

STATE OF FLORIDA BENEFICIARY MITIGATION PLAN



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION DIVISION OF AIR RESOURCE MANAGEMENT JULY 2019

Pursuant to the Environmental Mitigation Trust Agreement for
State Beneficiaries, issued in partial fulfillment of diesel emissions
mitigation obligations under the Volkswagen Settlement

<https://floridadep.gov/volkswagen>

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Executive Summary

The Florida Department of Environmental Protection (Department) presents the Beneficiary Mitigation Plan (Mitigation Plan) for Florida in accordance with the Volkswagen Settlement's Environmental Mitigation Trust for State Beneficiaries (Final Trust Agreement). This Mitigation plan contains all of the elements required by the Final Trust Agreement.

The purpose of the Mitigation Trust is to provide money for mobile source emissions mitigation projects. Cumulatively, these projects are intended to mitigate the excess nitrogen oxides (NO_x) emissions caused by the Volkswagen vehicles operating without the legally required emissions controls.

The Department sought public input to develop the Mitigation Plan through Requests for Information (RFI), a public survey, in-person public informational meetings and webinars, and a public comment period for written comments to be submitted.

The primary goal of Florida's Mitigation Plan is to reduce emissions of NO_x, particulate matter, and hazardous air pollutants in areas where people live, work, and visit. To achieve this goal, Florida's Mitigation Plan will balance the following factors:

- Prioritizing projects that replace eligible units with electric-powered and/or alternative fueled units;
- Identifying the areas in Florida where the largest number of people are impacted by higher levels of emissions from diesel-powered vehicles and equipment; and
- Identifying mitigation projects that achieve the lowest cost per ton of pollutants reduced.

The Department utilized a suite of available resources to designate comparatively overburdened areas which will provide the largest environmental benefits for the most people. This designation does not preclude other areas from funding.

The Mitigation Plan identifies the following categories of Eligible Mitigation Actions along with an estimated percentage breakdown for project-specific funding:

Eligible Mitigation Action	Allocation
School, Transit, and Shuttle Buses	70%
Light-Duty ZEV Supply Equipment	15% (Maximum Allowable)
Diesel Emissions Reduction Act (DERA)	15%

The Department intends to encumber as much of the total state allotment as possible for project-specific funding but reserves the right to allow for minimal funding on administrative costs. As stated in the Final Trust Agreement, Florida has the discretion to adjust priorities and objectives as necessary and reserves the right to adjust this goal and spending plans at the state's discretion while maintaining the primary goal of the plan. If the Mitigation Plan needs to be amended, the Department will provide the public and the Trustee with updates on any changes.

Volkswagen Settlement Summary

1. Introduction

On September 18, 2015, the United States (U.S.) Environmental Protection Agency (EPA) served the Volkswagen Group of America, Inc. (Volkswagen) with a Notice of Violation of the Clean Air Act (CAA). The EPA determined that Volkswagen violated section 203(a)(3)(B) of the CAA, 42 U.S.C. § 7522(a)(3)(b), which prohibits the use of defeat devices to bypass, defeat, or render inoperative elements of vehicles' emission control systems that exist to comply with CAA emissions standards.¹ Additionally, by using defeat devices and then selling noncompliant vehicles, Volkswagen violated section 203(a)(1) of the CAA, 42 U.S.C. § 7522(a)(1), which prohibits the sale of any vehicles that do not conform to the emissions standards of the CAA.

Volkswagen's defeat devices allowed the 2.0-liter and 3.0-liter diesel vehicles to meet applicable federal nitrogen oxides (NO_x) emissions limits during controlled emissions tests while not meeting these limits during normal vehicle operation. NO_x is produced when fuel is burned in motor vehicles, power plants, industrial boilers, and other sources, and can be harmful to human health. NO_x is also a precursor pollutant for ground-level ozone (O₃), also known as smog. Ozone forms when NO_x and volatile organic compounds (VOC) mix in the air and react to heat and sunlight.²

2. Partial Consent Decrees

On October 25, 2016, Volkswagen entered into a Partial Consent Decree with the U.S. government settling claims that it violated the CAA by selling diesel vehicles that violated the EPA mobile source emission standards. Volkswagen's actions consisted of the installation and use of emission testing defeat devices in approximately 500,000 turbocharged direct injection (TDI) 2.0-liter diesel engine vehicles sold and operated in the U.S. from model year 2009 through 2015.

On May 17, 2017, Volkswagen entered into the Second Partial Consent Decree with the U.S. government settling additional claims that it violated the CAA by selling approximately 80,000 TDI 3.0-liter diesel engines also equipped with defeat devices.

To resolve the 2.0-liter and 3.0-liter diesel engine CAA violations, Volkswagen agreed to provide funding to mitigate the excess NO_x emissions emitted by the approximately 500,000 2.0-liter vehicles and 80,000 3.0-liter vehicles equipped with defeat devices.

3. Final Trust Agreement

On October 2, 2017, the Environmental Mitigation Trust Agreement for State Beneficiaries (Final Trust Agreement) was filed with the federal district court in Northern District of California, establishing the terms and conditions of the Mitigation Trust.³ This action established October 2,

¹ U.S. Clean Air Act, 42 U.S.C. § 7522(a)(3)(b): <https://www.gpo.gov/fdsys/pkg/USCODE-2009-title42/pdf/USCODE-2009-title42-chap85-subchapII-partA-sec7522.pdf>

² Environmental Protection Agency Webpage on NO₂: <https://www.epa.gov/no2-pollution>

³ Final Trust Agreement: <https://floridadep.gov/sites/default/files/Executed-Trust-Agreements-Oct-02-2017.pdf>

2017, as the Trust Effective Date. The Trustee, Wilmington Trust, N.A., will manage the funds held in trust for the beneficiaries according to the responsibilities listed in Attachment A, Section III of the Final Trust Agreement.⁴

In addition to establishing the Mitigation Trust, the Final Trust Agreement also included the following components which are separate from Florida's allocation under the Mitigation Trust:

- A requirement that Volkswagen spend \$11 billion to buy back or install pollution control equipment for at least 85 percent of the 2.0-liter and 3.0-liter TDI engines (more information on vehicle buybacks and modifications is available at www.VWCourtSettlement.com);
- A \$2 billion investment to promote the use of zero emission vehicles (ZEV) and infrastructure⁵ (more information is available in EPA's response to Frequently Asked Questions);⁶

Under the terms of the Mitigation Trust, all 50 states, the District of Columbia, and Puerto Rico, are eligible to become beneficiaries and receive a pre-determined share of \$2.865 billion in total Mitigation Trust funding. This sum is based upon the number of 2.0-liter and 3.0-liter diesel vehicles sold within all jurisdictions covered by the Mitigation Trust. Florida's share is more than \$166 million, or 5.68 percent of the funds held in the Mitigation Trust. Florida's \$166 million share is the combined amount from both the 2.0-liter settlement (\$152.4 million) and the 3.0-liter settlement (\$13.9 million), as specified in Appendix D-1B to the Mitigation Trust.⁷

The purpose of the Mitigation Trust is to provide money for mobile source emissions mitigation projects. Cumulatively, these projects are intended to mitigate the excess NO_x emissions caused by the subject 2.0-liter and 3.0-liter vehicles operating without the legally required emissions controls. The Department estimates that from 2009 through the mandated buyback period, the 33,160 vehicles sold in Florida have an annual average of 261 tons of excess NO_x emissions. This estimate includes the number of violating vehicles removed through the minimum 85 percent Volkswagen buy-back program requirement.

On November 28, 2017, the State of Florida elected to become a beneficiary under the Final Trust Agreement by submitting the completed Certification Form to the Trustee. The Certification, signed by the Governor of Florida, designated the Department as Lead Agency for purposes of participation in the Environmental Mitigation Trust.⁸ On January 30, 2018, the Trustee issued notification designating Florida as a beneficiary under the Trust.⁹

⁴ Environmental Mitigation Trust Agreement for State Beneficiaries:

<https://floridadep.gov/sites/default/files/Attachment-A-State-Environmental-Mitigation-Trust.pdf>

⁵ Electrify America: <https://www.electrifyamerica.com/>

⁶ Environmental Protection Agency Zero Emission Vehicle Investment FAQ:

<https://www.epa.gov/sites/production/files/2016-11/documents/vw-faqs-app-c-final-11-18-16.pdf>

⁷ Department Link to Appendix D-1B: <https://floridadep.gov/air/air-director/documents/appendix-d-1b-vw>

⁸ Notice of Filing of Certification for Beneficiary Status: <https://floridadep.gov/air/air-director/documents/notice-filing-certification-beneficiary-status-vw>

⁹ Notice of Beneficiary Designation: <https://floridadep.gov/air/air-director/documents/notice-beneficiary-designation>

The Mitigation Trust specifies that once the Trustee designates the state a beneficiary, the state must, among other requirements, submit to the Trustee, a State Beneficiary Mitigation Plan (Mitigation Plan) prior to requesting funding for mobile source emissions mitigation projects. This document satisfies that requirement.

Beneficiary Mitigation Plan Requirements

All state beneficiaries must develop and submit to the Trustee a Beneficiary Mitigation Plan. Under Section 4.1 of the Final Trust Agreement, this Mitigation Plan must address the following elements:

1. An explanation of the process by which the Beneficiary sought and considered public input on its Beneficiary Mitigation Plan;
2. The state's overall goals for the use of the funds;
3. A description of how the state will consider the potential impact of the actions on air quality in areas that bear a disproportionate share of the air pollution burden within its jurisdiction;
4. The categories of eligible mitigation actions that the state anticipates will be appropriate to achieve these goals and an estimate of the percentage of funds to be spent on each of these actions; and
5. A description of the range of emissions benefits that would be realized by implementation of the actions identified in the Mitigation Plan.

Section 4.1 of the Final Trust Agreement also states that the Mitigation Plan “need only provide the level of detail reasonably ascertainable at the time of submission.” The purpose of the Mitigation Plan is to “provide the public with insight into a Beneficiary’s high-level vision for use of the mitigation funds and information about the specific uses for which funding is expected to be requested.”

Aside from these required elements of every state Mitigation Plan, Florida has the following additional informational objectives for its Mitigation Plan:

- To inform the public on key elements of the Final Settlement Agreement; and
- To provide details on air quality in Florida relevant to the air quality improvement objectives of the Final Settlement Agreement.

1. Public Input

When developing Florida’s Mitigation Plan, the Department sought and considered input from a range of interested parties, potential project partners, and members of the public through numerous discrete and interrelated public engagement, outreach, and educational efforts.

In April 2017, the Department created a webpage within the Department’s website summarizing the process by which the Volkswagen Mitigation Trust Fund was established, detailing the mitigation actions eligible for funding, and directing users to a range of related resources concerning the

Settlement process.¹⁰ The Department updated the website by posting Beneficiary Designation documents, a public survey, public informational meeting and webinar notices, presentation materials, and a post-public meeting Question and Answer document. The Department provided updates and uploaded documents to the webpage including the Mitigation Plan and will do so for the Volkswagen Settlement activities to follow. Concurrently with the publication of the website, the Department provided to the public an opportunity to subscribe to a mailing list that distributed news and updates relating to the Volkswagen Settlement from the Department. As of the publication date of this Mitigation Plan, this mailing list has more than 5,200 subscribers.

A. Requests for Information

In May 2017, the Department published six Requests for Information (RFI) seeking information from interested parties, potential project partners, and owners of units in the following categories:

1. Heavy and Medium Duty Trucks;
2. School, Shuttle, and Transit Buses;
3. Airport and Non-Road Equipment;
4. Ports – Shorepower and Marine Diesel;
5. Locomotives; and
6. Electric Vehicle Charging Stations.

The information received via these RFIs provided the Department with information regarding the types of potential project partners and the types of vehicles and equipment that could be eligible for replacement, repowering, or retrofitting, the location of potential projects, and the emissions benefits associated with potential projects.

B. Public Survey

In March 2018, the Department announced the availability of an online public survey asking a series of questions related to the requirements of the Mitigation Plan. The survey was available to interested individuals and members of the public and private sectors for a period of sixty (60) days. The Department conducted a series of five (5) in-person and two (2) webinar public informational meetings coinciding with the online public survey during the first thirty (30) days. There were 2,023 completed surveys submitted to the Department. The Department used the results to develop this Mitigation Plan. A full summary of survey results may be found in Appendix A.

