

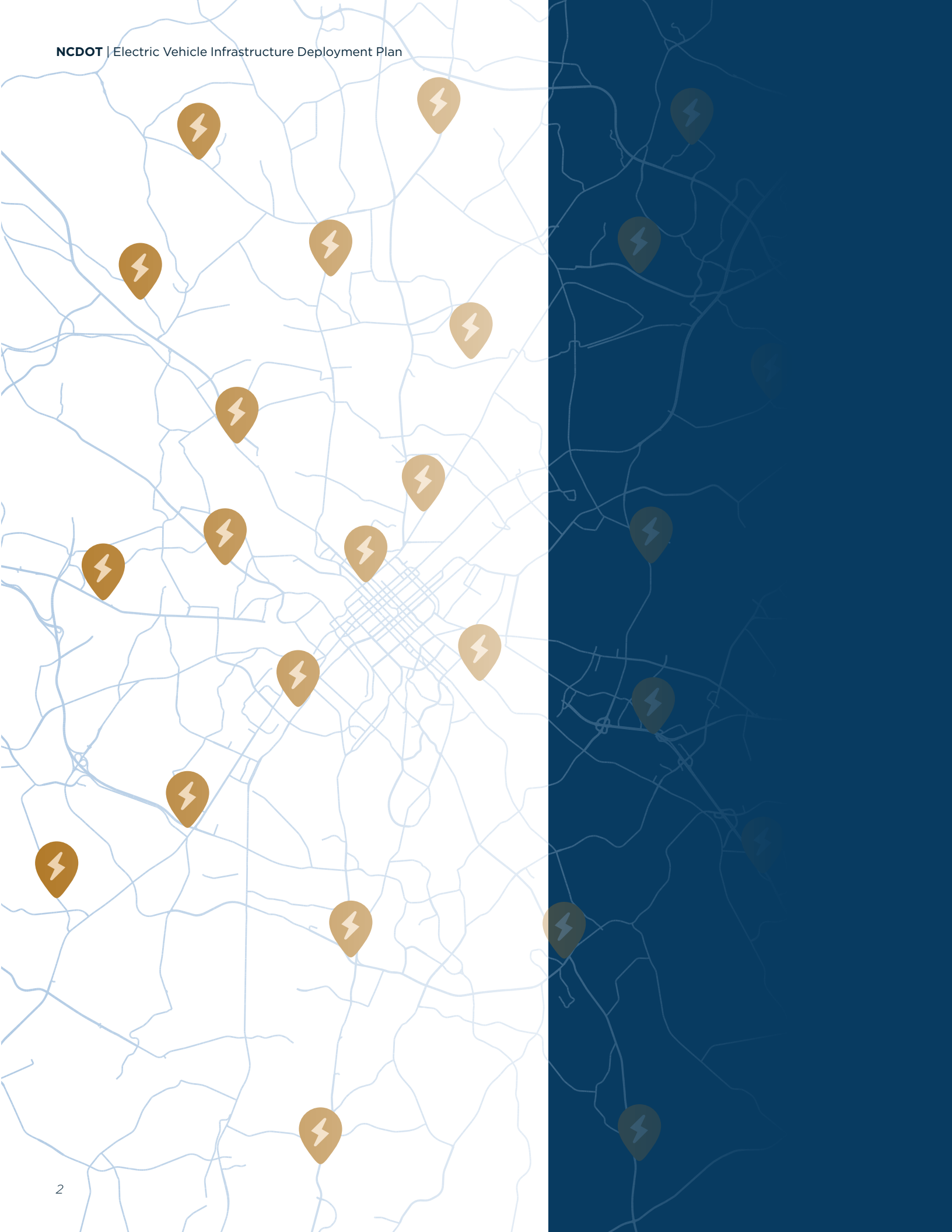


NORTH CAROLINA

Electric Vehicle Infrastructure Deployment Plan

August 1, 2022





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01

Introduction

The North Carolina Electric Vehicle (EV) Infrastructure Deployment Plan (Plan) is part of the federal National Electric Vehicle Infrastructure (NEVI) program. The program's purpose is to expand access to convenient, reliable, affordable and equitable electric vehicle charging. The program will:

- Accelerate equitable adoption of EVs, including for those who cannot reliably charge at home.
- Reduce transportation-related greenhouse gas emissions and help put the U.S. on a path to 50 percent reduction in economy-wide net greenhouse gas pollution by 2030 (compared to a 2005 baseline) and net-zero emissions by 2050.
- Position U.S. industries to lead global transportation electrification efforts and help create family-sustaining jobs that cannot be outsourced.

The North Carolina EV Infrastructure Deployment Plan also advances statewide goals for clean transportation and EV adoption. In January of 2022, Gov. Roy Cooper signed Executive Order (EO) 246, "North Carolina's Transformation to a Clean, Equitable Economy." The goals of EO 246 are to:

- Reduce economy-wide greenhouse gas emissions to at least 50 percent below 2005 levels by 2030 and achieve net-zero emissions no later than 2050.
- Increase the number of registered, zero-emission vehicles (ZEVs) to at least 1,250,000 by 2030 and increase the sale of ZEVs so that 50 percent of in-state sales of new light-duty vehicles are zero-emission by 2030.

To meet both federal and state objectives, all North Carolinians and especially historically underserved communities will need access to publicly available EV chargers and zero-emission forms of transportation. The North Carolina EV Infrastructure Deployment Plan is the state's proposed roadmap to maximize the NEVI Formula Program investment to support an equitable and swift transition to zero-emission vehicles. **This plan will continue to evolve based on feedback from ongoing and future public engagement opportunities.**

PHASE 1: AFC CHARGING



PHASE 2: COMMUNITY-BASED CHARGING



Important First Year Program Schedule Milestones

In North Carolina, NEVI program funds will be administered by the North Carolina Department of Transportation (NCDOT). The NEVI program requires each state to submit an annual EV Infrastructure Deployment Plan. This plan satisfies this requirement for fiscal year (FY) 2022.

Each state plan must be reviewed by the Joint Office of Energy and Transportation (Joint Office) and approved by the Federal Highway Administration (FHWA) before NEVI funds can be distributed to a state. Each year during the five-year program, the Plan will be updated to document program progress in North Carolina, outline new priorities based on public engagement, and meet NEVI program requirements related to reporting.

Table 1 highlights important schedule milestones for the first fiscal year of the North Carolina NEVI Program.

TABLE 1. KEY DATES FOR FY22

Anticipated Date	Milestone
May to July 2022	Development of Plan
August 2022	Plan Submitted to Joint Office
September 2022	Plan to be Approved by FHWA
Fall 2022	Public Engagement (Phase 1)
Winter 2022/2023	Publish Solicitation for Phase 1 Group 1
Spring 2023	• Award Contracts for Phase 1 Group 1
	• Public Engagement for Phase 1 Group 2
	• Public Engagement for Community-based Discretionary Grant Program



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Plan Vision and Goals

North Carolina has demonstrated a long-standing commitment in leading the transition to a clean energy economy that benefits the entire state and especially underserved communities. As part of this commitment, NCDOT is currently developing the North Carolina Clean Transportation Plan (NCCTP) to equitably decarbonize the transportation sector through a variety of strategies, including expanding access to electric vehicles. The NEVI program directly supports these broader objectives through a goal of expanding equitable access to a growing network of publicly accessible EV chargers.

In January 2022, Governor Cooper issued Executive order No. 246 (EO 246) establishing science-based goals to reduce statewide greenhouse gas emissions 50% by 2030 compared to 2005 levels and achieve net-zero emissions by 2050. The order also directed numerous actions to achieve the goals in a manner that centers on environmental justice and maximizes public health and economic benefits for North Carolinians across the state, especially in underserved communities.

The executive order also directed the NCDOT to develop a Clean Transportation Plan (NCCTP) to outline strategies to achieve the order's EV-related goals:

- Increase the total number of registered, zero-emission vehicles to at least 1,250,000 by 2030
- Increase the sale of zero-emission vehicles so that 50 percent of in-state sales of new light-duty vehicles are zero-emission by 2030

This EV Infrastructure Deployment Plan will be developed in coordination with the NCCTP to help achieve the clean transportation priorities. Both plans aim to increase EV usage in the state and emphasize the importance of environmental justice and equity as the state works to achieve this goal.

This plan will also use NEVI program formula funding in a cost-efficient way that creates a reliable and accessible public EV charging network. The plan will have two phases. **Phase 1**, in accordance with NEVI program guidance, will build out EV charging stations every 50 miles along the Alternative Fuel Corridors (AFCs). The priority for this phase is interstate and regional travel. When the AFCs are fully built out, **Phase 2** will focus on community-based charging. The priority for this phase will be working with stakeholders to expand local access to reliable public EV charging.



Executive Order No. 246 established new goals for the state to reduce greenhouse gas emissions 50 percent by 2030 compared to 2005 levels and achieve net-zero emissions by 2050.

Proposed North Carolina NEVI Program Goals

These proposed program goals will be refined according to feedback from public and stakeholder engagement.



Build an easily accessible EV charging network

As part of the plan, corridors will be built out in segments to be immediately useful for travel and priority will be given to corridors which do not have existing chargers. As EV adoption and deployment grows in North Carolina, the State will work with stakeholders to continue creating a network of EV chargers that are accessible and connected.



Increase overall network reliability

Through data collection requirements in the solicitation process, various performance metrics will be required to ensure the charging infrastructure is operational at least 97 percent of the time. The charger locations and real-time operational status will be available to drivers for seamless trip planning.



Ensure equitable location of EV chargers, particularly in historically disadvantaged communities

For the entire five-year program, disadvantaged communities and rural areas of the state will be prioritized for EV charging infrastructure deployment. Early and thorough engagement with community leaders and stakeholders will be necessary to ensure chargers are installed to meet the needs of communities that have been historically underserved.



Expand access to economic and workforce development opportunities

A portion of the North Carolina NEVI program will focus on jobs skills training as well as business development investments to develop and train local workers, particularly individuals from historically underserved communities, in Electric Vehicle Supply Equipment (EVSE) construction and maintenance.



Reliability during emergency events

This plan prioritizes implementing EV infrastructure along evacuation routes to ensure safe evacuations in the event of emergencies.



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Public Engagement

Public engagement will be integral to the North Carolina NEVI program's success. The purpose of this section is to provide a blueprint for public involvement over the five-year program. This blueprint will guide the process while remaining flexible enough to allow engagement to evolve over the five-year program.

The public engagement goals for this plan are:

- To provide the public with complete, timely, and frequent access to information.
- To create opportunities for the public to inform overall structure and facilitation of the program, including prioritization of funding.
- To ensure that public input is heard, acknowledged, and incorporated into the plan as appropriate.
- To ensure public awareness of the opportunities, challenges and considerations with program implementation.
- To engage local communities, specifically historically underserved communities and communities that do not have adequate access to charging.



NCDOT intends to utilize the strategies outlined in the [statewide public involvement plan](#) to ensure quality, consistency and compliance throughout NCDOT’s public involvement efforts. Public engagement activities for NEVI will include in-person and virtual public meetings as well as surveys, a program website, social media and regular reporting. Each of these activities is described briefly below.



- **Public Information Sessions** – NCDOT will host regular virtual public information meetings to provide information on the NEVI program. The purpose of these meetings is to share updates about ongoing program implementation as well as business and workforce development opportunities associated with the program.



- **Public Listening Sessions** – In addition to information sessions, NCDOT will host in-person public listening sessions to receive specific input from the public about the NEVI program. To maximize opportunities for citizen participation, meeting locations and times will be selected to ensure geographic coverage and accessibility.



- **Educational Activities** – In partnership with Clean Cities coalitions and other organizations, NCDOT will conduct educational activities throughout the state. These activities will take place at community events, such as the North Carolina State Fair or EV-promotional events like ride and drive events. Additionally, NCDOT will partner with other government partners like the N.C. Community College System, UNC System Office, N.C. Department of Commerce, and NCDOT Office for Civil Rights On-the-Job Training and Supportive Services and Business Opportunity and Workforce Development units.



- **Surveys** – Online surveys will be used to identify needs, opportunities, and priorities for EV infrastructure. Surveys will be advertised via geo-targeted social media ads and distributed via NCDOT and partner organizations’ websites. Each survey will offer the ability to be translated into multiple languages commonly spoken in North Carolina.



