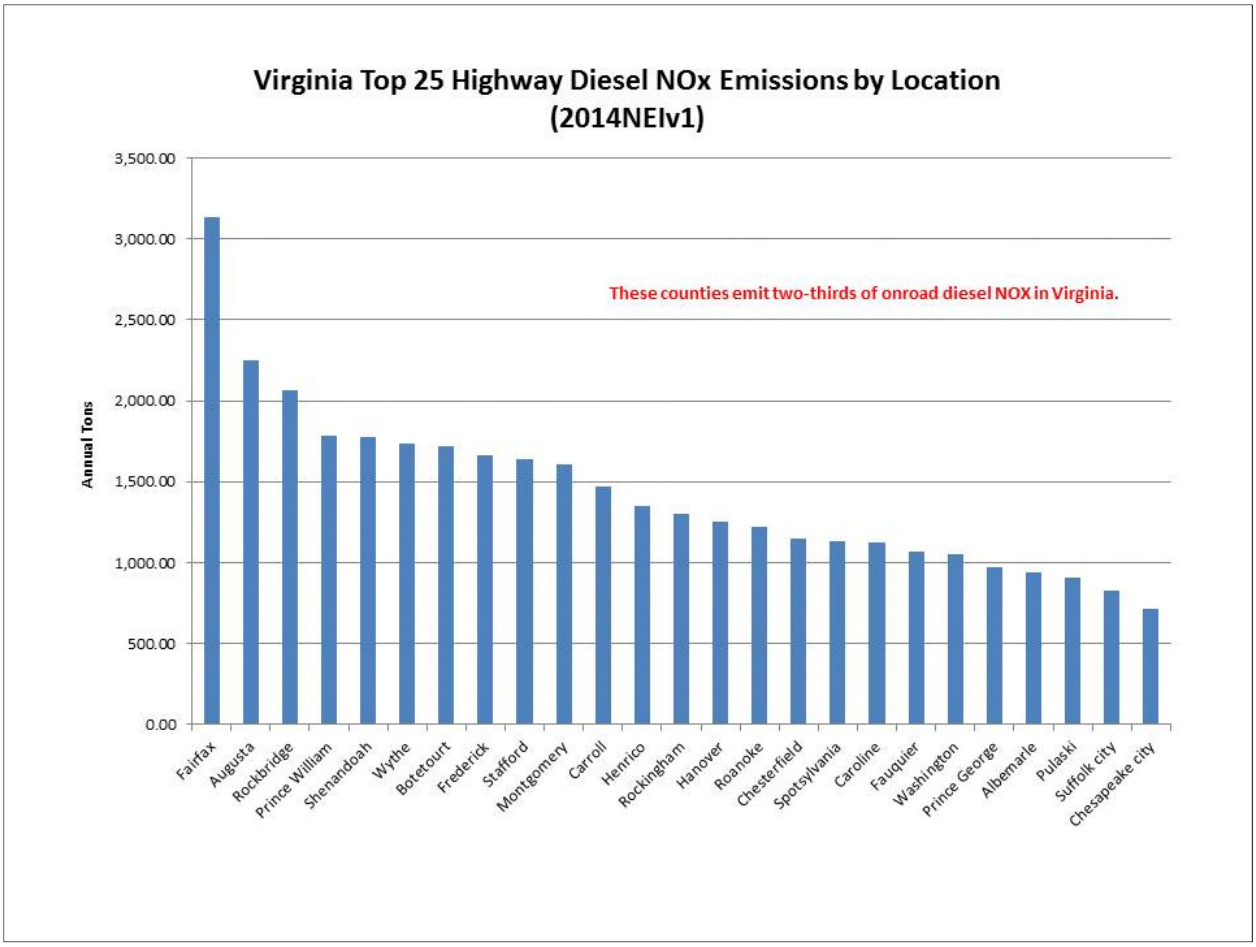


Figure A-5: Virginia Top 25 Counties for Annual Tons of Highway NOx Emissions, 2014 National Emissions Inventory Data

