

# powerNC

*Providing Opportunities for Workforce development  
and Energy Readiness in North Carolina*

## PROJECT NARRATIVE



IN PARTNERSHIP WITH  
**STEPS4GROWTH & NC COMMUNITY COLLEGE SYSTEM**

**USDOT Charging and Fueling  
Infrastructure Grant  
APPLICATION  
JUNE 2023**



# TABLE OF CONTENTS

PROJECT OVERVIEW .....	3
PROJECT LOCATION .....	7
ADDITIONAL PROJECT NARRATIVE INFORMATION.....	9



# PROJECT SNAPSHOT

Providing Opportunities for Workforce development and Energy Readiness in North Carolina (**powerNC**) is the result of a collaborative partnership between NCDOT, STEPs4GROWTH, and the North Carolina Community College System to install 20 new EV charging stations at 10 community colleges across the State. This new infrastructure will equitably expand community-based EV charging, while also supporting high-quality workforce development programs, and reducing GHG emissions that contribute to climate change.

*"PowerNC is a unique opportunity to equitably expand community-based EV charging across NC, while supporting high-quality workforce development programs that will prepare the state's workforce for the clean energy jobs of tomorrow."*

*-J. Eric Boyette,  
NCDOT Secretary*



## Unique Entity Identifier Number:

XSN8A4TT1DY5

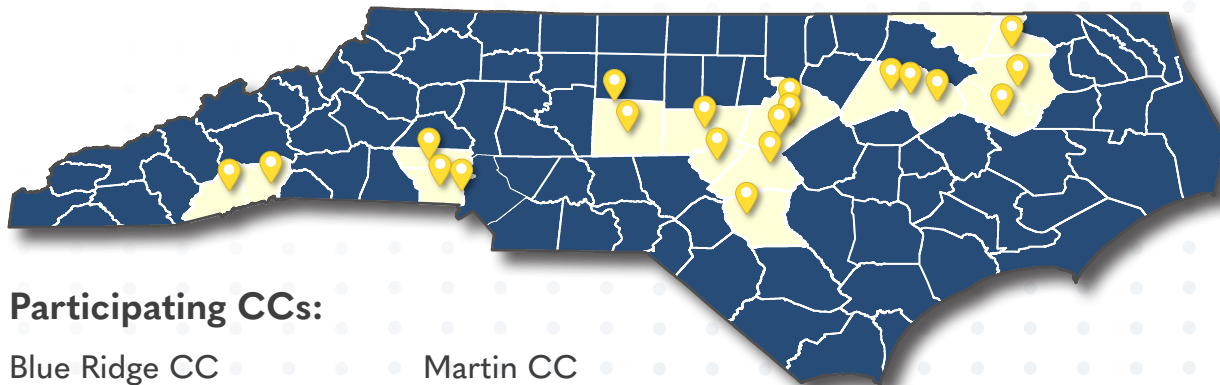
**Contact Name:** Gretchen Vetter

**E-mail:** gavetter@ncdot.gov

**Telephone:** (919) 707-4740

## Application Materials:

<https://connect.ncdot.gov/resources/CFI2023-powerNC/Pages/default.aspx>



## Participating CCs:

Blue Ridge CC

Central Carolina CC

Edgecombe CC

Fayetteville Technical CC

Gaston College

Martin CC

Nash CC

Randolph CC

Roanoke-Chowan CC

Wake Technical CC

 Community College Service Area

## powerNC Benefits



**Safety:** Promotes safety for all users through design elements like signage, crosswalk visibility enhancements, lighting, speed restrictions, and accessibility features for disabled users.



**Climate Change, Resilience & Sustainability:** Reduces transportation-related GHG emissions by 91.1 short tons annually to mitigate climate change and addresses environmental justice by increasing access to EV charging stations for disadvantaged and underserved populations.



**Equity, Community Engagement, & Justice40:** Creates meaningful impacts and reduces transportation-related disparities by increasing affordable transportation options, improving mobility, and addressing unique rural challenges in the deployment of new EV charging stations and workforce development programs.



**Workforce Development, Job Quality, & Wealth Creation:** Increases job quality and creates wealth through high-quality workforce development programs while building awareness of clean vehicle job opportunities through robust community engagement.



**CFI Program Vision:** Equitably expands publicly accessible EV charging stations in both rural and urban settings, while supporting the development of multimodal hubs and needs of electric fleet vehicles.

6

Tier 1  
Economically  
Distressed  
Counties

153

Justice40  
Disadvantaged  
Communities  
within 5 miles

140

Historically  
Disadvantaged  
Communities  
within 5 miles

Please see **Project Location** for definitions.

## Project Budget & Funding

Non-Federal Match (State Funds):  
\$251,745

CFI Funding Request:  
\$1,006,980



Total Project Cost: \$1,258,725

## Project Readiness & Environmental Risk

NCDOT will apply its experience in completing Federal discretionary grant projects and executing the State's EV Infrastructure Deployment Plan to reduce risk and accelerate deployment of EV charging stations across NC in calendar years 2024, 2025, and 2026.