- **Webpage** – NCDOT has created a webpage devoted to the NEVI program in North Carolina. The webpage will serve as the central repository for information about the program, including surveys, procurement documents, reports and upcoming events. The webpage will also provide an additional opportunity for the public to submit questions or provide feedback.



- **Social Media** – Social media content and a social media schedule will be developed to share information about the NEVI program and create dialogue and awareness.



- **Issue Tracking and Summary Report** – The primary purpose of public engagement is to inform the public and to understand and respond to community priorities. Input and progress will be documented regularly over the five-year program. At a minimum, NCDOT will include the feedback in its annual NEVI plan update to report progress and communicate priorities for the upcoming fiscal year.

North Carolina NEVI Program Public Engagement Strategy

Robust public engagement is a critical component to the success of North Carolina's EV charging infrastructure deployment strategy, including the deployment of NEVI funds. NCDOT has existing relationships with many local and statewide organizations and intends to continue to foster new relationships with partners to expand engagement into local communities, specifically those that have previously been underserved.

Through the NCCTP stakeholder process and other targeted outreach, NCDOT has had preliminary discussions with key stakeholders during the development of the NEVI plan. This includes outreach to:

- Clean Cities coalitions
- Environmental Advocates
- Metropolitan and Rural Planning Organizations
- Minority and women-owned small businesses
- Retail membership associations
- State agencies: N.C. Department of Environmental Quality, N.C. Department of Commerce, N.C. Department of Agriculture, N.C. Utilities Commission
- Utilities: Investor-owned utilities and electric membership cooperatives

NCDOT plans to continue stakeholder outreach with key partners and expand public engagement. A tentative public engagement schedule has been developed for the North Carolina NEVI program. Specific meetings and public involvement activities are approximate and subject to change.

TABLE 2. PUBLIC ENGAGEMENT DATES

Anticipated Date	Milestone
Jan - July 2022	NCCTP Stakeholder Engagement (see next page) Targeted NEVI Outreach to Key Partners Launch NCDOT NEVI Webpage and Initial Survey
August 2022	Plan Submitted to Joint Office
Fall 2022	Virtual Public Information Sessions Targeted In-person Listening Sessions Educational Events, Surveys, Community events
Winter 2022/2023	Development and Public Review of Phase 1 Solicitation Virtual Public Information Session for Phase 1 Solicitation Publish Solicitation for Phase 1 Group 1
Spring 2023	Award Contracts for Phase 1 Group 1 Public Engagement for Phase 1 Group 2 Public Engagement for Community-based Discretionary Grant Program
Fall 2023 - Summer 2026	Virtual Public Information Sessions Regional Listening Sessions and In-person Events Educational Activities in Partnership with Community Organizations

NEVI Coordination with North Carolina Clean Transportation Plan (NCCTP)

The NCCTP is a year-long planning effort to develop goals and strategies for a long-term path to a clean transportation future. The plan is expected to be completed in April of 2023 and will serve as the roadmap for North Carolina's clean transportation future. The NEVI program supports the NCCTP's long-term goals by investing and accelerating implementation of the publicly accessible EV charging network.

The NCCTP includes extensive statewide engagement with a variety of stakeholders.

To date:

- **Over 1,000 people have completed the initial NCCTP survey**
- **Over 200 stakeholders are participating across five technical stakeholder groups**
- **NCCTP work groups are Light-Duty Zero-Emission Vehicles, Medium and Heavy-Duty Zero-Emission Vehicles, Fleet Transition, Vehicle Miles Traveled (VMT) Reduction, and Clean Transportation Infrastructure**

NEVI program engagement will continue to be coordinated to support ongoing NCCTP implementation. NEVI and the NCCTP share the mutual goals of supporting the growth of EVs on North Carolina's roadways.

The Clean Transportation Infrastructure Work Group in particular is focused on EV and alternative fuel infrastructure. Below is a list of the agencies, organizations, and companies participating in this work group.

- Advanced Energy Economy
- Alliance for Automotive Innovation
- Alliance for Transportation Electrification
- Associate Public Policy
- BETTY (TLG-Alpha)
- Blue Ridge Energy
- Boss Energy
- Brunswick EMC
- Centralina Clean Fuels Coalition
- Chargepoint
- City of Hendersonville Environmental Sustainability Board
- City of Kannapolis
- City of Raleigh
- City of Wilmington
- Cyclum Renewables
- Dominion Energy
- Duke Energy
- Enviro Spark Energy
- Four County EMC
- Generation180
- Haywood EMC
- High Country RPO
- HipHop Caucus
- Infosyarchitecture, LLC
- Institute for Transportation Research and Education (ITRE)
- International Brotherhood of Electrical Workers
- Koulomb
- Landis
- Metro Mayors
- N.C. Auto Dealers Association
- N.C. Clean Energy Technology Center
- N.C. Conservation Network
- N.C. Department of Administration
- N.C. Department of Environmental Quality
- N.C. Department of Transportation
- N.C. Governor's Office
- N.C. Justice Center
- N.C. Sustainable Energy Association
- NCEMC
- Piedmont Electric
- Pitstop for the Birds
- PlugIn NC
- PowerSmiths Socomec Group
- Rivian
- Roanoke Electric Cooperative
- Schneider Electric
- SELC
- Sheetz
- Sierra Club
- Southeast Energy Efficiency Alliance (SEEA)
- Stewart
- Strategic International
- Sunrun
- Surry Yadkin EMC
- Triangle J Council of Government
- Volvo
- Whitman, Requardt & Associates



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State Agency Coordination

Interagency coordination will be an integral part of North Carolina's path to success for the NEVI program. The NCDOT will lead NEVI program coordination in North Carolina and work closely with other agencies to ensure all elements of the program are implemented efficiently and effectively in accordance with federal and state requirements, as well as community priorities.

Coordination with Other State Agencies

NCDOT will be the lead agency administering the NEVI program. Responsibilities include receiving funds from the federal government, managing program administration, ensuring robust public engagement, and overseeing program compliance with federal and state requirements.

NCDOT will work closely with many state agencies to ensure the coordination of EV charging deployment efforts. In particular, NCDOT will work with the North Carolina Department of Environmental Quality (NCDEQ) which includes the N.C. Division of Air Quality (NCDAQ) and the State Energy Office (NCSEO). NCDAQ leads the North Carolina VW Settlement program and has established a successful grant program for EV charger infrastructure deployment. NCDOT will use best practices from the VW Settlement program, as well as the program’s stakeholder list, to build partnerships for NEVI program implementation.

NCDOT has been reviewing the NCDAQ VW Settlement submission and review process as a best-practice model to use as a starting point for the NEVI grant management process. NCDOT will customize the use of the state’s grant management system for proposal submission as well as the review process and scoring criteria – including scoring bonuses for applications from historically underserved counties - for approval of grants. The NCDAQ team has also established an extensive outreach program, specific to underserved counties. This outreach program will be used and tailored to the NEVI program.

NCDOT has also worked closely with NCDEQ’s State Energy Office (NCSEO) to coordinate opportunities for EV charging infrastructure investment through the State Energy Program and other Department of Energy (DOE) funding opportunities. This coordination will continue with the NEVI program. These include the DOE funding available through IJJA that would accelerate the transition to clean energy through investments in transmission, distribution, and resilience.

NCDOT has also met with the North Carolina Utilities Commission (NCUC) and will coordinate with utility partners across the state, including the state’s regulated utilities, electric cooperatives, and municipal utilities. The focus will be on electrical grid investment coordination to support public EV charging stations across the state.

Lastly, NCDOT has consulted with and will continue to work closely with other state agencies as the program moves into NEVI station deployment strategies. These include the N.C. Department of Information Technology (NCDIT) on cybersecurity, data integrity, and privacy, the N.C. Department of Commerce (NCDOC) on economic development and workforce training opportunities, and the N.C. Department of Administration (NCDOA) on procurement.

NCDOT will create an interagency steering committee for the NEVI program as well as any future EV charging infrastructure programs to coordinate program administration. The committee will review all applications (for NCDOT and NCDEQ programs) to ensure that the state deployment is being done in a strategic and coordinated way. This committee will build off current work of the NCCTP Clean Infrastructure work group and include representatives from the following state agencies:

- N.C. Governor’s Office – Environmental Justice Lead
- NCDOT – Planning Division
- NCDOT – Office of Civil Rights
- NCDEQ - State Energy Office
- NCDEQ - Division of Air Quality
- N.C. Department of Commerce
- N.C. Department of Administration
- N.C. Department of Information Technology
- N.C. Utilities Commission

Coordination with Neighboring States

When developing the plan for building out EV infrastructure in North Carolina, interstate travel has been a large consideration. Due to the nature of this travel, it has been important to coordinate with bordering state agencies to develop EV charging station plans that overlap at shared border locations. At these border locations, considerations for other states' existing EV stations have been included in the planning of the 50-mile EV charging station build out along AFCs. As these nearby states develop their own NEVI plans, further coordination will ensure adequate station spacing at state borders.

U.S. - Made Supply Equipment

NCDOT is prepared to adhere to Buy America requirements following guidance of the FHWA and the Joint Office for the NEVI program. However, NCDOT also asks for continued focus on providing a flexible definition of Buy America. Given supply chain disruptions and the current marketplace production of EV chargers, using the current guidance for Buy America may delay deployment of infrastructure, limit competition, and increase program costs. NCDOT will continue to work with FHWA, DOE/DOT Joint Office, and state agency partners to comply with the latest program guidance over the five-year program.





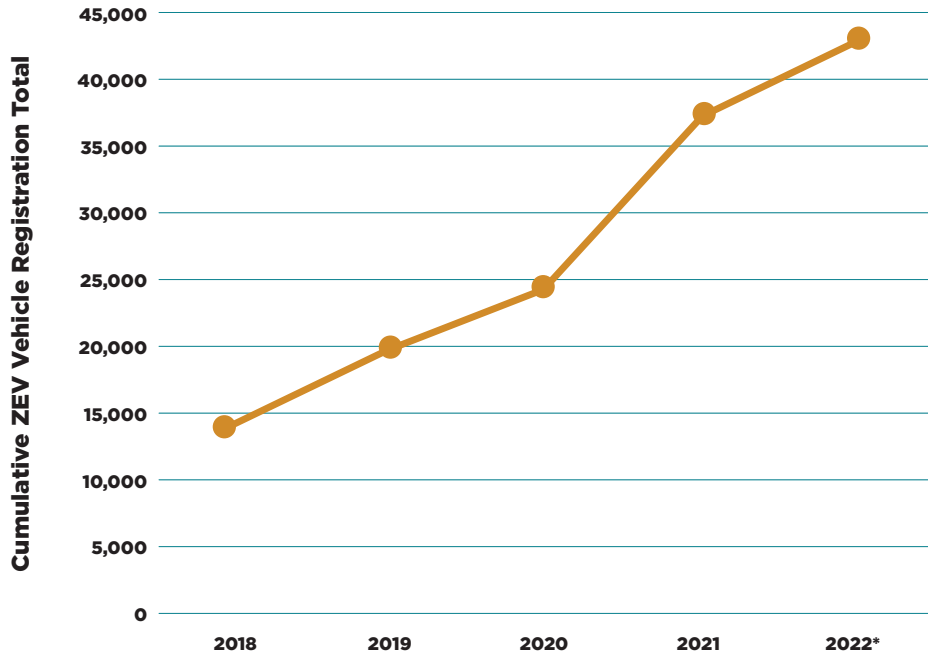
05

Existing and Future Conditions Analysis

This section of the plan analyzes existing and future conditions specific to North Carolina regarding EV infrastructure, state geography and climate conditions, and existing EV charging locations. Specific risks and challenges are also summarized.

EV ownership in the state has increased by 230% since 2018. According to the latest vehicle registration data available, there were over 43,000 ZEVs (battery-electric and plugin hybrid vehicles) registered in North Carolina in May 2022. Figure 2 illustrates EV ownership growth in North Carolina.

FIGURE 2. EXISTING ZERO EMISSION VEHICLE (ZEV) OWNERSHIP



**2022 data includes vehicle registration through May 2022 from NCDOT*

Based on the U.S. Department of Energy’s Alternative Fuels Data Center, as of July of 2022, there are 718 stations and 1,408 chargers (or EVSE ports) publicly accessible in the state. Note that these numbers exclude Tesla chargers because the Tesla network is currently only available to Tesla owners. DCFC chargers, or Level III chargers, make up 12 percent of the public charging network in the state. Eighty-eight percent of the network is Level II chargers. Overall, the average number of chargers per public EV charging station in North Carolina is two.

