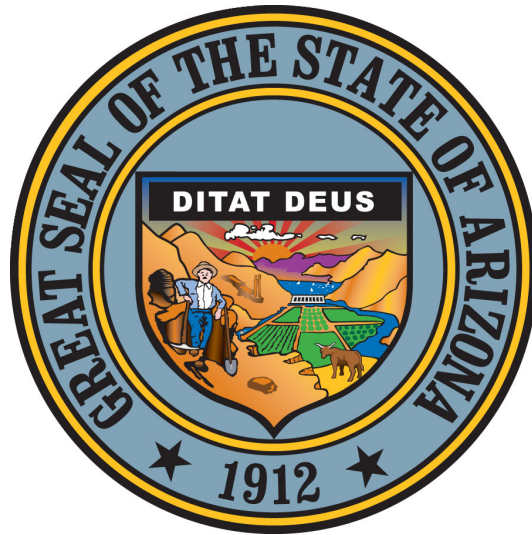


**Beneficiary Mitigation Plan for the  
State of Arizona**



**Prepared by  
the Arizona Department of Administration**

**June 8, 2018**

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## Definitions/Glossary of Terms

Definitions are from Appendix D-2 of the *Environmental Mitigation Trust Agreement for State Beneficiaries*.

**“Airport Ground Support Equipment”** shall mean vehicles and equipment used at an airport to service aircraft between flights.

**“All-Electric”** shall mean powered exclusively by electricity provided by a battery, fuel cell, or the grid.

**“Alternate Fueled”** shall mean an engine, or a vehicle or piece of equipment that is powered by an engine, which uses a fuel different from or in addition to gasoline fuel or diesel fuel (e.g., CNG, propane, diesel-electric Hybrid).

**“Certified Remanufacture System or Verified Engine Upgrade”** shall mean engine upgrades certified or verified by the U.S. Environmental Protection Agency (EPA) or the California Air Resources Board (CARB) to achieve a reduction in emissions.

**“Class 4-7 Local Freight Trucks (Medium Trucks)”** shall mean 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 lbs.

**“Class 4-8 School Bus, Shuttle Bus, or Transit Bus (Buses)”** shall mean vehicles with a Gross Vehicle Weight Rating (GVWR) greater than 14,001 lbs. used for transporting people. See definition for School Bus below.

**“Class 8 Local Freight, and Port Drayage Trucks (Eligible Large Trucks)”** shall mean trucks with a Gross Vehicle Weight Rating (GVWR) greater than 33,000 lbs. used for port drayage and/or freight/cargo delivery (including waste haulers, dump trucks, concrete mixers).

**“CNG”** shall mean Compressed Natural Gas.

**“Drayage Trucks”** shall mean trucks hauling cargo to and from ports and intermodal rail yards.

**“EPA”** shall mean the U.S. Environmental Protection Agency

**“Forklift”** shall mean nonroad equipment used to lift and move materials short distances; and generally includes tines to lift objects. Eligible types of forklifts include reach stackers, side loaders, and top loaders.

**“Freight Switcher”** shall mean a locomotive that moves rail cars around a rail yard as compared to a line-haul engine that moves freight long distances.

**“Generator Set”** shall mean 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”** shall mean 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)”** shall mean the maximum weight of the vehicle, as specified by the manufacturer. GVWR includes 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”** shall mean a vehicle that combines an internal combustion engine with a battery and electric motor.

**“Infrastructure”** shall mean the equipment used to enable the use of electric powered vehicles (e.g., electric vehicle charging station).

**“Intermodal Rail Yard”** shall mean a rail facility in which cargo is transferred from drayage truck to train or vice-versa.

**“Port Cargo Handling Equipment”** shall mean rubber-tired gantry cranes, straddle carriers, shuttle carriers, and terminal tractors, including yard hostlers and yard tractors that operate within ports.

**“Plug-in Hybrid Electric Vehicle (PHEV)”** shall mean a vehicle that is similar to a Hybrid but is equipped with a larger, more advanced battery that allows the vehicle to be plugged in and recharged in addition to refueling with gasoline. This larger battery allows the car to be driven on a combination of electric and gasoline fuels.

**“Repower”** shall mean to replace an existing engine with a newer, cleaner engine or power source that is certified by EPA and, if applicable, the California Air Resources Board (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 (e.g., grid, battery), diesel engine replacement with a fuel cell, diesel engine replacement with an electric generator(s) (genset), diesel engine upgrades in Ferries/Tugs with an EPA Certified Remanufacture System, and/or diesel engine upgrades in Ferries/Tugs with an EPA Verified Engine Upgrade. All-Electric and fuel cell Repowers do not require EPA or CARB certification.

**“School Bus”** shall mean a Class 4-8 bus sold or introduced into interstate commerce for purposes that include carrying students to and from school or related events. May be Type A-D.

**“Scrapped”** shall mean 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, 4”** shall refer to corresponding EPA engine emission classifications for nonroad, locomotive, and marine engines.

**“Tugs”** shall mean dedicated vessels that push or pull other vessels in ports, harbors, and inland waterways (e.g., tugboats and towboats).

**“Zero Emission Vehicle (ZEV)”** shall mean a vehicle that produces no emissions from the on-board source of power (e.g., All-Electric or hydrogen fuel cell vehicles).

## Beneficiary Mitigation Plan

This Beneficiary Mitigation Plan (Plan) for the State of Arizona (State) summarizes how the State plans to use funds allocated to it under the Volkswagen Environmental Mitigation Trust Agreement for State Beneficiaries (Trust). Every state, the District of Columbia, Puerto Rico, and federally recognized tribes may become Beneficiaries. Beneficiaries of the Trust receive allocations from the Trust to fund specified and pre-approved mitigation projects. The Trustee (Wilmington Trust, N.A.) shall approve any funding request that meets the requirements of the Trust.

This Plan is intended to provide the public with insight into the State's high-level vision for use of the mitigation funds and information about the specific uses for which funding is expected to be requested. The goals of this Plan are non-binding, nor does it create any rights in any person to claim an entitlement of any kind. The State may adjust these goals and specific spending plans at its discretion and, if so, shall provide the Trustee with updates to the Plan.

The State shall provide the Trustee with, and make available on the Arizona Department of Administration's (ADOA) Volkswagen Settlement webpage, any updates to this Plan. The ADOA Volkswagen Settlement website is available at <https://vwsettlement.az.gov/>.

This plan is not a solicitation for projects and does not provide specific details on the application or selection process. Information pertaining to the solicitation of projects will be available on the Department's website following the submission and approval of this Plan to the Trustee.

