



Request for Proposals

Phase 2

Zero Emission Vehicle Infrastructure Program

Level 2 Charging Stations

State Agencies

GMS Program ID: NCDEQDAQ0010



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I. Request for Proposals (RFP) Timeline

- Release of RFP February 28, 2022
- PDF application available for reference February 28, 2022
- Webinar for new DAQ Grants Management System users March 7, 2022
- First Program RFP information session March 14, 2022
 - Information sessions will be online, and registration is required. Dates and times will be posted on our website, <https://deq.nc.gov/VWsettlement>.
- Application open in DAQ Grants Management System April 1, 2022
- Proposal applications due date May 31, 2022
- Proposal application evaluations June – July 2022
- Phase 2 project selections July – August 2022
- Grant awards announced August – September 2022

Timeline changes: The 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 RFP website at: <https://deq.nc.gov/VW-Level-2-StateAgency-RFP>.

II. Overview

Summary

The North Carolina Division of Air Quality (NCDAQ) in the North Carolina Department of Environmental Quality (NCDEQ) is soliciting proposals for participation in Phase 2 of the NC Volkswagen Settlement Mitigation Program. NCDEQ is allocating the full 15% (\$10,198,826) allowed in the VW State Trust Agreement for light-duty zero emission vehicle (ZEV) infrastructure projects outlined in the [NC Mitigation Plan](#). NCDEQ will allocate 70% (\$7,139,178) of the Phase 2 ZEV infrastructure allocation to DC Fast charging infrastructure projects and 30% (\$3,059,648) to Level 2 charging infrastructure projects. This Request for Proposals (RFP) has \$1,009,684 available for funding of new Level 2 charging stations for state agencies and state managed attractions. The primary goal is to increase use of ZEVs in place of gas-powered cars to mitigate nitrogen oxides, particulate matter, and greenhouse gas emissions in the state. To achieve that goal, the program will emphasize adding new ZEV charging infrastructure in underserved areas, extend the existing light-duty ZEV infrastructure across the state, encourage intrastate and interstate ZEV vehicle usage at North Carolina's diverse geographic, historic and tourist attractions and highlight the environmental benefits of ZEVs.

This RFP for the State Agency Level 2 ZEV Charging Infrastructure Program will assist interested state agencies and state managed attractions in applying for funds to install light-duty ZEV Level 2 charging infrastructure, as described in the North Carolina VW Mitigation Plan (deq.nc.gov/VWsettlement). This document includes information on who may apply for funding, the funding levels for this program, project eligibility, match requirements, activities eligible for funding, and other information that will help applicants plan their projects and submit complete proposals. Applications will be accepted for 90 days



after the release of this RFP. Applicants must apply for funding through the online DAQ Grants Management System (GMS). Applicants must register for access to the DAQ Grants Management System for access. Please see the instructions on our Grants Management System webpage, <https://deq.nc.gov/DAQ-grants-management>. Please note, the online application will not be available in the DAQ Grants Management System until April 1, 2022, a PDF version of the application will be made available on the program webpage for agency reference to prepare all required materials for the online application.

Eligible Applicants

NC State Government Agencies and state-maintained attractions. NC State Government Agencies includes state agencies, departments, institutions, public universities and community colleges. State-maintained attractions includes state parks, aquariums, museums, etc.

State agencies are subject to using contractors approved on the mandatory Statewide Term Contract 691A – Electric Vehicle Charging Station Equipment, Accessories Installation & Infrastructure.¹

Additionally, project applications can be submitted by public-private partnerships where the lead applicant represents a state agency or state-maintained attraction listed above.