The top two responses for ranking project-specific funding were:

1. School Buses, Shuttle Buses, and Transit Buses
2. Electric Vehicle Charging Stations

¹⁰ Department's Volkswagen Settlement Website: <https://floridadep.gov/volkswagen>

The top three responses for ranking factors for funding projects were:

1. Projects that replace diesel units with alternative fuels and/or electric vehicles and equipment;
2. Projects that focus on communities that bear a disproportionate share of the air pollution burden; and
3. Projects with greater emission reductions per dollar invested.

C. Informational Meetings and Webinars

The Department conducted five public informational meetings around the state to inform the public about the settlement, the actions taken by the Department, and the development of the Mitigation Plan. These public meetings included a presentation¹¹ by Department staff that summarized the required elements of the Mitigation Plan and the process the Department would follow in finalizing the Mitigation Plan. Additionally, the Department conducted two public informational webinars for those who were unable to attend in person. The public informational meetings and webinars were conducted on the following dates:

- Wednesday, March 21, 2018 – Informational Meeting, Jacksonville
- Thursday, March 22, 2018 – Informational Meeting, Tallahassee
- Tuesday, March 27, 2018 – Informational Meeting, Orlando
- Wednesday, March 28, 2018 – Informational Meeting, Temple Terrace
- Thursday, March 29, 2018 – Informational Meeting, West Palm Beach
- Thursday, April 19, 2018 – Webinar
- Thursday, April 26, 2018 – Webinar

Concurrent with the sixty (60) day public survey period, the Department issued a general request for written comments regarding all issues to be addressed in the state's Mitigation Plan. The Department considered these comments in drafting this Mitigation Plan, particularly as they related to the overall goals of the Mitigation Plan and the types of eligible mitigation actions that should be favored.

D. Draft Mitigation Plan Public Comment Period

A draft of this Mitigation Plan was made publicly available for comment for a period of thirty (30) days. The Department compiled and reviewed all public comments and finalized the Mitigation Plan for submittal to the Trustee.

[THIS SPACE RESERVED FOR SUMMARY OF THE DRAFT MITIGATION PLAN PUBLIC COMMENT PERIOD]

¹¹ The Department's Volkswagen Mitigation Plan presentation is available at: <https://floridadep.gov/air/air-monitoring/documents/diesel-emissions-mitigation-program-public-informational-meetings>

E. Future Public Outreach

As previously stated, the Department manages an electronic mailing list service for any interested individual to subscribe and receive updates on all activities and publications related to the Department's work on the Volkswagen Settlement. Interested individuals are encouraged to subscribe to this service.¹²

After submitting the Mitigation Plan, the Department plans to publish a suite of RFIs for the purpose of receiving detailed information on the programs for project-specific funding based on the Eligible Mitigation Actions selected for participation. The RFIs will be publicly noticed through the Florida Administrative Register (FAR) as well as communicated through the Volkswagen Settlement email notification service and webpage.¹³

2. Overall Goal of Florida's Mitigation Plan

The primary goal of Florida's Mitigation Plan is to reduce emissions of NO_x, particulate matter, and hazardous air pollutants in areas where people live, work, and visit. To achieve this goal, Florida's Mitigation Plan will balance the following factors informed, in part, by the state's outreach efforts and input received from the public:

- Prioritizing projects that replace eligible units with electric-powered and/or alternative fueled units;
- Identifying the areas in Florida where the largest number of people are impacted by higher levels of emissions from diesel-powered vehicles and equipment; and
- Identifying mitigation projects that achieve the lowest cost per ton of pollutants reduced.

As stated in the Final Trust Agreement, Florida has the discretion to adjust priorities and objectives as necessary and reserves the right to adjust this goal and spending plans at the state's discretion while maintaining the primary goal of the plan. If the Mitigation Plan needs to be amended, the Department will provide the Trustee and the public with updates on any changes.

3. Areas with a Disproportionate Share of the Air Pollution Burden

Most air pollutants in Florida occur in concentrations well below the National Ambient Air Quality Standards (NAAQS), though some air pollutants can occur in concentrations in local or regional areas that could potentially affect the health of Florida's residents and visitors. The pollutants of most concern are ground-level ozone and particulate matter, including the emissions of precursor pollutants, such as NO_x, sulfur dioxide (SO₂), VOCs, and hazardous air pollutants (HAPs).¹⁴ The use of diesel-powered vehicles is a substantial contributor to the total amount of emissions that lead to ground-level ozone formation and increased concentrations of particulate matter. Emissions from diesel-powered vehicles can lead to localized impacts on air quality, especially in congested urban corridors.

¹² Department Subscription Service: <https://floridadep.gov/subscribe>

¹³ Florida Administrative Register: <https://www.flrules.org/>

¹⁴ EPA VOCs: <https://www.epa.gov/ozone-pollution>

Florida is attaining the NAAQS for the following criteria air pollutants: carbon monoxide (CO), nitrogen dioxide (NO₂), ozone, particulate matter (both PM₁₀ and PM_{2.5}), and lead (Pb). The vast majority of Florida is in attainment for SO₂, except for two small geographic areas centered around certain large stationary sources.

Air quality in Florida varies by geography. Generally, air quality is better in rural areas (with fewer total mobile and stationary sources of air pollution) than in more urban areas (which tend to have higher concentrations of both mobile and stationary sources of air pollution). Paragraph 4.1 of Attachment A of the Final Settlement Agreement requires beneficiaries to specify how they “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[.]”¹⁵ In order to identify the specific geographic areas that “bear a disproportionate share of the air pollution burden,” the Department utilized the following suite of available resources to develop Air Quality Priority Areas for project-specific funding.

1. The 2014 National Emissions Inventory;
2. Design values in Florida for NO₂, ozone, PM_{2.5}, and PM₁₀;
3. The Environmental Justice Screening tool (EJSCREEN); and
4. U.S. Census population data.

A. National Emissions Inventory

The National Emissions Inventory (NEI) is a comprehensive and detailed estimate of air emissions for criteria air pollutants, criteria precursors, and 187 hazardous air pollutants (HAPs) from air emissions sources. The 2014 NEI is the most recent complete version released by EPA. The NEI is based primarily upon data provided by State, Local, and Tribal air agencies for sources in their jurisdictions and supplemented by data developed by EPA.¹⁶

NEI on-road sources include emissions from on-road vehicles that use gasoline, diesel, and other fuels. These sources include on-road light- and heavy-duty vehicle emissions. EPA uses the Motor Vehicle Emission Simulator (MOVES) model to compute on-road emissions based on model inputs.¹⁷ NEI non-road sources include off-road mobile sources that use gasoline, diesel, and other fuels. Source types include construction equipment, lawn and garden equipment, aircraft ground support equipment, and locomotives. For many non-road sources, the EPA uses the MOVES-NONROAD model.¹⁸

According to the 2014 NEI, Florida’s total emissions of NO_x from all sources, both stationary and mobile, was 582,390 tons.¹⁹ The vast majority of these NO_x emissions came from mobile sources. These sources emitted 416,565 tons in 2014, approximately 71% of the total statewide NO_x

¹⁵ Final Trust Agreement: <https://floridadep.gov/air/air-director/documents/executed-trust-agreements-vw>

¹⁶ National Emissions Inventory: <https://www.epa.gov/air-emissions-inventories/national-emissions-inventory-nei>

¹⁷ EPA MOVES Model: <https://www.epa.gov/moves>

¹⁸ EPA Nonroad MOVES Model: <https://www.epa.gov/moves/nonroad-model-nonroad-engines-equipment-and-vehicles>

¹⁹ EPA’s 2014 NEI Data: <https://www.epa.gov/air-emissions-inventories/2014-national-emissions-inventory-nei-data>

emissions. In Florida, approximately 33% of all NO_x emissions (194,638 tons) are from diesel-powered mobile sources. Figure 1 shows the sources of NO_x emissions in Florida. Figure 2 shows the distribution of total NO_x emissions by county.

Figure 1. Percentage Distribution by Sector for All NO_x Emissions in Florida (2014)

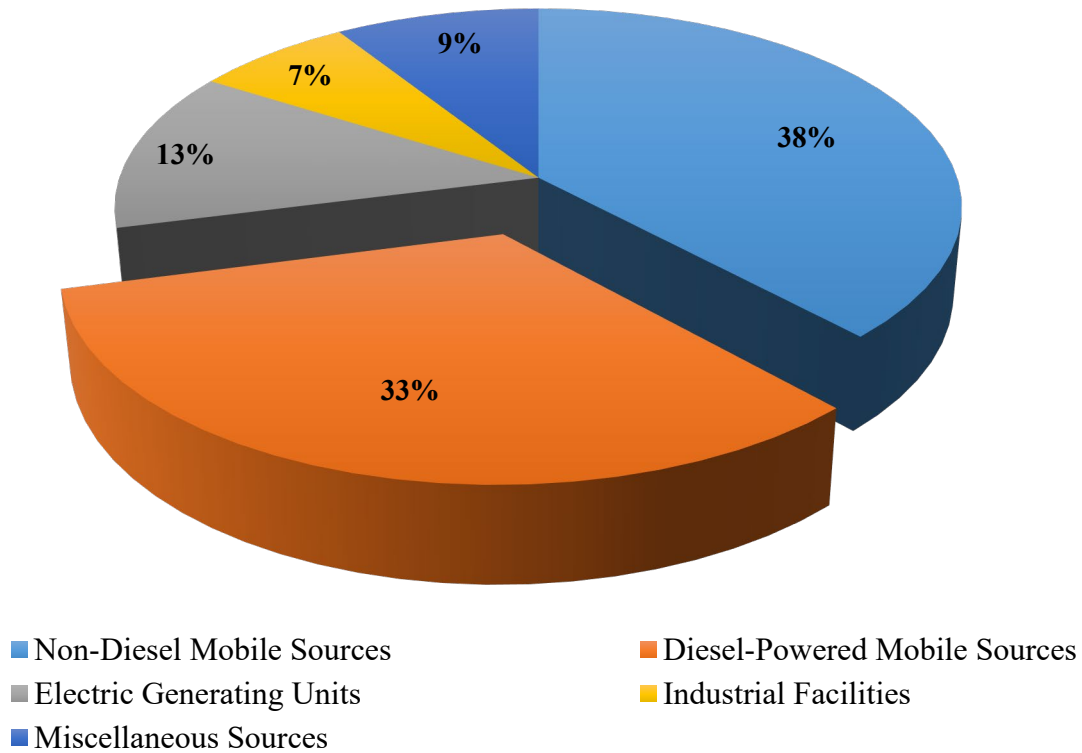
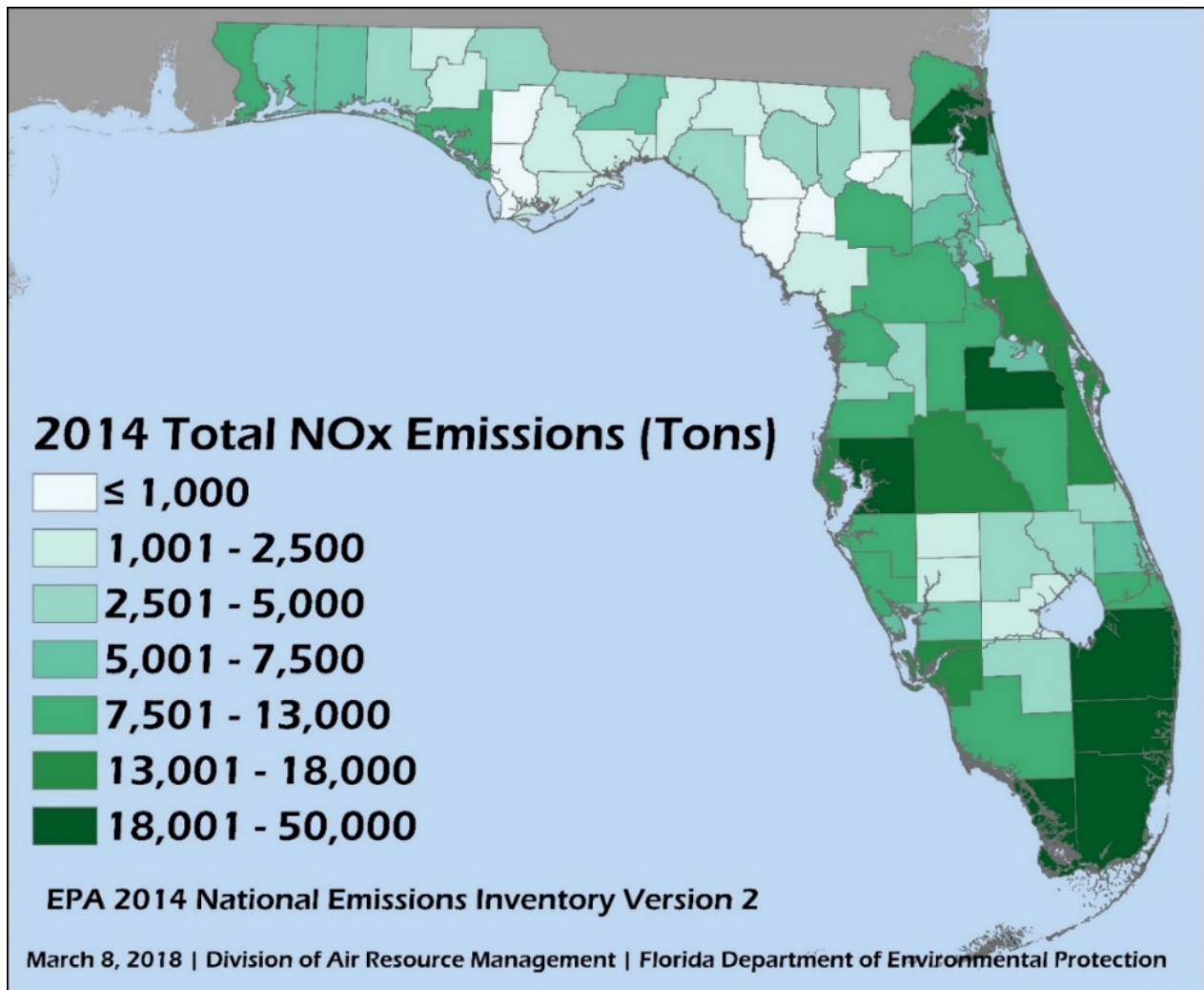


