Request for Proposals

Phase 2

Transit and Shuttle Bus Program

GMS Program ID: NCDEQDAQ0006

Contents

I. Request for Proposals (RFP) Timeline

- Release of RFP — February 1, 2022
- Application open in DAQ Grants Management System — February 1, 2022
- Webinar for new DAQ Grants Management System users — February 8, 2022
- First Program RFP information session — February 17, 2022
    - Information sessions will be online, and **registration is required**. Dates and times will be posted on our website, https://deq.nc.gov/VW-Transit-Bus-RFP.
- Proposal applications due date — May 2, 2022
- Proposal application evaluations — May – June 2022
- Phase 2 project selections — July 2022
- Grant awards announced — July 2022

Timeline changes: NCDEQ reserves the right to adjust the dates listed above. Any changes or additional information regarding the RFP schedule, including responses to questions, will be posted on NC VW Settlement Transit Bus Program website at: https://deq.nc.gov/about/divisions/air-quality/motor-vehicles-and-air-quality/volkswagen-settlement/phase-2-volkswagen-settlement/transit-program.

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II. Overview

Summary

The North Carolina Division of Air Quality (NCDAQ) in the North Carolina Department of Environmental Quality (NCDEQ) is soliciting proposal applications for participation in Phase 2 of the NC Volkswagen Settlement Mitigation Program. Approximately $13.5 million will be available in Phase 2 for the Transit and Shuttle Bus Program. This program is designed to achieve significant reductions in diesel emissions by replacing old diesel transit and shuttle buses with new cleaner buses.

This Request for Proposal (RFP) will assist interested parties in applying for funds to mitigate NOx emissions from mobile sources, as described by the North Carolina VW Mitigation Plan (deq.nc.gov/VWsettlement). This document includes information on who may apply for funding, the funding levels for the program, project eligibility, funding priorities for Phase 2, funding match requirements, activities eligible for funding, and other information that will help applicants plan their project and submit a competitive proposal application. All proposal applications must be submitted on the DAQ Grant Management System (GMS) website, at https://www.ebs.nc.gov/irj/portal, **no later than 11:59 p.m. Eastern Daylight Time on May 2, 2022**.

Eligible Projects

For Phase 2, eligible projects for this RFP include:

- projects submitted by local, state, and tribal government organizations,

- projects submitted by public or private nonprofit organizations (Incorporated Nonprofit – an organization as described in section 501(c)(3) of the Federal Internal Revenue Code of 1954, as amended. The organization must be incorporated under NC law or registered with the NC Department of the Secretary of State), and
- projects submitted by public-private partnerships where the lead applicant represents a public sector, public or private nonprofit organization.

Ineligible Applicants

Applicants that are currently debarred by the State of North Carolina[1] and/or federal government[2] are ineligible applicants.

NCDEQ may also deem an applicant ineligible because of, but not limited to environmental compliance issues, labor standards issues, tax status or other such legally enforceable issues.

III. Funding

This RFP is for Phase 2 (2021 – 2024) of the NC VW Mitigation Program and combines funding for previously proposed Phases 2 and 3 with a total amount of $67.9 million available. This final phase of funding represents the remaining step in achieving our multi-year goals for the program.

NCDEQ may fund projects for Phase 2 up to 100% of the cost of the replacement of a vehicle for government projects (subject to the availability of funds, quality of evaluated proposal applications, and other applicable considerations). NCDEQ reserves the right to partially fund proposal applications by funding discrete portions of proposed projects. Additionally, NCDEQ reserves the right to make additional awards under this announcement if additional funding becomes available after the original project selections. Public and private nonprofit projects are subject to a cost share based on the vehicle/equipment type. Government is defined in Appendix D-2 of the VW State Trust Agreement and Appendix G of this document.

Funding Type

NCDEQ anticipates awarding a total of approximately $13.5 million towards reimbursement of transit and shuttle bus replacement projects in Phase 2. Applications will be prioritized based on the urban-suburban/rural split described in the NC VW Mitigation Plan using the NC Rural Center[3] classification for counties, allocating 68% (~$9,246,934) of the funds for urban and suburban counties and 32% (~$4,351,499) for rural counties in Phase 2. Funding for infrastructure will be capped at a maximum of $75,000 per bus.

In addition to the Phase 2 funding, approximately $6 million has been allocated by the North Carolina Department of Transportation (NCDOT) for electric buses in Congestion Mitigation and Air Quality (CMAQ) Improvement Program eligible counties. CMAQ funding will be limited to 80% of the incremental cost of an electric replacement bus over the equivalent diesel replacement bus, with the remaining 20% of the incremental cost covered by NC VW Settlement Phase 2 funding. Infrastructure costs will not be eligible for CMAQ funding. All eligible electric buses from CMAQ areas will be

[1] North Carolina Department of Administration, https://ncadmin.nc.gov/government-agencies/procurement/contracts/debarred-vendors

[2] United States Department of Labor, https://www.dol.gov/ofccp/regs/compliance/preaward/debarlst.htm

[3] https://www.nccommerce.com/blog/2015/07/09/rural-center-expands-its-classification-north-carolina-counties

considered for CMAQ funding in addition to the Phase 2 funding, resulting in both Phase 2 and CMAQ funding being awarded for projects that are selected for funding. A list of eligible counties can be found in Appendix D of this document.

Funding Levels for the Transit and Shuttle Bus Program

NC Grant Programs	Eligible Action Category	Eligible Fuels*	Phase 2 Funding Levels	
			Targeted Percent**	Targeted Program Funding Amount
Transit bus replacement program*	Class 4-8 transit and shuttle buses	All (diesel, propane, natural gas, electric)	20%	$13,598,433
	Total:			**$13,598,433**

*Electrification projects are a priority in Phase 2. Infrastructure cost will be funded at a maximum amount of $75,000 per all-electric bus.
**20% of the Phase 2 total of $67,992,166.