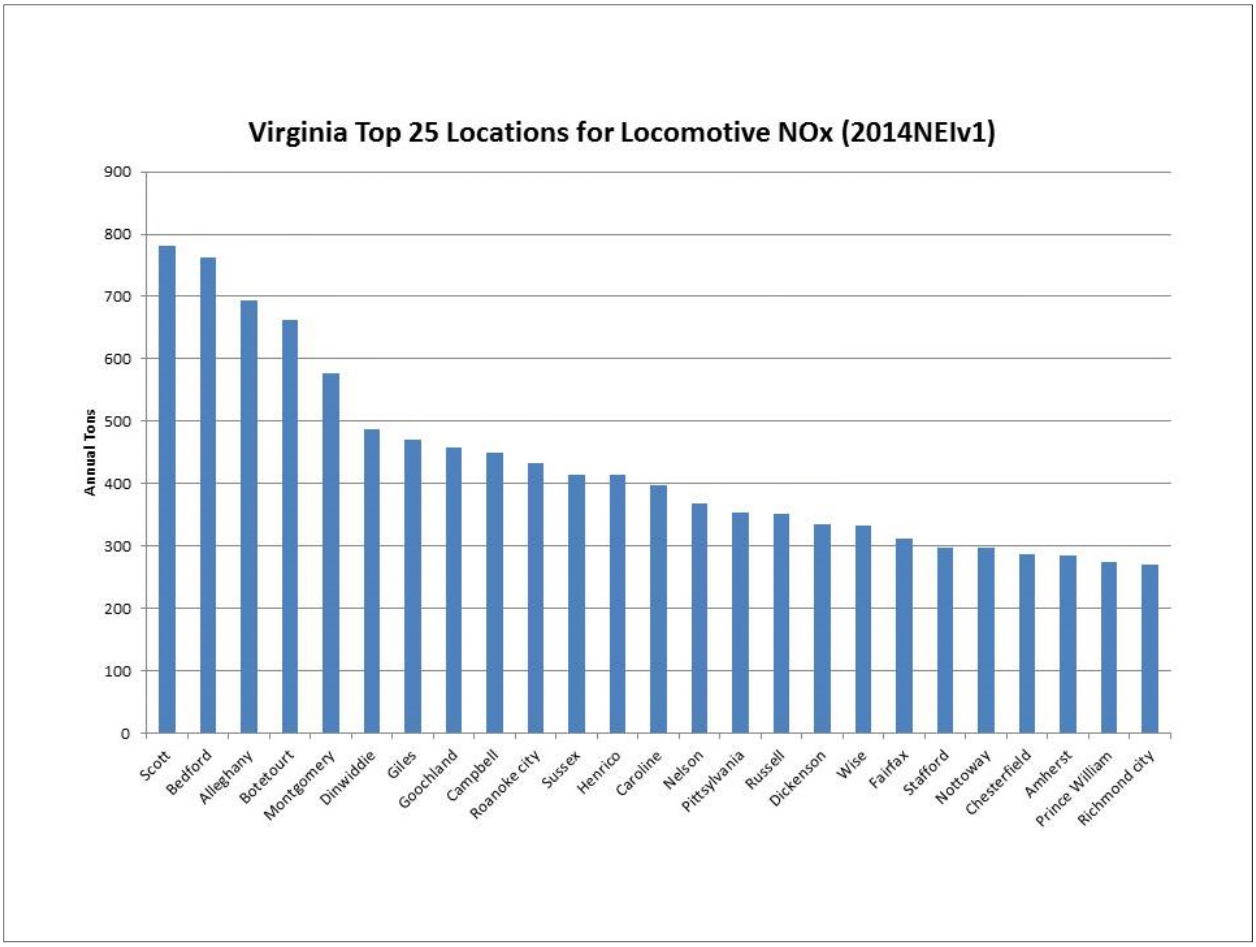


Figure A-6: Virginia Top 25 Counties for Annual NOx Emissions from Locomotives, 2014 National Emissions Inventory Data