Figure 2. Distribution by County for All NO_x Emissions in Florida (2014)



Of the 194,638 tons of NO_x emitted from diesel-powered mobile sources, the sources break down into the following specific subcategories:

- 100,709 tons from on-road diesel heavy-duty vehicles (i.e., tractor trailers);
- 63,675 tons from non-road diesel equipment (heavy forklifts);
- 16,786 tons from commercial marine vessels (cruise and container ships);
- 7,448 tons from on-road diesel light-duty vehicles (personal vehicles); and
- 6,020 tons from diesel-powered locomotives (switcher locomotives).

The Environmental Mitigation Trust Fund provides funding to reduce NO_x emissions from each of these categories (except on-road diesel light-duty vehicles), focusing on older and higher emitting mobile sources. Figure 3 show the main categories of NO_x emissions from diesel-powered mobiles sources. Figure 4 shows mobile sources of NO_x distributed by county.

Figure 3. Percent Distribution of Diesel-Powered Mobile Source NO_x Emissions (2014)

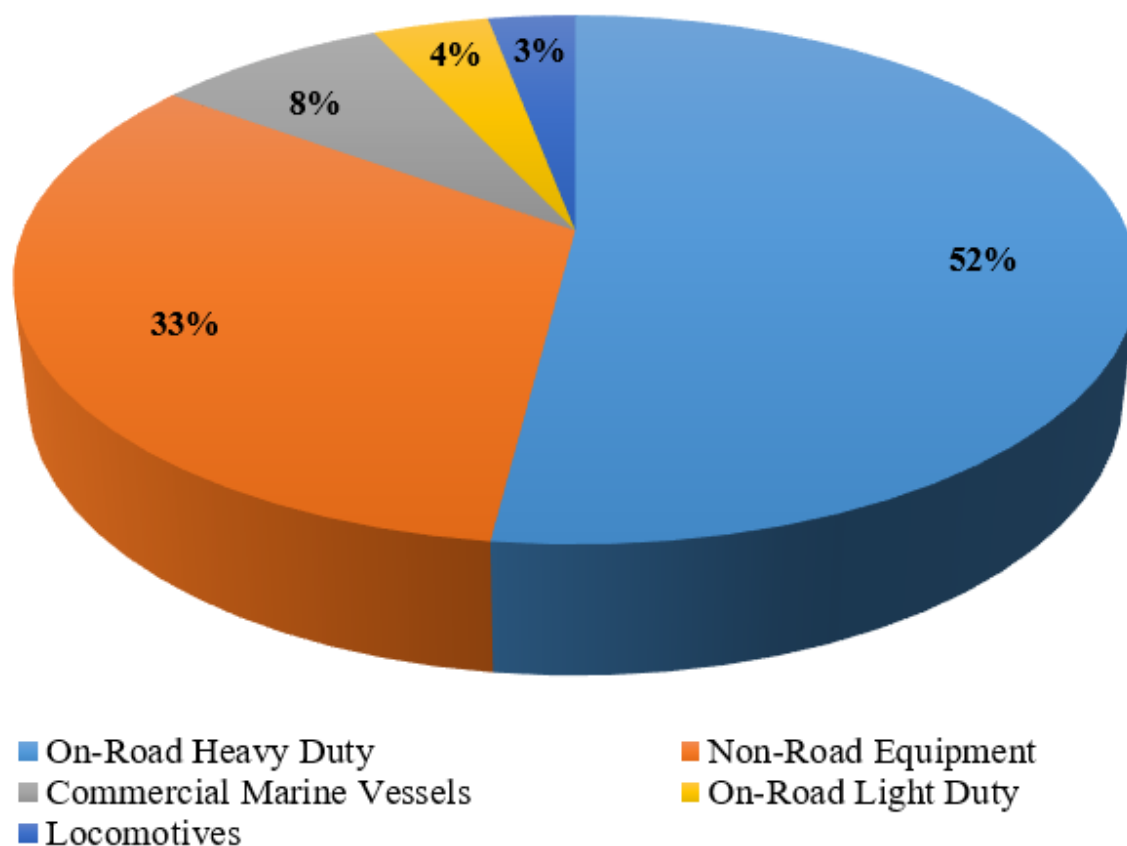
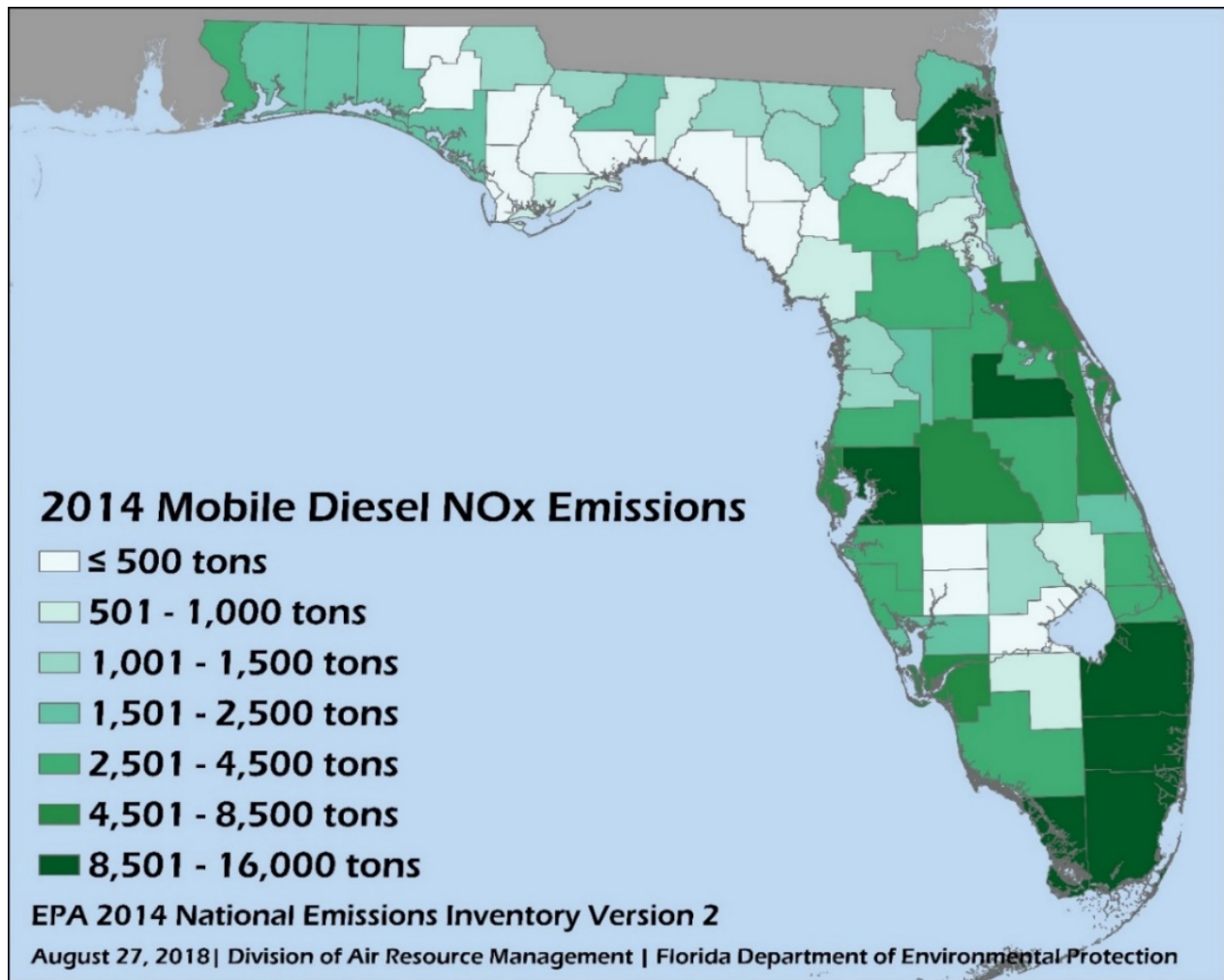


Figure 4. Distribution by County for Mobile Source NO_x Emissions in Florida (2014)



Use of the NEI provides insight as to where the sources of air pollution that could impact citizens' health are located. The NEI allows states to review county-level emissions data, sector-wide emissions data (i.e., point sources, mobile sources, or area sources), or a combination of both. Using the 2014 NEI, the Department has identified which counties have the most NO_x, PM_{2.5}, and PM₁₀ emissions from mobile diesel sources. Figure 5 shows the top 10 counties. A complete county list may be found in Appendix B.

Figure 5. Counties with the Highest Mobile Diesel Emissions in Tons Per Year (TPY) (2014)

Emissions of NO_x from Mobile Diesel Sources

County	Total NO_x (TPY)
Miami-Dade	15,646
Monroe	14,699
Broward	11,944
Palm Beach	11,698
Hillsborough	11,160
Orange	9,205
Duval	8,608
Lee	6,832
Pinellas	6,044
Brevard	5,455

Emissions of PM_{2.5} from Mobile Diesel Sources

County	TotalPM_{2.5} (TPY)
Miami-Dade	1,107
Broward	779
Palm Beach	760
Hillsborough	746
Monroe	682
Orange	614
Duval	545
Lee	469
Pinellas	417
Polk	322

Emissions of PM₁₀ from Mobile Diesel Sources

County	TotalPM₁₀ (TPY)
Miami-Dade	1,429
Broward	951
Hillsborough	913
Palm Beach	864
Orange	751
Duval	661
Pinellas	570
Lee	557
Monroe	402
Volusia	396