Cost Share Requirements

Maximum funding percentages for selected projects depend on the Eligible Mitigation Action type, the fuel type of the replacement (diesel, alternative fuel[4], and all-electric), and whether it is a government (public) or nonprofit (private) owned fleet; however, maximum funding for any project proposal application is not guaranteed. NCDEQ may partially fund a proposal application by funding a portion of a proposed project. Applicants receiving funding will be notified of the actual amount awarded for their project. Applicants awarded funding have the option to accept or decline the award. The Trustee may only disburse funds for Eligible Mitigation Actions as outlined in the Volkswagen Consent Decree Appendix D-2.

Public-private partnerships are agreements that involve a contract between a public-sector authority and a private party, in which the private party provides a public-sector service or project and assumes substantial financial, technical and operational risk in the project. For projects that are public-private partnerships, the ownership of the original and replacement vehicle will determine the maximum funding percentages. Public-private partnership projects where the original and replacement vehicle is owned by the public entity will be eligible for the maximum funding percentages allowed under government-owned vehicle categories found in the tables below. Public-private partnership projects where the original and replacement vehicle is owned by the private entity will be eligible for the maximum funding percentages allowed under non-government categories found in the tables below.

Transit Bus Replacement Program

Class 4-8 Transit Bus and Shuttle Bus (Eligible Buses)*

Replacement	Diesel	Alternative Fuel	All-Electric
Government	100%	100%	100%
Non-Government	25%	25%	75%

*Eligible buses include 2009 engine model year or older class 4-8 transit buses and shuttle buses. Eligible buses may be replaced with any new diesel or alternate fuel or all-electric vehicle, with the engine model year in which the eligible trucks mitigation action occurs or one engine model year prior.

[4] Alternative fuels include biodiesel, compressed natural gas, diesel hybrid-electric, liquid natural gas, and liquid propane gas or liquefied petroleum gas.

IV. How to Apply

NCDEQ will only accept applications submitted through the NCDAQ Grant Management System (GMS) website, at https://www.ebs.nc.gov/irj/portal. Prior to using the GMS, applicants must obtain an NCID and then complete and submit the online Enterprise Business Services External Access Request Application. Applicants must also complete and email the State of North Carolina Substitute W-9 Form svc.NCVWApplication@ncdenr.gov to get registered in the system. **Applicants not currently registered in the GMS should request access well before the application closing date of May 2, 2022**. The GMS contains tutorials on how to use the system, submitting applications and submitting claims. The application will not be viewable in the GMS until 8 a.m. February 1, 2022. **The Program ID in the DAQ Grants Management System for the Transit and Shuttle Bus Program is NCDEQDAQ0006.**

All applications will require the following information, at minimum, to be submitted via GMS:

1. Organization name, address, Organization Tax ID number, contact information
2. Project location
    a. Address
    b. County
    c. GPS coordinates (decimal format)
3. Project Type
    a. Government
    b. Non-Government
    c. Non-Profit
4. Itemized project quotes
5. For electric bus replacements projects only:
    a. Charging unit information
    b. Manufacturer
    c. Model
    d. Charging capacity in kW
    e. Warranty period
6. Identification of any additional rebates, grants, or other financial incentives applied for or received for project.

Applications, all required attachments, and supporting documentation must be submitted electronically using our online NCDAQ Grant Management System (GMS) website, at https://www.ebs.nc.gov/irj/portal to be considered for funding. Incomplete applications will be returned. This application and any supplemental information provided will serve as the primary means by which all applications are evaluated and approved for funding.

If you have any questions about this RFP, please contact NCDEQ at daq.NC_VWGrants@ncdenr.gov with Subject title: "Transit and Shuttle Bus Program RFP" prior to submitting your application.

Application Requirements

Applications, copies of quotes, required pictures and supporting documentation must be submitted electronically using GMS. Applicants must completely fill out the application form to be considered for funding. Applicants must include a price quote on letterhead from the original equipment manufacturer (OEM) for any vehicles or equipment to be purchased. The quote must be dated within six months immediately preceding the date the application is submitted. **Incomplete applications will not be**

considered. This application and any supplemental information provided will serve as the primary means by which all applications are evaluated, and projects selected. NCDEQ may contact you or your organization for clarification and/or supplemental information, so please ensure the contact information you provide is accurate; applicants will have 10 business days to respond to any such requests.

This is a competitive application process. To be considered for funding in Phase 2 (2022 to 2024), completed applications must be submitted in the GMS **no later than 11:59 p.m. Eastern Daylight Time on May 2, 2022**. The downloadable sample proposal application will be available on https://deq.nc.gov/VW-Transit-Bus-RFP. If you have any questions about this application, please contact NCDEQ at daq.NC_VWGrants@ncdenr.gov with Subject title: "Transit and Shuttle Bus Program RFP" prior to submitting your application and well in advance of the submission deadline.

Projects initiated prior to submitting a proposal application and having a signed executed contract are not eligible for funding. Project initiation activities that can disqualify an application include approving the total cost of the project in a budget, ordering vehicles/equipment or hiring a contractor/vendor to complete the project. Submittal of a proposal application is not a guarantee that a proposed project will be funded.

Additional required information for applications:

- Actual quotes from OEM for vehicle being replaced including quotes for infrastructure for all-electric vehicle projects.
- Pictures of original vehicle – see vehicle information form

Awarded applicants must:

- Unless otherwise stipulated, procure the new vehicles or equipment and take delivery no later than two years from the date of a signed executed contract with NCDEQ;
- Render the replaced vehicles inoperable by cutting a 3-inch hole in the engine block for all engines and disabling the chassis by cutting the vehicle's frame rails completely in half which must be completed within six months of delivery of the new vehicle (see instructions on NCDAQ Form 001, Certificate of Destruction[5]);
- Agree to keep the replaced vehicle operational in North Carolina, with emission controls in place, for a minimum of five years;
- Provide NCDEQ with all documentation required for reimbursement; and
- Submit quarterly progress reports starting no later than six months after execution of a contract with NCDEQ for the duration of contract. The report shall include a summary of the current project status (including the actual or projected termination date, project development and implementation activities, and any modifications to the project).