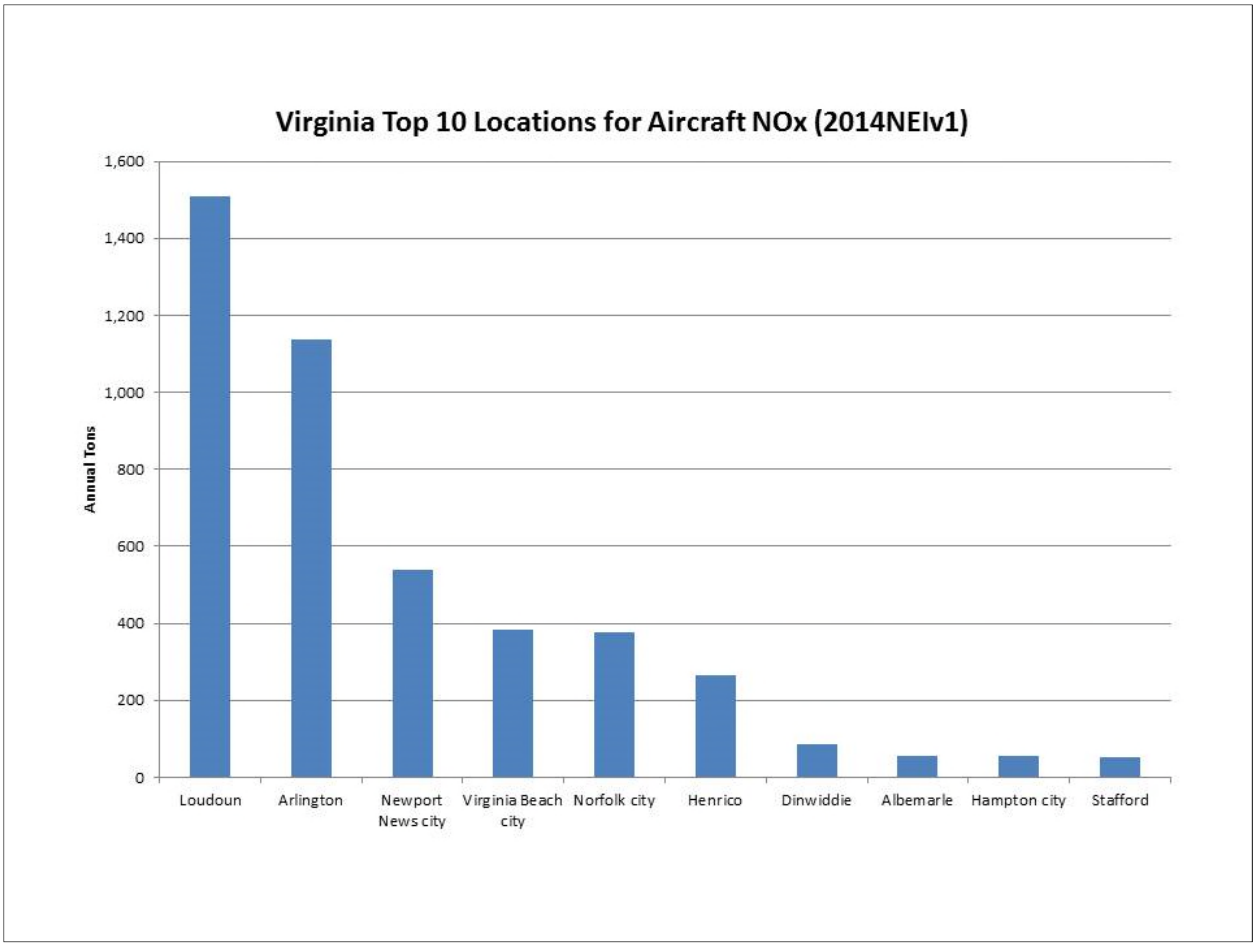


Figure A-7: Virginia Top 10 Counties for Annual NOx Emissions from Aircraft, 2014 National Emissions Inventory Data

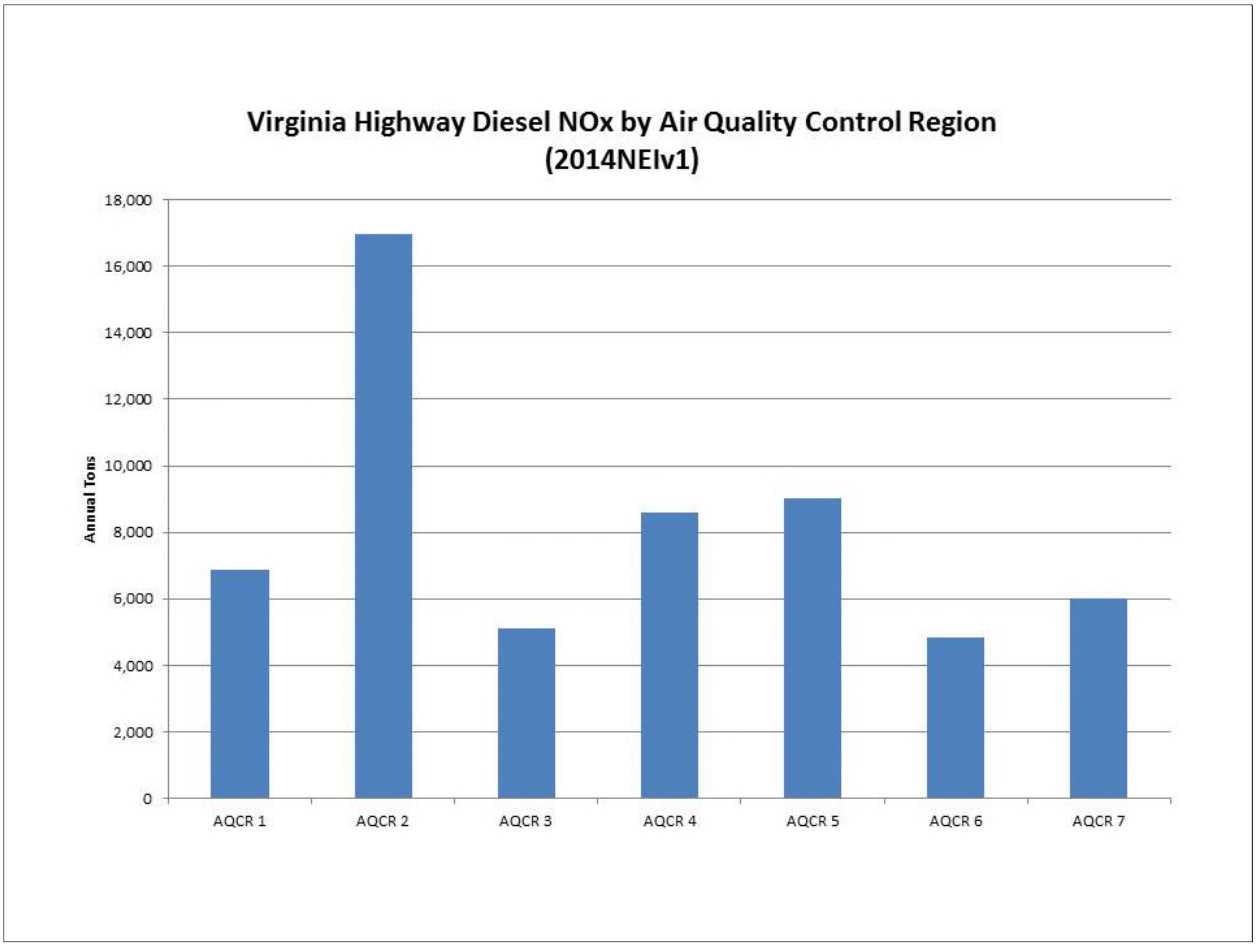


Figure A-8: Virginia Highway Diesel Annual Tons of NOx Emissions by Air Quality Control Region, 2014 National Emissions Inventory Data