B. Ambient Air Monitoring Data

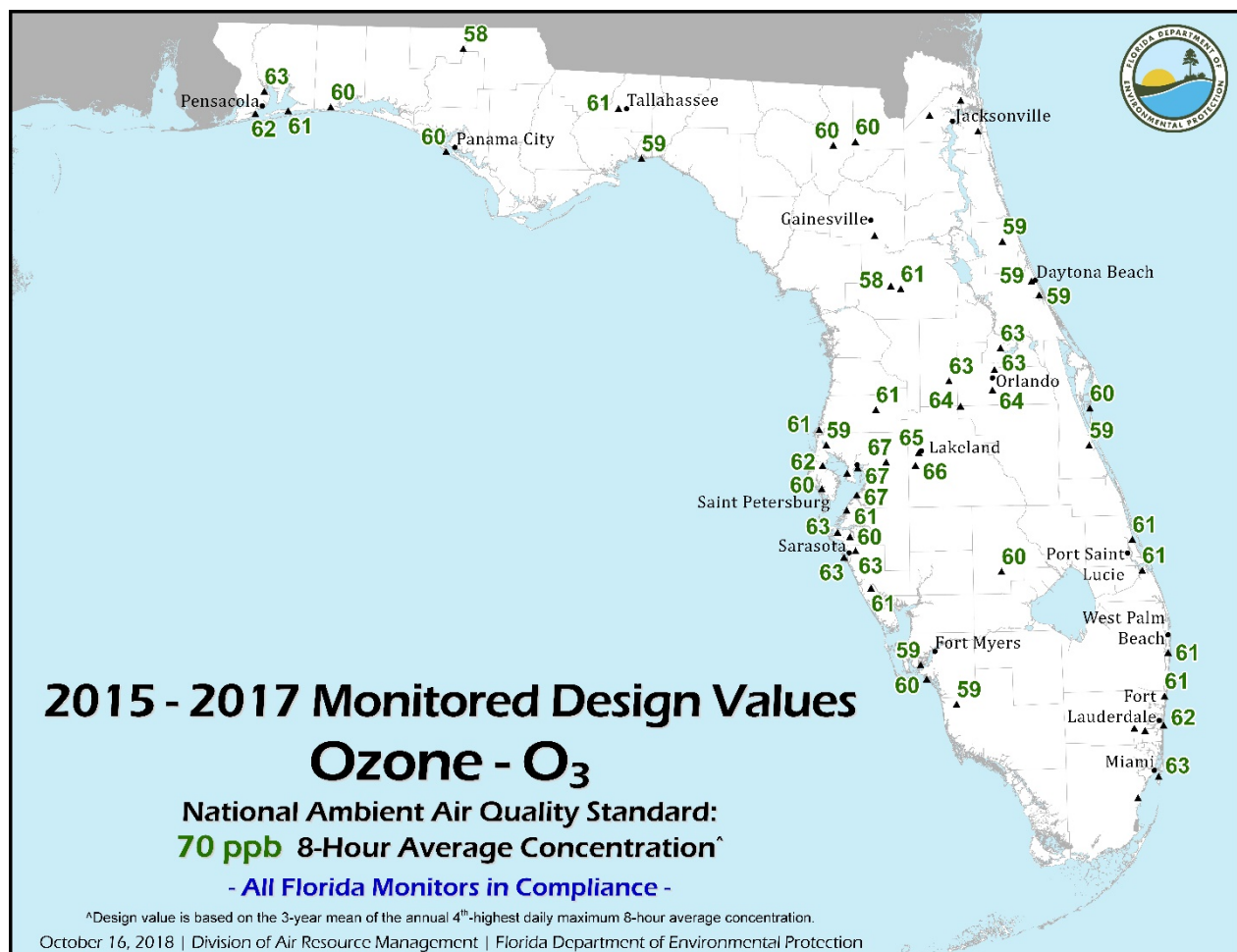
A simple quantification of emissions is only one of the indicators that helps to identify areas that bear a disproportionate burden. Another relevant factor is the actual monitored air quality around the state. As noted above, Florida's ambient air monitoring network shows that all of Florida is in attainment for ozone, NO_x, PM_{2.5}, and PM₁₀. However, some areas of the state have monitoring data that are closer to the NAAQS than others. For NO₂, the state has consistent levels of annual and one-hour concentration design values. Florida's ambient monitoring network for NO₂ shows that there are no monitors within 50 percent of the 1-hour NO₂ NAAQS or within 80 percent of the annual NO₂ NAAQS.

Although Florida's ambient monitoring network demonstrates that there are no monitored air quality issues relating to NO₂, NO_x remains one of the primary precursor pollutants for the formation of ground-level ozone. The formation of ozone occurs when NO_x and other precursor pollutants, such as VOCs, react in the presence of sunlight to form ozone, also known as ground-level ozone or smog. Exposure to high levels of ozone can cause respiratory issues, such as increased frequency of asthma attacks.²⁰

Although moderate levels of ground-level ozone do occur in Florida, the Department's ambient monitoring network shows that there are no monitors exceeding the 2015 8-hour ozone NAAQS of 70 parts per billion (ppb). Figure 6 illustrates the ozone design values from 2015 to 2017.

²⁰ EPA's Webpage for Ozone Health Effects: <https://www.epa.gov/ground-level-ozone-pollution/health-effects-ozone-pollution>

Figure 6. Ozone Design Values (2015-2017)



On occasion, there are days in the spring when meteorological conditions conducive to ozone formation cause an air monitor to measure ozone values above the 8-hour average concentration of 70 ppb. Figure 7 shows county information for the number of days with at least one monitored reading above 70 ppb. Some counties have multiple air monitors that have been placed in locations based on federal regulations. This figure does not show how many air monitors are in each county, and which individual and/or combination of air monitors measured an exceedance.²¹ Additionally, this figure does not show official exceedances, but rather shows 2013-2017 data using the 2015 standard of 70 ppb. The standard for 2013 and 2014 was 75 ppb.

²¹ EPA Webpage for the National Ambient Air Quality Standards: <https://www.epa.gov/criteria-air-pollutants/naaqs-table>

Number of Days with at least One Monitored Ozone Exceedance per County 2013-2017

2015 National Ambient Air Quality Standard: 70 ppb 8-hour Average Concentration

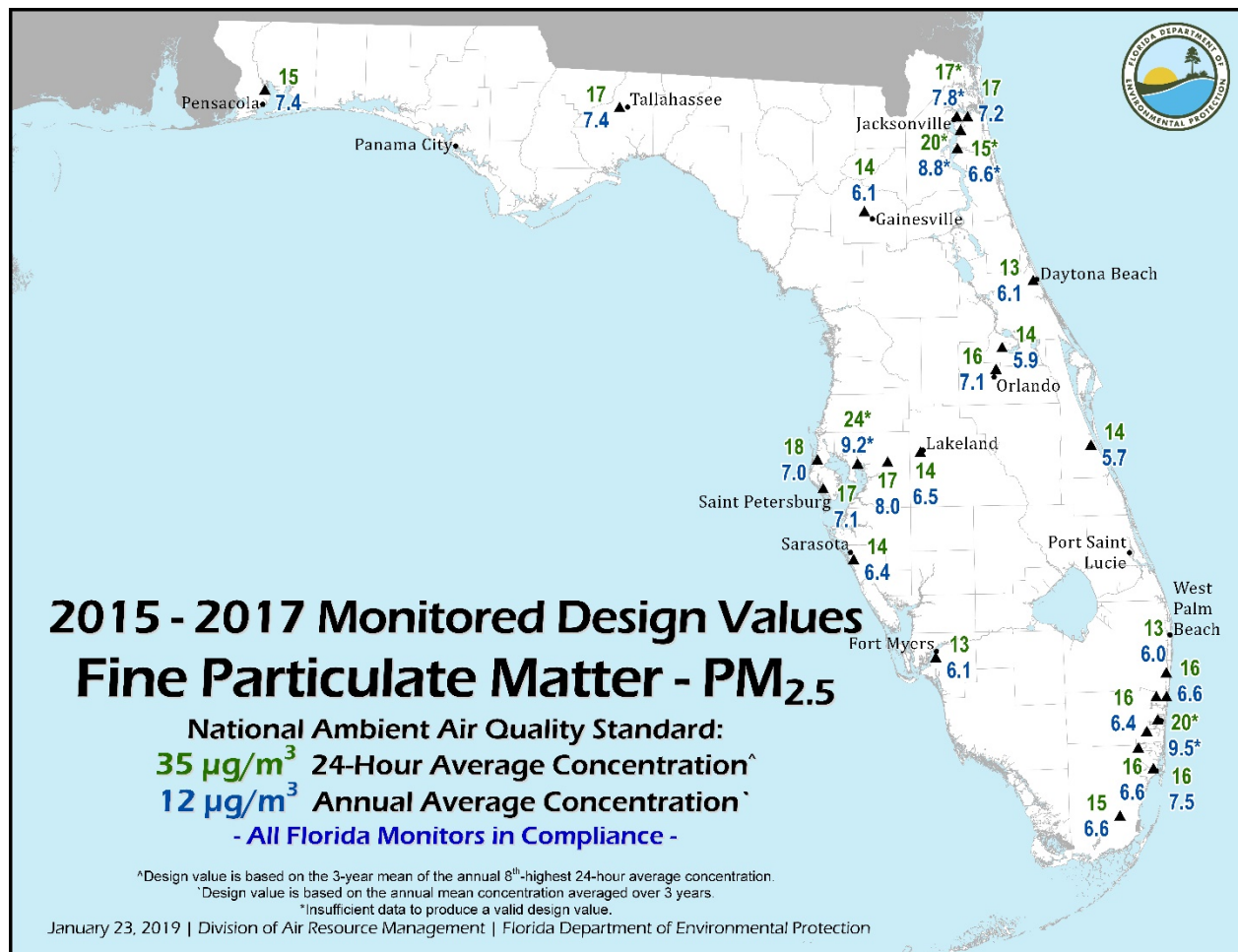
Before 2015, concentrations below 75 ppb would not have been considered exceedances based on the standard at that time
(Grey counties do not have an ozone monitor)

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1. Naturally-occurring direct emissions of PM_{2.5} (e.g. fires);
2. Naturally-occurring secondarily-formed PM_{2.5} (e.g. biogenic VOCs);
3. Anthropogenic sources of directly-emitted PM_{2.5} (e.g. PM_{2.5} from mobile sources); and
4. Anthropogenic sources of secondarily-formed PM_{2.5} (e.g. SO₂ and NO_x emissions)

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Figure 8. Statewide PM_{2.5} Design Values



C. Environmental Justice Screening Tool

For estimating population impacts, the state utilized EPA’s Environmental Justice Screening Tool, known as “EJSCREEN.” EJSCREEN takes geographic area and provides specific demographic and environmental information and creates EJ indexes.²²

The six (6) demographic indicators used by EJSCREEN are (1) Percent Low-Income; (2) Percent Minority; (3) Less Than High School Education; (4) Linguistic Isolation; (5) Individuals Under Age 5; and (6) Individuals Over Age 64.

The eleven (11) environmental indicators used by EJSCREEN are (1) National Scale Air Toxics Assessment Air Toxics Cancer Risk; (2) National Scale Air Toxics Assessment Respiratory Hazard Index; (3) National Scale Air Toxics Assessment Diesel PM (DPM); (4) Particulate Matter (PM_{2.5}); (5) Ozone; (6) Lead Paint Indicator; (7) Traffic Proximity and Volume; (8) Proximity to Risk

²² EJSCREEN: <https://www.epa.gov/ejscreen>

Management Plan Sites; (9) Proximity to Treatment Storage and Disposal Facilities; (10) Proximity to National Priorities List Sites; and (11) Proximity to Major Direct Water Dischargers.

EJSCREEN results were supplemented with additional information, including local knowledge, to get a better understanding of the issues as the tool does not provide data on every environmental impact and demographic indicator that may be relevant to a location.

EJSCREEN is used as an additional indicator to identify potential areas where more people may be exposed to more pollution, thus receiving a disproportionate share of the air pollution burden. The state used population density statistics within EJSCREEN to determine the number of people that may be impacted in the areas surrounding a project. For example, a project involving trucks that routinely drive through more populated areas may have more overall benefit than a similar project involving trucks that routinely drive along more rural routes.

EJSCREEN uses a formula to combine a single environmental factor with the demographic indicator to calculate an “EJ Index”. The “EJ Index” uses the raw environmental indicators combined with census data on low-income and minority populations to determine counties where these populations are most burdened by air quality issues. Figure 9 is sorted by National Air Toxics Assessment Diesel PM “EJ Index” as it is most relevant to finding overburdened areas impacted by diesel emissions. A full County-level “EJ Index” may be found in Appendix C.

Figure 9. Output from EPA’s Environmental Justice Screening Tool (EJSCREEN Version 2017) – County-Level EJ Indexes and Environmental Indicators

County*	EJ Index (percentile in state)			
	PM _{2.5}	Ozone	NATA Diesel PM	Traffic Proximity
Osceola	96	96	94	87
Orange	85	86	88	87
Miami-Dade	83	82	86	91
Broward	69	68	74	87
DeSoto	68	70	65	71
Hillsborough	58	58	65	77
Alachua	53	53	62	76
Duval	56	54	62	72
Hendry	76	78	62	68
Leon	54	53	62	66
Gadsden	82	76	61	61
St. Lucie	56	57	61	69
Palm Beach	54	55	59	78
Polk	59	60	59	67
Hardee	69	70	58	70

*This table shows fifteen (15) counties from the output of EPA’s EJSCREEN. A complete output can be found in Appendix C of this Mitigation Plan.

D. Population Data

The final factor that the Department considered is the most recent population data for Florida. This is consistent with the state's overall goal of reducing emissions of NO_x, particulate matter, and organic hazardous air pollutants from diesel-powered mobile sources that impact the most people. Figure 10 shows population density by county and Figure 11 shows the most recent U.S. Census data identifying Florida's urban areas.