Eligible Locations

Locations eligible for the State Agency Level 2 ZEV Charging Infrastructure Program funding include:

- a. Government-owned property
- b. Government-leased property with property site owner approval (leased property must have at least a minimum of five years remaining from date of project contract execution)
- c. State parks
- d. State museums and other state-maintained attractions

III. Funding

This RFP is for Phase 2 (2022 – 2024) of the NC VW Settlement Program and combines funding from initially planned Phase 2 and 3 with a total amount of \$1,009,684 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 maximum percentages of the total project costs in Table 1 for the cost to purchase and install zero emission vehicle Level 2 charging infrastructure for state agency projects. **DEQ reserves the right to partially fund projects.**

Funding Type

NCDEQ anticipates awarding a total of approximately \$1 million towards light-duty state agency Level 2 charging infrastructure projects for state agencies and state managed attractions in Phase 2. Applications will be prioritized by the urban-suburban/rural split described in the NC VW Mitigation Plan using the

¹ <https://files.nc.gov/ncdoa/pandc/Documents/StateTermContracts/STC691A/691A.pdf>



NC Rural Center² classification for counties, allocating a maximum of 68% (~\$686,585) of the funds for urban and suburban counties and a minimum of 32% (~\$323,099) for rural counties in Phase 2.

This is a reimbursement program and award recipients must provide their own funding to cover expenses as they are incurred. Grant applicants must include a demonstration that the applicant can cover the full cost of the project prior to approval. Selected projects will be reimbursed up to the amount awarded after the recipient submits acceptable documentation to show that eligible expenses have already been paid.

Cost Share Requirements

The NC Level 2 ZEV Charging Infrastructure Program will be available as a percentage of the total project costs. Table 1 outlines the maximum percentage reimbursable by project type. Funds can be applied to project costs directly associated to equipment acquisition, installation, operation, and maintenance (see **Section IV. How to Apply**, for a list of eligible and ineligible project expenditures). The final award amount will be determined by the maximum percent of total actual quoted project costs included with the application. **NCDEQ reserves the right to partially fund an application based on available funds.**

Table 1. Funding Amounts State Government-Owned Property

Project Type	Maximum % of Total Project Costs
Public Access, Networked	100%
Public Access, Non-networked	80%
No Public Access, Networked or Non-networked	60%

For public access projects chargers must be accessible during site/attraction business hours to the general public without restriction.

Project Period

ZEV Level 2 Charging applications must be approved by NCDEQ prior to project equipment purchase and installation. Following NCDEQ approval, the awardee must not start any work until a fully executed contract is in place between NCDEQ and the awardee.

Projects initiated prior to an application approval are not eligible for funding. Project initiation activities that may disqualify an application include ordering equipment, hiring a contractor or vendor to complete the project. Submittal of an application is not a guarantee of approval.

² <https://www.nccommerce.com/blog/2015/07/09/rural-center-expands-its-classification-north-carolina-counties>



IV. Program Requirements

Project Requirements

- Level 2 light-duty Electric Vehicle Supply Equipment.
- Minimum of 2 ports per project.
- One application per unique charging location (address).
- Projects must be installed by a qualified licensed professional according to all federal, state, and local rules, including applicable permitting and inspection requirements.
- Chargers must be maintained and operated for a minimum of five years from the date of project completion.
- Project installation costs incurred prior to the date of the application are not eligible (with exclusions for applicants that re-apply for projects previously approved).
- For networked chargers only: Level 2 charging stations must connect by wired Ethernet, Wi-Fi, or cellular connection (4G or newer). Networking allows for centralized management, administration, communication, diagnostics, and data collection.
- Award recipients will be required to submit annual charger utilization data for five years after project completion. See Reporting Requirements for more detail on reporting requirements.
- Level 2 ZEV infrastructure must be operational in North Carolina for a minimum of five years.
- Award recipients for public access projects will be required to register the location with the Alternative Fuels Data Center at:
https://afdc.energy.gov/fuels/electricity_locations.html#/station/new.

Site Requirements

- Charging sites must be located within the state of North Carolina to be eligible for funding.
- If the property/site is not state government owned, the applicant must provide a signed letter from the landowner indicating approval of the project.
- Projects must include at least one designated and clearly marked EV parking space per port.
- Public access sites must be clearly identified with signage that directs users to the site and appropriate parking spaces.
- Signage: Complies with all applicable local, state and /or federal laws, ordinances, regulations, and standards.
 - On-site signage for publicly accessible projects identifies to the approaching driver from any ingress, that the Host site has EV charging station(s), and the location(s) of the EV charging station(s). “Electric vehicle charging only” signs are required on each side of each charging station along with “electric vehicle charging only” stenciled graphics on each striped parking pad.
- Public access sites must be easily accessible and adequately lit.
- For public access projects chargers must be accessible during site/attraction business hours to the general public without restriction.