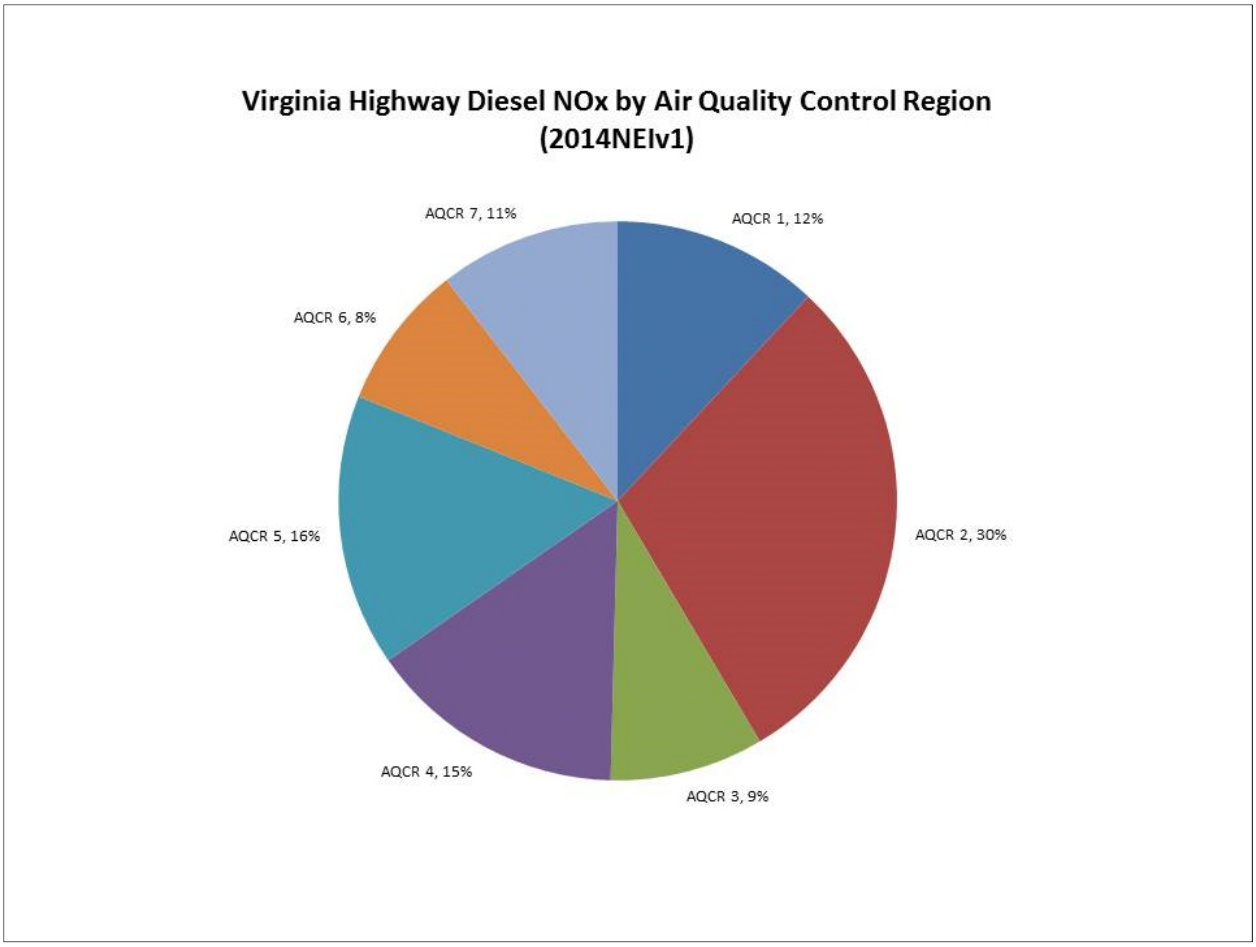


Figure A-9: Virginia Highway Diesel Percent NOx Emissions by Air Quality Control Region, 2014 National Emissions Inventory Data