Figure 10. Population Density by County (2016)

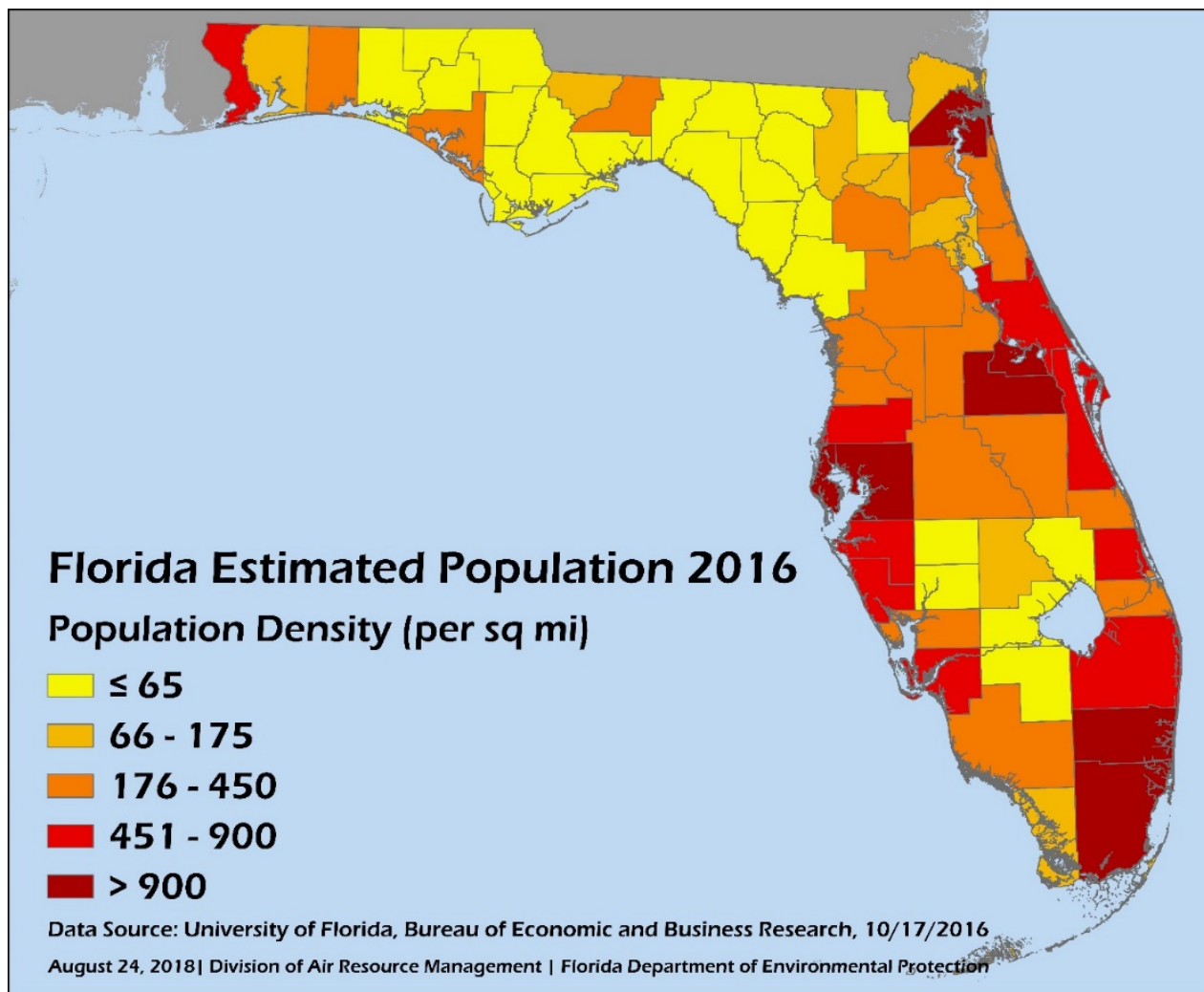
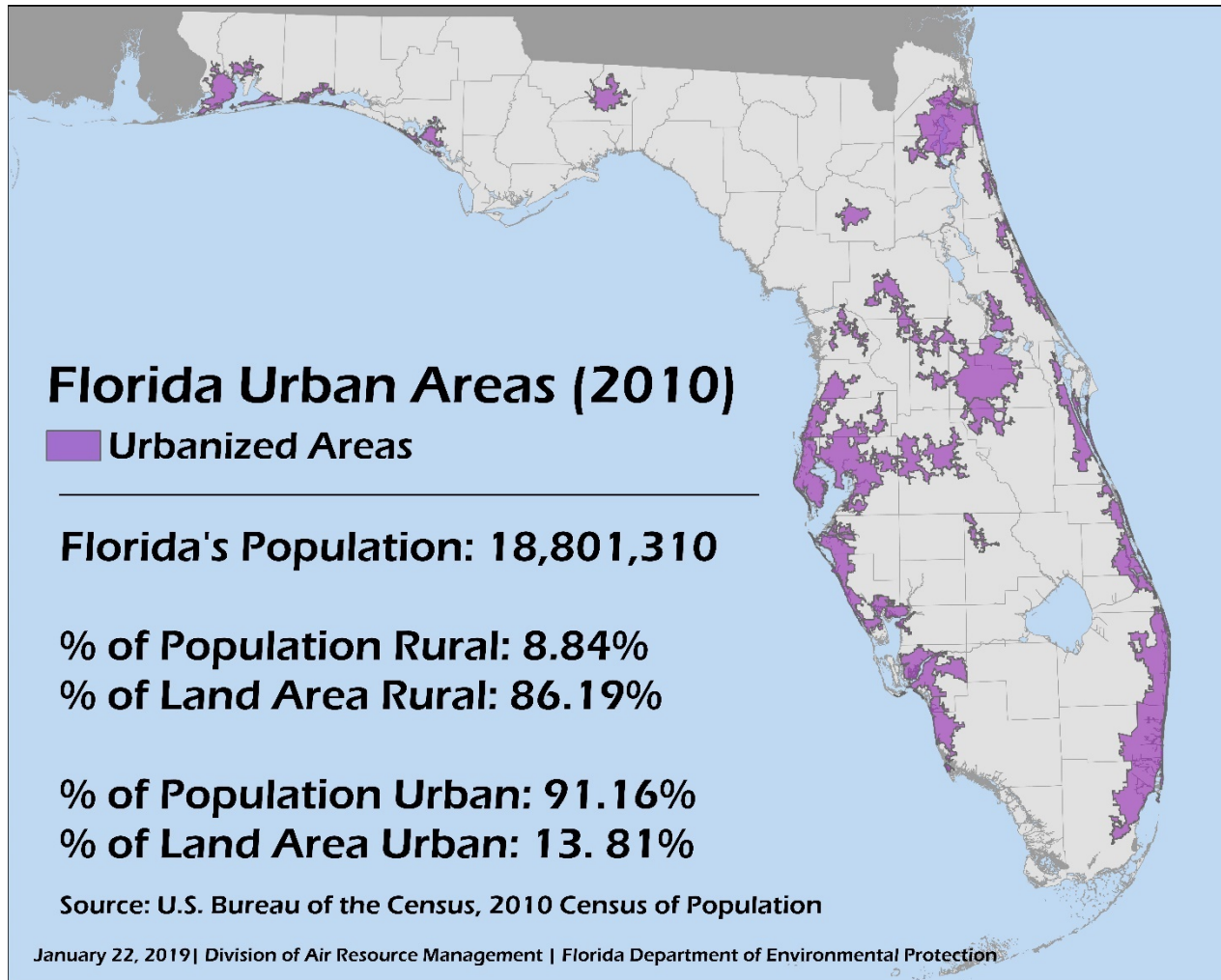


Figure 11. Florida Urban Areas (Latest U.S. Census Data, 2010)

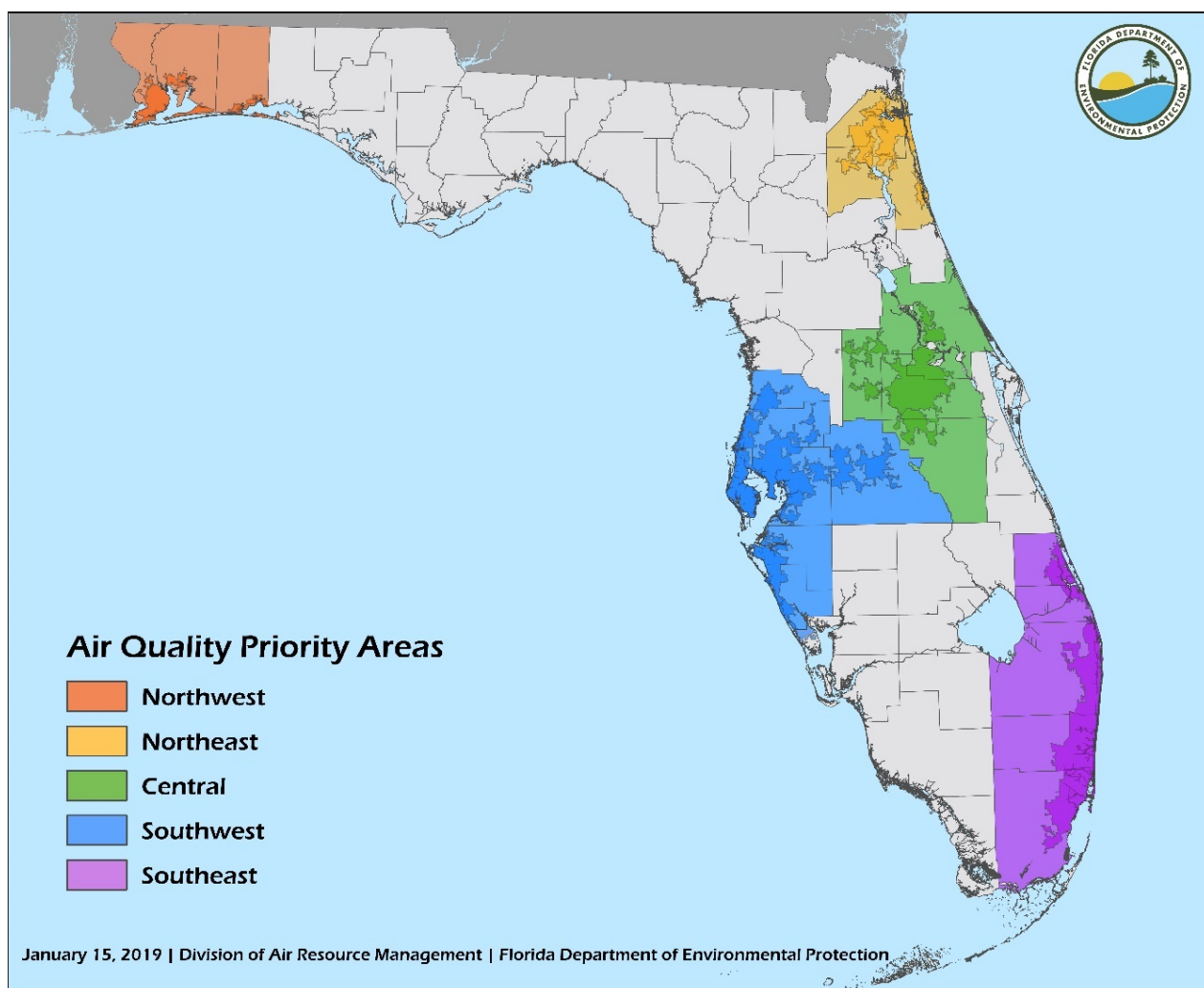


E. Air Quality Priority Areas

The Department identified five air quality priority areas using the four overburdened area factors discussed above (emissions inventories, air monitoring data, environmental justice indicators, and population data). The Department will prioritize these areas for certain diesel emission mitigation projects. The Department's overburdened areas analysis shows that mitigation funds spent in these priority areas will have the largest environmental benefits for the most people, consistent with the Department's overall goal of the Mitigation Plan.

The Department identified urban areas with the highest emissions, highest ozone design values, highest population, and highest environmental justice indicator. The Miami-Broward-Palm Beach, Tampa-St. Petersburg, Orlando, Jacksonville, and Pensacola urbanized areas were the highest urbanized areas for these factors. The Department then included nearby secondary urbanized areas that are connected to these five primary urbanized areas. The result of this analysis is shown in Figure 12, identifying priority counties, with a focus on the more urbanized areas within those counties.