Accessibility

- Applicants who are required to provide handicapped accessible parking spaces within their parking area as required by the Fair Housing Act (42 U.S.C. 3601 et seq.), the 1991 or 2010



Americans with Disabilities Act Architectural Design Standards must meet the accessibility requirements for EV charging spaces as provided in this section.

According to the United States Department of Energy:

When designing ADA-compliant PEV charging stations, consider accessibility, ease of use, and safety for disabled drivers, including those using wheelchairs or other assistive equipment. Key considerations include ensuring adequate space for exiting and entering the vehicle, unobstructed access to the EVSE, free movement around the EVSE and connection point on the vehicle, as well as clear paths and close proximity to any building entrances.

(www.afdc.energy.gov/uploads/publication/WPCC_complyingwithADArequirements_1114.pdf).

Additional reference material regarding accessibility for public charging stations can be found on the Plug-in NC webpage (https://pluginncc.com/wp-content/uploads/2016/06/12-PEV_Planning_Toolbox_Accessibility.pdf).

Eligible ZEV Project Types

Light-duty Electric Vehicle Supply Equipment (EVSE): Level 2 charging equipment (or analogous successor technologies) located on state owned or leased property.

Eligible Expenditures

- Commercial grade Level 2 charging station infrastructure
- Conduit, cable/wiring, electrical service box disconnect addition
- Concrete or asphalt replacement
- Paint striping and stenciling of the station parking spaces
- Signage
- Bollards
- Permit costs
- Labor for installation (electrical and trenching)
- Shipping of equipment
- Networking charges (maximum of five years, if paid in advance prior to claim reimbursement request)-networked chargers only
- EVSE maintenance contracts (maximum of five years, if paid in advance prior to claim reimbursement request)

Ineligible Expenditures

- Residential grade Level 2 charging station infrastructure
- Purchasing, leasing or renting of real-estate for project
- Used, refurbished, remanufactured, or leased equipment
- Capital costs such as construction of buildings, parking facilities, etc.
- Any expenses incurred before the award is approved including applicant's expense for preparing the eligibility and cost proposals
- Bad debts, late payments, finance charges or contingency funds, interest, and investment
- Attorney fees
- Administrative costs
- Lobbying, lobbyists, and political contributions



- Mark-up on purchases and/or subcontracts
- Taxes, except sales tax on eligible equipment and expenses
- Activities addressing enforcement actions that involve a financial penalty
- DC Fast and Level 1 charging station infrastructure and equipment
- Hydrogen fuel cell vehicle supply infrastructure and equipment
- Maintenance costs not covered under EVSE warranty or service contract
- Electric service costs
- Replacement of existing Level 2 chargers that are operational.

Equipment Requirements

Level 2 charging stations must offer either one Society of Automotive Engineer (SAE) J-1772 connectors to charge one EV at a time (single port charger) or two SAE J-1772 connectors to charge two EVs at once (dual port charger). Powered by 240-volt alternating current, the stations must provide a minimum charge of 6.6 kW of power to provide up to 100 miles of travel in 3 to 4 hours. **The stations may be networked via communications protocol with smart charging controls.**

All charging station equipment must come with a minimum of a five-year warranty and meet the following minimum requirements for safety testing by a Nationally Recognized Testing Laboratory (NRTL) recognized by the Occupational Safety and Health Administration (OSHA). The equipment must be listed and labeled as required by North Carolina General Statutes Chapter 66, Article 4 – Electrical Materials, Devices, Appliances and Equipment, the National Electrical Code (NEC) Section 625.5 and be Federal Communication Commission (FCC) compliant.