Currently, 45 percent of public EV chargers (Level II and III) in North Carolina are within one mile of an AFC. However, NEVI program guidance requires stations to have four or more chargers with 150KW capacity within one mile of an AFC. In total, there are 10 stations that meet these requirements in North Carolina.

TABLE 3. EXISTING PUBLICLY ACCESSIBLE EV CHARGERS IN NORTH CAROLINA

	Chargers Statewide	Chargers within 1 mile of AFCs	AFC charger share of statewide chargers
Level II	1,241	517	42%
Level III/DC Fast	167	116	69%
Total	1,408	633	45%

Number of EV chargers in N.C. based on U.S. Department of Energy’s Alternative Fuels Data Center, as of July 2022

The term "chargers" refers to EVSE ports

FIGURE 3. AFCS AND EXISTING STATIONS THAT MEET NEVI CRITERIA



TABLE 4. EXISTING NEVI COMPLIANT EV CHARGER STATIONS ALONG AFCS

Unique Station ID	State EV Charging Location	AFC Designation	Route	DC Fast Chargers	Other EV Chargers (Level 2)	EV Network (if known)	Annual Average Daily Traffic (AADT) 2019	Located along Evacuation Route	Disadvantaged Community (DAC) Area
167212	Carolina Premium Outlets	Pending	I-95	4	0	Electrify America	42,500	Yes	Yes
187907	Crossroads Center (Statesville, NC)	Ready	I-40	4	0	Electrify America	48,500	No	No
121809	Pleasant Valley Promenade	Ready	US-70	6	0	Electrify America	37,000	No	No
167166	Sam's Club 6452 (Asheville, NC)	Pending	I-240	4	0	Electrify America	114,000	No	Yes
166835	Sheetz 504 (Rocky Mount, NC)	Ready	US-64	4	0	Electrify America	40,000	Yes	No
168151	SHEETZ 647-Hillsborough, NC	Ready	I-85	4	0	Electrify America	56,500	No	No
167147	Walmart 1155 (Lumberton, NC)	Pending	I-95	4	0	Electrify America	56,000	No	No
168271	Walmart 2134 - Charlotte, NC	Ready	I-85	10	0	Electrify America	144,000	No	No
170324	Walmart 2256 Henderson	Ready	I-85	4	0	Electrify America	44,500	No	No
167269	Walmart 5320 - Greensboro, NC	Ready	I-85	8	0	Electrify America	73,500	No	Yes



Role of Electric Utilities

North Carolina's electric utilities will continue to be critical partners in the safe, reliable, affordable, and equitable deployment of charging infrastructure across the state. North Carolina is served by three investor-owned utilities: Dominion North Carolina Power, Duke Energy Carolinas, and Duke Energy Progress. According to a *2021 North Carolina Utilities Commission's annual report**, Dominion North Carolina Power serves 122,000 customers in the northeast part of the state, Duke Energy Carolinas serves over 2 million customers in the western part of the state, and Duke Energy Progress serves over 1.4 million customers in the central part of the state and a small area in the western part of the state.

North Carolina is also served by 31 electric membership cooperatives, 26 of which are headquartered in the state and serve almost 1.1 million customers in 95 of the state's 100 counties. In addition to the electric cooperatives, there are 76 municipally-owned utilities throughout the state, serving approximately 599,000 customers in North Carolina.

In 2020, the North Carolina Utilities Commission (NCUC) approved Duke Energy's Electrification Transportation Pilot Program, including \$26 million of investment in EV charging infrastructure and electric school buses. In 2022, North Carolina Utility Commission (NCUC) subsequently approved Duke Energy's electric vehicle Make Ready Credit Program, which will help to defray the upfront infrastructure costs for customers interested in installing charging stations.

Grid capacity

According to the Federal Energy Regulatory Commission (FERC), North Carolina is part of the

Southeast electricity market, a bilateral market that is vertically integrated and features large, investor-owned electric utilities. In 2021, according to the U.S. Energy Information Administration (EIA), nuclear energy provided 34 percent of the state's net electricity generation followed by natural gas, which provided 33 percent of electricity generation, and coal, which provided 17 percent of electricity generation. North Carolina has increased solar power production in recent years and currently ranks fourth in the nation for solar power generation. Sixteen percent of the state's electricity is provided by renewable energy, and the usage of renewable energy is expected to increase with the passage of HB 951, which aims to reduce North Carolina's carbon emissions by 70 percent by 2030 and to carbon neutrality by 2050.

Existing EV Market Potential

To understand potential demand and travel behavior across the state, a case study analysis of existing travel patterns and EV charging demand was done for this plan. A sample of 14 potential EV charging station locations along AFCs in North Carolina were selected for the analysis. These locations were selected to be within one mile of an AFC at locations with existing services and amenities to support an EV charging station. The case study analysis examined the types of trips, length of trips, and potential charging demand. Additionally, the analysis examined if travel patterns and EV charging needs are different in urban, suburban, and rural areas along the AFCs. The information gathered from this case study provides insight on current travel behavior and how EV charging can be more easily accommodated.

Data from StreetLight Data was used for this analysis. Their data combines anonymized location records from smart phones and navigation devices with other geographic data like parcel data and digital road network data. Data was used from 2021.

* <https://www.ncuc.net/reports/longrange21.pdf>

Key findings include:

- Across urban, suburban, and rural areas, about half of all daily trips at the case study sites are pass-through trips, while about half stop or start at the case study site.
- About 5% of trips stopping at case study sites in urban, suburban, and rural areas were of a distance 50 miles or more. However, for trips passing through these sites, the percent of trips 50 miles or more increased significantly between urban and rural areas. This makes sense given the fact people driving in rural areas typically have further distances to drive than people in urban areas.
- For trips not associated with commuting, the dwell time for trips that started and ended in urban areas was 2.8 hours, 1.4 hours in suburban areas, and 0.9 hours in rural areas. These dwell times already support the time typically needed to charge an EV using a DC Fast Charger, meaning that a travel behavior change would not be needed to accommodate EV charging. The typical time needed for a full battery charge using a DC Fast Charger is about 30 minutes.

For the analysis, a scenario of 5% EVs on the road was used. This share is in line with projections for EVs on the road from the North Carolina ZEV Plan. If this 5% is applied to the average daily trips in the case study sites, the data shows:

- There is greater demand for EV charging in more populated areas. More EV trips equal more potential trips needing a charge while traveling.
- However, the average number of daily trips in urban, suburban, and rural areas that are greater than 50 miles are about the same. This may indicate that while there is more demand for short charges in urban areas, long-distance charging demand is about the same regardless of land use.

The information gathered from this case study analysis will be used to help guide the identification and implementation of Phase 1 and Phase 2 EV charging locations.

The table below highlights the key metrics from the analysis.

TABLE 5. AFC EV MARKET POTENTIAL CASE STUDIES IN URBAN, SUBURBAN, AND RURAL AREAS

	Urban	Suburban	Rural
Average Daily Travel Patterns Within 1 Mile of AFC			
Trips pass through station locations	108,615	117,564	52,681
Percent of Total Trips	49%	66%	51%
Trips starting or stopping in station locations	112,832	60,711	49,652
Percent of Total Trips	51%	34%	49%
Total Trips	221,447	178,275	102,333
Long-Distance Travel Patterns			
% of Trips 50 Miles or more (Pass Through)	16%	31%	57%
% of Trips 50 Miles or more (Non-Pass Through)	4%	5%	5%
Average Dwell Time and Potential EV Charging Demand			
Median Dwell Time (Day Time Hours)	2.8 hrs	1.4 hrs	0.9 hrs
Average EV Charging share of Total Trips (5%)	11,072	8,914	5,117
Average EV Charging share of Total Trips 50 Miles or more	1,095	1,974	1,626

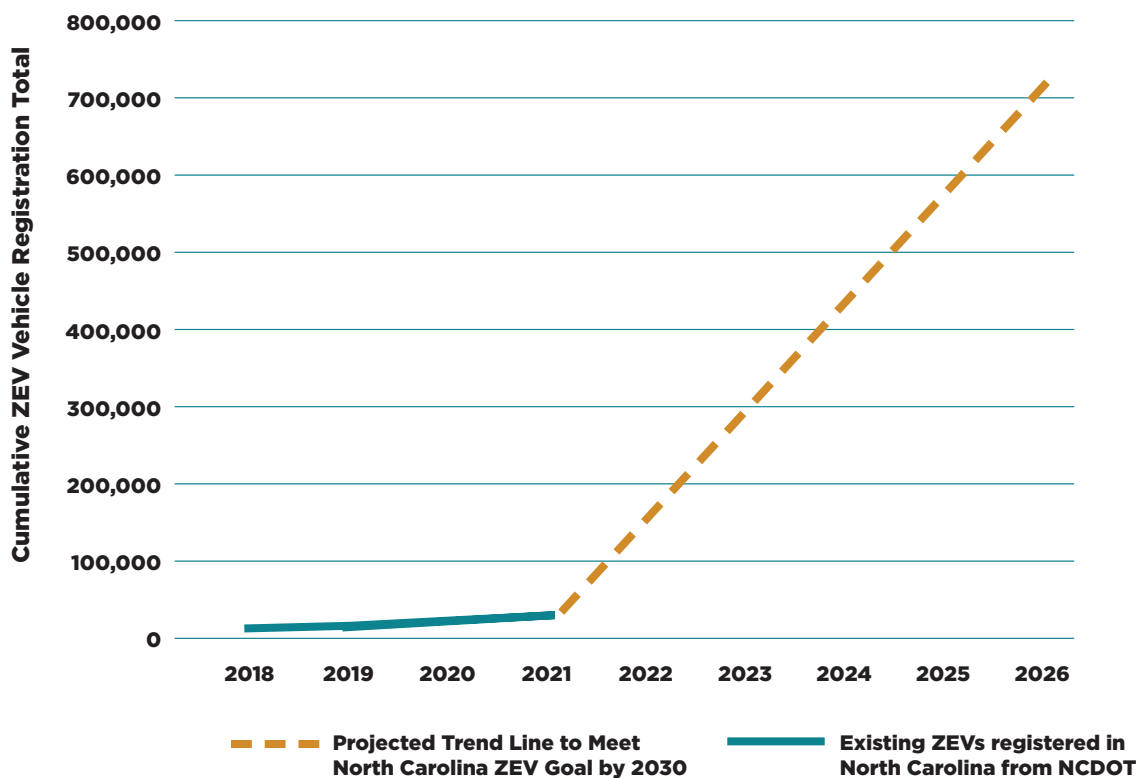
Future Needs

Executive Order No. 246, signed by Governor Roy Cooper, created new statewide goals of having at least 1,250,000 registered ZEVs by 2030 and achieving a 50% ZEV sales share for new light-duty vehicles by that same year. These EO 246 goals complement previous commitments under the Medium- and Heavy-Duty (MHD) Memorandum of Understanding, signed by Governor Cooper in 2020, including increasing the sales of ZEVs so that 100% of new MHD vehicle sales are zero emission by 2050 and at least 30% of all new MHD vehicle sales are zero emission by 2030.

EO 246 also directed the development of a North Carolina Deep Decarbonization Analysis to better understand viable pathways to achieve net-zero GHG emissions statewide by 2050 and interim targets. This project will analyze various illustrative ZEV adoption scenarios to inform long-term decarbonization efforts.

Figure 4 illustrates the needed growth in EV ownership over the five-year NEVI program timeline to be on pace to meet the state’s 2030 ZEV goal of 1,250,000 vehicles. The NEVI investments in North Carolina will be a critical part of achieving the state’s EV goals.

FIGURE 4. FUTURE ZEV OWNERSHIP PROJECTIONS NEEDED TO REACH EXECUTIVE ORDER 246 GOAL DURING FIVE-YEAR NEVI PROGRAM





Alternative Fuel Corridors (AFCs)

The FHWA has created the AFCs program. The goal of the program is to create a national network of charging and fueling infrastructure along the national highway system.

Each state is responsible for nominating and managing AFC designation and implementation. In North Carolina, NCDOT is responsible for managing AFC designation and compliance.