## Mitigation Plan and Goals

Appendix D of the Trust directs the State to develop this Plan and to summarize how the allocated funds will be used. The State must include in their plan the following:

1. The State's overall goal for the use of the funds;
2. The categories of Eligible Mitigation Actions the State anticipates will be appropriate to achieve the stated goals and the preliminary assessment of the percentages of funds anticipated to be used for each type of Eligible Mitigation Action;
3. A description of how the State will consider the potential beneficial impact of the selected Eligible Mitigation Actions on air quality in areas that bear a disproportionate share of the air pollution burden within its jurisdiction; and
4. A general description of the expected ranges of emission benefits the State estimates would be realized by implementation of the Eligible Mitigation Actions identified in the Beneficiary Mitigation Plan.

## **Goals**

The overarching goal is to protect Arizona's environment and the health of our citizens. The Trust funds allow the State the opportunity to offset (mitigate) the impact of excess nitrogen oxide (NOX) emissions associated with the affected vehicles registered within the state. The reduction of NOX from mobile sources achieves the intended use of the Trust funds by preventing the deterioration of air quality, ensuring the health and safety of the inhabitants of the state, and promoting visibility improvement within the state. Implementation of diesel NOX reduction projects using Trust funds will have immediate and long-lasting benefits.

The State will submit project proposals that will reduce or eliminate emissions of NOX, focusing on the most cost-effective projects that will maximize emission reductions. The following list indicates the State's overall goals utilizing the Trust funds. This list is not meant to be inclusive. The State may consider other qualifications and factors when determining whether to submit projects to the Trustee for funding.

1. Focus on funding projects that repower or replace older diesel-fueled vehicles and engines.
2. Focus on vehicles, engines, and equipment operating or located in or near areas that bear a disproportionate share of the air pollution burden (priority areas), such as schools and environmental justice areas.
3. Prioritize projects located in or near areas that are in nonattainment of National Ambient Air Quality Standards (NAAQS) for ozone, particulate matter (PM), or nitrogen dioxide (NO<sub>2</sub>).
4. Focus on projects located in areas with high population density and high traffic density. In Arizona, areas of high population density are often the areas with the poorest air quality.

## **Eligible Mitigation Projects**

The ADOA will ensure that funded projects support the state's Beneficiary Mitigation Plan goals. The Trust provides Beneficiaries 10 categories of Eligible Mitigation Actions from which to choose.

1. Class 8 Local Freight Trucks and Port Drayage Trucks (Eligible Large Trucks)
  - a. Eligible Large Trucks include 1992-2009 engine model year Class 8 Local Freight or Drayage. For Beneficiaries that have State regulations that already require upgrades to 1992-2009 engine model year trucks at the time of the proposed Eligible Mitigation Action, Eligible Large Trucks shall also include 2010-2012 engine model year Class 8 Local Freight or Drayage.
  - b. Eligible Large Trucks must be Scrapped.
  - c. Eligible Large Trucks 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 Eligible Large Trucks Mitigation Action occurs or one engine model year prior.
  - d. For Non-Government Owned Eligible Class 8 Local Freight Trucks, Beneficiaries may only draw funds from the Trust in the amount of:

- i. Up to 40% 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.
    - ii. Up to 25% of the cost of a new diesel or Alternate Fueled (e.g., CNG, propane, Hybrid) vehicle.
    - iii. 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.
    - iv. Up to 75% of the cost of a new All-Electric vehicle, including charging infrastructure associated with the new All-Electric vehicle.
  - e. For Non-Government Owned Eligible Drayage Trucks, Beneficiaries may only draw funds from the Trust in the amount of:
    - i. Up to 40% 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.
    - ii. Up to 50% of the cost of a new diesel or Alternate Fueled (e.g., CNG, propane, Hybrid) vehicle.
    - iii. 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.
    - iv. Up to 75% of the cost of a new all-electric vehicle, including charging infrastructure associated with the new All-Electric vehicle.
  - f. For Government Owned Eligible Class 8 Large Trucks, Beneficiaries may draw funds from the Trust in the amount of:
    - i. 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.
    - ii. Up to 100% of the cost of a new diesel or Alternate Fueled (e.g., CNG, propane, Hybrid) vehicle.
    - iii. 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.
    - iv. Up to 100% of the cost of a new All-Electric vehicle, including charging infrastructure associated with the new All-Electric vehicle.
2. Class 4-8 School Bus, Shuttle Bus, or Transit Bus (Eligible Buses)
- a. Eligible Buses include 2009 engine model year or older class 4-8 school buses, shuttle buses, or transit buses. For Beneficiaries that have State regulations that already require upgrades to 1992-2009 engine model year buses at the time of the proposed Eligible Mitigation Action, Eligible Buses shall also include 2010- 2012 engine model year class 4-8 school buses, shuttle buses, or transit buses.



- b. Eligible Buses must be Scrapped.
  - c. Eligible Buses may be Repowered with any new diesel or Alternate Fueled 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 Eligible Bus Mitigation Action occurs or one engine model year prior.
  - d. For Non-Government Owned Buses, Beneficiaries may draw funds from the Trust in the amount of:
    - i. Up to 40% 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.
    - ii. Up to 25% of the cost of a new diesel or Alternate Fueled (e.g., CNG, propane, Hybrid) vehicle.
    - iii. 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.
    - iv. Up to 75% of the cost of a new All-Electric vehicle, including charging infrastructure associated with the new All-Electric vehicle.
  - e. For Government Owned Eligible Buses, and Privately Owned School Buses Under Contract with a Public School District, Beneficiaries may draw funds from the Trust in the amount of:
    - i. 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.
    - ii. Up to 100% of the cost of a new diesel or Alternate Fueled (e.g., CNG, propane, Hybrid) vehicle.
    - iii. 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.
    - iv. Up to 100% of the cost of a new All-Electric vehicle, including charging infrastructure associated with the new All-Electric vehicle.
3. Freight Switchers
- a. Eligible Freight Switchers include pre-Tier 4 switcher locomotives that operate 1,000 or more hours per year.
  - b. Eligible Freight Switchers must be Scrapped.
  - c. Eligible Freight Switchers may be Repowered with any new diesel or Alternate Fueled or All-Electric engine(s) (including Generator Sets), or may be replaced with any new diesel or Alternate Fueled or All-Electric (including Generator Sets) Freight Switcher, that is certified to meet the applicable EPA emissions standards (or other more stringent equivalent State standard) as published in the CFR for the engine model year in which the Eligible Freight Switcher Mitigation Action occurs.
  - d. For Non-Government Owned Freight Switchers, Beneficiaries may draw funds from the Trust in the amount of:

- i. Up to 40% of the cost of a Repower with a new diesel or Alternate Fueled (e.g., CNG, propane, Hybrid) engine(s) or Generator Sets, including the costs of installation of such engine(s).
  - ii. Up to 25% of the cost of a new diesel or Alternate Fueled (e.g., CNG, propane, Hybrid) Freight Switcher.
  - iii. Up to 75% of the cost of a Repower with a new All-Electric engine(s), including the costs of installation of such engine(s), and charging infrastructure associated with the new All-Electric engine(s).
  - iv. Up to 75% of the cost of a new All-Electric Freight Switcher, including charging infrastructure associated with the new All-Electric Freight Switcher.
- e. For Government Owned Eligible Freight Switchers, Beneficiaries may draw funds from the Trust in the amount of:
  - i. Up to 100% of the cost of a Repower with a new diesel or Alternate Fueled (e.g., CNG, propane, Hybrid) engine(s) or Generator Sets, including the costs of installation of such engine(s).
  - ii. Up to 100% of the cost of a new diesel or Alternate Fueled (e.g., CNG, propane, Hybrid) Freight Switcher.
  - iii. Up to 100% of the cost of a Repower with a new All-Electric engine(s), including the costs of installation of such engine(s), and charging infrastructure associated with the new All-Electric engine(s).
  - iv. Up to 100% of the cost of a new All-Electric Freight Switcher, including charging infrastructure associated with the new All-Electric Freight Switcher.

4. Ferries/Tugs

- a. Eligible Ferries and/or Tugs include unregulated, Tier 1, or Tier 2 marine engines.
- b. Eligible Ferry and/or Tug engines that are replaced must be Scrapped.
- c. 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 Remanufactured System or an EPA Verified Engine Upgrade.
- d. For Non-Government Owned Eligible Ferries and/or Tugs, Beneficiaries may only draw funds from the Trust in the amount of:
  - i. Up to 40% of the cost of a Repower with a new diesel or Alternate Fueled (e.g., CNG, propane, Hybrid) engine(s), including the costs of installation of such engine(s).
  - ii. Up to 75% of the cost of a Repower with a new All-Electric engine(s), including the costs of installation of such engine(s), and charging infrastructure associated with the new All-Electric engine(s).
- e. For Government Owned Eligible Ferries and/or Tugs, Beneficiaries may draw funds from the Trust in the amount of:
  - i. Up to 100% of the cost of a Repower with a new diesel or Alternate Fueled (e.g., CNG, propane, Hybrid) engine(s), including the costs of installation of such engine(s).

- ii. Up to 100% of the cost of a Repower with a new All-Electric engine(s), including the costs of installation of such engine(s), and charging infrastructure associated with the new All-Electric engine(s).

5. Ocean Going Vessels (OGV) Shorepower

- a. Eligible Marine Shorepower includes systems that enable a compatible vessel's main and auxiliary engines to remain off while the vessel is at berth. Components of such systems eligible for reimbursement are limited to cables, cable management systems, shore power coupler systems, distribution control systems, and power distribution. Marine shore power systems must comply with international shore power design standards (ISO/IEC/IEEE 80005-1-2012 High Voltage Shore Connection Systems or the IEC/PAS 80005-3:2014 Low Voltage Shore Connection Systems) and should be supplied with power sourced from the local utility grid. Eligible Marine Shorepower includes equipment for vessels that operate within the Great Lakes.
- b. For Non-Government Owned Marine Shorepower, Beneficiaries may only draw funds from the Trust in the amount of 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 components.
- c. For Government Owned Marine Shorepower, Beneficiaries may draw funds from the Trust in the amount of 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 components.

6. Class 4-7 Local Freight Trucks (Medium Trucks)

- a. Eligible Medium Trucks include 1992-2009 engine model year class 4-7 Local Freight trucks, and for Beneficiaries that have State regulations that already require upgrades to 1992-2009 engine model year trucks at the time of the proposed Eligible Mitigation Action, Eligible Trucks shall also include 2010- 2012 engine model year class 4-7 Local Freight trucks.
- b. Eligible Medium Trucks must be Scrapped.
- c. Eligible Medium Trucks may be Repowered with any new diesel or Alternate Fueled 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 Eligible Medium Trucks Mitigation Action occurs or one engine model year prior.
- d. For Non-Government Owned Eligible Medium Trucks, Beneficiaries may draw funds from the Trust in the amount of:
  - i. Up to 40% 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.
  - ii. Up to 25% of the cost of a new diesel or Alternate Fueled (e.g., CNG, propane, Hybrid) vehicle.
  - iii. 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.

- iv. Up to 75% of the cost of a new All-Electric vehicle, including charging infrastructure associated with the new All-Electric vehicle.
- e. For Government Owned Eligible Medium Trucks, Beneficiaries may draw funds from the Trust in the amount of:
  - i. 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.
  - ii. Up to 100% of the cost of a new diesel or Alternate Fueled (e.g., CNG, propane, Hybrid) vehicle.
  - iii. 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.
  - iv. Up to 100% of the cost of a new All-Electric vehicle, including charging infrastructure associated with the new All-Electric vehicle.

7. Airport Ground Support Equipment

- a. Eligible Airport Ground Support Equipment includes:
  - i. Tier 0, Tier 1, or Tier 2 diesel powered airport ground support equipment; and
  - ii. Uncertified, or certified to 3 g/bhp-hr or higher emissions, spark ignition engine powered airport ground support equipment.
- b. Eligible Airport Ground Support Equipment must be Scrapped.
- c. Eligible Airport Ground Support Equipment may be Repowered with an All- Electric engine, or may be replaced with the same Airport Ground Support Equipment in an All-Electric form.
- d. For Non-Government Owned Eligible Airport Ground Support Equipment, Beneficiaries may only draw funds from the Trust in the amount of:
  - i. Up to 75% of the cost of a Repower with a new All-Electric engine, including costs of installation of such engine, and charging infrastructure associated with such new All-Electric engine.
  - ii. Up to 75% of the cost of a new All-Electric Airport Ground Support Equipment, including charging infrastructure associated with such new All-Electric Airport Ground Support Equipment.
- e. For Government Owned Eligible Airport Ground Support Equipment, Beneficiaries may draw funds from the Trust in the amount of:
  - i. Up to 100% of the cost of a Repower with a new All-Electric engine, including costs of installation of such engine, and charging infrastructure associated with such new All-Electric engine.