Figure 12. Air Quality Priority Areas in Florida



These five air quality priority areas (incorporating the counties and primary and secondary urbanized areas in each) are as follows:

Southeast Florida

- Covering Broward, Martin, Miami-Dade, Palm Beach, and St. Lucie counties;
- Primary urbanized area: Miami-Broward-Palm Beach; secondary urbanized area: Port St. Lucie;

Southwest Florida

- Covering Hernando, Hillsborough, Manatee, Pasco, Pinellas, Polk, and Sarasota counties;
- Primary urbanized area: Tampa-St. Petersburg; secondary urbanized areas: Spring Hill, Zephyrhills, Lakeland, Winter Haven, and Sarasota-Bradenton;

Central Florida

- Covering Lake, Orange, Osceola, Seminole, and Volusia counties;
- Primary urbanized area: Orlando; secondary urbanized areas: Kissimmee, Deltona, Leesburg-Eustis-Tavares;

Northeast Florida

- Covering Clay, Duval, and St. Johns counties;
- Primary urbanized area: Jacksonville; secondary urbanized area: St Augustine;

Northwest Florida

- Covering Escambia, Okaloosa, and Santa Rosa counties;
- Primary urbanized area: Pensacola; secondary urbanized area: Fort Walton Beach-Navarre-Wright.

Florida's air quality priority areas for certain diesel emission reduction projects cover ~16,000,000 people (78% of all Floridians); ~125,000 tons of mobile-diesel NO_x emissions (65% of all Florida mobile-diesel NO_x); all areas within 10% of the 2015 ozone NAAQS (2015-2017) design values of 63 or above); and the top four Diesel PM "EJ Index" counties.

4. Eligible Mitigation Actions

Appendix D-2 of the Final Trust Agreement lists ten (10) Eligible Mitigation Actions for states to consider in the development of the Mitigation Plan. A complete copy of Appendix D-2 can be found as Appendix D-2 to the Mitigation Plan and can also be found on the Department's webpage.²³ Additionally, the Department has a helpful drop-down tool on the Volkswagen Settlement webpage to assist interested individuals in understanding the eligibility requirements of each of the ten (10) Eligible Mitigation Actions.²⁴ Florida considered which eligible mitigation actions would achieve the state's primary goal of improving air quality around the state and identifying projects projected to yield real and measurable environmental benefits.

²³ DEP's Link to Appendix D-2 of the Final Trust Agreement: <https://floridadep.gov/air/air-director/documents/appendix-d-2-vw>

²⁴ DEP's Volkswagen Settlement Website with Drop-down Tool: <https://floridadep.gov/volkswagen>

The Department identified the following categories of Eligible Mitigation Actions for project-specific funding:

Eligible Mitigation Action	Allocation
School, Transit, and Shuttle Buses	70%
Light-Duty ZEV Supply Equipment	15% (Maximum Allowable)
Diesel Emissions Reduction Act (DERA)	15%

The Final Settlement Agreement allows for up to 15% of the total cost of each eligible mitigation action to be used for actual administrative expenditures, as described in Appendix D-2 of the Final Trust Agreement. The Department intends to encumber as much of the total state allotment as possible for project-specific funding but reserves the right to allow for minimal funding on administrative costs.

These types of projects are projected to meet the state's overall goal for reducing excess NO_x emissions in areas where improvement in air quality could yield the greatest public health benefits (due to a combination of population density and relatively poorer air quality levels) as the emission reductions will inure to communities around concentrated areas of mobile emissions sources.

Diesel Emissions Reduction Act

The DERA State Grant Program is funded in part through federal grants administered by EPA. The DERA grant program is analogous to Appendix D-2 of the Final Trust Agreement because the program is designed to provide funding to reduce harmful emissions from diesel engines. This similarity makes the DERA Option under the Eligible Mitigation Actions a valuable option to leverage additional funds for the same purpose.²⁵ The Department has participated in DERA previously and posted a webpage dedicated to the DERA program.²⁶

The Department's decision to use Mitigation Trust funds in conjunction with the DERA program will allow for funding project-types that were not selected above. Participating in DERA provides versatility for project types with the highest mitigation value based on the factor of cost per ton. The Department encourages those interested to visit the Department's DERA program webpage.²⁷

5. Emissions Benefits

Section 4.1 of Appendix D of the Final Trust Agreement requires that states provide a description of the range of emissions benefits projected to result from actions identified in their Mitigation Plans. The Department estimates that from 2009-2018, the 33,160 vehicles sold in Florida have an annual average of 261 tons of excess NO_x emissions. This estimate includes the number of violating vehicles removed through the minimum 85 percent Volkswagen buy-back program requirement.

²⁵ EPA's Clean Diesel and DERA Funding: <https://www.epa.gov/cleandiesel>

²⁶ DEP's DERA Program Webpage: <https://floridadep.gov/air/air-director/content/diesel-emissions-reduction-act-dera-florida>

²⁷ Florida's DERA Webpage: <https://floridadep.gov/air/air-director/content/diesel-emissions-reduction-act-dera-florida>

Florida has utilized EPA’s Diesel Emissions Quantifier (DEQ) to provide general data related to the NO_x emission reductions associated with various Eligible Mitigation Actions.²⁸ The DEQ is an EPA tool that enables users to estimate emissions from diesel vehicles and equipment for both highway and nonroad vehicles and marine vessels. The DEQ is capable of the following:

- Calculating emissions from a single emissions reduction project; and
- Comparing fleet emissions using different retrofit control technologies.

Figures 13 and 14 show the potential annual emissions benefits for each of the selected Eligible Mitigation Actions. The annual emissions benefits estimates are based on a scenario using the total available funding amount identified in Section 4 of the Mitigation Plan for each row of examples. This figure does not have a full list of fuel types and electric-powered units eligible for project specific funding, but serves as a general range of annual emissions benefits. For additional data showing emissions benefits using project-specific examples, please see Appendix E. Not included in this estimate are the emissions benefits from the installation of light-duty electric vehicle charging stations. The Department is developing a method to estimate the emissions benefits from the full 15% allowed under the Final Trust Agreement for charging infrastructure.

Figure 13. Emissions Benefits Estimate Based on Selected Eligible Mitigation Actions

NO_x Emissions Benefit in Tons Per Year (TPY) Based on Possible Cost-Share Amounts							
Unit Type (Assuming 100% Funding Within Each Category)	Unit Cost	100% Cost-Share (Public)			50% Split Share (Public)		
		Number of New Units	TPY	Cost/Ton/Year	Number of New Units	TPY	Cost/Ton/Year
School Bus Electric Replacement (70% or \$116.4M)	\$350,000	332	41	\$2,874,000	665	81	\$1,434,674
School Bus Diesel Replacement (70% or \$116.4M)	\$100,000	1163	142	\$820,000	2327	284	\$409,995
Transit Bus Electric Replacement (70% or \$116.4M)	\$900,000	129	114	\$1,023,000	258	228	\$511,501
Transit Bus Diesel Replacement (70% or \$116.4M)	\$400,000	290	241	\$482,000	581	483	\$240,788

²⁸ EPA’s Diesel Emissions Quantifier (DEQ): <https://cfpub.epa.gov/quantifier/index.cfm?action=main.home>

Figure 14. Emissions Benefits Estimate Based Under DERA Option

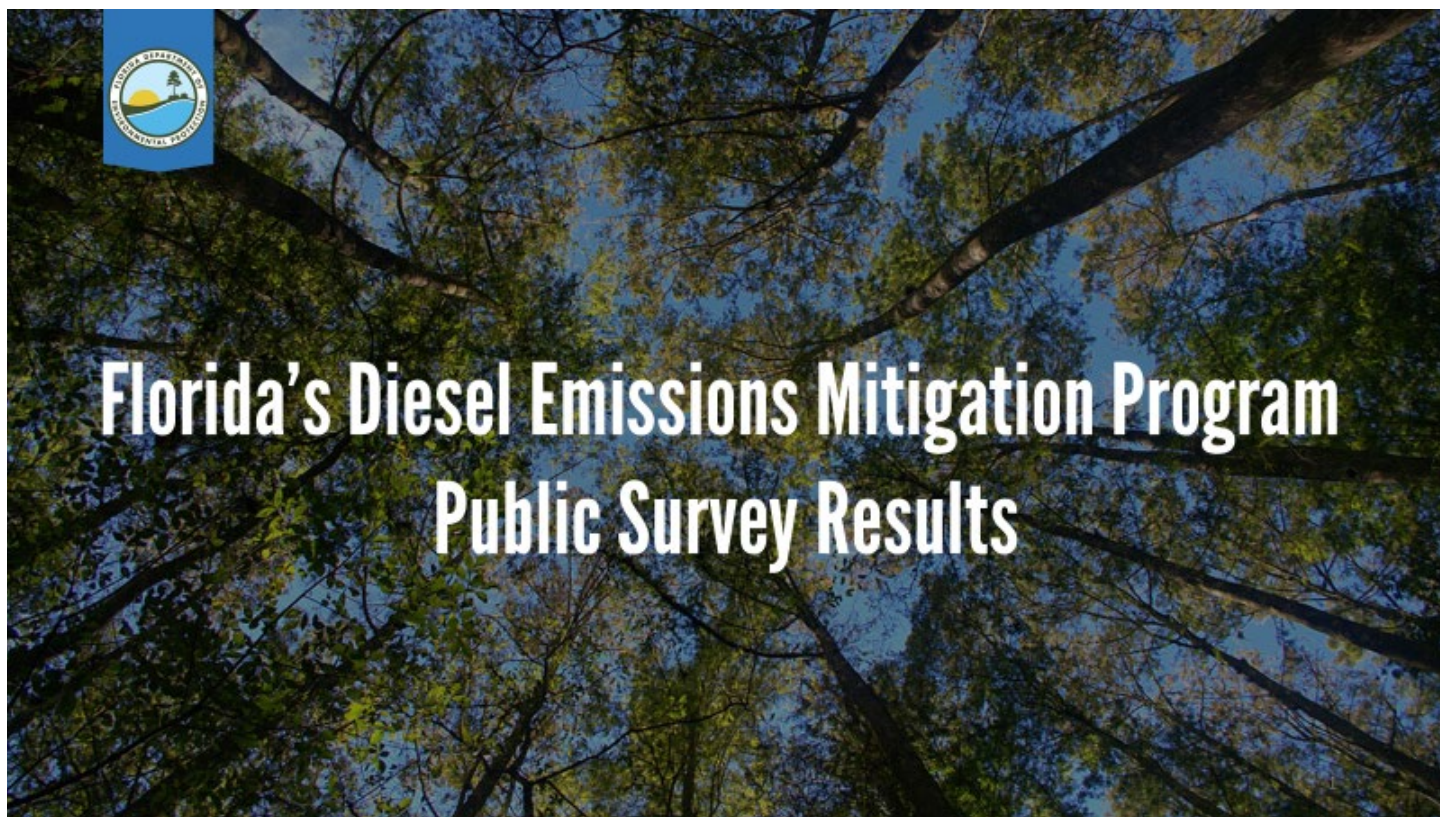
Potential DERA NO_x Emissions Benefit in Tons Per Year (TPY)				
Unit Type (Assuming 100% Funding Within the DERA Category)	Estimated Unit Cost	40% Maximum Cost-Share (60% Owner Contribution)		
		Number of New Units	TPY	Cost/Ton/Year
Tug Boat (Propulsion) Engine Replacement (15% or \$24.9M)	\$1,000,000	62	865	\$28,783
Switcher Locomotive Engine Replacement (15% or \$24.9M)	\$1,000,000	62	197	\$126,532

Once projects commence, the Department will use project-specific emissions factors and modeling software to estimate the range of air pollution reductions associated with each mitigation project.

The state expects that each Eligible Mitigation Action will:

1. Reduce NO_x emissions for the remainder of the lifecycle for the units being replaced;
2. Improve air quality in areas that bear a disproportionate share of the air pollution burden, as discussed under Section 3 above; and
3. Reduce exposure to other pollutants resulting from diesel combustion such as diesel particulate matter and organic hazardous air pollutants.