North Carolina has 3,831 miles of AFCs, 2,283 of which are pending corridors and 1,549 are ready corridors. Sixty-two percent are interstates and thirty eight percent are U.S. routes. An AFC ready designation means the corridor meets AFC requirements for different alternative fuel sources, including EVs. AFC pending designation means the corridor is eligible for certain alternative fuel grants, including NEVI funding, but that it has not yet met the alternative fuel source requirements. Figure 5 shows the corridors that are designated as AFC Pending and Ready.

For the purposes of identifying NEVI program requirements for station locations along the AFCs, AFCs designated during Rounds 1 through 6 were considered. These AFCs will form the basis of implementation tracking in the first and second fiscal year for NEVI implementation in North Carolina.

Figure 5 shows the locations of Round 1 through 6 AFCs and their designations. Round 6 AFCs include additional rural area corridor designations. Table 6 describes the specific corridors and their designations as of July 2022.

FIGURE 5. CORRIDORS PENDING AND READY

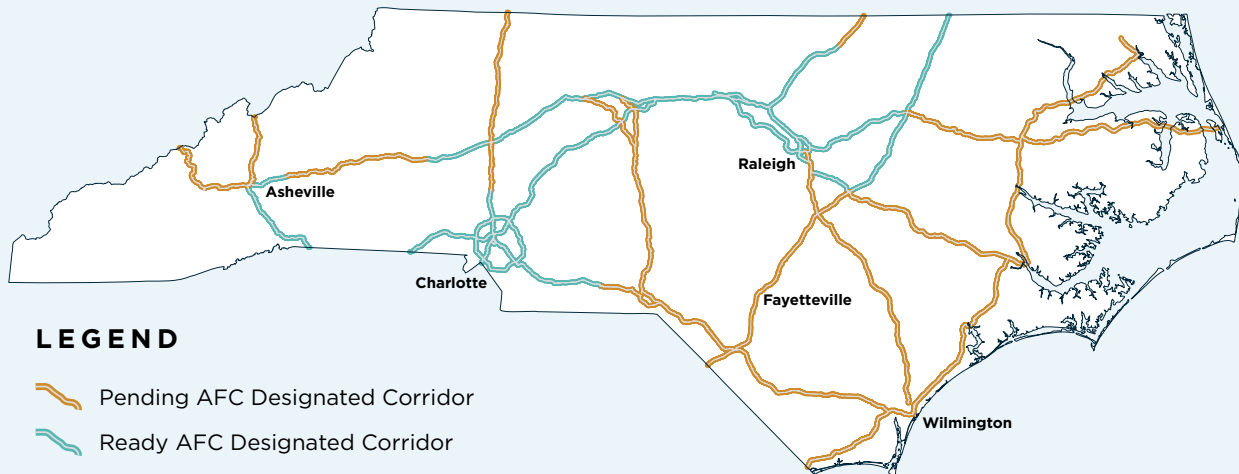


TABLE 6. AFC READY AND PENDING

Corridor	Miles	Start	End	Designation
I-240	8	I-40 Interchange	I-26 Interchange	Pending
I-26	26	Forks of Ivy	Tennessee Border (state line)	Pending
I-26	82	South Carolina Border (state line)	I-40 interchange	Ready
I-40	91	Tennessee Border (state line)	I-240 Interchange	Pending
I-40	36	Brookford	SR-9	Ready
I-40	120	SR-9	Brookford	Pending
I-40	356	Brookford	Raleigh	Ready


Corridor	Miles	Start	End	Designation
I-40	236	Raleigh	Kings Grant	Pending
I-277	9	I-77	Greenville	Ready
I-440	15	I - 87 Interchange	US - 70	Ready
I-485	131	Belmont	I - 85 Interchange	Ready
I-85	265	South Carolina Border (state line)	I - 40 Interchange	Ready
I-85	116	I - 40 Interchange	US-1 Interchange	Ready
I-85	31	US-1 Interchange	Virginia Border (state line)	Pending
I-74	39	SR - 41	US - 74 ALT	Pending
I-77	64	South Carolina border (state line)	Mt Mourne	Ready
I-77	147	Mt Mourne	Virginia border (state line)	Pending
I-87	26	I - 40 Interchange	US - 64	Ready
I-95	193	South Carolina border (state line)	US-70 Interchange	Pending
I-95	170	US-70 Interchange	Virginia border (state line)	Ready
US-13	39	SR - 11	US - 64	Pending
US-74 Bypass	37	Wingate	Stallings Rd	Ready
US-74	34	US-52	Wingate	Ready
US-74	29	E Independence Blvd	Charlotte	Ready
US-74	102	Alma	US-52	Pending
US-74	140	SR-41	Easy Hill	Pending
US-17	8	Easy Hill	Wilmington	Pending
US-17	13	US-17 Interchange	US-70 Interchange	Pending
US-52	3	Wade Mills	US-52	Ready
US-64	70	I-95 Interchange	Rolesville Rd	Ready
US-64	64	I-95 Interchange	US-13 Interchange	Pending
US-64	121	Manns Harbor	US-13 Interchange	Pending
US-64	1	Pirates Way	SR-345	Pending
US-64 Bypass	12	SR-345	Manns Harbor	Pending
US-70 Bypass	40	La Grange	Rosewood	Pending
US-70 Bypass	6	Pine Level	US-70 Interchange	Pending
US-70	1	James City	US-17	Pending
US-70	84	US-17 Interchange	La Grange	Pending
US-70	36	Rosewood	I-95 Interchange	Pending
US-70	39	I-95 Interchange	I-40 Interchange	Ready
US-70	32	I-40 Interchange	Glen Forest	Ready
US-19	29	Asheville	Forks of Ivy	Pending
US - 70	16	Mebane	I-85 Interchange	Ready
US-70	15	I-85 Interchange	Glenn Forest	Ready
I-73	14	I-40 Interchange	I-85 Interchange	Pending
I-73	144	US-220	I-85 Interchange	Pending
I-74	63	I-73 Interchange	I-40 Interchange	Pending
I-74 BUS	13	US-220	I-85 Interchange	Pending
US-220	11	I-73	US-1 S	Pending
US-17	88	South Carolina	Andrew jackson Hwy	Pending
US-17	158	Wilmington	US-70	Pending
US-17	80	New Bern	US-13	Pending
US-13	25	Williamston	US-17	Pending
US-17	103	US-13	US-158 S	Pending

State Geography, Terrain, Climate, and Land Use Patterns

North Carolina is bordered by the Atlantic Ocean and numerous states: Virginia, South Carolina, Georgia and Tennessee. The state is divided into three regions: the Mountains, the Piedmont and the Coastal Plain. The state, in terms of terrain, is considered one of the wettest in the country and contains marshlands and numerous lakes. There are nearly 4,000 square miles of inland water, the largest such area of any state in the United States. The Coastal Plain comprises more than half of the state and extends 120 to 140 miles westward to the Piedmont Region which is characterized by rolling, forested hills.

North Carolina experiences a variety of climates, with cooler continental conditions in the mountain region to subtropical weather in the Coastal Plain. Based on the region, average annual temperatures, precipitation, and experience with natural events varies. Average annual temperatures range from 66 F in the eastern region, 60 F in the central region, and 55 F in the mountains. On average, annual precipitation ranges from 40 inches to 80 inches, with higher precipitation levels occurring in the mountains. Severe storms are rare in the state and heavy snow is generally infrequent. Hurricanes bring heavy rain and winds to different parts of the state. Hurricanes occasionally occur along the eastern coast of the state, and there have been tornadoes historically inland. Floods can occur anywhere in the state, and they are most often caused by heavy rainfall or hurricanes. The state's most notable historical floods were consequences of hurricanes. According to the North Carolina Institute for Climate Studies, North Carolina can expect disruptive sea level rise, increasing temperatures, and extreme rainfall due to climate change. These expected changes will likely increase the frequency and severity of flooding in the state.

North Carolina's populations are concentrated in urban areas — about 60 percent of residents lived in an urban area, according to the 2010 census. Populations are concentrated across several cities including Asheville, Charlotte, Durham, Fayetteville, Greensboro, Greenville, Hickory, Raleigh and Wilmington. Despite the concentration of population in urban areas, North Carolina is still one of the most rural states in the United States — and ranked second in the 2010 Census among states with the largest rural population. Many of the state's urban areas are connected by interstates and state highways. The transportation system is critical in carrying people and goods statewide. Facilitating better access will continue to be a priority for the state as North Carolina's population is expected to continue to grow, with the most growth to continue in major urban areas.



NEVI program funds will help connect urban and rural areas of the state and support demand for public EV charging as the state grows. Additionally, the expanded charging network will help with emergency preparedness by expanding EV charging along evacuation routes.

State Travel Patterns, Freight, and Other Supply Chain Needs

NCDOT is aligned with NEVI program goals and is focusing on creating a reliable statewide network of EV chargers. Below is a summary of state travel patterns, freight needs, and supply chain considerations as they relate to EV charging network implementation in the state.



State Travel Patterns

According to NCDOT's 2019 Highway and Road Mileage Report, North Carolina has over 15,000 miles of primary highways and almost 65,000 miles of secondary roads. The state maintains about 80,000 miles of roadway. Based on the 2019 Vehicle Miles Traveled (VMT) Reduction Study conducted by NCDOT, VMT in the state was observed to be 123.1 billion miles in 2019. North Carolina surpassed the nationwide VMT per capita by nearly 2,000 (9,800 nationally vs. 11,600 for North Carolina), and much of that growth is from vehicles in urban areas. The North Carolina urban VMT grew by 3.4 percent per year versus rural VMT which grew 0.2 percent per year. Comparatively, in that same time frame, the nationwide urban and rural VMT grew by 1.9 percent and 0.2 percent per year, respectively. The deployment of EV infrastructure will need to take into account the state's travel pattern travels and growth in population.



Freight Needs

Based on the 2017 North Carolina Statewide Multimodal Freight Plan, most of the truck traffic in the state is carried by the Interstate System. I-40 and I-85 are the most heavily utilized freight corridors based on truck volumes. I-85 also continues to be an important corridor for freight movement, as many freight-intensive industries are on the corridor. In 2015, more than 400 million tons of cargo were carried through North Carolina's highway system with about 50 percent of total truck tons originating and ending in North Carolina. By 2045, a nearly 50 percent increase in cargo moved by truck is expected.



Supply Chain Needs

During the COVID-19 pandemic, labor force participation became a challenge and has had difficulties recovering to pre-pandemic levels. This, in conjunction with ongoing supply chain issues and overall material shortages, will present challenges in implementation moving forward. NCDOT recognizes potential barriers that may influence the ultimate deployment in terms of speed and timeline. The agency will work with vendors and private-sector partners to encourage speedy installation and to mitigate as much of the risk associated with deployment as possible.



Known Risks and Challenges

Deployment of a program of this scope and scale has inherent risks and challenges. NCDOT is focused on four key risk and challenge factors. They are:

- **Site conditions** – Site conditions will vary across North Carolina. For example, in more rural areas of the state, there may be a need for utility grid upgrades and enhanced wireless cellular coverage needed for data transmission.
- **Supply chain**– Significant numbers of Electric Vehicle Supply Equipment (EVSE), along with electrical transformers and other components, will be needed to deploy this plan. Based on the statewide and nationwide deployment, significant delays in acquiring needed equipment may occur.
- **Skilled labor** – Labor shortages for supportive industries like electricians and installers could contribute to further delays of equipment installation.
- **Safety risks and considerations** – There are certain safety-related risks during the installation of equipment or directly by users and the public. Ensuring safe deployment is a priority and can be a challenge.