Level 2 (240-volt alternating current) charging stations must be equipped with SAE J-1772 standard connector(s) that provide a minimum of 6.6 kW of charging power and shall be certified to one of the following options:

- Underwriters Laboratories (UL) UL 2594 (Standard for EV Supply Equipment),
- IEC (International Electrotechnical Commission) 61851-23, IEC 62196, and IEC 61000 Electric Motor Cars (EMC) standards. These charging stations must be certified (listed and labeled) with Electrical Testing Laboratories (ETL), or an equivalent NRTL certification. Supporting documentation must be provided.

The EVSE enclosure must be constructed:

- for use outdoors in accordance with UL 50E Standard for Safety for Enclosures for Electrical Equipment, Environmental Considerations, Type 3R exterior enclosure or equivalent,
- be capable of operating without any decrease in performance over an ambient temperature range of minus 22 to 122 degrees Fahrenheit with a relative humidity of up to 95%, and
- must incorporate a cord management system or method to eliminate potential for cable entanglement, user injury, or connector damage.

Payment Options:

- Networked Level 2 charging stations have the option either to require payment or not require payment from users. Payment options are at the discretion of the awardee who will operate and maintain the stations. Should payment be required to access and use the charging stations, it must be Payment Card Industry compliant to allow use of a credit or debit card. Stations may also offer additional payment methods including subscription methods, smart cards, or smart phone applications. Real-time pricing and fee information shall be displayed on the unit, payment screen or associated phone application.



V. 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 Request Application](#). Applicants must also complete and email the [State of North Carolina Substitute W-9 Form](#) to daq.NC_VWGrants@ncdenr.gov to get registered in the system. **Applicants not currently registered in the GMS should request access well before the application acceptance date.** The GMS contains tutorials on how to use the system, submitting applications and submitting claims. The application will not be viewable in the Grants Management System until April 1, 2022. A PDF version of the application will be made available on the program webpage for agency reference to prepare all required materials for the online application. **The Program ID in the DAQ Grants Management System for the Level 2 State Agency Program is NCDEQDAQ0010.**

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
4. Project Access Type
 - a. Publicly accessible
 - b. Not-publicly accessible (fleet charging)
 - c. Workspace (employee charging)
5. Number of ports and spaces
6. Itemized project quotes
7. Charging unit information
 - a. Manufacturer
 - b. Model
 - c. Charging capacity in kW
 - d. Warranty period
8. Identification of any additional rebates, grants, or other financial incentives applied for or received for project.

Applications, any 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 not be considered.** This application and any supplemental information provided will serve as the primary means by which all applications are evaluated and approved for funding.

This is a competitive application process. **To be considered for funding in Phase 2, completed proposal applications must be submitted in the GMS no later than 11:59 p.m. Eastern Time on May 31, 2022.** If you have any questions about this proposal application, please contact NCDEQ at daq.NC_VWGrants@ncdenr.gov with subject title line: "Level 2 State Agency Program RFP" prior to submitting your proposal application and well in advance of the deadline to submit.



Projects initiated prior to submitting a proposal application are not eligible for funding. Project initiation activities that may disqualify a proposal application include ordering equipment, hiring a contractor or vendor to complete the project. Submittal of a proposal application is not a guarantee that a proposed project will be funded.

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. If, after two years, a project has not been completed, funds will no longer be guaranteed for the project and the applicant will need to reapply. **State contract terms and conditions are final and not subject to negotiation.**

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.



VI. Project Scoring Criteria

A 100-point scale will be used to evaluate eligible proposal applications. Scores will be used to develop final recommendations. Urban/suburban projects and rural projects will be grouped separately. Proposal applications will be evaluated and ranked according to the following criteria:

Cost Effectiveness (VW\$ funded per kW charging rate * number of charging ports): cost effectiveness is based on applicant provided information and if applicable, matching funds. Under this criterion, projects are ranked, and points are calculated and assigned incrementally based on rank from a maximum of 30 for the most cost effective to least cost effective (i.e. \$/kW charging rate * number of charging ports).	30
Likelihood of Use: Based on applicant answers. <ul style="list-style-type: none"> Has the applicant demonstrated a significant need for the charging stations? Has the applicant conducted an employee survey to gauge interest/demand for charging stations? 	10
Project Readiness: Based on applicant answers. <ul style="list-style-type: none"> To what extent are the key participants in the project (site, equipment provider, installation sub-contractors, operator) identified and committed to the project? Has the site been identified? Is the site ready for construction or is there a viable make-ready plan in place? How soon does the applicant propose to install and make operational the station or stations? Is the proposed timeline sensible, reasonable and likely to be met? 	10
Long-term Sustainability: Based on applicant answers. <ul style="list-style-type: none"> Has the applicant developed an internal workplace charging management policy that governs access, security, usage, and other issues? <ul style="list-style-type: none"> Access to EVSE Security of equipment Administration of EVSE operation and maintenance 	10
Environmental Justice <ul style="list-style-type: none"> See Appendix B for county scores and a detailed description of how county scores are determined in Appendix D. 	15
County NOx and VW concentration: Number of registered subject VW vehicles and the mobile NOx emissions for a county? <ul style="list-style-type: none"> See Appendix B for county scores and a detailed description of how county scores are determined. 	15
Project is in a Historically Under-Resourced County ³	10
Total	100

³Historically 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 C.

VII. Reimbursement Process

Grant payments will be disbursed as **reimbursements after the work is completed, verified, and approved**. Verification will occur via site visits by NCDEQ staff to photograph the completed installation. Evidence of a minimum five-year warranty for the station equipment and a service contract to provide annual maintenance for five years will be required prior to payment disbursements. Requests for reimbursement can occur after each individual station is installed or after all stations are installed for multi-station projects. 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 letterhead, for the amount to be reimbursed (a template will be provided on the website, <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.
- Photos of each installed EVSE unit (one photo of each EVSE unit and one photo of each EVSE unit's serial number).
- Certification that the station infrastructure is fully operational
- Proof of charging station equipment warranty and a maintenance plan and
- Payee contact information for payment (form provided).

All EVSE station installation work must be completed by end of contract date. All documentation required for reimbursement should be completed and submitted to the NCDEQ as soon as possible, but no later than the date specified in the contract with NCDEQ.

NCDEQ may contact the authorized contract or project manager for clarification and/or supplemental information to process a reimbursement request. Please ensure the contact information you provide is accurate. Applicants will have 10 business days to respond to any such requests.

VIII. 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

Award recipients are required to submit a final project report to NCDEQ with their claim reimbursement request. A template for the final project report will be made available on the website, <https://deq.nc.gov/vw-settlement/forms>.



Annual Charging Station Utilization Reporting Requirements

All award recipients are required to submit EVSE usage data to NCDEQ for the previous 12 months on January 30th of each consecutive year for a five-year period after installation of the charging station(s). Annual reports will be submitted to NCDEQ by January 30th each year for five years. Failure to submit annual reports is considered a violation of the terms and conditions of the signed contract. Once the awardee corrects the failure to submit annual report the suspension will be lifted.

The usage data submitted to NCDEQ will identify the previous 12 months of EVSE utilization data. The annual reports must include but is not limited to the following information for each EVSE:

- Location information: site name, EVSE ID number, address, city, zip, county,
- Number of charging events,
- Energy Consumed (average per session and annual total),
- Percent time with EV connected and
- Percent downtime (time when station is unavailable due to routine maintenance or repair).

The EV Utilization Annual Report template is available on the NC VW Settlement webpage, <https://deq.nc.gov/vw-settlement/forms>. The report submittal shall be in either CSV or XLS format. EVSE vendor portal access for DEQ to download charger data is also an acceptable format. These reports must be uploaded as an attachment in the DAQ Grants Management System for your application. NCDEQ will notify award recipients of changes to the annual report template submittal process 90 days prior to the required submittal. Alternatively, the awardee's vendor may be able to grant NCDEQ staff access to their portal to download charger usage data in lieu of submitting the annual reports.

IX. 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

County Name	County Classification
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

County Name	County Classification
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.