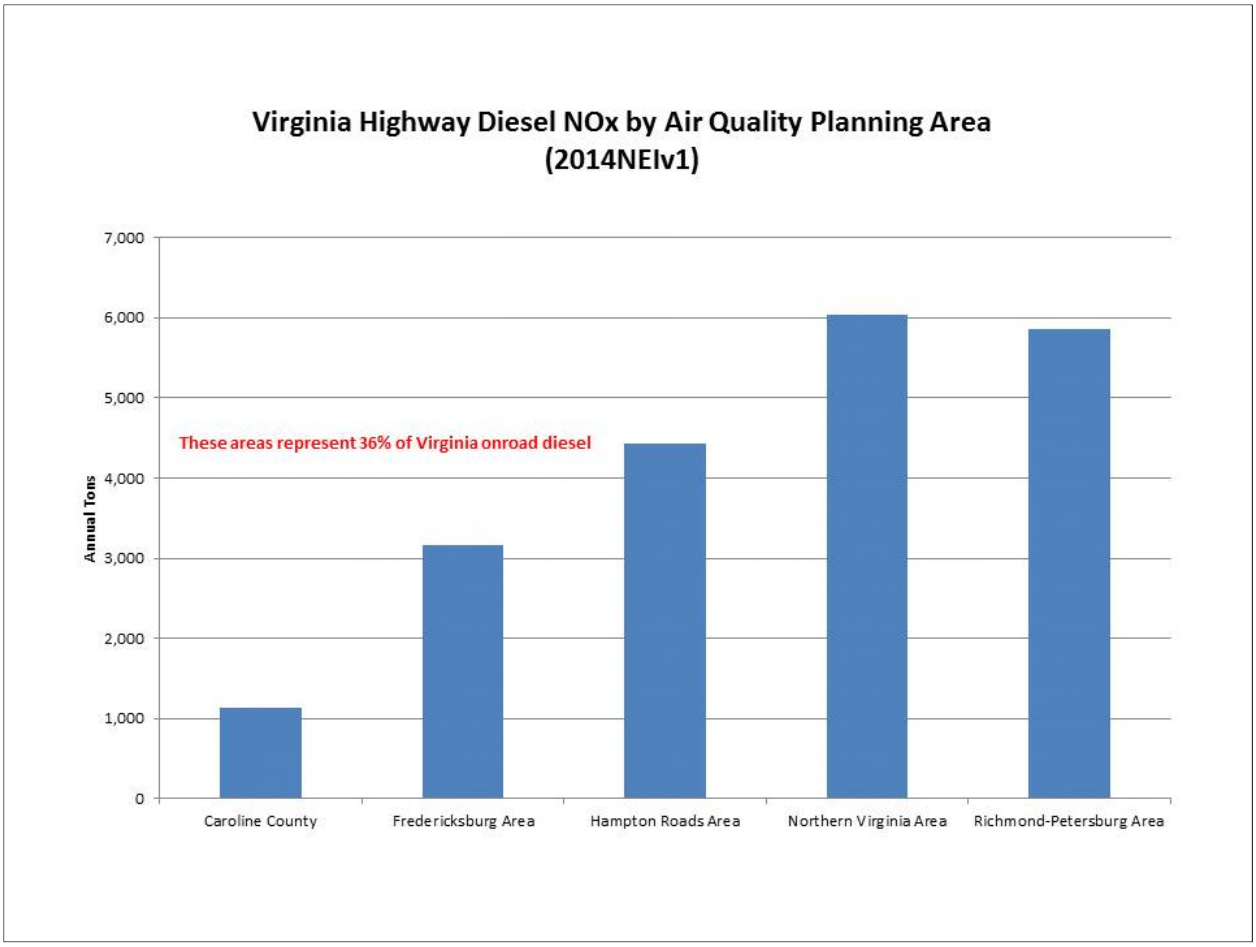


Figure A-10: Virginia Highway Diesel Annual Tons of NOx Emissions by Air Quality Planning Area, 2014 National Emissions Inventory Data