06

EV Charging Infrastructure Deployment

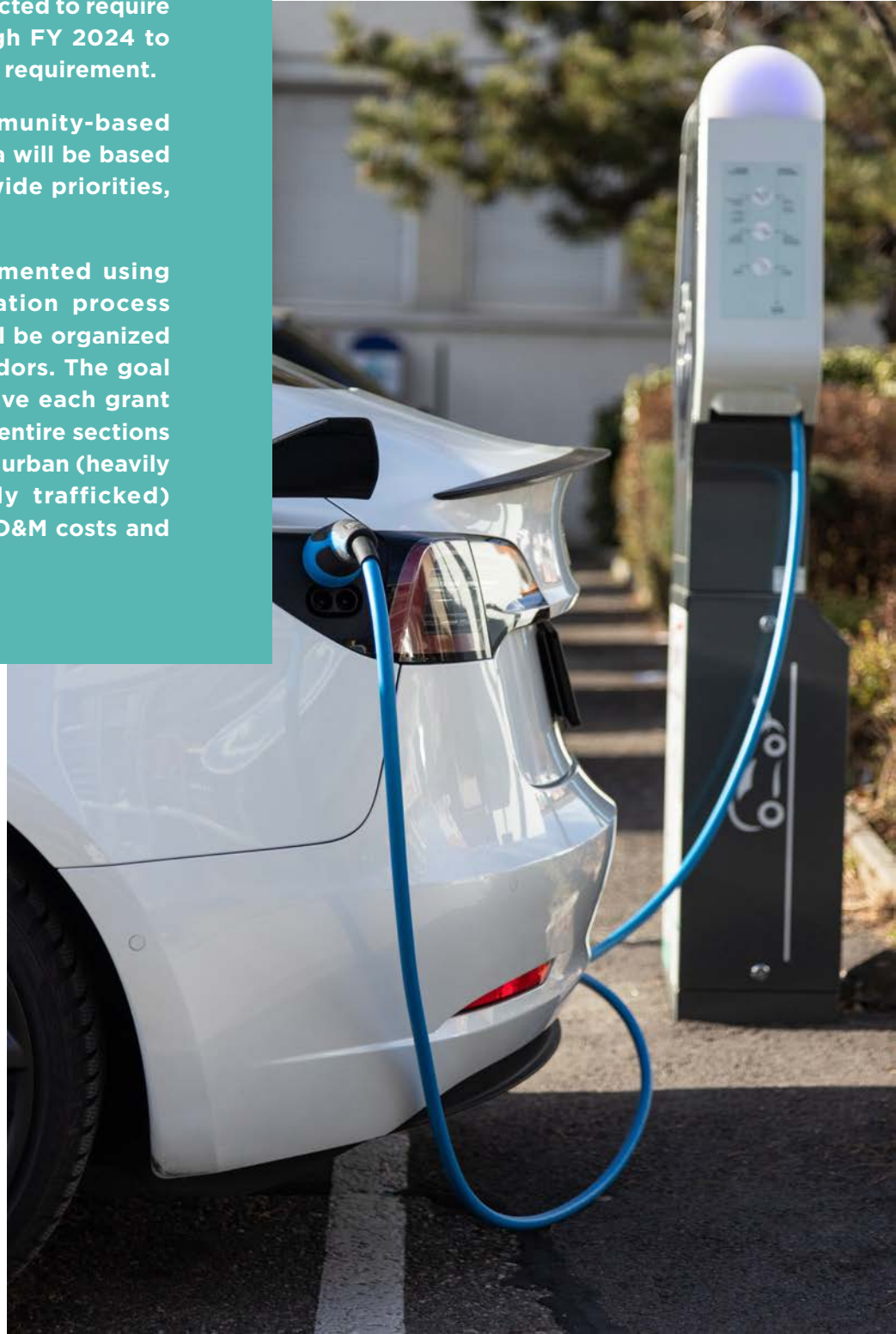
To meet the goals and requirements of the NEVI program, NCDOT will work with public and private partners. The goal is to create a convenient and reliable public EV charging network that is accessible for visitors and residents in North Carolina.

Deployment of the NEVI funds for implementation will occur in two phases.

Phase 1 will build out EV charging stations along the AFCs as required by the NEVI guidance. It is estimated that this phase will require 33 stations and 132 chargers. Based on initial cost estimates, it is projected to require funding from FY 2022 through FY 2024 to build out the NEVI AFC station requirement.

Phase 2 will focus on community-based charging. Site selection criteria will be based on NEVI requirements, statewide priorities, and public input.

Phase 1 and 2 will be implemented using a competitive grant application process managed by NCDOT. AFCs will be organized into a series of bundled corridors. The goal of bundling corridors is to have each grant recipient focus on completing entire sections of corridors, including a mix of urban (heavily trafficked) and rural (lightly trafficked) charging locations to spread O&M costs and risks across multiple sites.



Station Standards

In addition to any further guidance released by FHWA on NEVI charging station requirements or additional standards required by utilities, the typical standards for charging stations will include the following.

For stations funded as part of Phase 1, the typical standards will be:

- Four ports per station with 150-350kW Max Power for each port
- Access to three phase 480-volt power (typically 1000 amps, 660 kva)
- Site must include a minimum of four 150kW Level III chargers with Combined Charging System (CCS) ports (three parking spaces for general use and one parking space that is ADA accessible)

Additional standards for all stations will include:

- 45-minute charging time limit
- Idle fee after charging is complete/time limit exceeded
- Safety lighting, restrooms, Americans with Disabilities Act (ADA) accessibility
- Standard bollards and charger protection
- Open to public and accessible 24/7 to both chargers and amenities
- Plug to Charge preferred (payment handles by vehicle when plugging in) but payments by phone/app/card will also be required
- Adequate signage to charger stations
- Spaces marked EV only
- Signs recommending charging to 80 percent
- Vendor required to make usage data per location available to NCDOT every six months
- Signage directing users to charging locations from the AFCs
- Real-time data sharing, including location, charger status, and fees available online. See Strategies for EVSE Data Collection & Sharing Section for additional data sharing requirements.
- Where economically feasible and in accordance with NEVI guidance and applicable state and federal laws, solar power can be used as electricity source.

For stations funded as part of Phase 2, the typical standards will be:

- J1772 Connector (industry standard)
- 6.6-19.2kW Max Power for Level II chargers
- 50kW-350kW Max Power for Level III chargers
- Same requirements for number of chargers, signage, markings, payment options and data sharing as Phase 1.

Funding Sources

An estimated \$109,024,196 will be allocated to the North Carolina NEVI program over five years under the Bipartisan Infrastructure Law. It is estimated that 10 percent of the allocated funds will be applied to administrative costs. After these appropriations, North Carolina’s NEVI program funding for EV station construction and operations and maintenance (O&M) costs is estimated to be \$98,052,000.

NEVI program funding will be leveraged with grant applicant cost share match to encourage private investment and maximize the use of NEVI program funds. Each project that receives NEVI funding is eligible to receive up to an 80 percent federal share of the project costs. The remaining cost share is to be funded by a non-federal funding match. For the North Carolina NEVI program, the cost share match will be the responsibility of grant applicants. The O&M of projects are eligible costs for federal funds. O&M costs will be covered for the first five years of station operations and may be funded as part of the 80 percent federal share of a project’s costs.

Table 7 shows an estimated funding plan for the NC NEVI program. Site costs include site host coordination, design and permitting fees, utility coordination and upgrades, the EVSE, construction, and commissioning costs associated with building the station. Construction costs include the equipment and labor to install the EVSE, electrical panelboards, transformers, utility upgrades, trenching, site work, conduit, wires, bollards, safety lighting, signage, pavement marking, fencing if required, testing and commissioning, site as-builts, pictures, and closeout documentation.

O&M cost includes a five-year warranty on equipment and installation, monitoring of equipment to ensure guaranteed uptime/availability, maintenance of hardware and associated site appurtenances (including replacement of EVSE if necessary), data plan for network connectivity, reporting site metrics to the state, and annual site inspections.

TABLE 7. NEVI FORMULA PROGRAM FUNDING PLAN

	Total Site Costs	Total O&M (Five Years)	Total Site Costs and O&M	Approximate Federal Share (80%)	Approximate Grant Applicant Share (20%)
Phase 1	\$36,300,000	\$3,300,000	\$39,600,000	\$31,680,000	\$7,920,000
Phase 2	\$76,370,000	\$6,595,000	\$82,965,000	\$66,372,000	\$16,593,000
Total	\$112,670,000	\$9,895,000	\$122,565,000	\$98,052,000	\$24,513,000

Estimated Phase 1 Deployment

To meet the NEVI station requirements, stations must have at least four 150kW Level III chargers. Additionally, the stations need to be within one mile of an AFC and spaced 50 miles or less. Based on these requirements, it is estimated that North Carolina will need at least 33 new NEVI-compliant stations. This is in addition to the existing 10 stations that are NEVI-compliant. The approximate location of proposed Phase 1 new charging stations are listed in Table 8 and shown in Figure 6.

TABLE 8. PROPOSED EV CHARGING STATIONS ALONG AFCS

Unique ID*	AFC Designation	Route Name	County	Located along Evacuation Route	Disadvantaged Community (DAC) Area
1	Pending	I-40	McDowell	No	No
2	Pending	I-40	Burke	No	No
3	Pending	I-77	Surry	No	Yes
4	Pending	I-40	Sampson	Yes	Yes
5	Pending	I-40	Duplin	Yes	Yes
6	Ready	I-40	Forsyth	No	Yes
7	Ready	I-40	Alamance	No	No
8	Ready	I-40	Durham	No	No
9	Ready	I-95	Nash	Yes	No
10	Pending	US-64	Washington	Yes	Yes
11	Pending	US-64	Tyrrell	Yes	Yes
12	Pending	US-64	Edgecombe	Yes	Yes
13	Pending	US-70	Lenoir	Yes	Yes
14	Pending	I-95	Cumberland	No	No
15	Ready	I-77	Mecklenburg	No	No
16	Ready	I-85	Cleveland	No	Yes
17	Ready	I-85	Davidson	No	No
18	Pending	US-74	Columbus	No	Yes
19	Pending	US-74	Brunswick	Yes	No
20	Pending	US-74	Richmond	No	Yes
21	Ready	US-74 BYP	Union	No	No
22	Pending	I-74	Robeson	No	Yes
23	Pending	I-40	New Hanover	No	No
24	Pending	US-70	Craven	Yes	No
25	Pending	US-64	Dare	Yes	No
26	Pending	I-26	Madison	No	No
27	Pending	I-40	Haywood	No	Yes
28	Ready	US-74	Polk	No	No
29	Pending	I-73	Randolph	No	Yes
30	Pending	I-73	Montgomery	No	Yes
31	Pending	US-17	Onslow	No	Yes
32	Pending	US-17	Beaufort	No	Yes
33	Pending	N Hughes Blvd	Pasquotank	Yes	Yes

FIGURE 6. EXISTING AND APPROXIMATE LOCATION OF FUTURE NEVI-COMPLIANT EV STATIONS ALONG AFCS



Upgrades of Corridor Pending Designations to Corridor Ready Designations

North Carolina is including all Pending and Ready AFC corridors as approved by FHWA from Rounds 1 through 6 for the AFCs. NCDOT will continue to manage AFC designation and status with FHWA and incorporate any needed station additions to meet NEVI requirements over the five-year program. Currently, NCDOT has estimated some funds for each program fiscal year to accommodate future AFC designations and the need to address the 50-mile station spacing requirement along these future corridors. AFC designation and whether they meet NEVI requirements will be evaluated annually. If additional stations are needed, they will be incorporated into the grant cycle for that fiscal year.

Increases of Capacity/Redundancy Along Existing AFC

The charging time needed for EVs varies by the model's battery capacity, which is typically stated in kilowatt hours (kWh), the charging capability and age of the EV, the charger type (kW), and extreme temperatures. Chargers that will be installed as part of Phase 1 will be DC Fast Chargers and have a minimum of 150kW output. DC Fast chargers provide DC power directly to the battery, increasing the charging speed when compared to a Level 2 (AC power) charger. In general for DC Fast Charging, to determine the charge time, the EV battery capacity (kWh) is divided by the charger output (kW).

For example, the Chevrolet Bolt electric vehicle has a battery capacity of 65kWh, so it would take approximately 29 minutes to reach max charge using a 150kW charger. Another example, a Ford Mach-E with a standard range 68kWh battery capacity would take approximately 31 minutes to reach max charge using the same 150kW charger. The mileage range these vehicles could reach on a full charge varies based on the car specifications. In this example, the Chevrolet Bolt would have a range of approximately 260 miles and the Ford Mach-E would have a range of approximately 230 miles. Many manufacturers recommend charging EV batteries to 80 percent rather than 100 percent, so the mileage ranges might be lower in practice.

This plan aims to build out the AFCs in North Carolina with EV charging infrastructure every 50 miles, so even vehicles with an approximate 150-mileage range could reach the next charging station on less than a full charge. The usage of existing stations will also be reviewed annually in order to make recommendations to increase capacity as needed in heavily trafficked areas.