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

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: 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 C-1. 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 C-1: Eligible Historically Under-Resourced Counties

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

Appendix D: NO_x and Volkswagen Vehicle Concentration Scores

To determine the NO_x scores, North Carolina Mobile NO_x estimates from the 2017 USEPA National Emissions Inventory (NEI) were imported and then ranked from highest to lowest. Using natural breaks, 5 bins were created for NO_x 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 “NO_x” 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 E: Acronyms and Abbreviations

ADA	Americans with Disabilities Act
GIS	Geographic Information System
EVSE	Electric Vehicle Supply Equipment
FCC	Federal Communications Commission
EMC	Electric Motor Cars
ETL	Electrical Testing Laboratories
EV	Electric Vehicle
IEC	International Electrotechnical Commission
kW	Kilowatt
NCDAQ	North Carolina Division of Air Quality
NCDEQ	North Carolina Department of Environmental Quality
NEC	National Electrical Code
NRTL	Nationally Recognized Testing Laboratory
NO _x	Oxides of Nitrogen
OSHA	Occupational Safety and Health Administration
PEV	Plug-in Electric Vehicle
RFP	Request for Proposals
SAE	Society of Automotive Engineer
UL	Underwriters Laboratories
USEPA	United States Environmental Protection Agency
VW	Volkswagen
ZEV	Zero-Emissions Vehicle

Appendix F: Definitions

AC Charging: the majority of ZEV charging is done with AC voltage at Level 1 (120 volts or normal household current) or Level 2 (240 volts or an electric dryer power equivalent). AC charging is typically more cost effective for the equipment and installation and takes advantage of longer dwell times to provide lower power to a ZEV over a longer period of time. AC charging is an excellent solution for residential, workplace, multi-unit dwelling and other longer-term parking situations like hotels and municipal or airport parking garages.

DC Fast Charging: direct current charging for electric vehicles allows for higher charging speeds, as DC current can be supplied directly to the electric vehicle's battery at power levels normally higher than AC charging. The higher the DC power supplied, the faster the electric vehicle can be charged, provided the vehicle is designed to handle such power.

CCS (Combined Charging System): a DC fast charging protocol that is SAE certified and featured on vehicles produced by GM, BMW, Volkswagen Group, Ford and a number of other automakers headquartered in Europe and the United States. The "combined" term designates the CCS capability to incorporate the Level 2 (J1772 standard) plug and DC fast charging connector into the same larger plug.

Government: a North Carolina state government agency, institution, or attraction supported by state funds.

Government may include any of the following entities:

1. NC state agencies,
2. NC public universities,
3. NC public community colleges,
4. NC state parks and other state operated attractions

Level 2 Charging: a form of AC charging that provides 240V like (an electric dryer or oven uses). It goes through a box and a cord that improves safety by waiting to send power to the plug until it is plugged into an EV. Level 2 allows for a wide range of charging speeds, up to 19.2 kW or about 70 miles of range per hour of charging.

Plug-in Electric Vehicle (PEV): a vehicle that can be powered by an electric motor that draws electricity from a battery and is capable of being charged from an external source. A PEV includes both a vehicle that can only be powered by an electric motor that draws electricity from a battery (all-electric vehicle) and a vehicle that can be powered by an electric motor that draws electricity from a battery and by an internal combustion engine (plug-in hybrid electric vehicle).

Port: the connector at the terminal end of a station's charging cord.

Zero Emission Vehicle (ZEV): under Appendix C of the Volkswagen Settlement Consent Decree, the following three vehicle types are considered Zero Emission Vehicles:

1. An on-road passenger car or light-duty vehicle, light-duty truck, medium-duty vehicle, or heavy-duty vehicle that produces zero exhaust emissions of all of the following pollutants: non-methane organic gases, carbon monoxide, particulate matter, carbon dioxide, methane, formaldehyde, oxides of nitrogen, or nitrous oxide, including, but not limited to, battery electric vehicles (“BEV”) and fuel cell vehicles (“FCEV”);
2. An on-road plug-in hybrid electric vehicle (“PHEV”) 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 or
3. An on-road heavy-duty vehicle with an electric powered takeoff.

ZEVs do not include: zero emission off-road equipment and vehicles; zero emission light rail; additions to transit bus fleets utilizing existing catenary electric power; or any vehicle not capable of being licensed for use on public roads.