- ii. Up to 100% of the cost of a new All-Electric Airport Ground Support Equipment, including charging infrastructure associated with such new All-Electric Airport Ground Support Equipment.
- 8. Forklifts and Port Cargo Handling Equipment
  - a. Eligible Forklifts includes forklifts with greater than 8,000 pounds lift capacity.
  - b. Eligible Forklifts and Port Cargo Handling Equipment must be Scrapped.
  - c. Eligible Forklifts and Port Cargo Handling Equipment may be Repowered with an All-Electric engine, or may be replaced with the same equipment in an All-Electric form.
  - d. For Non-Government Owned Eligible Forklifts and Port Cargo Handling Equipment, Beneficiaries may draw funds from the Trust in the amount of:
    - i. Up to 75% of the cost of a Repower with a new All-Electric engine, including costs of installation of such engine, and charging infrastructure associated with such new All-Electric engine.
    - ii. Up to 75% of the cost of a new All-Electric Forklift or Port Cargo Handling Equipment, including charging infrastructure associated with such new All-Electric Forklift or Port Cargo Handling Equipment.
  - e. For Government Owned Eligible Forklifts and Port Cargo Handling Equipment, Beneficiaries may draw funds from the Trust in the amount of:
    - i. Up to 100% of the cost of a Repower with a new All-Electric engine, including costs of installation of such engine, and charging infrastructure associated with such new All-Electric engine.
    - ii. Up to 100% of the cost of a new All-Electric Forklift or Port Cargo Handling Equipment, including charging infrastructure associated with such new All-Electric Forklift or Port Cargo Handling Equipment.
- 9. Light Duty Zero Emission Vehicle Supply Equipment. Each Beneficiary may use up to fifteen percent (15%) of its allocation of Trust Funds on the costs necessary for, and directly connected to, the acquisition, installation, operation and maintenance of new light duty zero emission vehicle supply equipment for projects as specified below. Provided, however, that Trust Funds shall not be made available or used to purchase or rent real estate, other capital costs (e.g., construction of buildings, parking facilities, etc.) or general maintenance (i.e., maintenance other than of the Supply Equipment).
  - a. Light duty electric vehicle 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).
  - b. Light duty hydrogen fuel cell vehicle supply equipment includes hydrogen dispensing equipment capable of dispensing hydrogen at a pressure of 70 megapascals (MPa) (or

analogous successor technologies) that is located in a public place.

- c. Subject to the 15% limitation above, each Beneficiary may draw funds from the Trust in the amount of:
  - i. 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.
  - ii. 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.
  - iii. Up to 60% of the cost to purchase, install and maintain eligible light duty electric vehicle supply equipment that is available at a workplace but not to the general public.
  - iv. Up to 60% of the cost to purchase, install and maintain eligible light duty electric vehicle supply equipment that is available at a multi-unit dwelling but not to the general public.
  - v. Up to 33% of the cost to purchase, install and maintain eligible light duty hydrogen fuel cell vehicle supply equipment capable of dispensing at least 250 kg/day that will be available to the public.
  - vi. Up to 25% of the cost to purchase, install and maintain eligible light duty hydrogen fuel cell vehicle supply equipment capable of dispensing at least 100 kg/day that will be available to the public.

10. Diesel Emission Reduction Act (DERA) Option. Beneficiaries may use Trust Funds for their non-federal voluntary match, pursuant to Title VII, Subtitle G, Section 793 of the DERA Program in the Energy Policy Act of 2005 (codified at 42 U.S.C. § 16133), or Section 792 (codified at 42 U.S.C. § 16132) in the case of tribes, thereby allowing Beneficiaries to use such Trust Funds for actions not specifically enumerated in this Appendix D-2, but otherwise eligible under DERA pursuant to all DERA guidance documents available through the EPA. Trust Funds shall not be used to meet the non-federal mandatory cost share requirements, as defined in applicable DERA program guidance, of any DERA grant.

The categories of Eligible Mitigation Actions that will be appropriate to achieving the State's goals are largely dependent on the availability of the category. Based on an initial assessment of the 10 categories of Eligible Mitigation Actions, two of them are not available in Arizona. This initial assessment of the 10 categories does not preclude the ADOA from funding a project in the future. Of the ten Eligible Mitigation Actions identified in Appendix D-2 of the Trust, those found in sections 4 (Ferries and Tugs) and 5 (Ocean Going Vessels Shorepower) are not applicable in Arizona.

For this Beneficiary Mitigation Plan, the ADOA considers a fleet to be either a single eligible vehicle, engine, or piece of equipment or combination of vehicles, engines, or equipment as outlined above.

Eligible Mitigation Projects (and the percentages at which the State plans to fund them), plus administrative fees, include:

1. On-road state fleet projects (24%);
2. School bus replacements (67%); and
3. Administrative Fees (9%).

### ***On-Road State Fleet Projects***

On-road fleet projects could include repowers or vehicle replacements with new diesel, alternative fuel or electric vehicles and engines. The State anticipates most of the projects within Arizona will fall within the on-road fleets of the Arizona Department of Transportation and the Arizona Department of Forestry and Fire Management and is proposing to apply twenty-four percent (24%) of the Trust funds to this group. This group includes:

Class 8 local freight trucks and port drayage truck; and

Class 4-7 local freight trucks.

### ***School Bus Replacement Projects***

While the State is anticipating a significant environmental benefit from the projects that will fall under the on-road state fleet projects, the major focus of the state's plan is the repower or replacement of school buses with new diesel, alternative fuel or electric vehicles and the associated environmental and health benefits to our communities, schools, and students. The State is proposing to apply sixty-seven percent (67%) of the Trust funding to this group. These projects will include the Arizona State Schools for the Deaf and the Blind, as well as, the most economically and environmentally challenged school districts and regions of Arizona. This group includes:

Class 4-8 school buses, shuttle or transit buses

### ***Administrative Costs***

The Trust allows the State to apply up to 15 percent of its allocation for actual administrative costs associated with implementing Eligible Mitigation Actions. The State does not anticipate using the full 15 percent for administrative costs. For this plan, the State is proposing nine percent (9%) for administrative costs.

## **Priority Areas**

There are several types of areas that tend to bear a disproportionate share of the air pollution burden, referred to in this Plan as priority areas. Priority areas include areas designated nonattainment for a NAAQS, high population areas, environmental justice areas, and areas with numerous air pollutant sources. The State plans to focus its mitigation project selection on the types of priority areas discussed in this section.

### ***NAAQS Nonattainment***

There are two areas within the state not attaining the federal 2015 NAAQS standard for ozone: the Maricopa-Pinal-Gila nonattainment area and the Yuma nonattainment area. In October 2015, the federal government lowered the NAAQS for ozone from 0.075 parts per million (ppm) to 0.070 ppm. Ozone data collected by the Arizona Department of Environmental Quality (DEQ) from 2013 through 2015 shows that all but these two areas are meeting the new ozone standard. While all areas of the state are currently

in attainment of the NO<sub>2</sub> NAAQS, NO<sub>x</sub> emissions are a precursor pollutant for ozone. There are also nine PM<sub>10</sub> nonattainment areas: Maricopa, West Pinal, Yuma, Rillito, Ajo, Nogales, Douglas, Hayden and Miami. There are two PM<sub>2.5</sub> nonattainment areas: West Pinal and Nogales.