General Requirements

The following are general requirements that applicants will be expected to certify, describe in the narrative or upload as attachments containing additional documentation to the online application form.

- Existing on-road diesel transit or shuttle bus must be registered in North Carolina for operation on public highways. This includes vehicles registered in North Carolina under the Division of Motor Vehicles' International Registration Plan (IRP).
- Applications must demonstrate that the applicant has the financial resources to cover the cost of the vehicle purchases included in the application and explain the funding source that will cover the cost of project expenditures until reimbursement from the grant is approved.

[5] NC DAQ Form 001 can be found at https://deq.nc.gov/vw-settlement/forms

- Current Use: Applications must describe how, when and where the vehicles are currently used in normal duty service, including any seasonal changes in operation or periods when not in use. If operated on routes that regularly take the vehicles into counties that are not listed as priority counties for this program, explain the percentage of use that occurs outside the priority counties.
- New Use: Applications must describe any differences between how the replacement vehicles will be used compared to how the current vehicles are used.
- Alternative Fuel Availability: Applications must explain the availability of electric charging stations or the alternative fuel in the areas where the vehicle will be most frequently driven or operated. If the applicant does not own a charging or fueling station on site, give the location of the publicly available charging or fueling station most likely to be used, or document that the fleet has been granted access to some other charging or fueling station.
- The costs of preparing and submitting proposals in response to this RFP are solely the responsibility of the applicant. The program shall not reimburse or contribute, in any way, to the cost of the preparation and submittal of the proposal.
- For electric transit or shuttle bus replacements, dual port chargers will be allowed up to the maximum reimbursement amount of $75,000, if required by the electric bus or is the only option available from the bus vendor.

Ineligible costs include but may not be limited to:

- Operating expenses and fuel costs, including incremental costs of fuel.
- Any project required by any law or other legally binding agreement.
- Work done or purchases made prior to the signing of a fully executed contract with NCDEQ.
- Costs incurred for work or purchases not included in the approved project scope.
- Installation costs incurred from in-kind services or by an unauthorized vendor.
- Administrative costs.

Emissions Reductions Quantification

NCDEQ will quantify the emission reductions resulting from the project by using the information included in a complete application. If information on emission reductions from a specific engine is available from the vendor, this should be included as an attachment to the application. Emission reductions will be quantified using the USEPA Diesel Emission Quantifier [6]. While there are other tools for quantifying emissions, NCDEQ will use the EPA tool as the standard for this process. Examples of estimating emission reductions can be found in Appendix F of this document. If you are having trouble gathering the required information for this application, please contact NCDEQ at daq.NC_VWGrants@ncdenr.gov with Subject title: "Transit and Shuttle Bus Program RFP" well in advance of the submission deadline as we may be able to provide some assistance.

Project Awards

Applicants selected for funding shall have two years to complete their project from the date of a signed executed contract with NCDEQ. If an application shows that the project cannot be completed in two years, it will not be selected for funding. Finally, the majority of Eligible Mitigation Actions require the existing vehicle and engine to be rendered permanently inoperable. From Appendix D-2 of the VW State Trust Agreement:

> "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

[6] The USEPA Diesel Emission Quantifier is available at: https://cfpub.epa.gov/quantifier

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.

Public Data

All rebate applications and associated documentation are public record per North Carolina General Statutes §132-1, except for "confidential" or "trade secret" data as defined and classified in North Carolina General Statutes §66-152(3) and North Carolina Administrative Code 01 NCAC 05B .0103. Such material must be indicated as such by the applicant at the time of the initial rebate application or claim reimbursement submittal.

V. Use of Funds - Restrictions

1. **Original Vehicle:** No funds awarded under this RFP shall be used to cover expenses to replace non-diesel vehicles.
2. **Replacement Vehicle:** All replacement vehicles must be EPA or CARB certified/verified to be eligible for funding.
3. **Expenses Incurred Prior to the Project Period:** No funds awarded under this RFP shall be used to cover expenses incurred prior to the project period set forth in any contract agreement funded under this RFP.
4. **Emissions Testing:** No funds awarded under this RFP shall be used for emissions testing and/or air monitoring activities (including the acquisition cost of emissions testing equipment) or for research and development activities.
5. **Fueling Infrastructure:** No funds awarded under this RFP shall be used for fueling infrastructure, such as that used for the production and/or distribution of biodiesel, compressed natural gas, liquefied natural gas, and/or other fuels (except for projects where an all-electric vehicle or equipment with charging infrastructure is replacing a diesel vehicle or equipment).
6. **Fleet Expansion:** Funding under this RFP cannot be used for the purchase of vehicles, to expand a fleet. Vehicle replacement projects are eligible for funding on the condition that all of the following criteria are satisfied:
    a. The replacement vehicle will continue to perform the same function and operation as the vehicle that is being replaced.
    b. The replacement vehicle will be of the same type and similar gross vehicle weight rating or horsepower as the vehicle being replaced.
7. **Vehicle Operation Requirements**: Original vehicle must have been in operation in North Carolina for the previous 12 months to be eligible. Funding under this RFP cannot be used for original and replacement vehicles that do not operate in the state of North Carolina for at least 70% of the time.
8. Third-party administrative costs will not be permitted as part of this mitigation.
9. No project is eligible to receive funding under the NC VW Program if the applicant is already receiving funding for the same project from another state's share of the VW Trust funds.
10. All replacement vehicles must be purchased and not leased.
11. No funds awarded under this RFP shall be used for paper studies or research projects.