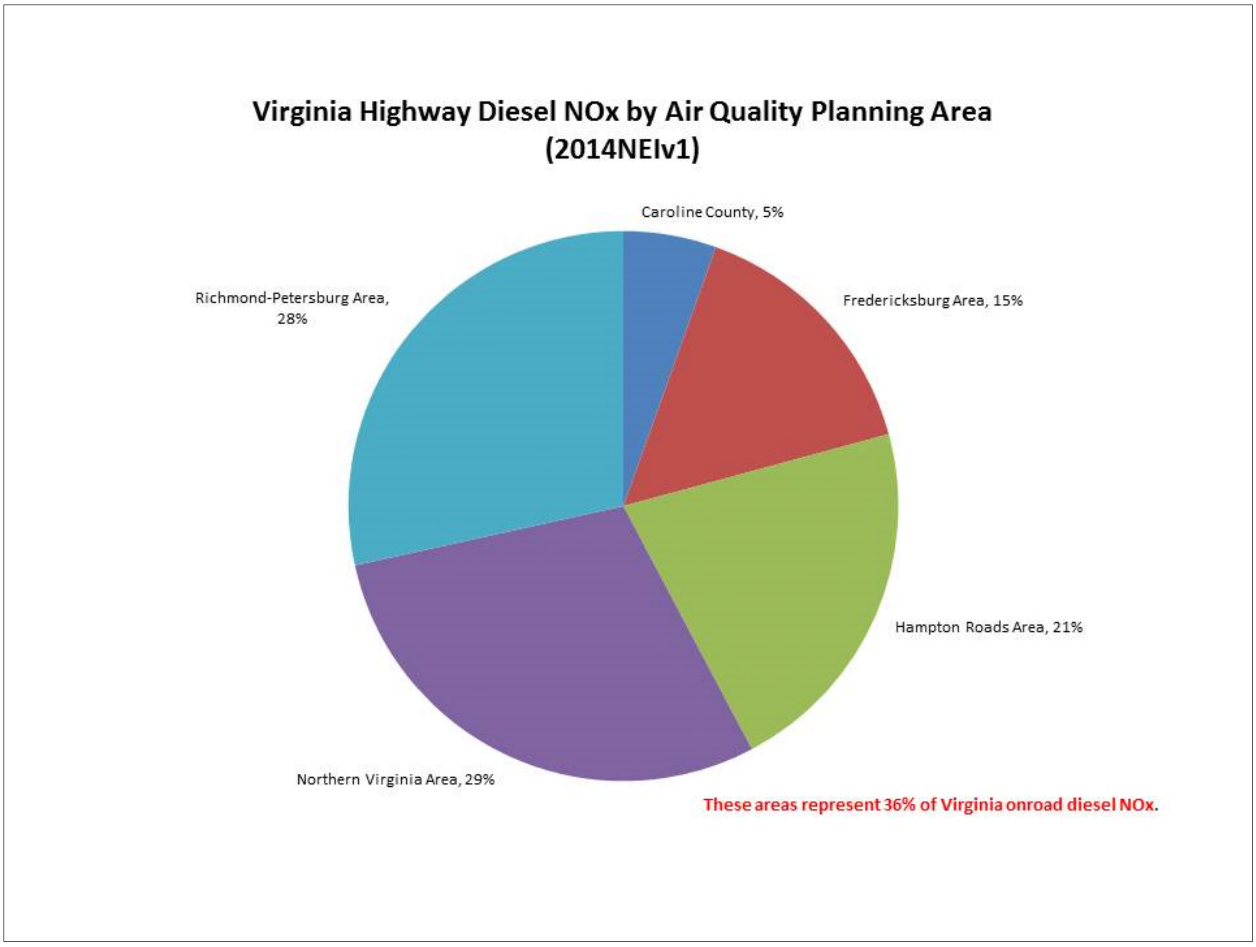


Figure A-11: Virginia Highway Diesel Percent NOx Emissions by Air Quality Planning Area, 2014 National Emissions Inventory Data

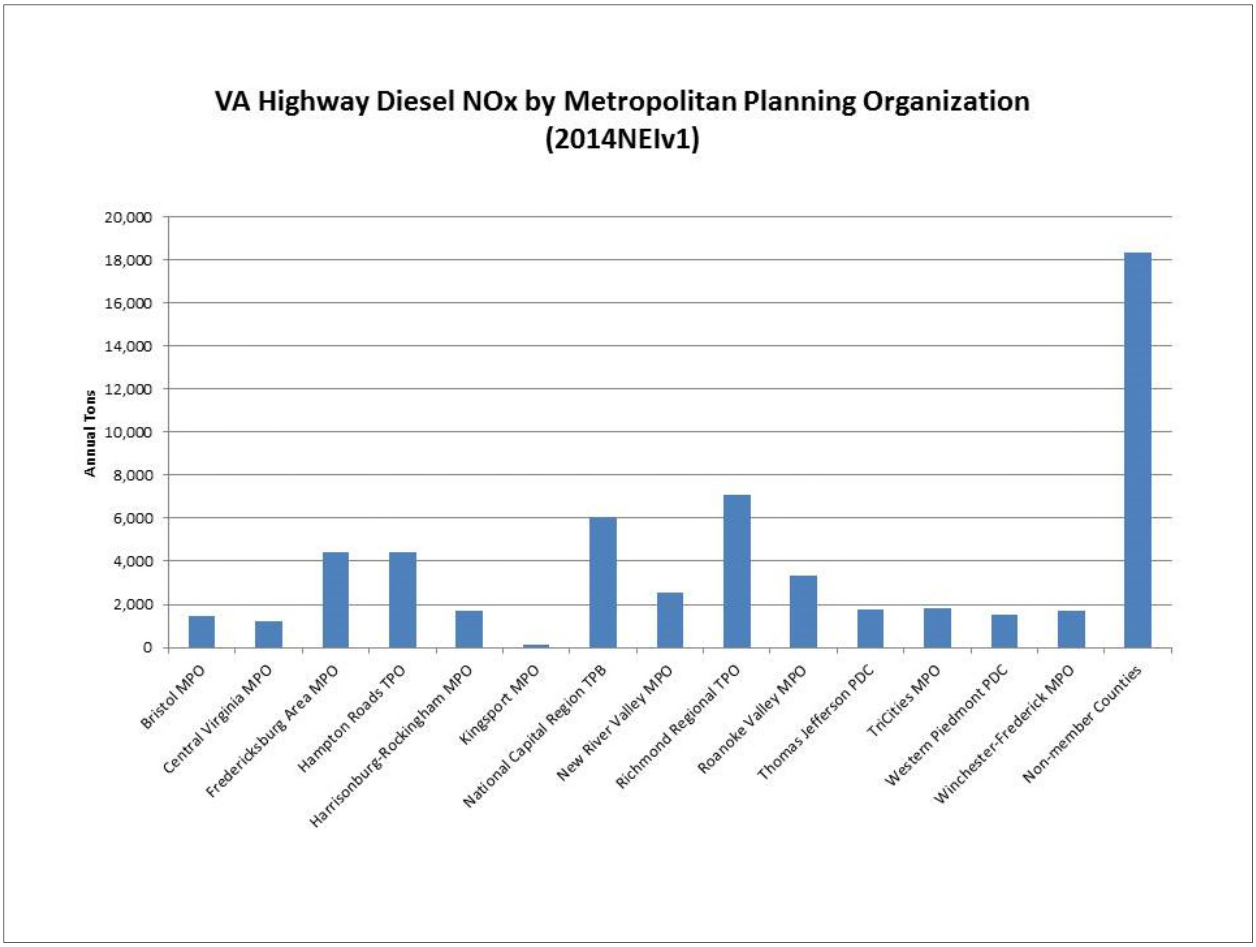


Figure A-12: Virginia Highway Diesel Annual Tons of NOx Emissions by Metropolitan Planning Organization, 2014 National Emissions Inventory Data