### *Environmental Justice*

The EPA defines Environmental Justice as the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people should bear a disproportionate share of the negative environmental consequences resulting from industrial, governmental and commercial operations or policies. Environmental justice areas commonly include communities and/or populations that are more adversely, disproportionately, and/or historically impacted by environmental issues than other communities because of geography, poverty, and similar types of factors. It is not uncommon to find environmental justice areas within and adjacent to high pollution areas.

### *High Pollution Areas*

The following types of locations, and the surrounding areas, may be considered high pollution areas: ports, rail yards, terminals, distribution centers, truck stops, construction sites, and bus yards or depots.

## **Expected Ranges of Emission Benefits**

Wide ranges of benefits are expected to be achieved from the selection and implementation of Eligible Mitigation Projects. The expected ranges of emissions benefits realized by these projects are largely dependent on the project type, location, and cost.

To estimate the expected ranges of emission benefits, a representative sample of project types under each group described above was chosen.

These values do not indicate a commitment to the funding amounts or projects ultimately selected. As the Trust program evolves, the terms of the Plan will be adjusted to reflect changes to the funding percent allocations to the groups. The estimated emissions were calculated using the EPA's Diesel Emissions Quantifier and are based on the percentages stated above. Other assumptions used for the calculations of the emission reductions include:

- All vehicles are model year of 2002;
- The upgrade year is 2018;
- Estimated years remaining life of 12 years; and
- The use of diesel fuel for the replacement vehicle.

The following figures provide examples of the anticipated lifetime emission reductions from one vehicle in select groups, a comparison of one group of vehicles, and the anticipated lifetime emissions for all groups in a selected scenario.



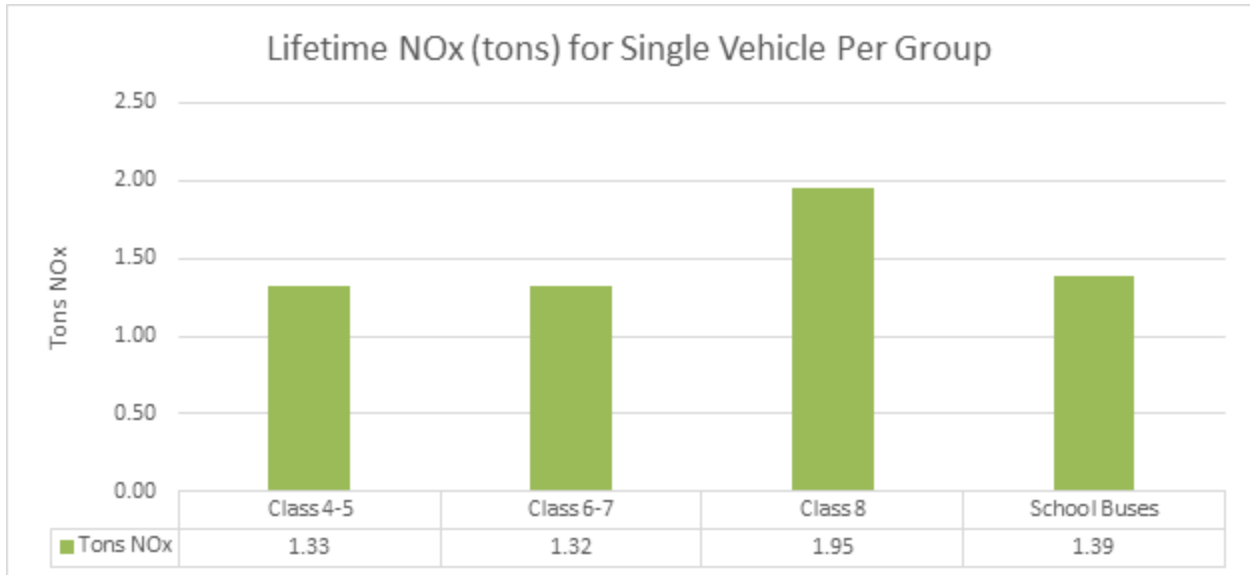


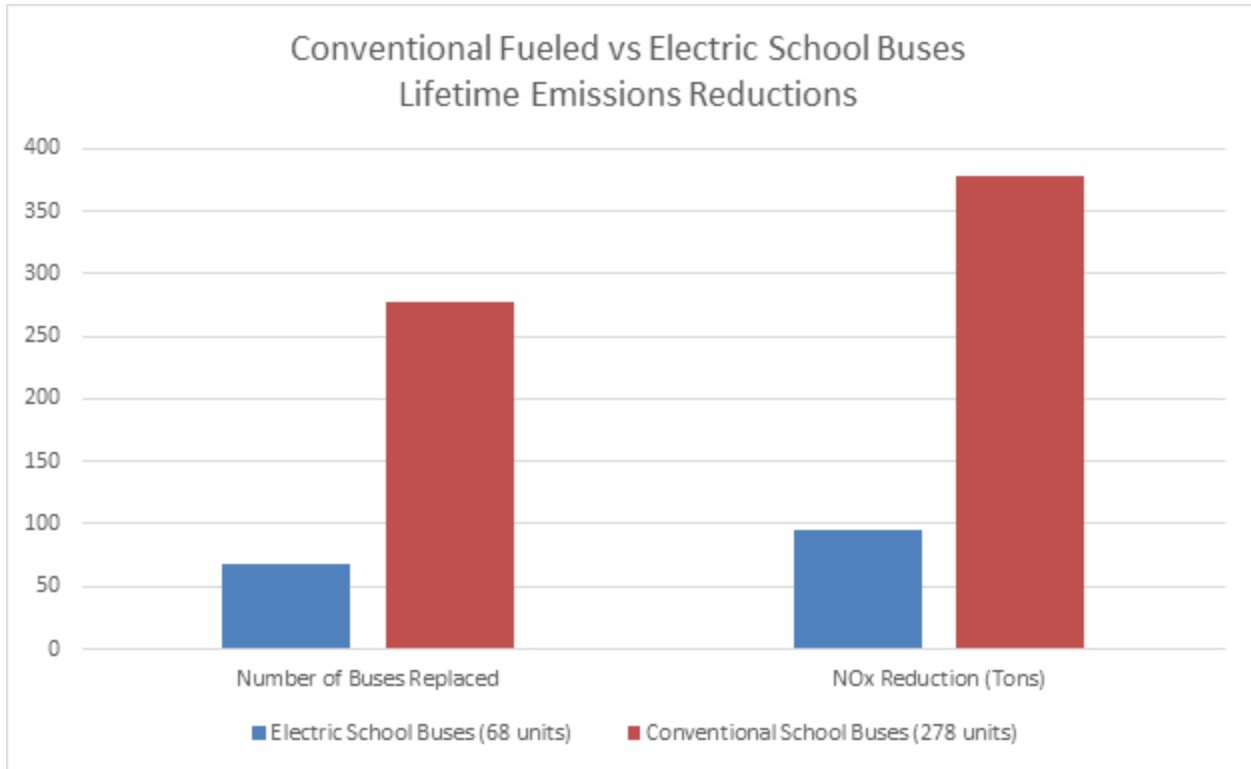
Figure 1: Lifetime Emission Reduction for Select Individual Vehicles