VI. Proposal Application Review Process

A combination of evaluation factors will be considered during the proposal application review process. NCDEQ will consider the overall lifetime cost effectiveness and the potential for early implementation and completion of each proposed project. Project proposal applications will be selected for funding based

on a set of criteria reflecting funding priorities for the program. These factors will guide NCDEQ in giving priority to projects that best meet the overall goals of the NC VW Program. To properly compare projects, the proposal applications will be categorized by urban/suburban and rural based on the NC Rural Center Classification[7] found in Appendix A.

The NCDEQ will consider factors such as, but not limited to:

- **Lifetime Cost Effectiveness (VW$ funded per NOx tons reduced):** Lifetime cost effectiveness is based on applicant-provided information using the USEPA Diesel Emission Quantifier tool and if applicable, matching funds.
- **Lifetime NOx Emissions Reductions**: Lifetime NOx emission reduction calculation based on applicant-provided information using the USEPA Diesel Emission Quantifier tool.
- **Location of Project:** Number of VW subject diesel vehicles registered in project area.
- **Environmental Justice Areas:** Projects in environmental justice (EJ) areas and other communities that have historically borne a disproportionate share of the adverse impacts of air pollution from sources including, but not limited to transportation hubs/corridors, ports, rail yards, truck stops, airports, terminals, and bus depots, see Appendix B.
- **Co-Benefits:** Additional emission reductions beyond NOx emissions (e.g., PM 2.5, VOC, GHG and CO).
- **Sustainability of the Project:** Expected longevity of the funded equipment and additional long-term benefits.
- **Timeliness:** Ability to complete project within two years of award (e.g., project complete and providing emission reductions).
- **Useful Life of Vehicle/Equipment Replaced:** Vehicles/equipment with less than 3 years of useful life remaining will not be excluded but may score lower than those with 3 years or more of useful life remaining.
- **Other Selection Criteria:** Additional criteria employed as necessary for the selection of proposal applications (e.g., innovative technology or approaches).

Although cost-sharing/matching is not required as a condition of eligibility under this competitive grant process, NCDEQ will evaluate proposal applications based on a leveraging criterion. Leveraging is generally when an applicant proposes to provide its own additional funds/resources or those from third-party sources to support or complement the project they are awarded. Any leveraged funds/resources, and their source, must be identified in the proposal application. Leveraged funds and resources may take various forms.

Voluntary cost share is a form of leveraging. Voluntary cost sharing is when an applicant proposes to legally commit to provide contributions to support the project when a cost share is not required. Applicants who propose to use a voluntary cost share must include the contributions for the voluntary cost share in the project budget. If an applicant proposes a voluntary cost share, the following apply:

- A voluntary cost share may not be used on ineligible costs.
- The recipient may not use other sources of federal funds to meet a voluntary cost share unless the statute authorizing the other federal funding allows cost sharing.
- The recipient is legally obligated to meet any proposed voluntary cost share that is included in the approved project budget. If the proposed voluntary cost share does not materialize during grant

[7] https://www.nccommerce.com/blog/2015/07/09/rural-center-expands-its-classification-north-carolina-counties

performance, NCDEQ may reconsider the legitimacy of the award and take appropriate action as authorized.

VII. Project Scoring Criteria

A 110-point scale will be used to evaluate eligible proposal applications. Scores will be used to develop final recommendations. Proposal applications will be evaluated and ranked according to the following criteria:

Lifetime Cost Effectiveness: (VW$ funded per NOx tons reduced): Cost effectiveness is based on applicant provided information using the USEPA Diesel Emission Quantifier[8] and if applicable, matching funds. Under this criterion, projects are ranked, and points calculated from a maximum of 30 from most cost effective to least cost effective (i.e. $/amount of Lifetime NOx reduced). Urban/Suburban projects and Rural Projects will be ranked separately.	30
Lifetime NOx Emissions Reductions: Ranked highest to lowest; Lifetime NOx emission reduction calculation based on applicant-provided information using the USEPA Diesel Emission Quantifier tool. Under this criterion, projects are ranked, and points calculated from a maximum of 30 from highest emissions reductions to lowest. Urban/suburban projects and rural projects will be ranked separately.	30
Environmental Justice: See Appendix B for county scores and a detailed description of how county scores are determined.	15
County NOx and VW concentration: Number of registered subject VW vehicles and the mobile NOx emissions for a county? See Appendix C for county scores and a detailed description of how county scores are determined.	15
Vehicle Electrification Project	10
Bonus Points	
Project is located in a Historically Under-Resourced County[9]	10
Total Points Possible	**110**

[8] The USEPA Diesel Emission Quantifier is available at: https://cfpub.epa.gov/quantifier/index.cfm?action=main.home

[9] Historically under-resourced counties are counties that have an underserved population greater than 15% and are designated as a Tier 1 by the NC Department of Commerce as shown in Appendix D.

VIII. Reimbursement of Expenses

Grant payments will be disbursed as **reimbursements after the work is completed, verified and approved**. Verification will occur via site visits by NCDEQ staff and photographs supplied by the grantee verifying the scrappage of the original equipment/vehicle. Before reimbursement, awardees must submit the information listed below after project completion. After NCDEQ approval of the final documentation, NCDEQ will process the application for payment. Required documentation:

- A signed payment request, on grantee letterhead, for the amount to be reimbursed (a template will be provided on our webpage, https://deq.nc.gov/vw-settlement/forms.
- Copies of detailed invoices of all eligible project costs.
- Proofs of payment of all eligible project costs associated with the project;
- Evidence that the replaced vehicles have been rendered inoperable by cutting a 3-inch hole in the engine block of the engine and disabling the chassis by cutting the vehicle's frame rails completely in half which must be completed within six months of delivery of the new vehicle (see instructions on NCDAQ Form 001, Certificate of Destruction) provided on our webpage, https://deq.nc.gov/vw-settlement/forms.
- Submit delivery or registration documents showing the VINs and engine serial numbers for the new vehicles.
- Confirm that the project is completed, and the vehicle(s) is/are operating satisfactorily for the intended purpose.
- For all-electric vehicle replacements projects where charging infrastructure is part of the project, submit documentation for accompanying EV charging infrastructure:
    - Submit a photo of the EV charging infrastructure, including the charging station and any other associated auxiliary equipment; and
    - Certify that the EV charging infrastructure is fully operational.