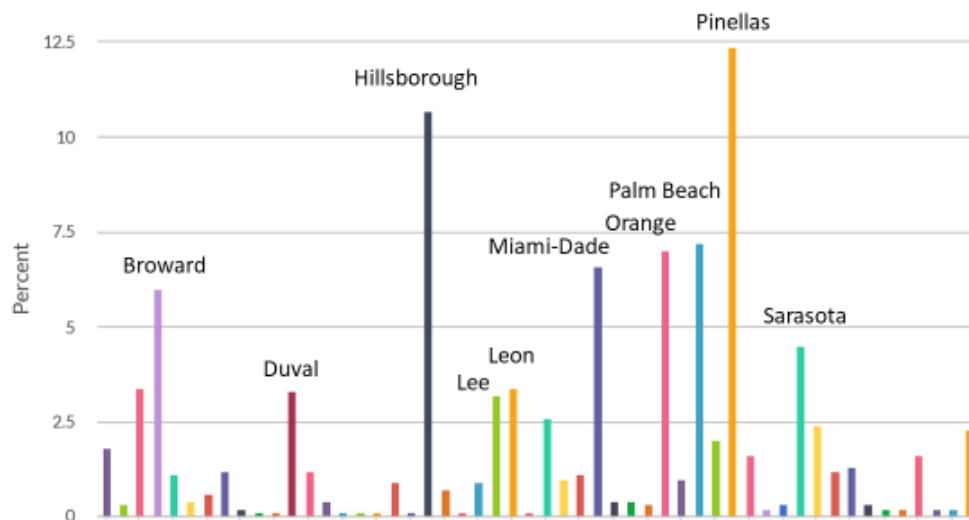
Appendix A





County Participation

1. In which county do you reside? (Total Completed Surveys: 2,023)





Respondent Description

2. Which of the following best describes you?

Response Totals

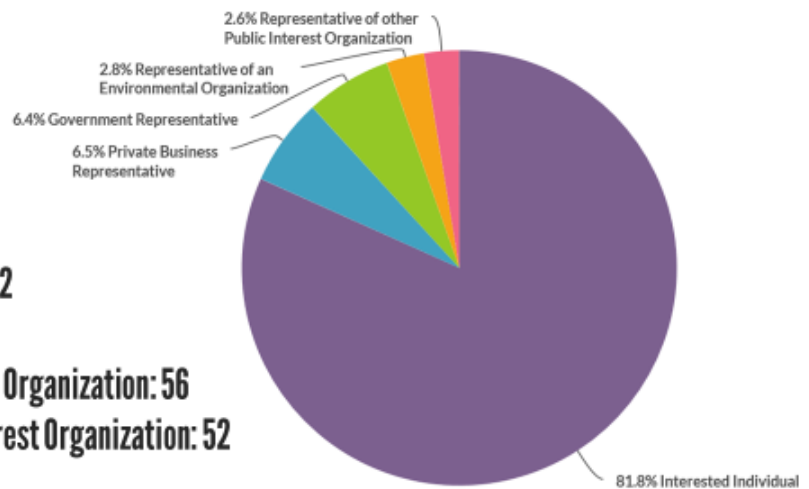
Interested Individual: 1,654

Private Business Representative: 132

Government Representative: 129

Representative of an Environmental Organization: 56

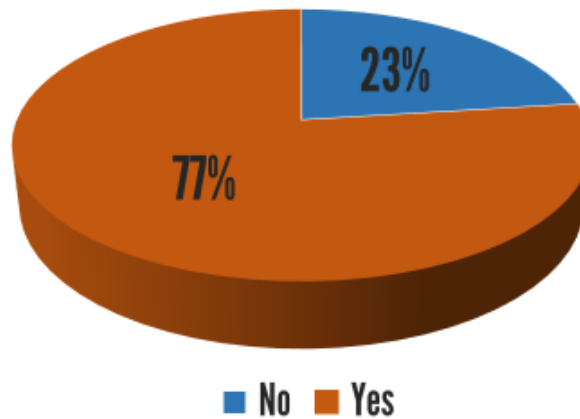
Representative of Other Public Interest Organization: 52





Project Funding Interest

3. Are you interested in receiving funding for a diesel emission reduction project?





Project Funding Interest Follow Up

If yes, what type of project are you interested partnering or participating?

Common Responses include:

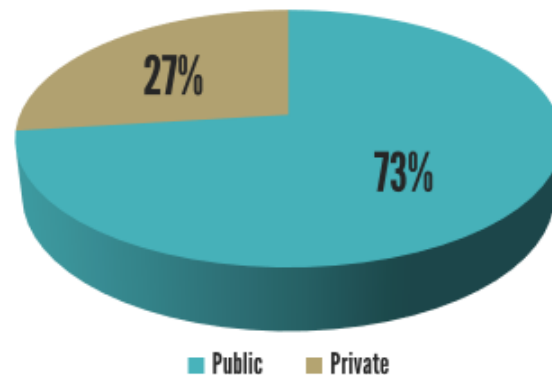
- Government fleet modernization
- Replacement of older diesel school buses
- EV charging station infrastructure
- Update statewide fleets of garbage collection
- Repowering of locomotives and heavy trucks
- Alternative fueling stations
- Private fleet replacement projects
- Repower of maritime equipment at state ports



Public/Private Breakdown

4. As a percentage, how should Florida divide the total available funding between government-owned vehicles and equipment and partnerships with business-owned vehicles and equipment?

Public to Private Funding Response





Project Category Ranking

5. There are several major project categories to which the state may direct funding. Please rate these categories from 1 (most preferred) to 7 (least preferred).

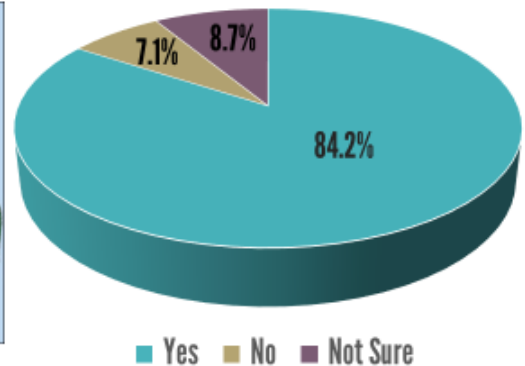
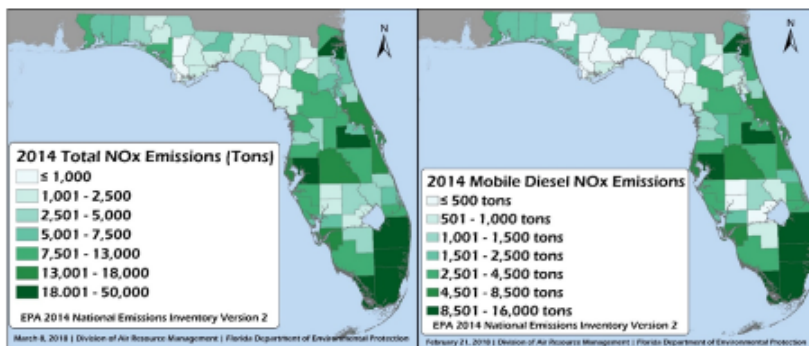
Item	Overall Rank	Rank Distribution	Score	No. of Rankings
School Buses, Shuttle Buses, and Transit Buses	1		11,778	1,939
Electric Vehicle Charging Stations	2		9,800	1,928
On-Road Medium and Heavy-Duty Diesel Trucks	3		7,738	1,794
Seaport Shorepower, Cargo Handling Equipment, and Marine Diesel Engines	4		6,233	1,780
Airport Ground Support Equipment	5		5,858	1,784
Locomotives	6		5,488	1,769
Non-Road Diesel Equipment	7		5,019	1,775

Lowest Rank Highest Rank



Current Emissions Sources Consideration

6. These maps show the relative concentrations of mobile-source air pollution in Florida and ozone levels relative to the National Ambient Air Quality Standard. Should Florida prioritize funding in areas with more emissions sources and higher ozone levels?





Project Factors Ranking

7. There are many factors that may be useful in identifying and prioritizing mitigation projects. Please rate the following from 1 (most preferred) to 7 (least preferred)

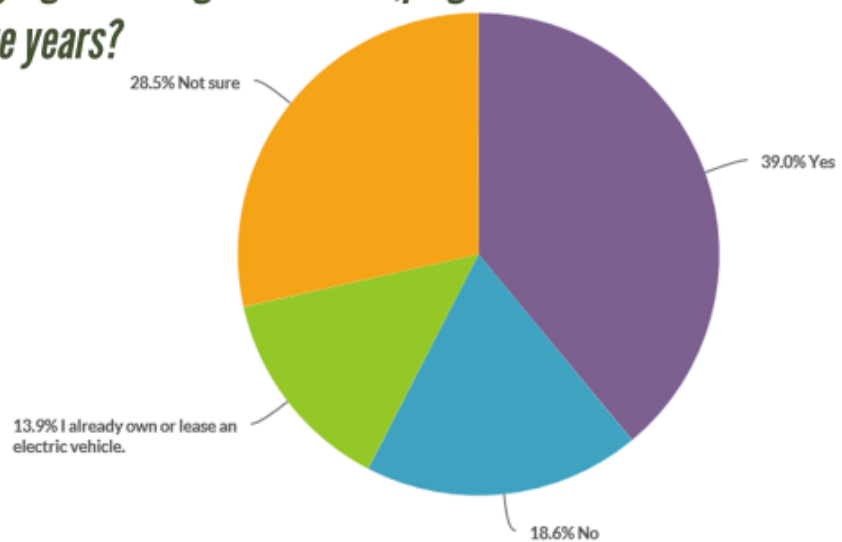
Item	Overall Rank	Rank Distribution	Score	No. of Rankings
Projects that replace diesel units with alternative fuels and/or electric vehicles and equipment	1		10,240	1,937
Projects that focus on communities that bear a disproportionate share of the air pollution burden	2		8,108	1,861
Projects with greater emission reductions per dollar invested	3		7,495	1,833
Projects that replace the highest emitting diesel units regardless of their location	4		7,208	1,856
Projects in areas with higher diesel engine emissions	5		7,119	1,837
Projects that incentivize business investment in cleaner technologies	6		6,755	1,846
Projects that focus funding on modernizing transportation hubs (seaports, airports, railyards)	7		5,860	1,832

Lowest Rank Highest Rank



Electric Vehicle Ownership

8. Are you planning on buying or leasing an electric (plug-in) vehicle in the next five years?





Electric Vehicle Ownership Follow Up

Common Responses to why include:

- I already own an electric vehicle
- Reducing gas consumption and vehicle emissions
- More cost effective in the long run
- Cheaper to operate over time
- To invest in cleaner energy

Common Responses to why not include:

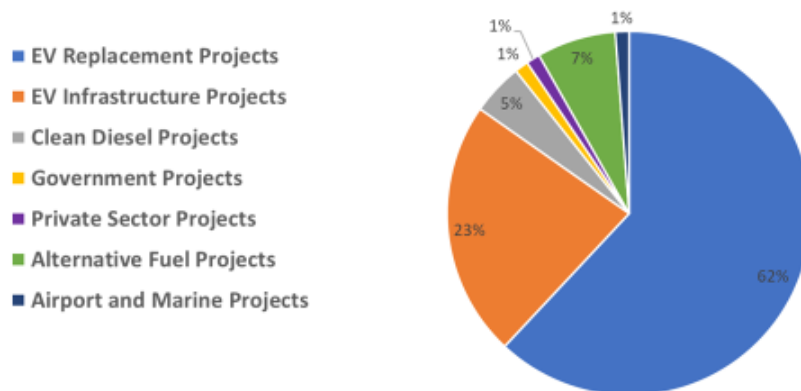
- Too expensive
- The technology is too new
- Vehicles currently available won't meet fleet needs
- Available range/shortage of infrastructure
- Already own a hybrid vehicle
- Not wanting to wait for a charge
- Questionable reliability on new technology
- Just bought a new car recently/happy with current car



Opportunity for Comments

9. Please provide any additional information that you think may be helpful in developing Florida's Beneficiary Mitigation Plan.