Figure 1 provides an illustration of the anticipated lifetime NOX reductions for a single vehicle per group. For example, if one 2002 model year diesel school bus is replaced with a 2018 model year diesel school bus, EPA’s Diesel Emission Quantifier estimates a lifetime NOX reduction of 1.4 tons.

The Diesel Emission Quantifier considers annual fuel consumption, vehicle miles traveled per year, idling hours per year, and estimated remaining life. The estimates presented in this Plan assume a 2002 base model year vehicle with an estimated 12 years remaining life expectancy to estimate the emission reductions.

Therefore, the estimated emission reductions are those that are expected over the 12-year period.

To realize the full potential of the Trust funds, it has been determined that a diversity of projects will be the best use of the funds and the interest of the state. Some projects provide for greater emission reductions while providing health benefits for a larger population and other projects may not provide as great of emission reductions, but target smaller more sensitive populations.



*Figure 2: Conventionally Fueled School Buses vs Electric School Buses*

Figure 2 provides a comparison of applying the Trust funds to one group of vehicles, conventionally-fueled school buses, and electric school buses. Please note that all fuels, conventional or alternative (except electric), must meet at least the same emission standards. Figure 2 illustrates that applying Trust funds to conventionally fueled school buses allow for significantly more school buses and significantly greater NOX reductions than electric school buses. Fewer than 50 electric school buses could be purchased for the same price as more than 150 conventionally fueled school buses.

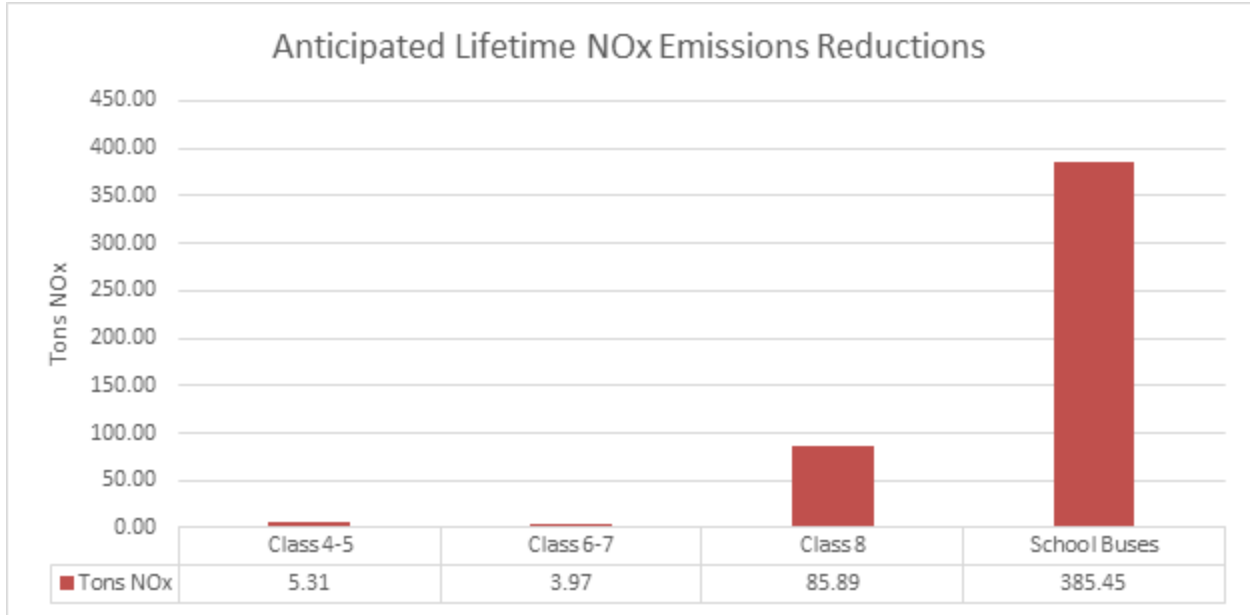


Figure 3: Anticipated Lifetime NOx Emission Reduction Per Group

Figure 3 provides an illustration of the anticipated lifetime NOX for the Eligible Mitigation.

Table 1 provides a potential scenario breakdown of the estimated number of vehicles, an estimated cost per vehicle and cost per group of vehicles.

Eligible Mitigation Projects	# of Vehicles	Estimated Cost/Vehicle	Cost per Group
Class 8 local freight trucks.	44	\$285,000.00	\$12,523,500.00
Class 4-5 local freight trucks	7	\$150,000.00	\$1,040,000
Class 6-7 local freight trucks			
Total On-Road State Fleet			\$13,563,500.00
District School Buses	270 +	\$110k - \$135k	\$37,000,000.00
ASDB School Buses	8	\$112,500.00	\$900,000.00
Total School Bus Replacements			\$37,900,000.00

Table 1: Estimated Number of Vehicles and Associated Costs

### *On-Road Fleet Projects*

The ADEQ analyzed a sample of eligible projects that included replacing class 8 local freight trucks and class 4-7 local freight trucks with modern diesel versions. The estimated total lifetime emission reductions from this group are approximately 95.17 tons of NOX.

### *School Bus Replacement Projects*

The ADEQ analyzed a sample of eligible projects that included replacing school buses, with diesel and alt-fuel versions. The estimated total lifetime emission reductions from this group are approximately 385.45 tons of NOX.

## **Emissions Associated with Diesel-fueled Vehicles**

The overall goal of the Trust is the reduction of NOX primarily from mobile sources focusing on medium and heavy-duty vehicles. The emissions from diesel engines are a complex mixture of gases and particles; the significant pollutants are NOX and particulate matter.