IX. Reporting Requirements

Quarterly Reporting Requirement

All project award recipients will be required to submit quarterly reports on the status of their project to NCDEQ until the final project report is submitted. Quarterly reports must be submitted to NCDEQ within 14 days after the end of each reporting month (March 31, June 30, September 30, and December 31). Failure to submit required reports will result in NCDEQ suspending the acceptance of any new applications from the applicant. A template for the quarterly report will be provided on the website, https://deq.nc.gov/vw-settlement/forms.

Final Report Requirements

Grantees are required to submit a final project report to NCDEQ. A template for the final project report will be made available by NCDEQ on our webpage, https://deq.nc.gov/vw-settlement/forms.

X. Program Contact Information

Inquiries related to the project requirements, application, application requirements, and other aspects of this RFP should be directed to: Daq.NC_VWGrants@ncdenr.gov.

Appendix A: Urban/Suburban and Rural County Designations in North Carolina

The Rural Center has defined the counties in North Carolina based on population densities as either urban, suburban, or rural. The Rural Center uses the following definitions in classifying counties:

Rural: There are 80 counties with population densities of 250 people per square mile or less, according to 2014 U.S. Census population estimates. These counties are home to a little more than 4 million people (41% of the state population).

Regional city or suburban counties: There are 14 counties with population densities between 250 and 750 people per square mile. These counties account for 2.4 million people (25% of the state population).

Urban: There are six counties with population densities between 750 and 1,933 people per square mile. These counties account for 3.3 million people (34% of the state population).

Using the Rural Center classification for counties, urban counties account for the largest population of subject VW vehicles with 41% of the total. Rural counties account for 32% of the vehicles and regional city or suburban counties account for 27% of the VW vehicle population.

Table A-1 is a list of all 100 North Carolina counties with their designation based on the above definitions.

Table A-1: County Classifications in North Carolina

County Name	County Classification
Alamance	Suburban
Alexander	Rural
Alleghany	Rural
Anson	Rural
Ashe	Rural
Avery	Rural
Beaufort	Rural
Bertie	Rural
Bladen	Rural
Brunswick	Rural
Buncombe	Suburban
Burke	Rural
Cabarrus	Suburban
Caldwell	Rural
Camden	Rural
Carteret	Rural
Caswell	Rural
Catawba	Suburban
Chatham	Rural
Cherokee	Rural
Chowan	Rural
Clay	Rural
Cleveland	Rural
Columbus	Rural
Craven	Rural
Cumberland	Suburban
Currituck	Rural
Dare	Rural
Davidson	Suburban
Davie	Rural
Duplin	Rural
Durham	Urban
Edgecombe	Rural
Forsyth	Urban
Franklin	Rural
Gaston	Suburban
Gates	Rural
Graham	Rural
Granville	Rural
Greene	Rural
Guilford	Urban
Halifax	Rural
Harnett	Rural
Haywood	Rural
Henderson	Suburban
Hertford	Rural
Hoke	Rural
Hyde	Rural
Iredell	Suburban
Jackson	Rural
Johnston	Rural
Jones	Rural
Lee	Rural
Lenoir	Rural
Lincoln	Suburban
McDowell	Rural
Macon	Rural
Madison	Rural
Martin	Rural
Mecklenburg	Urban
Mitchell	Rural
Montgomery	Rural
Moore	Rural
Nash	Rural
New Hanover	Urban
Northampton	Rural
Onslow	Rural
Orange	Suburban
Pamlico	Rural
Pasquotank	Rural
Pender	Rural
Perquimans	Rural
Person	Rural
Pitt	Suburban
Polk	Rural
Randolph	Rural
Richmond	Rural
Robeson	Rural
Rockingham	Rural
Rowan	Suburban
Rutherford	Rural
Sampson	Rural
Scotland	Rural
Stanly	Rural
Stokes	Rural
Surry	Rural
Swain	Rural
Transylvania	Rural
Tyrrell	Rural
Union	Suburban
Vance	Rural
Wake	Urban
Warren	Rural
Washington	Rural
Watauga	Rural
Wayne	Rural
Wilkes	Rural
Wilson	Rural
Yadkin	Rural
Yancey	Rural

Appendix B: Environmental Justice Scoring

The Environmental Protection Agency defines environmental justice (EJ) 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." (US EPA). Historically, people of color and people of low-income, along with other vulnerable populations, have been disproportionately exposed to harmful pollutants.

Defining Potentially Underserved Populations and Environmental Justice Scores

To determine environmental justice (EJ) scores for the purpose of ranking and rating vehicles and projects, the following analysis was done at the block group level using the 2019 American Community Survey (ACS) five-year estimates. The ACS is a demographic survey conducted each year by the U.S Census Bureau to collect detailed demographic information. For this analysis, aggregated five-year data from the 2017 and 2019 surveys was used to increase reliability.

We imported, analyzed and aggregated the ACS data to determine a "percentage of underserved population" measure for each county. The percentage of underserved populations calculated for EJ project and vehicle scores was also used to determine inclusion in the Historically Under-Resourced County Outreach Program.