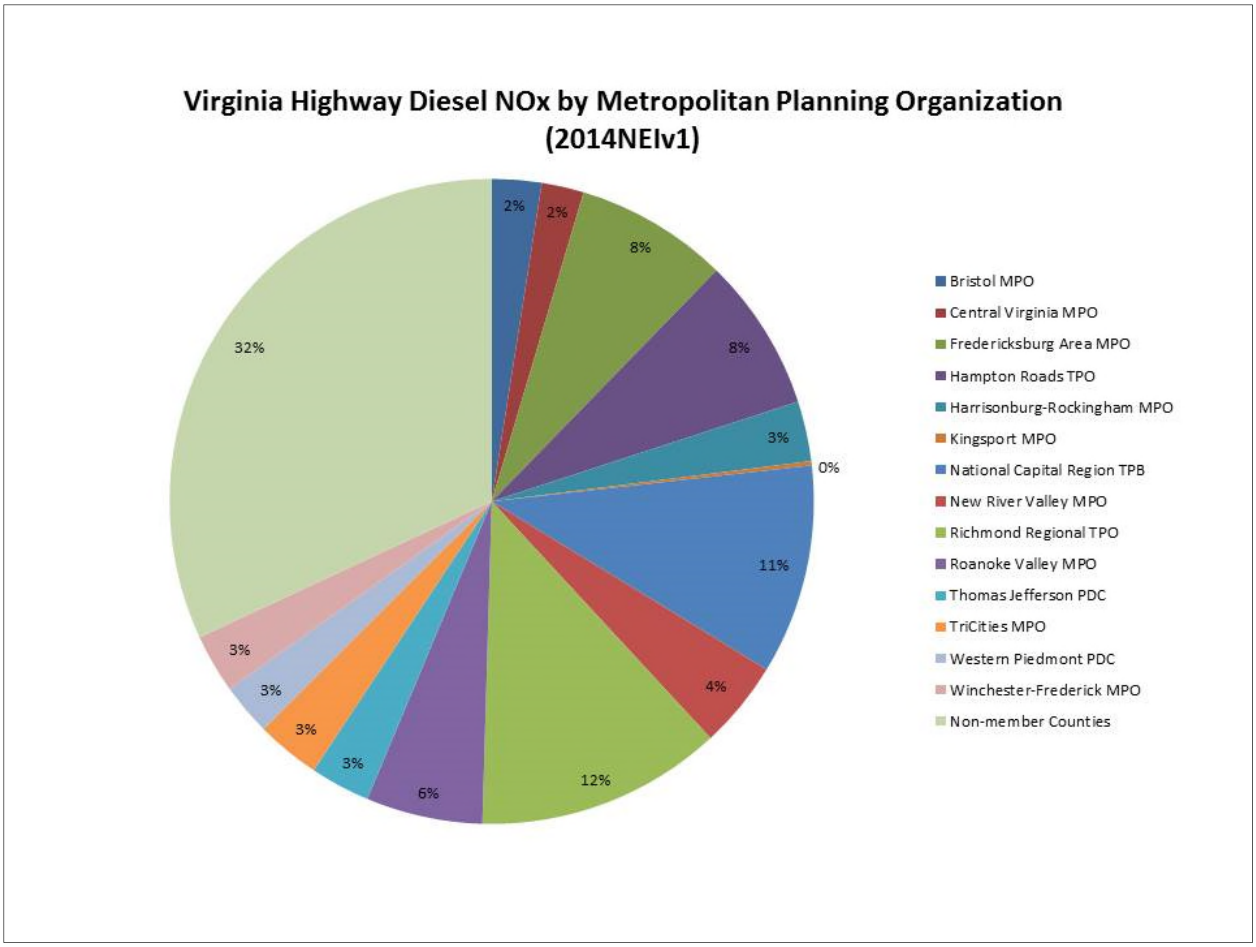


Figure A-13: Virginia Highway Diesel Percent of NOx Emissions by Metropolitan Planning Organization, 2014 National Emissions Inventory Data

APPENDIX B: ELIGIBLE MITIGATION PROJECT ADMINISTRATIVE EXPENDITURES

For any eligible mitigation project, Trust Funds can be used for the actual administrative expenditures associated with implementing such eligible mitigation project, but not to exceed 15% of the total cost of such eligible mitigation project. The 15% cap includes the aggregated amount of eligible administrative expenditures incurred by the Beneficiary and any third-party contractors. These eligible administrative expenditures include the following:

- Personnel including costs of employee salaries and wages, but not consultants.
- Fringe Benefits including costs of employee fringe benefits such as health insurance, Federal Insurance Contributions Act, retirement, life insurance, and payroll taxes.
- Travel including costs of mitigation project-related travel by program staff, not including consultant travel.
- Supplies including tangible property purchased in support of the mitigation project that will be expensed on the “Statement of Activities”, such as educational publications, office supplies, etc.
- Contractual cost including all contracted services and goods except for those charged under other categories such as supplies, construction, etc. Contracts for evaluation and consulting services and contracts with sub-recipient organizations must be included.
- Construction including costs associated with ordinary or normal rearrangement and alteration of facilities.
- Other costs including insurance, professional services, occupancy and equipment leases, printing and publication, training, indirect costs, and accounting.