Percent of Responses by Category





Appendix B

Mobile Diesel NO_x, PM_{2.5}, PM₁₀ by County (NEI Data 2014)

Emissions of NO_x from mobile diesel sources	
County	Total NO_x (TPY)
Miami-Dade	15,646
Monroe	14,699
Broward	11,944
Palm Beach	11,698
Hillsborough	11,160
Orange	9,205
Duval	8,608
Lee	6,832
Pinellas	6,044
Brevard	5,455
Polk	5,392
Volusia	5,245
Marion	4,415
Sarasota	4,146
Manatee	3,835
Collier	3,834
St. Johns	3,775
Pasco	3,544
Osceola	3,232
Seminole	3,098
Escambia	3,072
Alachua	3,001
St. Lucie	2,953
Martin	2,861
Lake	2,608
Leon	2,463
Okaloosa	2,170
Sumter	2,108
Charlotte	1,983
Indian River	1,953
Bay	1,888
Nassau	1,721

Emissions of PM_{2.5} from mobile diesel sources	
County	Total PM_{2.5} (TPY)
Miami-Dade	1,107
Broward	779
Palm Beach	760
Hillsborough	746
Monroe	682
Orange	614
Duval	545
Lee	469
Pinellas	417
Polk	322
Brevard	321
Volusia	321
Marion	269
Sarasota	268
Manatee	260
Collier	253
Pasco	230
St. Johns	209
Seminole	205
Osceola	205
Escambia	186
St. Lucie	174
Martin	167
Lake	166
Alachua	165
Leon	162
Okaloosa	131
Charlotte	119
Indian River	117
Bay	117
Sumter	104
Santa Rosa	96

Emissions of PM₁₀ from mobile diesel sources	
County	Total PM₁₀ (TPY)
Miami-Dade	1,429
Broward	951
Hillsborough	913
Palm Beach	864
Orange	751
Duval	661
Pinellas	570
Lee	557
Monroe	402
Volusia	396
Polk	382
Brevard	375
Sarasota	333
Marion	318
Manatee	308
Collier	307
Pasco	278
St. Johns	251
Seminole	249
Osceola	244
Escambia	210
Lake	201
Alachua	200
Leon	199
St. Lucie	196
Martin	185
Okaloosa	160
Indian River	140
Charlotte	140
Bay	138
Sumter	118
Santa Rosa	113

Emissions of NO_x from mobile diesel sources	
County	Total NO_x (TPY)
Walton	1,685
Santa Rosa	1,673
Columbia	1,590
Hernando	1,420
Flagler	1,346
Clay	1,236
Jackson	1,163
Citrus	1,095
Gadsden	976
Highlands	877
Suwannee	832
Hamilton	821
Madison	799
Baker	651
Putnam	605
Levy	601
Okeechobee	574
Jefferson	572
Hendry	571
Franklin	527
Washington	465
Bradford	455
DeSoto	440
Gulf	416
Holmes	407
Glades	375
Hardee	334
Wakulla	327
Taylor	297
Dixie	235
Gilchrist	181
Calhoun	177
Union	130
Liberty	108
Lafayette	92

Emissions of PM_{2.5} from mobile diesel sources	
County	Total PM_{2.5} (TPY)
Nassau	96
Walton	91
Flagler	88
Hernando	86
Clay	81
Citrus	71
Columbia	68
Highlands	54
Jackson	54
Gadsden	44
Suwannee	40
Hendry	37
Madison	34
Putnam	33
Okeechobee	31
Hamilton	31
Baker	30
Levy	29
DeSoto	29
Bradford	26
Jefferson	26
Franklin	24
Washington	22
Gulf	21
Hardee	21
Holmes	20
Wakulla	18
Glades	17
Taylor	14
Dixie	11
Gilchrist	10
Calhoun	10
Union	7
Liberty	6
Lafayette	5

Emissions of PM₁₀ from mobile diesel sources	
County	Total PM₁₀ (TPY)
Hernando	105
Walton	104
Flagler	101
Clay	96
Nassau	95
Citrus	87
Columbia	83
Highlands	63
Jackson	61
Gadsden	50
Suwannee	46
Hendry	42
Putnam	40
Madison	37
Hamilton	36
Okeechobee	36
Levy	34
Baker	33
DeSoto	33
Jefferson	29
Bradford	26
Washington	25
Hardee	25
Holmes	22
Wakulla	22
Franklin	21
Gulf	19
Glades	19
Taylor	17
Dixie	13
Gilchrist	13
Calhoun	12
Union	9
Lafayette	6
Liberty	6

Appendix C

EJSCREEN 2017 By County

EJSCREEN 2017 - Florida County-Level EJ Indexes (by Percentile)

County	PM2.5	Ozone	NATA Diesel PM	Traffic Proximity
Alachua	53	53	62	76
Baker	21	24	32	55
Bay	25	29	38	24
Bradford	41	41	45	51
Brevard	32	30	29	15
Broward	69	68	74	87
Calhoun	54	53	50	55
Charlotte	28	27	31	23
Citrus	20	21	32	28
Clay	14	16	18	17
Collier	48	48	53	51
Columbia	43	44	47	35
DeSoto	68	70	65	71
Dixie	44	45	47	52
Duval	56	54	62	72
Escambia	45	46	50	70
Flagler	39	38	38	33
Franklin	49	49	48	35
Gadsden	82	76	61	61
Gilchrist	33	35	43	36
Glades	59	60	52	62
Gulf	43	44	47	38
Hamilton	70	66	56	57
Hardee	69	70	58	70
Hendry	76	78	62	68
Hernando	35	35	39	31
Highlands	49	49	52	57
Hillsborough	58	58	65	77
Holmes	43	45	47	54
Indian River	42	41	41	26
Jackson	59	56	52	54
Jefferson	69	64	57	57
Lafayette	53	52	49	59
Lake	34	33	36	43
Lee	44	44	48	58
Leon	54	53	62	66
Levy	46	46	48	54
Liberty	60	58	51	56
Madison	68	64	57	62
Manatee	31	31	40	57
Marion	41	41	45	60
Martin	30	26	25	19
Miami-Dade	83	82	86	91
Monroe	45	44	47	51
Nassau	14	17	24	30
Okaloosa	25	30	38	16
Okeechobee	64	66	58	67
Orange	85	86	88	87
Osceola	96	96	94	87
Palm Beach	54	55	59	78
Pasco	34	34	34	25
Pinellas	36	36	34	34
Polk	59	60	59	67
Putnam	53	54	53	63

EJSCREEN 2017 - Florida County-Level EJ Indexes (by Percentile)				
County	PM2.5	Ozone	NATA Diesel PM	Traffic Proximity
Santa Rosa	10	14	29	15
Sarasota	16	15	18	14
Seminole	38	38	36	66
St. Johns	3	3	6	18
St. Lucie	56	57	61	69
Sumter	0	0	0	16
Suwannee	45	46	48	50
Taylor	58	56	51	52
Union	61	60	53	50
Volusia	41	40	43	28
Wakulla	19	24	39	25
Walton	31	33	44	20
Washington	52	51	49	52
Yellow highlighted boxes are the highest percentile in the column.				

Appendix D

Eligible Mitigation Actions and Mitigation Action Expenditures

(Directly from Appendix D-2 of Final Trust Agreement)

APPENDIX D-2

ELIGIBLE MITIGATION ACTIONS AND MITIGATION ACTION EXPENDITURES

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:
 1. 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.
 2. Up to 25% of the cost of a new diesel or Alternate Fueled (e.g., CNG, propane, Hybrid) vehicle.
 3. 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.
 4. 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:
 1. 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.
 2. Up to 50% of the cost of a new diesel or Alternate Fueled (e.g., CNG, propane, Hybrid) vehicle.

3. 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.
 4. 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:
 1. 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.
 2. Up to 100% of the cost of a new diesel or Alternate Fueled (e.g., CNG, propane, Hybrid) vehicle.
 3. 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.
 4. 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:
 1. 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.
 2. Up to 25% of the cost of a new diesel or Alternate Fueled (e.g., CNG, propane, Hybrid) vehicle.

3. 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.
 4. 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:
 1. 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.
 2. Up to 100% of the cost of a new diesel or Alternate Fueled (e.g., CNG, propane, Hybrid) vehicle.
 3. 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.
 4. 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 1000 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:
 1. 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).
 2. Up to 25% of the cost of a new diesel or Alternate Fueled (e.g., CNG, propane, Hybrid) Freight Switcher.
 3. 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).
 4. 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:
 1. 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).

2. Up to 100% of the cost of a new diesel or Alternate Fueled (e.g., CNG, propane, Hybrid) Freight Switcher.
3. 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).
4. 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 Remanufacture 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:
 1. 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).
 2. 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:
 1. 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).
 2. 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:
 - 1. 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.
 - 2. Up to 25% of the cost of a new diesel or Alternate Fueled (e.g., CNG, propane, Hybrid) vehicle.
 - 3. 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.
 - 4. 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:
 - 1. 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.
 - 2. Up to 100% of the cost of a new diesel or Alternate Fueled (e.g., CNG, propane, Hybrid) vehicle.
 - 3. 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.

4. 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:
 1. Tier 0, Tier 1, or Tier 2 diesel powered airport ground support equipment; and
 2. 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:
 1. 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.
 2. 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:
 1. 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.
 2. 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 8000 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:
 1. 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.
 2. 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:

1. 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.
2. 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:
 1. 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.
 2. 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.
 3. 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.
 4. 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.
 5. 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.
 6. 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.

Eligible Mitigation Action Administrative Expenditures

For any Eligible Mitigation Action, Beneficiaries may use Trust Funds for actual administrative expenditures (described below) associated with implementing such Eligible Mitigation Action, but not to exceed 15% of the total cost of such Eligible Mitigation Action. The 15% cap includes the aggregated amount of eligible administrative expenditures incurred by the Beneficiary and any third-party contractor(s).

1. Personnel including costs of employee salaries and wages, but not consultants.
2. Fringe Benefits including costs of employee fringe benefits such as health insurance, FICA, retirement, life insurance, and payroll taxes.
3. Travel including costs of Mitigation Action-related travel by program staff, but does not include consultant travel.
4. Supplies including tangible property purchased in support of the Mitigation Action that will be expensed on the Statement of Activities, such as educational publications, office supplies, etc. Identify general categories of supplies and their Mitigation Action costs.
5. Contractual 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 are included.
6. Construction including costs associated with ordinary or normal rearrangement and alteration of facilities.
7. Other costs including insurance, professional services, occupancy and equipment leases, printing and publication, training, indirect costs, and accounting.

Definitions/Glossary of Terms

“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 EPA or 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. “Forklift” shall mean nonroad equipment used to lift and move materials short distances; 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. The term “State” means the several States, the District of Columbia, and the Commonwealth of Puerto Rico.

“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, 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).

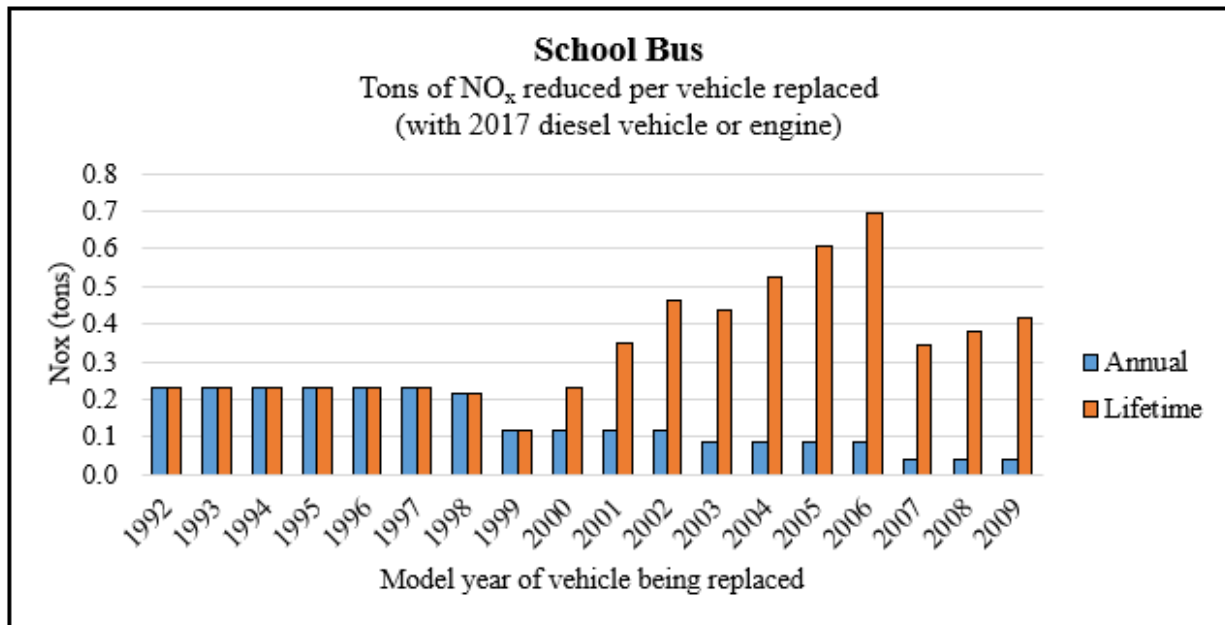
“Zero Emission Vehicle (ZEV)” shall mean a vehicle that produces no emissions from the on- board source of power (e.g., All-Electric or hydrogen fuel cell vehicles).

Appendix E

Example DEQ Defaults:

Emission Reduction by Project Type

NO_x Emission Reductions for School Buses



NO_x Emission Reductions for Transit Buses