According to the EPA's 2014 National Emissions Inventory (NEI), emissions from highway and non-road diesel-powered mobile sources (including rail and aviation) accounted for approximately 99,026 tons per year (tpy) of NOX in Arizona. Revised emission standards for diesel vehicles and equipment promulgated by the EPA, applicable to Model Year 2007 and newer vehicles and engines, will ensure that newer medium-duty and heavy-duty diesel engines will be less polluting. Many older diesel engines, however, can operate for 25 to 30 years before replacement is necessary. Thus, it may be many years before existing equipment is replaced with newer, cleaner equipment due to typical fleet turnover. It is likely that a large population of older diesel engines unaffected by the new federal standards will continue to operate in Arizona well into the future.

The State, through its project selection process, will strive to balance the environmental and societal benefits among Arizona's cities, counties, and statewide interests for all Arizona citizens who are impacted by NOX emissions generated by on-road diesel-fueled vehicles.

Many strategies and programs exist to reduce emissions from these older engines. Replacing, retrofitting, or repowering many older diesel vehicles and engines are cost-effective strategies to reduce emissions of NOX and volatile organic compounds (VOC), which are precursor pollutants for the formation of fine particulate matter (particulate matter under 2.5 microns in diameter, or PM 2.5) and ground-level ozone, by as much as 90 percent or more. The Trust will enable the State to fund more of these types of projects than can currently be funded through existing programs and budgets.

### *Pollutants of Concern*

Nitrogen Oxides (NOX) are a family of poisonous, highly reactive gases. These gases form when fuel is burned at high temperatures. NOX pollution is emitted by automobiles, trucks and various non-road vehicles (e.g., construction equipment, boats, etc.) as well as industrial sources such as power plants, industrial boilers, cement kilns, and turbines. NOX often appears as a brownish gas. It is a strong oxidizing agent and plays a major role in the atmospheric reactions with VOCs that produce ground-level ozone (smog) on hot summer days. Diesel engines operate at a higher temperature and pressure than gasoline engines. These conditions favor the production of NOX gases.

The ADOA, in partnership with ADEQ, is using data from the 2014 NEI to identify the state’s NOX emissions, specifically NOX emissions from diesel-powered vehicles. Review of the NEI will assist the ADOA in identifying those areas within the state that are impacted by mobile source diesel emissions.

The 2014 NEI estimated that more than 168,000 tons of NOX were emitted from mobile sources in Arizona. Figure 4 illustrates the major NOX sources within the state and their percentage contribution. Figure 5 breaks down the statewide mobile NOX sources and their percent contribution.

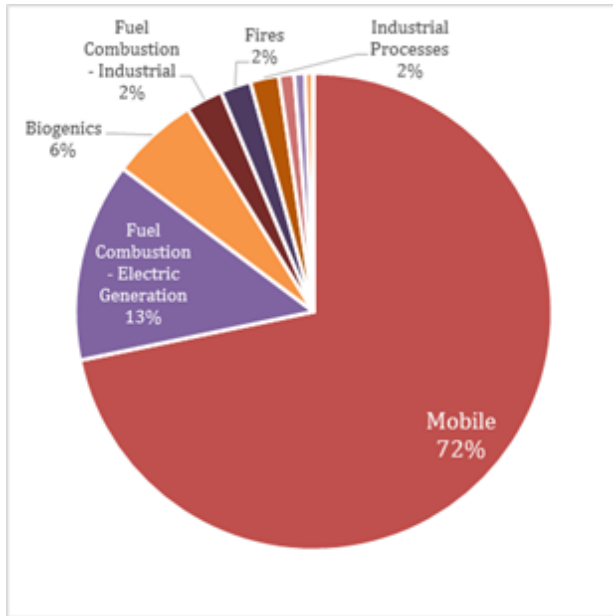


Figure 4: Statewide NOx Source Contribution

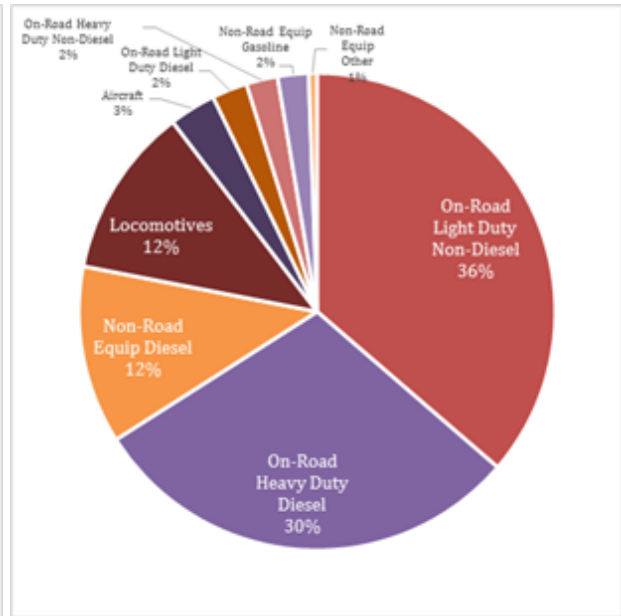


Figure 5: Statewide Mobile Source NOx Contribution

Category	NOx (tons)
Mobile	168,148.45
Fuel Combustion - Electric Generation	31,649.75
Biogenics	13,912.47
Fuel Combustion - Industrial	5,804.53
Fires	4,854.57
Industrial Processes	4,555.89
Fuel Combustion - Residential	2,421.19
Fuel Combustion - Comm/Institutional	1,692.96
Waste Disposal	1,228.23
Misc Non-Industrial	125.46
Solvent	3.55
Commercial Cooking	0.00
<b>Grand Total</b>	<b>234,397.05</b>

Mobile Category	NOx (tons)
On-Road Light Duty Non-Diesel	61,059.11
On-Road Heavy Duty Diesel	49,915.75
Non-Road Equip Diesel	20,281.42
Locomotives	19,467.81
Aircraft	5,326.32
On-Road Light Duty Diesel	4,035.55
On-Road Heavy Duty Non-Diesel	3,584.31
Non-Road Equip Gasoline	3,531.07
Non-Road Equip Other	947.10
<b>Grand Total</b>	<b>168,148.45</b>

Mobile source emissions made up 72 percent of the total statewide NOX emissions. Statewide NOX emissions from diesel-powered vehicles and equipment were estimated at 93,700 tons of NOX, with on-road heavy-duty diesel making up 43 percent, or 49,915 tons, of the diesel-fueled mobile total. Figure 6 provides the NOX emissions, in tons for 2014, associated with on-road heavy-duty diesel-fueled vehicles and rail by county.