Percentages for the block group level, county level, and state level were calculated for the following two variables, "Race and Ethnicity" and "Poverty." After adding all county and state data to the block group data, we calculated the four variables utilized to identify potentially underserved block groups which included:

- Race and Ethnicity Compared to the State: ((Block group percent estimate for Non-white or Hispanic/Latino – State percent estimate for non-white or Hispanic/Latino)/ State percent estimate for non-white or Hispanic/Latino) * 100
- Race and Ethnicity Compared to the County: ((Block group percent estimate for Non-white or Hispanic/Latino – County percent estimate for non-white or Hispanic/Latino)/ County percent estimate for non-white or Hispanic/Latino) * 100
- Poverty Compared to the State: ((Block group percent estimate for poverty– State percent estimate for poverty)/ State percent estimate for poverty) * 100
- Poverty Compared to the County: ((Block group percent estimate for poverty – County percent estimate for poverty)/ County percent estimate for poverty) * 100

The current criteria that are used to determine potentially underserved populations is related to both poverty level within a block group and to race and ethnicity within a block group and is compared on both the county and the state level. To classify a block group as potentially underserved, it must meet both of the following criteria:

- The block group must have an estimated population in poverty that is at least a five percent increase from the state or county percent AND the block group must have an estimated population in poverty of at least 20%.
- The block group must have an estimated non-white or Hispanic population that is at least a ten percent increase from the state or county percent OR the block group must have an

estimated population of non-white or Hispanic residents that is greater than 50% of the total population of that block group.

After determining the percent underserved measure for each county, these percentages were ranked from highest to lowest and using natural breaks, 15 bins were created, and points were assigned accordingly. Statistically, utilizing natural breaks divides continuous values into clusters resulting in values that are grouped together in classes that are more like each other than to the values in any other class. See Table B-1 for a listing of these scores.

Table B-1: Final EJ Scores by County

County	NOx & VW Location Score	EJ Score
Alamance	8	6
Alexander	3	5
Alleghany	3	8
Anson	2	8
Ashe	3	3
Avery	3	4
Beaufort	4	8
Bertie	3	13
Bladen	3	11
Brunswick	7	3
Buncombe	11	4
Burke	5	7
Cabarrus	8	4
Caldwell	5	5
Camden	3	1
Carteret	5	3
Caswell	3	6
Catawba	8	5
Chatham	7	3
Cherokee	3	3
Chowan	3	6
Clay	3	5
Cleveland	5	9
Columbus	4	9
Craven	6	6
Cumberland	9	9
Currituck	4	1
Dare	4	3
Davidson	7	5
Davie	5	6
Duplin	5	11
Durham	10	8
Edgecombe	3	11
Forsyth	11	8
Franklin	4	6
Gaston	7	5
Gates	3	3
Graham	2	6
Granville	4	6
Greene	3	14
Guilford	11	8
Halifax	4	12
Harnett	7	2
Haywood	5	4

County	NOx & VW Location Score	EJ Score
Henderson	7	3
Hertford	3	14
Hoke	4	13
Hyde	2	9
Iredell	8	4
Jackson	4	8
Johnston	8	5
Jones	3	9
Lee	4	8
Lenoir	3	10
Lincoln	5	4
Macon	3	4
Madison	3	10
Martin	3	8
McDowell	4	4
Mecklenburg	14	6
Mitchell	3	4
Montgomery	3	7
Moore	7	3
Nash	5	7
New Hanover	9	6
Northampton	3	11
Onslow	8	3
Orange	9	4
Pamlico	3	2
Pasquotank	3	7
Pender	6	5
Perquimans	3	5
Person	3	5
Pitt	7	9
Polk	4	1
Randolph	7	5
Richmond	3	10
Robeson	6	15
Rockingham	4	6
Rowan	7	6
Rutherford	5	6
Sampson	4	11
Scotland	3	13
Stanly	4	2
Stokes	3	1
Surry	5	4
Swain	3	3
Transylvania	4	4

County	NOx & VW Location Score	EJ Score
Tyrrell	2	6
Union	8	3
Vance	3	9
Wake	15	3
Warren	2	14
Washington	3	11
Watauga	4	5
Wayne	6	9
Wilkes	5	4
Wilson	5	10
Yadkin	4	5
Yancey	3	7