APPENDIX C: DEFINITIONS

"Airport Ground Support Equipment" means vehicles and equipment used at an airport to service aircraft between flights.

"All-Electric" means powered exclusively by electricity provided by a battery, fuel cell, or the grid.

"Alternate Fueled" means an engine, or a vehicle or piece of equipment which is powered by an engine, which uses a fuel different from or in addition to gasoline fuel or diesel fuel (e.g., compressed natural gas, propane, diesel-electric hybrid).

"Certified Remanufacture System or Verified Engine Upgrade" means engine upgrades certified or verified by EPA or California Air Resources Board (CARB) to achieve a reduction in emissions.

"Class 4-7 Local Freight Trucks (Medium Trucks)" means trucks, including commercial trucks, used to deliver cargo and freight (e.g., courier services, delivery trucks, box trucks moving freight, waste haulers, dump trucks, concrete mixers) with a gross vehicle weight rating (GVWR) between 14,001 and 33,000 pounds (lbs).

"Class 4-8 School Bus, Shuttle Bus, or Transit Bus (Buses)" means vehicles with a GVWR greater than 14,001 lbs used for transporting people.

"Class 8 Local Freight and Port Drayage Trucks" means trucks with a GVWR greater than 33,000 lbs used for port drayage and/or freight/cargo delivery, including waste haulers, dump trucks, and concrete mixers.

"Drayage Trucks" means trucks hauling cargo to and from ports and intermodal rail yards.

"Forklift" means nonroad equipment used to lift and move materials short distances, and generally include tines to lift objects. Eligible types of forklifts include reach stackers, side loaders, and top loaders.

"Freight Switcher" means a locomotive that moves rail cars around a rail yard as compared to a line-haul engine that move freight long distances.

"Generator Set" means a switcher locomotive equipped with multiple engines that can turn off one or more engines to reduce emissions and save fuel depending on the load it is moving.

"Government" means a state or local government agency (including a school district, municipality, city, county, special district, transit district, joint powers authority, or port authority, owning fleets purchased with government funds), and a tribal government or native village.

"Gross Vehicle Weight Rating (GVWR)" means the maximum weight of the vehicle, as specified by the manufacturer. GVWR include the following total vehicle weight plus fluids, passengers, and cargo:

Class 1: < 6000 lb
Class 2: 6001-10,000 lb
Class 3: 10,001-14,000 lb
Class 4: 14,001-16,000 lb
Class 5: 16,001-19,500 lb
Class 6: 19,501-26,000 lb
Class 7: 26,001-33,000 lb
Class 8: > 33,001 lb

"Hybrid" means a vehicle that combines an internal combustion engine with a battery and electric motor.

"Infrastructure" means the equipment used to enable the use of electric powered vehicles (e.g., electric charging stations).

"Intermodal Rail Yard" means a rail facility in which cargo is transferred from drayage truck to train or vice-versa.

"Port Cargo Handling Equipment" means rubber-tired gantry cranes, straddle carriers, shuttle carriers, and terminal tractors, including yard hostlers and yard tractors that operate within ports.

"Repower" means to replace an existing engine with a newer, cleaner engine or power source that is certified by EPA and, if applicable, CARB, to meet a more stringent set of engine emission standards. Repower includes, but is not limited to, diesel engine replacement with an engine certified for use with diesel or a clean alternate fuel, diesel engine replacement with an electric power source (grid, battery), diesel engine replacement with a fuel cell, diesel engine replacement with an electric generator(s) genset, diesel engine upgrades in ferries or tugs with an EPA Certified Remanufacture System, and/or diesel engine upgrades in ferries or tugs with an EPA Verified Engine Upgrade. All-Electric and fuel cell repowers do not require EPA or CARB certification.

"School Bus" means a Class 4-8 bus sold or introduced into interstate commerce for purposes that include carrying students to and from school or related events.

"Scrapped" means to render inoperable and available for recycle, and, at a minimum, to specifically cut a 3-inch hole in the engine block for all engines. If any eligible vehicle will be replaced as part of an eligible project, "scrapped" shall also include the disabling of the chassis by cutting the vehicle's frame rails completely in half.

"Tier 0, 1, 2, 3, and 4" refers to corresponding EPA engine emission classifications for nonroad, locomotive and marine engines.

"Tugs" means dedicated vessels that push or pull other vessels in ports, harbors, and inland waterways (e.g., tugboats and towboats).

"Zero Emission Vehicle (ZEV)" means a vehicle that produces no emissions from the onboard source of power (e.g., all-electric or hydrogen fuel cell vehicles).

APPENDIX D: PUBLIC COMMENT PERIOD ACTIVITIES

A summary of informal public comment activities regarding the state mitigation plan will be provided in the final state mitigation plan.