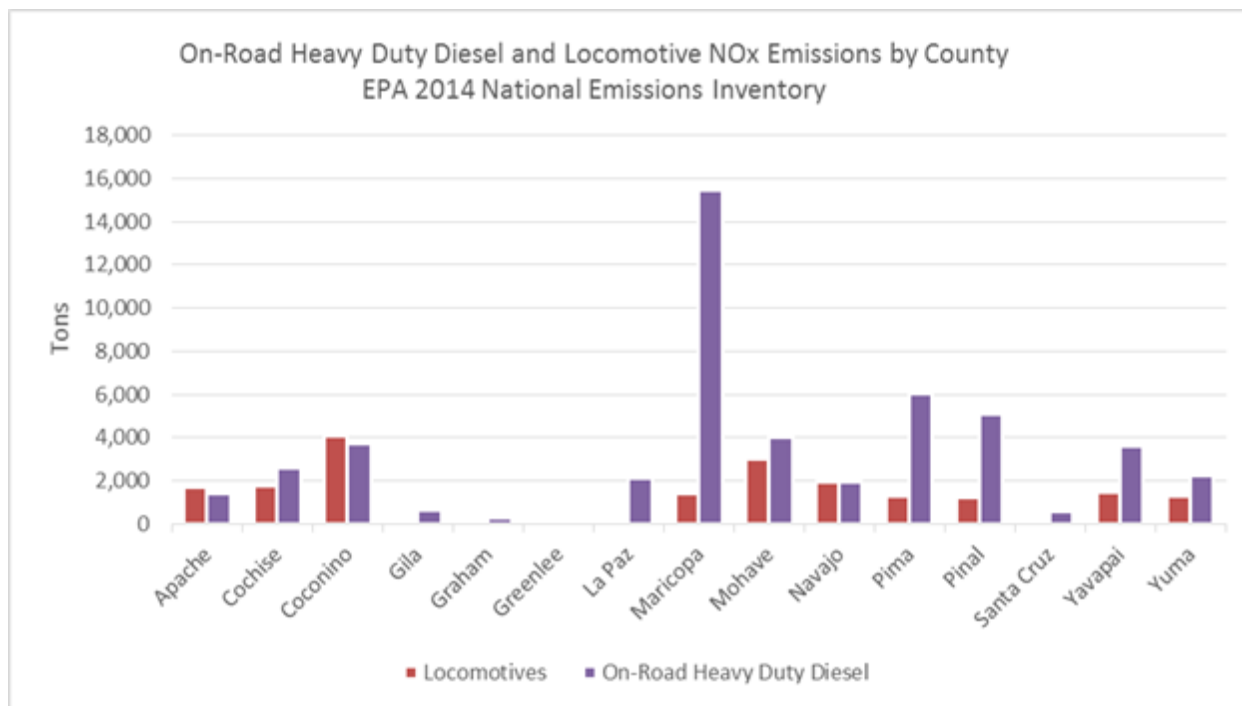


Figure 6: On-Road Heavy-Duty Diesel and Rail NOx Emissions by County

## Ozone

Ozone is formed from the combination of NOX and volatile organic compounds in the presence of sunlight. Excessive levels of ozone aggravate respiratory conditions. People most at risk from breathing air containing ozone include people with asthma, children, older adults, and people who are active outdoors, especially outdoor workers.

Children are at greatest risk from exposure to ozone because their lungs are still developing and they are more likely to be active outdoors when ozone levels are high, which increases their exposure. Children are also more likely than adults to have asthma.

Air monitors in the Maricopa-Pinal-Gila and Yuma areas have shown exceedances of the ozone NAAQS, based on monitor data from 2014 – 2016, and are awaiting their final designations as ozone nonattainment areas for the 2015 NAAQS.

## Particulate Matter

Diesel particulate matter (PM, also abbreviated DPM) is a complex mixture of solid and liquid material. The particles in diesel exhaust are of special concern because, due to their respirable size, they can

penetrate deep into human lungs. The composition of DPM includes many species that are known for their adverse health effects, including several carcinogens. Health effects most often linked with particulate pollution, from diesel and other sources, include an increase in death due to respiratory and cardiovascular disease and worsening of symptoms in people with asthma.

There are presently nine nonattainment area for particulate matter 10 microns or less in size (PM<sub>10</sub>) within Arizona. Some of these PM<sub>10</sub> areas overlap with ozone nonattainment areas in the Maricopa-Pinal-Gila and Yuma areas. There are two PM<sub>2.5</sub> nonattainment areas in West Pinal and Nogales that overlap PM<sub>10</sub> nonattainment areas.

## **Public Input for this Beneficiary Mitigation Plan**

The ADOA has created a public website for information relating to the Trust, the VW Partial Consent Trust Decrees, Arizona's plans, and implementation information. To provide transparency and accountability, the Department will post information on its VW website.

### ***Public Input***

The ADOA has received public input on the Beneficiary Mitigation Plan through the VW website, <https://vwsettlement.az.gov/>. Further, the ADOA and other state agencies have held a series of meetings with various stakeholders to garner additional public input. ADOA will follow a similar process for future revisions to the Beneficiary Mitigation Plan if needed.

### ***Final Beneficiary Mitigation Plan***

The State has considered all comments received, reviewed any new or revised requirements the Trustee developed, and made any relevant revisions, and posted the final Beneficiary Mitigation Plan on the ADOA VW website, <https://vwsettlement.az.gov/>.

### ***Periodic Evaluation***

The ADOA will periodically evaluate implementation of the Beneficiary Mitigation Plan and implementation of the Eligible Mitigation Actions after the initial round of funding and will determine whether any revisions to the Beneficiary Mitigation Plan and funding levels are appropriate or necessary. If future revisions to the Beneficiary Mitigation Plan are necessary, the ADOA will seek public input on major Plan revisions generally consistent with the process outlined above, including publishing a notice of the opportunity for a 30-day public comment period regarding the proposed revisions.

### ***Website Updates***

The ADOA will post the following information on our website:

- General information on the Partial Trust Consent Decrees, including a link to the documents;
- The State's final Beneficiary Mitigation Plans,
- All public records supporting funding requests the ADOA submits to the Trustee, and all public records supporting all expenditures of the Trust Fund, subject to confidentiality laws and until the Termination Dates of the Partial Trust Consent Decrees; and
- Department contact information.

## **Conclusion**

The Beneficiary Mitigation Plan for the State of Arizona has been developed in accordance with the terms of the Trust. This Beneficiary Mitigation Plan is not a solicitation for projects. As such, this Beneficiary Mitigation Plan does not include detail on the application or project selection process. Such information will become available on the Department's VW website once the Beneficiary Mitigation Plan has been approved.

As part of periodic evaluations, the ADOA may revise the final Beneficiary Mitigation Plan as necessary to reflect major changes in project demand, the State's priorities or available funds in future years.