Electric Vehicle Freight Considerations

After the NEVI Program requirements are met in Phase 1 of this plan, EV chargers for freight and other medium- and heavy-duty vehicles are eligible to apply for funding as part of the competitive grant process of Phase 2. More information will be given pending the FHWA's release of additional NEVI Formula Program requirements for EV freight chargers.

Public Transportation Considerations

Purchasing electric buses generally involves purchasing the necessary charging equipment as well. Electric buses have high power requirements and typically require separate charging infrastructure from personal EVs. The majority of charging for public transit and school bus fleets will take place at fleet facilities that are not open to the public for general use.

There may be opportunities and a need to support off-site charging for public transportation vehicles. Additionally, public transit agency fleet facilities may be ideal sites for shared commercial or public charging, such as at a park-and-ride lot, as long as chargers at these locations are publicly accessible. NCDOT will coordinate with public transit agencies and school districts during NEVI program engagement. If their projects meet the community goals and program requirements, they can be eligible and encouraged to participate in applying for NEVI funding in Phase 2.



FY22-26 Infrastructure Deployment

FY2022 and 2023 funds will be released to North Carolina with the approval of this plan by the Joint Office. Based on initial estimates, Phase 1 of this plan can be implemented with the funds from the first two fiscal years. Phase 2 of this plan will be implemented with any remaining funds from Phase 1 (FY2022 and FY2023) as well as FY2024, FY2025, and FY2026.

State, Regional, and Local Policy

The North Carolina EV Infrastructure Deployment Plan and implementation of its recommendations will rely on partners across the state to coordinate and update policies. This section discusses short-term and ongoing policies that can support the deployment of EV infrastructure and NEVI program guidance. Final policy guidance will be informed by the NCCTP, which is being completed in coordination with a large group of stakeholders.

Short-Term

- Identify leads for program action items and include specific individuals and/or roles within an organization to implement actions.
- Strategically consider the deployment of EV in public properties (state, regional, and/or local) and collaborate with federal agencies where deployment would be beneficial (such as on federal lands).
- Work with NCDOT and local public works departments to identify and deploy consistent signage standards and labeling for EV infrastructure along the AFCs.
- Create an assistance program that is easily accessible on the internet that includes educational materials such as fact sheets. The educational materials should be easily accessible, easy to understand, and in multiple languages.
- Include EV considerations as a part of Metropolitan Planning Organization (MPO) long-range transportation plans. This step can help with regional EV network coordination.

Ongoing

- Work to streamline EV permitting at local jurisdictions. This can include the creation of permitting standards and guidelines, target timeframes for approval, and checklists. The development of website resources and electronic applications to speed up the permitting process is recommended.
- Work to ensure that once permitted, the installation of EV is speedy and efficient. This includes processes at the state, local, as well as private processes (e.g. utilities) and ensuring that site planning, permitting, and utility coordination are streamlined and expedited.
- Work to ensure that zoning ordinances and building codes are updated to support EV station construction. This should extend to site-specific requirements such as parking ordinances.
- Work with the North Carolina Utility Commission to develop EV rate designs and infrastructure programs that center affordability, reliability, and equity.
- Work with the North Carolina Utility Commission to streamline and monitor the interconnection process for EV charging.



07

Contracting

NCDOT will manage the NEVI program and work with third-party entities to construct, operate, and maintain EV chargers installed with NEVI funds. To do this, NCDOT will manage a competitive bidding and contracting process for NEVI-funded EV charging infrastructure. Community priorities and federal and state requirements will be incorporated into the contracting process to ensure compliance and goal achievement.

NCDOT will contract with third-party entities to deploy NEVI program-funded EV infrastructure in North Carolina. NCDOT’s preference is to build out corridors that are heavily utilized and minimize network gaps on those corridors before moving onto other regions and/or roadways. In some cases, corridors that have existing chargers, even if chargers do not meet NEVI requirements, may be a lower priority.

The contracting strategy for charging includes a variety of topics that are discussed below. The actual contract will include further detail than what is provided.

- **Grant solicitation** – The grant solicitation will include federal requirements and guidelines. The priorities and selection criteria for grant applicants will be provided as a part of the solicitation as well.
- **Proposals** - Applicants will provide the specific location/site, the status of site negotiation, the number of existing and proposed chargers, and Direct Current Fast Charging (DCFC) site capacity capabilities. Phase 1 solicitations will be awarded in bundles and will also require applicants to document the distance between NEVI-compliant charging stations. Applicants can choose to upgrade existing charging stations, buildout existing charging stations further (particularly if a conduit already exists for expansion), and build new charging stations. Preference will likely be given to new charging station locations, but both cases will be considered when evaluating applications. Proposals should include standard components including schedule, the scope of work, budget, terms and conditions beyond what is included in the grant solicitation, regular project management calls/reports, and compliance reviews during construction, as well as periodic reviews to ensure ongoing operations and maintenance after award.
- **Funding** – The proposal must include clarification from the applicant of how the remaining 20 percent of funding (based on the 80 percent federal funding match) will be provided. If awarded through the NEVI program, the remaining 20 percent must come from non-federal sources.
- **Other Stipulations** – A variety of stipulations may be included as a part of the grant solicitation or be listed as evaluation metrics for the proposals submitted. These can include level of public access, operating hours, multiple forms of payment (cash, credit, debit), availability of customer support and assistance in multiple languages, adequate safety measures (lighting, visibility), ADA accessibility, data sharing, and monitoring provisions.

The North Carolina NEVI interagency committee will be led by NCDOT and be responsible for coordinating compliance with federal and state requirements as well as community priorities. NCDOT will manage the solicitation for grant applications and the committee will be responsible for review and grant application selection. As mentioned previously in other chapters of this Plan, Phase 1 will focus on meeting the NEVI requirements for the construction of EV stations along the AFCs. Phase 2 will focus on community-based charging, with priorities established during NEVI program public engagement.

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08

Implementation

An important requirement of the public EV charging network in North Carolina is that it is reliable and easily accessible. This section covers topics that will be addressed over the five-year program to ensure EV stations funded by the NEVI program support this goal.

Strategies for EV Station Operations & Maintenance

Grant recipients awarded contracts under the NCDOT NEVI program will be required to provide a cost and implementation plan for five years of operations and maintenance. Operation and maintenance costs shares may differ for each station location. Operations and maintenance costs should include comprehensive warranties for the EV chargers and associated electrical equipment.

Monitoring of sites and individual ports will be required under this program. The station owners will be expected to report to the State regarding uptime availability of the individual ports, usage, and to explain any downtime greater than 3 percent.

NCDOT will develop a program policy and funding provisions that would make maintenance and operations funding contingent on meeting uptime requirements. For example, operations and maintenance funds may be distributed as a reimbursement at the end of each fiscal year. Station owners will be required to submit operations and maintenance reports documenting they met operation and performance requirements before operation and maintenance costs are refunded.

Strategies for Identifying EV Charger Service Providers and Station Owners

NCDOT will use existing solicitation methods for registered vendors to advertise, select, and award contracts for NEVI program applicants. Additionally, NCDOT will develop a list of other potential applicants that could be eligible to apply for the grant and work to ensure they receive grant notices. Examples include utility companies, city or county governments, Clean Cities coalitions, MPOs/RPOs, and school districts.

NCDOT will also host industry forums with proactive outreach to minority- and women-owned businesses. The purpose of the forums will be to answer grant application questions about the NEVI program, provide updates on program schedules, and answer other program-specific questions. The goal is to support a robust, diversified, and skilled marketplace for public EV charging implementation and operations in North Carolina.

Strategies for EVSE Data Collection & Sharing

To ensure accountability and implement a data-driven program, NCDOT will require regular reporting of charger utilization and reliability. Data sharing and analysis will also incorporate consumer privacy strategies to ensure data is anonymized. Requirements will be similar to what is required as part of North Carolina's VW Settlement Fund reporting requirements. Requirements will also be compliant with NEVI program requirements. This reporting may include the following data points, collected quarterly or annually as required and submitted to NCDOT. This data will further be shared with the United States Department of Transportation (USDOT) and the United States Department of Energy (USDOE) as required by further NEVI formula program and FHWA guidance.

Summary Report per EV charging station:

- *Location: Site name, EVSE ID number, address, city, zip, county*
- *Operational uptime*
- *Number of charge events*
- *Number of unique vehicles*
- *Average charge time per event (mins)*
- *Average kWh per charge event*
- *Total kWh consumed*
- *Gallons of gasoline and/or diesel fuel displaced*
- *Estimated cumulative miles driven from charge*
- *Estimated cumulative gallons of gasoline and/or diesel fuel displaced*
- *Total monthly cost of electricity for charging station operator*
- *Monthly maintenance and repair cost*

Details per charging event:

- *Location: Site name, EVSE ID number, address, city, zip, county,*
- *Charge event date time,*
- *Time charging,*
- *Length of time connected,*
- *kWh provided,*
- *Vehicle make and model year (on events where available).*

Additional data to be reported

- *EV charging station owners are required to share real-time data sharing on charger location, charger status, and fees publicly on online directories, including on the Alternative Fuel Data Center's Station Locator.*

Strategies to Address Resilience, Emergency Evacuation, Snow Removal/Seasonal Needs

As reported in the U.S. Department of Energy’s Energy Sector Risk Profile for North Carolina, between 2008 and 2017, the greatest number of electrical outages occurred in July, primarily due to weather or falling trees. On average, these outages affected 684,562 people. Hurricanes have been responsible for the greatest overall property loss, and all areas of the state have been impacted by hurricanes in the past 20 years. Due to the increasing frequency and severity of hurricanes, Governor Roy Cooper and other public figures have encouraged North Carolina residents to educate themselves about hurricane preparedness, including devising emergency evacuation plans. NCDOT has identified evacuation routes that coastal residents can take to reach I-95. I-95 is the nearest north-south interstate to the coastal regions, so it is a key evacuation roadway for the coastal areas and cross-border evacuations to nearby states. Ensuring access to EV chargers leading to and along I-95 is necessary for safe evacuations.

During hurricane evacuations, the performance, reliability, and accessibility of EV chargers are essential for people’s safety. This Plan prioritizes implementing stations along evacuation routes, and future planning should ensure that EV charging stations located along evacuation routes are prepared to serve intense periods of increased

demand and withstand extreme weather conditions. Residents who own an EV should develop an evacuation plan that identifies multiple nearby charging sources, including sources that are not traditional charging stations.

EVs, EV chargers, and EV cables are designed to be weatherproof, especially regarding water. EV charging ports are designed to flush water and drain when they are charged, and EV chargers and cables are designed to protect users from electric shock. Additional steps during charger installation can maximize their resistance to severe weather, such as watertight covers on any outlets and plugs.

NCDOT will continuously explore opportunities to incorporate emergency preparedness into NEVI program planning and implementation. Examples include incorporation of EV stations along evacuation routes as a scoring criteria or promotion of battery storage (an eligible expense with NEVI funds) as part of station deployment and as a back-up electric power source. Reliability is a goal for the NEVI program in North Carolina. Reliability includes use of EV charging stations during emergency events.

Strategies to Promote Strong and Diverse Labor, Safety, Training, and Installation Standards

The NCDOT Human Resources/Workforce Development, On-the-Job Training (OJT) and Supportive Services (SS), and Business Opportunity and Workforce Development (BOWD) units will lead workforce training initiatives related to the NEVI program. Additionally, NCDOT will work with other partners across the state to create a skilled workforce and create new opportunities for business and employment.

Executive Order No. 246, signed by Governor Roy Cooper, solidified North Carolina's commitment to developing a local workforce trained for clean energy-related careers such as those needed for EV charging infrastructure projects. The Clean Energy Youth Apprenticeship Program, created as part of this executive order, establish a partnership with educational institutions, particularly those that serve underrepresented communities, to create programs that develop graduates for clean energy careers. Workforce stakeholders including the NCWorks Commission (the state workforce development board), local workforce development boards, community colleges, and the NC Chamber of Commerce will be essential in collaborating to provide employers and employees with the necessary training to develop a skilled workforce for EV charging infrastructure installation.