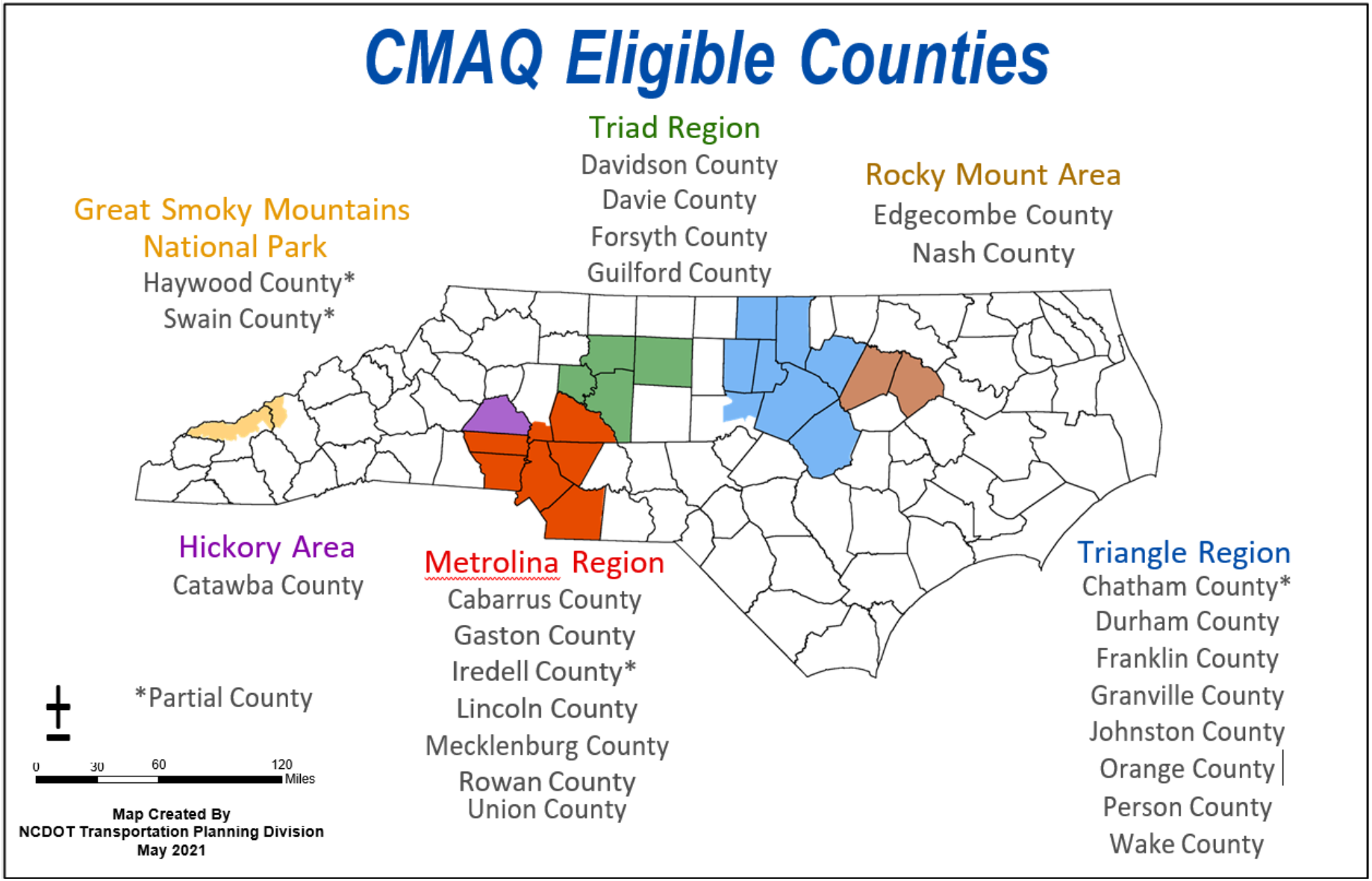
Appendix C: NOx and Volkswagen Vehicle Concentration Scores

To determine the NOx scores, North Carolina Mobile NOx estimates from the 2017 EPA National Emissions Inventory (NEI) were imported and then ranked from highest to lowest. Using natural breaks, 5 bins were created for NOx concentration levels and points were assigned accordingly.

To determine VW concentration scores, registered VWs from each county at the time of the consent decree were assessed for each county and ranked. Using natural breaks, 10 bins were created for VW concentration and points were assigned accordingly.

The points for "NOx" and "VW concentration" were then added to get a composite score for each county for a total of 15 possible points. See Table B-1 for a listing of these scores.

Appendix D: CMAQ Eligible Counties



Appendix E: Historically Under-Resourced Counties

Historically Under-Resourced Counties Outreach Program

Projects will be evaluated for potential benefits to under-served communities during the evaluation process. In order to ensure more communities are able to apply for funding, DEQ is developing an outreach program to help counties that historically do not have the resources to effectively identify eligible vehicles for grant programs and submit quality applications. Applications from these counties may also receive scoring bonuses.

Historically Under-Resourced Counties are those identified as *economically distressed* with the highest percentages of *underserved populations*.

Underserved populations are those that meet certain racial and poverty criteria, as determined by the DEQ Environmental Justice Program. Using economic criteria, a county's *economic distress* is defined and ranked by the NC Department of Commerce (commonly referred to as "County Tiers").

Combining these two data sets, 37 Historically Under-Resourced Counties were selected as follows:

- List all counties with an underserved population greater than 15%.
- Remove from the list, any Tier 2 or Tier 3 counties (next and least distressed counties).

These counties may be eligible for the maximum funding amounts allowed by the Volkswagen Mitigation Consent Decree based on applicant and equipment/vehicle fuel types. Counties eligible for program are listed in Table 3. The final list of counties was updated using new data from the 2020 Census. Priority will be given to applications in counties where an application was not submitted, or VW funding not awarded, in Phase 1.

Table 1: Eligible Historically Under-Resourced Counties

County Name		
Alexander		Martin
Anson		Nash
Bertie		Northampton
Bladen		Pasquotank
Burke		Randolph
Caldwell		Richmond
Caswell		Robeson
Cleveland		Rockingham
Columbus		Rowan
Cumberland		Rutherford
Duplin		Sampson
Edgecombe		Scotland
Graham		Tyrrell
Greene		Vance
Halifax		Warren
Hertford		Washington
Hoke		Wayne
Hyde		Wilson
Lenoir		

Appendix F: Estimated Emission Reductions

Estimated Emission Reductions

To get a sense of the magnitude of emission reductions that could be achieved by making investments a comparison of replacing transit buses with various fuel options, data is provided on a per vehicle basis. Example emissions estimates are shown in the tables below.

The estimated emissions for the transit bus replacement program are calculated for the different available fuel options. Table 1 below shows the lifetime estimated emissions of transit buses.

Table 1: Estimated Lifetime Emissions* for Transit Buses by Fuel Type***

Transit Bus Fuel Type	Lifetime NOx Emissions (short tons)	Lifetime $PM_{2.5}$ Emissions (short tons)	Lifetime HC Emissions (short tons)	Lifetime CO Emissions (short tons)	Lifetime CO_2 Emissions (short tons)	Estimated Cost (per vehicle)**
Electric	0.000	0.000	0.000	0.000	0.000	$850,000
Natural Gas	0.002	0.0007	0.005	1.075	68.97	$550,000
Propane	0.094	0.0001	0.002	0.077	68.97	$550,000
Diesel	0.055	0.0007	0.005	0.024	68.97	$500,000

* Includes only tailpipe emissions and not fuel distribution or power-generation related emissions.
** Estimated costs per vehicle fuel type is based on average 2021 model costs and are subject to change. The electric transit bus estimate includes estimated average cost for infrastructure of $50,000 for a non-overhead charger.
***Values were calculated using the EPA Diesel Emissions Quantifier (EPA-DEQ) on January 7, 2022 and may differ from previously calculated emission values due to updates in the EPA-DEQ.