Requirements for training certifications through the North Carolina EV deployment plan solicitation process can help ensure installation standards across EV charging infrastructure projects. The Electric Vehicle Infrastructure Training Program (EVITP) is one example of a training program that provides skill upgrades to help electricians meet the new demand for EV charging station installations. Partnerships with trade schools and community colleges, as well as state and local workforce development programs, particularly in disadvantaged communities, could provide training programs like this to NC workers at a low or no-cost. NCDOT's On-the-Job Training and Supportive Services (OJT/SS) programs – especially its Highway Construction Trade Academies – can also help to prepare skilled labor for the installation of the stations, particularly involving women, minorities, and disadvantaged individuals in the training and employment process.

Lastly, one of the goals of this Plan is to create opportunities for small and disadvantaged businesses to participate in the construction of North Carolina's EV infrastructure. As part of the solicitation process for NEVI grants, smaller and disadvantaged businesses (SBE/DBE) requirements will be included to ensure opportunities for them to participate with implementation.





Equity Considerations

Advancing equity is a priority for Governor Cooper's administration including the Department of Transportation. In 2020, Governor Cooper signed Executive Order No. 143, establishing the Andrea Harris Social, Economic, Environmental and Health Equity Task Force to address long-term disparities. Executive Order 246, signed in 2022, also prioritizes the importance of environmental justice and equity in the state's transition to a clean economy, directing agencies to take steps to elevate the consideration of environmental justice including by identifying a staff lead to serve as the point person for environmental justice efforts. Each agency will also develop a public participation plan ensure the public and especially underserved communities are meaningfully engaged in government decision-making.

North Carolina is working closely with federal partners on a variety of equity initiatives, including the the Justice40 Initiative which was created to deliver benefits of federal investments in climate and clean energy, including sustainable transportation, to disadvantaged communities. Signed as Executive Order 14008, Justice40 has a myriad of Justice40-covered programs that support this initiative, one of which is the NEVI program. As prioritized both in NEVI guidelines and Justice40, the plan prioritizes charging infrastructure that serves lower-income and disadvantaged communities.

Identification and Outreach to Disadvantaged Communities (DACs) in the State

NCDOT and the state are committed to effectively and equitably implementing the NEVI program throughout North Carolina and especially in underserved communities by following a decision-making process driven by clear performance metrics.

This Plan adopts Interim Guidance for Justice40 that was used to identify disadvantaged communities. The interim definition for DACs includes 22 indicators that are grouped into six categories of disadvantaged characteristics: transportation access health, environment, economic, resilience, and equity. The definition itself is consistent with the Office of Management and Budget and relevant statutory authorities. As of Summer 2022, a tool was developed by the United States Department of Transportation to indicate whether a proposed project is located in a Disadvantaged Community (DAC; <https://usdot.maps.arcgis.com/apps/dashboards/d6f90dfcc8b44525b04c7ce748a3674a>).

In North Carolina, 73 percent of the population lives in a census tract designated as a Justice40 community. Additionally, 46 percent of the state’s population is within a Justice40 designated community and along an AFC. For Phase 1 and Phase 2 NEVI implementation in North Carolina, priority and focus will be given to ensuring job opportunities and infrastructure are located in Justice40 designated census tracts.

TABLE 9. DISADVANTAGED COMMUNITIES AND RELATIONSHIP TO AFCS

	Population	% of Statewide Population
Statewide Justice40 communities	7,533,476	72.5%
Alternative Fuel Corridor Justice 40 communities	964,552 (within 2 miles of AFC)	9.3%

FIGURE 7. DISADVANTAGED COMMUNITIES

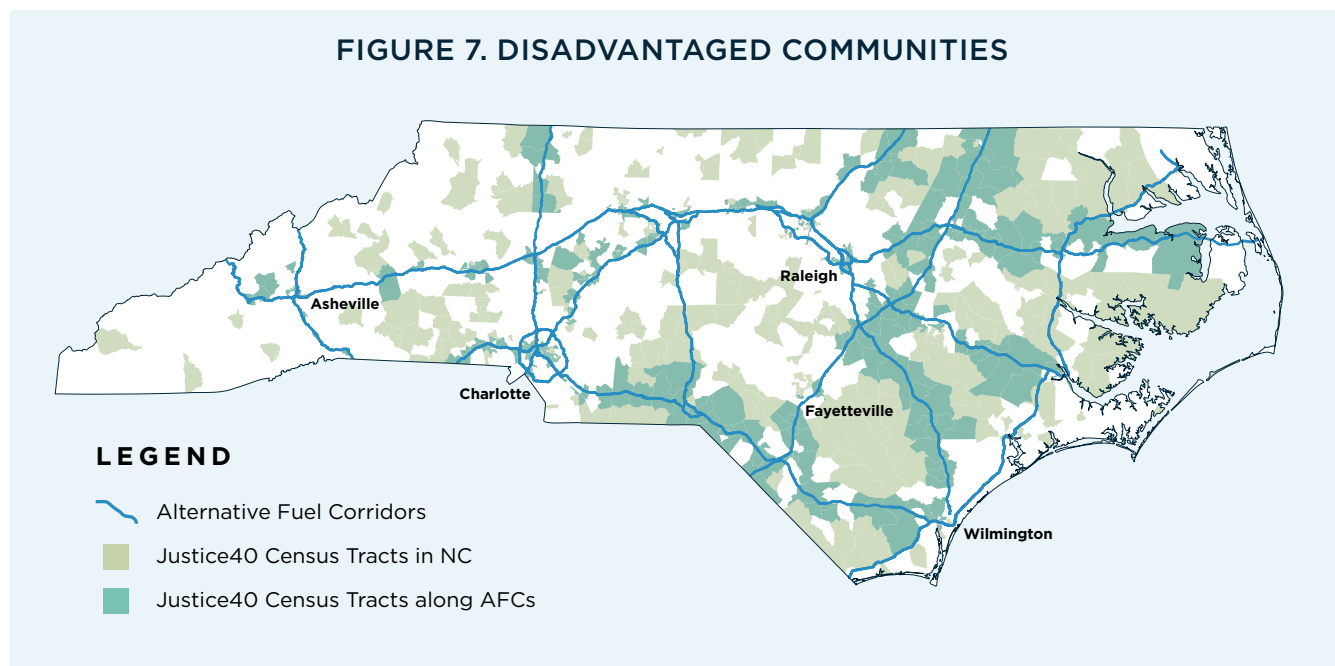


FIGURE 8. DISADVANTAGED COMMUNITIES WITH EXISTING AND PROPOSED STATIONS

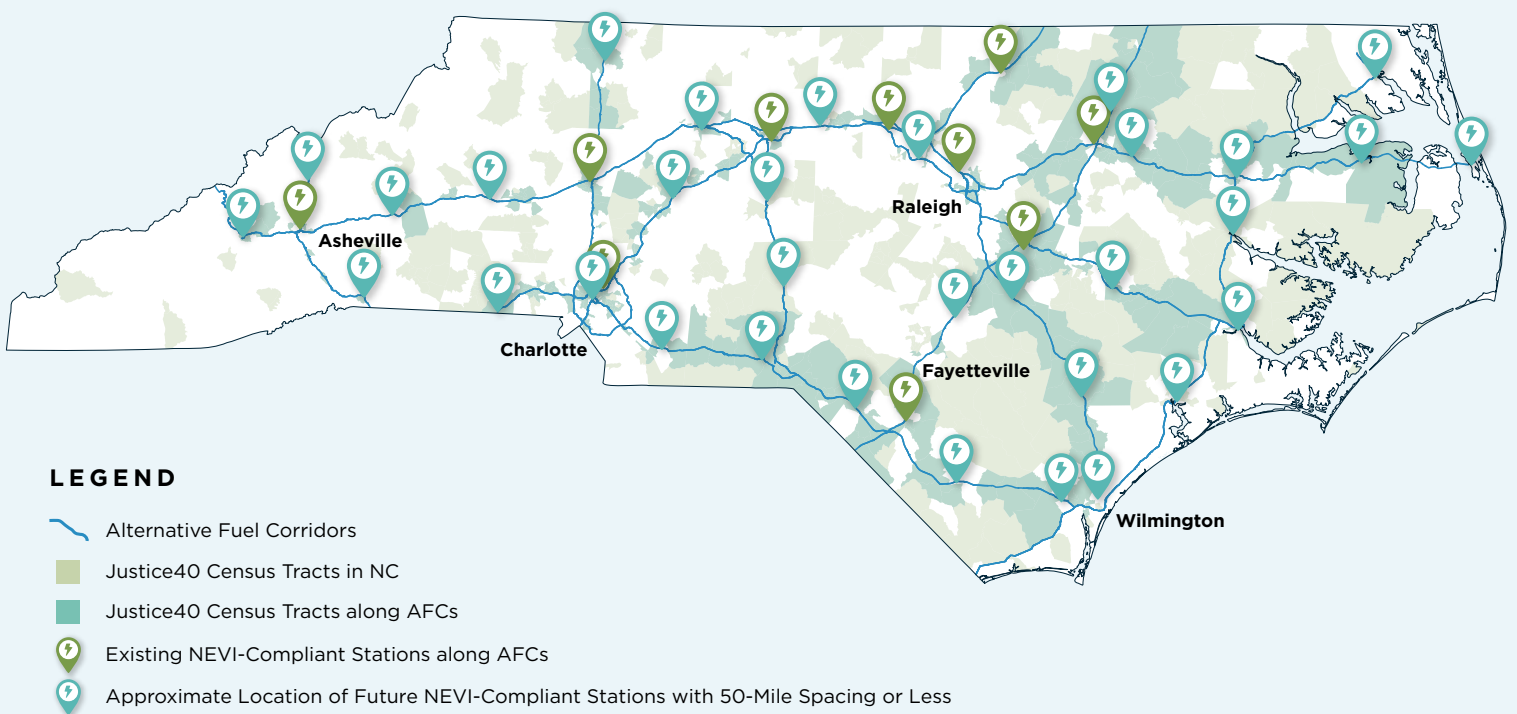


Figure 8 indicates the existing and approximate future location of NEVI-compliant EV stations in relation to North Carolina's disadvantaged communities. 55 percent of the identified approximate locations are located within Justice40 designated census tracts.

Process to Identify, Quantify, and Measure Benefits to DACs

The NCDOT Office of Civil Rights will develop a tracking and reporting plan for the North Carolina NEVI program. The metrics will be developed in coordination with community stakeholders and will cover the following topics.



General Deployment and Access

As infrastructure is deployed, NCDOT will refine and update the analysis to identify where there may be network gaps and an implementation plan to address gaps that exist within DACs. Data and maps will be developed so the deployment can be actively updated. Information regarding the location, deployment type, charge capacity, and overall coverage (and coverage within DACs) will be tracked.



Funding

A critical piece to understanding the effects of EV deployment and DACs is provided through funding and financing. NCDOT will develop metrics to track whether investments are made in DACs and the community impact of these investments.



Air Quality

NCDOT will partner with NCDEQ to gather information from existing air quality monitoring stations in DACs over the five-year NEVI program. The goal is to improve air quality, particularly in DACs, across the state.



Creation of a Website and Materials specific for EV information and assistance

NCDOT will create, maintain, and update a repository of resources for those who are unfamiliar with EVs and will update regularly with feedback from community stakeholders. These materials will be in English as well as other common languages spoken in North Carolina. Online website clicks and resource downloads will be tracked as a measure to understand how communities are continuing to engage with the NEVI program.

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Labor and Workforce Considerations

Access to clean energy jobs and workforce development programs is a key part of the North Carolina NEVI program. Additionally, creating opportunities for disadvantaged communities to participate and have access to these jobs is also a priority.

As noted previously, a portion of the North Carolina NEVI program will focus on jobs skills training as well as business development investments to develop and train local workers in Electric Vehicle Supply Equipment (EVSE) construction and maintenance .

The NCDOT Office of Civil Rights (OCR) will lead North Carolina NEVI program elements related to Woman-owned businesses (WBE)/Minority-owned businesses (MBE)/Small business enterprise (SBE)/Disadvantaged business enterprise (DBE) opportunity training and development and labor law compliance. Its On-The-Job Training and Supportive Services (OJT/SS) programs, along with NCDOT's Human Resources/Workforce Development unit, will be responsible for workforce training with Diversity, Equity, Inclusion, and Accessibility (DEIA) considerations. The Business Opportunity & Workforce Development (BOWD) unit will be responsible for the development and education of disadvantaged and small businesses regarding NEVI. The unit has created business training and development programs in partnership with entities across the state and will develop ways to leverage these partnerships for the NEVI program. Also, within the NCDOT Office of Civil Rights are the Disadvantaged Business Enterprise Program, Airport Concession Disadvantaged Business Enterprise Program, Historically Underutilized Program and the Small Business Enterprise/ Small Professional Services Firm Program. These programs will focus on creating opportunities for small, minority, and historically disadvantaged businesses to participate in the NEVI program. For all North Carolina NEVI program solicitations, grant applicants will be required to submit a disadvantaged business enterprise (DBE) performance plan. The DBE performance plan will identify the overall budget dedicated to supporting DBEs. The performance plan will also describe how DBEs will be engaged with grant applicant projects and the strategies for reporting compliance with the project's DBE commitment.