Emission Reduction Calculations

The DEQ used the following methods and assumptions to calculate estimated emissions reductions for potential Phase 2 projects of the VW Settlement funding.

Heavy-Duty On-Road Vehicles

The DEQ used the EPA Diesel Emissions Quantifier (EPA-DEQ) to estimate emissions from heavy-duty on-road vehicles. The EPA-DEQ is a web-based, data-driven estimator that enables users to evaluate replacement projects and upgrade options for heavy-duty diesel engines. It does so by asking for inputs on project specifics, (e.g., fleet information, usage, upgrade, or replacement details). Using this information and EPA-approved data sources, the EPA-DEQ estimates annual and lifetime baseline (pre-upgrade) emissions, post-upgrade emissions reductions, and cost effectiveness of the project. Diesel emissions and reductions are estimated for fine particulate matter (PM2.5), nitrogen oxides (NOx), hydrocarbons (HC), carbon monoxide (CO), and carbon dioxide (CO2).

EPA-DEQ Parameters

Table 2 shows the parameters used for estimating the emissions for transit. The EPA-DEQ was used to estimate emissions for diesel, propane, natural gas, and electric transit buses. Table 3 shows the combination of vehicle types and fuels modeled. The DEQ used average values from Phase 1 projects. The DEQ ran the EPA-DEQ for one vehicle in each category.

Table 2: EPA-DEQ Parameters – Transit Buses

Predicted lifetime of vehicle	12 years
Model year of original vehicle	2008
Annual miles of old vehicle	44,782
Annual Fuel volume	6,131
Idling hour/year	340

Table 3: Vehicle and Fuel Type Combinations Modeled

Vehicle Type	Model Year	Fuel	Transit bus
Original	2008	ULSD (Diesel)	x
Replacement	2021	ULSD (Diesel)	x
Replacement	2021	CNG	x
Replacement	2021	All-Electric	x
Replacement	2021	Propane	x

Calculations

The EPA-DEQ outputs lifetime NOx emissions reduced in short tons per year.

Appendix G: Acronyms and Abbreviations

CNG	Compressed Natural Gas
CO	Carbon Monoxide
DERA	Diesel Emission Reduction Act
g/bhp-hr.	Grams per brake horsepower-hour
GHG	Greenhouse Gases
GIS	Geographic Information System
LNG	Liquid Natural Gas
LPG	Liquid Propane Gas
NCDAQ	North Carolina Division of Air Quality
NCDEQ	North Carolina Department of Environmental Quality
NOx	Oxides of Nitrogen
PM 2.5	Particulate matter 2.5 micrometers and smaller in diameter
RFP	Request for Proposals
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound
VW	Volkswagen
ZEV	Zero-Emissions Vehicle

Appendix H: Definitions[10]

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

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

Bi-fuel: an engine or motor vehicle that is capable of operating on gasoline or diesel fuel in addition to another type of fuel, such as natural gas or propane. Both fuels are stored on board and the driver can switch between the fuels. The vehicle is equipped with fuel tanks, fuel injection systems, and fuel lines for both fuels. Additional term defined by the state for purposes of administering this Program.

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

Diesel Gallon Equivalent (DGE): the amount of alternative fuel it takes to equal the energy content of one liquid gallon of diesel.

Engine Model Year: the "annual production period" for all models within an engine family of light-duty motor vehicles, heavy-duty motor vehicles and engines, and on-highway motorcycles begins either:

- when any vehicle or engine within the engine family is first produced; or
- on January 2 of the calendar year preceding the year for which the model year is designated, whichever date is later.

The annual production period ends either:

- When the last such vehicle or engine is produced; or
- on December 31 of the calendar year for which the model year is named, whichever date is sooner.[11]

Government: a state, local or federal government agency owning fleets purchased with government funds (including a school district, municipality, city, county, special district, transit district, joint powers authority, or port authority), or a tribal government or native village. The term 'State' means the several States, the District of Columbia, and the Commonwealth of Puerto Rico.

Government may include any of the following entities:

1. Public school districts.
2. Municipal governments and municipal authorities.
3. Other NC state agencies.
4. Tribal government agencies.
5. Local, regional or multi-state air quality or transportation organizations

[10] Source (unless otherwise noted): APPENDIX D-2 TO PARTIAL CONSENT DECREE MDL No. 2672 CRB (JSC) https://www.vwcourtsettlement.com/wp-content/uploads/documents/DOJ/Approved%20Appendix%20D-2.pdf

[11] US Code of Federal Regulations § 85.2304

6. Metropolitan or rural planning organizations, as defined by the U.S. Department of Transportation at 49 U.S.C. § 5303(b), that are located in North Carolina.

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

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

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

Infrastructure: the equipment used to enable the use of electric powered vehicles (e.g., electric vehicle charging station).

Model year (MY): the manufacturer's annual new model production period which includes January 1 of the calendar year, ends no later than December 31 of the calendar year, and does not begin earlier than January 2 of the previous calendar year. Where a manufacturer has no annual new model production period, model year means calendar year.

Original Equipment Manufacturer (OEM): the entity that originally manufactures the engine or the vehicle for sale. Additional term defined by the state for purposes of administering this Program.

Plug-in Hybrid Electric Vehicle (PHEV): 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.

Scrapped: 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.

Transit Bus: a class 4-8 vehicle that provide public transportation, which shall mean regular and continuing shared-ride surface transportation services that are open to the general public. Additional term defined by the state for purposes of administering this Program.

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