In addition, NCDOT's HR/Workforce Development and OCR OJT/SS units can help provide the necessary training and skills upgrades needed to mitigate potential labor shortages, especially for DEIA purposes, for supportive industries like installers, electricians, and station maintenance and repair personnel. NCDOT's HR/Workforce Development and OCR OJT/SS units can help provide the necessary

training and skills upgrades, especially for DEIA purposes. On-the-Job Training and preregistered and registered apprenticeships, Highway Construction Trade Academies, Advanced Training, and career exposure, engagement and education development activities — both for youth and adults – can be provided for NEVI talent pipeline needs.

According to the FHWA, one workforce strategy that is important for highway construction programs and most infrastructure projects, including NEVI, is the expansion of Registered Apprenticeship and pathways that lead people into programs. Expanding preregistered and registered apprenticeship will help to ensure the next cohort of skilled tradespeople is being trained as NEVI projects are being delivered. At the same time, NC will take steps to make Registered Apprenticeship more accessible to populations that have been underrepresented in the infrastructure workforce including women, minorities, people with disabilities, and others. In fact, NCDOT units are major partners in a National Governors Association (NGA) Technical Assistance project to help develop opportunities for older youth and adults via funds from IJJA. NC Workforce Innovation and Opportunity Act (WIOA) and community college systems (including ApprenticeshipNC), plus state public school systems, are likewise involved. Expanding the workforce for installing and maintaining electric vehicle chargers — from trenchers to electricians – is something State Departments of Transportation (such as NCDOT) are uniquely positioned to do with partners such as the university system, especially Institute for Transportation Research and Education (ITRE) at NC State here in NC.

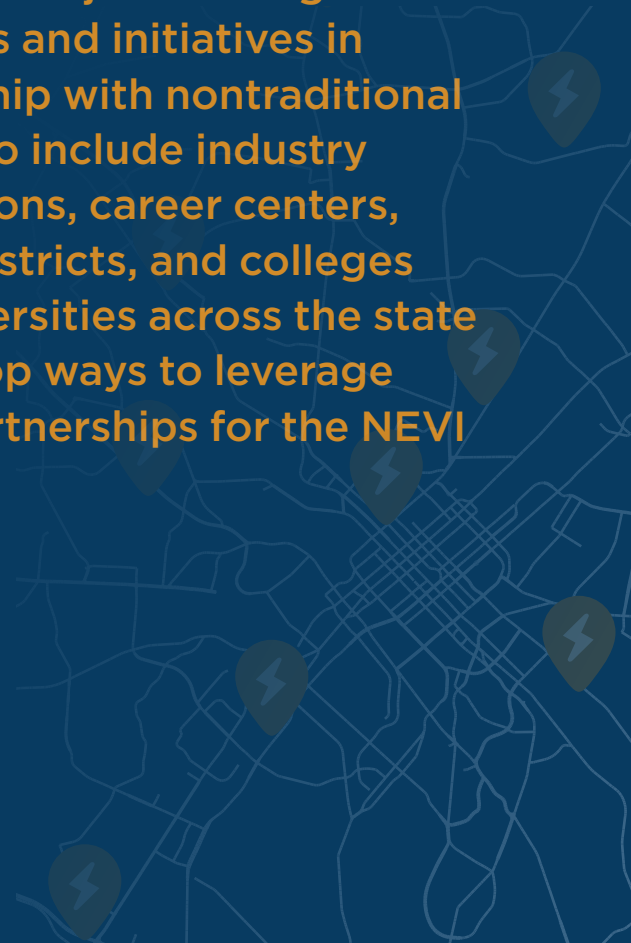
The NCWorks and community college systems, together with community-based organizations and the state's school systems, will be key partners in these efforts.

Additionally, both OCR units have pilot program resources to quickly provide training for specialized skills. These resources will also be leveraged to support skills acquisition that can be quickly applied during the five-year NEVI program.

For the North Carolina NEVI program, the Office of Civil Rights will create an annual report documenting labor and workforce activities. It will also track and report progress towards achieving DBE goals for the NEVI program.



The Office of Civil Rights, the Business Opportunity & Workforce Development (BOWD) and On-the Job Training Units will be responsible for Business Development and DBE/SBE Utilization, workforce development training, and career readiness. These units will combine job training programs and initiatives in partnership with nontraditional entities to include industry associations, career centers, school districts, and colleges and universities across the state to develop ways to leverage these partnerships for the NEVI program.





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Civil Rights

There are two areas of focus for civil rights with the NEVI program. One area is the promotion and support of equal access to employment and business opportunities. The second area is enforcing federal and state laws and regulations that prohibit discrimination on the basis of race, religion, sex, sexual orientation, gender identity, color, national origin, age or disability.

The NCDOT Office of Civil Rights will be responsible for leading NEVI activities related to civil rights. Specific programs managed by the Office are:

- Americans with Disabilities Act (ADA) Program
- Business Opportunity & Workforce Development (BOWD) - Services for Certified Firms
- Contractor Utilization
- Disadvantaged Business Enterprise and Small Business Enterprise Program
- Environmental Justice and Equity/ Limited English Proficiency
- Equal Employment & Affirmative Action
- Equal Opportunity Contractor Compliance
- HBCU Administration
- Title VI Nondiscrimination
- Unified Certification Program
- Workforce Development and On-the-Job Training/ Supportive Services Program

The Office of Civil Rights plans to increase capacity to coordinate civil rights-related activities for the NEVI program. This will include a focus on the education and promotion of business opportunities, the development and tracking of equity goals, and the coordination of grant compliance efforts with grant applicants and other agencies to ensure compliance with federal and state laws and regulations.

The Office of Civil Rights, in partnership with the Office of HBCU Outreach, will work with state HBCUs to explore workforce development and development of educational programs to fill supply chain gaps in skilled labor and contracting.

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Cybersecurity

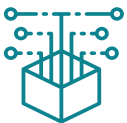
A critical part of creating a reliable public EV charging network is network reliability and data security. Today, data is not just information but a critical piece of infrastructure. The North Carolina NEVI program will work with the N.C. Department of Information Technology to identify and design security standards for data sharing and management to ensure the public EV charging network is secure and reliable.

As part of the North Carolina NEVI program, NCDOT will focus on five cybersecurity policy topics:



Asset, catalogue, and push asset data.

Cataloguing where chargers are located and pushing real-time data about charger availability is essential to ensure ease of travel, access, and reliability. NCDOT will require all grant recipients to participate in the latest national and industry open data specifications to ensure the traveling public has accurate and timely data about the public EV charging network in North Carolina.



Open data specifications and interoperability.

Hardware and software should be able to work for customers, regardless of the vendor or system. Open data standards will create a seamless marketplace for customers. NCDOT will work with FHWA, NCDIT, and industry partners to incorporate the latest open data specifications for the NEVI-funded EV network in North Carolina.



Data management.

Data management will be important for NCDOT and third-party providers building and operating EV chargers funded by the NEVI program. NCDOT and NCDIT will develop policies for the data it receives from grant recipients and also establish standards for data management grant recipients, particularly as it relates to data security and privacy. NCDOT will also consider cybersecurity strategies such as addressing user identity and access management, intrusion and malware detection, event logging and reporting, management of software updates, and secure operation during communication outages.



Data capacity.

As part of grant applications, proposals will need to document EV charging providers have sufficient data capacity to meet operations and reporting requirements for the NEVI program. Additionally, NCDOT will create sufficient storage policies to ensure data collected is managed and maintaining for the entire five-year program.



Data privacy.

NCDOT will require grant recipients to adopt and maintain a data privacy policy. The policy will confirm how customer private data is collected, stored, used and shared. Additionally, NCDOT will require that any data that is reported and shared as part of the NEVI program be anonymized. This requirement will ensure data can be used to analyze trends and performance while also protecting consumer privacy.





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Program Evaluation

Reporting and monitoring progress will be regular part of the North Carolina NEVI program. The purpose of program evaluation will be to document regulatory compliance, create public transparency about the benefits and impacts of the program, and improve and refine the program over time.

NCDOT will evaluate the North Carolina NEVI program annually. Performance measures will be developed in partnership with FHWA, state agencies, the business community, and community members. During the Fall of 2022, NCDOT will develop the key performance indicators (KPIs) for the five-year program. The indicators will be developed based on FHWA program guidance as well as public input. NCDOT will focus on four main topics:



Regulatory Compliance.

These KPIs will focus on documenting and reporting the federal and state regulatory and performance requirements for the NEVI program. Examples include the number of NEVI-compliant stations constructed each fiscal year and funding distributed each fiscal year.



Community Characteristics and Demographics.

These KPIs will document aggregate-level community characteristics about who is using the NEVI-funded charging network as well as access characteristics, like population within a certain distance of stations.



Economic Impact.

This topic will focus on how NEVI funds are supporting the North Carolina economy. Example KPIs include jobs created, people trained, and number of small-business or disadvantaged businesses supported by the NEVI program.



Equity.

In line with the Justice40 initiative at the federal level, this topic will focus on measuring the impacts and benefits of the NEVI program in historically disadvantaged communities (DACs). Example KPIs could include the number of stations and chargers installed in DACs and the number of people employed that live in DACs. Desired benefits and the associated KPI tracking metrics will be developed through a collaborative process with community partners within DACs. Public engagement activities as described in Section 3 of this plan will be leveraged to consistently solicit and incorporate the needs, priorities, and desires of DACs. The Office of Civil Rights will take a lead in the collaborative process used for developing and tracking these KPIs.





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Discretionary Exceptions

North Carolina is a big and diverse state. NCDOT will focus on meeting the NEVI program requirements and ask for exceptions when deviations are needed to meet unique site, geographic, cost, or other technical conditions.

Over the course of the five-year NEVI program, there may be a need to adjust the federal NEVI program requirements for a particular site. NCDOT will work with the Joint Office to coordinate and receive approval for exceptions.

Currently, the Phase 1 strategy has identified station locations that meet the requirements of the 50-mile station spacing along the AFCs. During FY2023 and FY2024, identified sites along the AFCs may need exceptions due to grid capacity, geography, equity, or cost considerations especially in the state's rural areas. NCDOT will work with grant applicants and the Joint Office to identify exceptions as early in the implementation process as possible and submit required exception applications for approval.





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Over the course of the five-year NEVI program, there may be a need to adjust the federal NEVI program requirements for a particular site. NCDOT will work with the Joint Office to coordinate and receive approval for exceptions.



Glossary of Terms

AADT - Annual Average Daily Traffic

ADA - American Disabilities Act

AFC -Alternative Fuel Corridors

BIL - Bipartisan Infrastructure Law

BOWD - Business Opportunity and Workforce Development

DAC - Disadvantaged Community

DBE - Disadvantaged Business Enterprise

DCFC - Direct Current Fast Charging

EIA - U.S. Information Administration

EO - Executive Order

EV- Electric Vehicle

EVITP - Electric Vehicle Infrastructure Training Program

EVSE - Electric Vehicle Supply Equipment

FERC - Federal Energy Regulatory Commission

FHWA - Federal Highway Administration

IIJA - Infrastructure Investment and Jobs Act

Joint Office - Joint Office of Energy and Transportation

KPI - Key Performance Indicator

kWh - Kilowatt-hours

MPO - Metropolitan Planning Organization

NCCTP - North Carolina Clean Transportation Plan

NCDEQ - North Carolina Department of Environmental Quality

NCDOT - North Carolina Department of Transportation

NCSEO - NCDEQ's State Energy Office

NCUC - North Carolina Utility Commission

NEVI Formula Program - National Electric Vehicle Infrastructure Formula Program

SBE - Small Businesses Enterprise

USDOE - United States Department of Energy

USDOT - United States Department of Transportation

VMT - Vehicle Miles Traveled