## PROJECT OVERVIEW

Providing Opportunities for Workforce development and Energy Readiness in North Carolina (powerNC, or “the Project”) is the result of a collaborative partnership between the North Carolina Department of Transportation (NCDOT), Successful Training and Effective Partnerships for Growing Regional Opportunities in the Workforce To Harness the NC Clean Energy Alliance (STEPs4GROWTH), and the North Carolina Community College System (NCCCS) to install 20 new Level 2 electric vehicle (EV) charging stations at 10 community colleges (CCs) across the State (see **Project Location** for more information). This new infrastructure will equitably expand community-based EV charging and fill gaps in access, while also supporting high-quality workforce development programs at these CCs.

North Carolina is poised for exponential growth in EV ownership and operations. According to [NCDOT data](#), the number of EVs on North Carolina roads increased 54 percent in 2022, and EVs are now registered in all 100 North Carolina counties. However, one of the primary challenges to EV adoption is the lack of convenient, affordable, reliable, and equitable networks of EV charging stations in communities across the State, particularly in rural areas ([EESI 2021](#)). These

STEPs4GROWTH is a four-year, \$23.7 million comprehensive clean energy workforce development project funded by the US Department of Commerce’s (USDOC’s) Economic Development Administration (EDA) - Good Jobs Challenge and led by the Center for Energy Research & Technology at NC A&T State University. STEPs4GROWTH is a Comprehensive Clean Energy (CE) Workforce Development Project focused on working with employers to train students and adults to fill well-paying jobs in energy efficiency, renewable energy, clean vehicles, and grid & resiliency and creating the next generation of clean energy talent.



access barriers are compounded by concerns that the workers needed to sustain the clean energy transition will not have the knowledge, skills, and qualifications to install, maintain, and repair EVs and charging infrastructure.

Recognizing this challenge, powerNC will train the next generation of technicians and engineers in the clean vehicle sector and expand public access to EV charging stations to reduce greenhouse gas (GHG) emissions. The Project will provide opportunities for students in clean vehicle training programs at the participating CCs to observe, learn about, and participate in activities over the lifecycle of the Project, including procurement, contracting, siting, design, environmental review, installation, and operations and maintenance (where appropriate and under the supervision of certified professionals). Moreover, Wake Technical and Blue Ridge CCs currently operate EV charging stations that are at the end of their useful life. PowerNC will replace old charging stations with new ones at these CCs, and the decommissioned charging stations will be used in classroom instruction, to gain hands-on experience that is not possible with EV charging stations operating under National Electric Vehicle Infrastructure (NEVI) requirements.



By enabling students to participate in the deployment of new EV charging stations in their community and enabling older EV charging stations to be used in educational activities, powerNC will leverage Federal investment in EV charging infrastructure to add value to North Carolina's workforce development efforts and expose the State's future clean vehicle professionals to the real-world considerations and processes they will encounter throughout their careers. PowerNC will help generate coursework over two semesters that will be incorporated into the clean vehicle educational and training programs at the participating CCs (See **Workforce Development, Job Quality, and Wealth Creation** for more information).

## WORKFORCE DEVELOPMENT

The Project's workforce development activities will be led through a strong partnership between NCDOT's Office of Civil Rights (OCR) and STEPs4GROWTH to ensure the training of a diverse workforce. These programs have significant funding, experience, and proven track records of workforce development in disadvantaged communities. The workforce development activities conducted by NCDOT OCR and STEPs4GROWTH in the counties served by the participating CCs will ensure powerNC reaches a wider audience, creates improved outcomes, and cultivates a more diverse, competent, retained, and well-paid clean vehicle workforce in North Carolina.

**NCDOT OCR's** workforce development and community engagement programs will generate grassroots support for the Project in the counties served by the participating CCs. OCR will provide opportunities to minorities, women, and disadvantaged individuals and businesses in these counties who have been historically underrepresented in highway construction-skilled professions through three programs:

- **On-the-Job Training and Supportive Services (OJT/SS)** which helps individuals prepare for and enter the sector workforce and train for journey-level positions.
- **Business Opportunity and Workforce Development (BOWD)** to support

Disadvantaged Business Enterprises (DBEs) through training, education, and technical assistance to increase the number of businesses that have a work specialty related to the Federal-aid Highway Program (FAHP), including EV charging equipment. BOWD identifies firms who already have work types conducive to EV charging and assisting with gaining the competencies needed to get prequalified in related work types.

- **Highway Construction Trade Academies (HCTAs):** These academies include innovative, accelerated boot camp versions called Pop-Up Academies that partner with NCWorks Career Centers, non-profits, and advocacy organizations to promote the training and hiring of women, minorities, and other underrepresented groups in the clean vehicle sector.

**STEPS4GROWTH's** workforce development program will provide EV-related curricula and educational resources, facilitate hands on training, job placements, and provide wraparound support services for students at the participating CCs. The program also collaborates with industry partners to provide job opportunities, including apprenticeships for those graduating from the program. STEPs4GROWTH is partnered with several large employers (including SIEMENS Energy, TOYOTA Battery, VinFast, Wolfspeed, Kempower, Atom Power, Duke Energy, NC Electric Co-Ops, and ABB), Workforce Boards, Chambers of Commerce, North Carolina Business Committee for Education (NCBCE), North Carolina Sustainable Energy Association, labor unions, worker support organizations, the State's network of minority-owned small businesses, notably [\*Black Owners of Solar Services \(BOSS\)\*](#), and many others to advance its workforce development goals.

As the Project trains new workers in the clean vehicle sector and improves access to EV charging stations in their communities, powerNC will create synergies with major new employment opportunities in the State. PowerNC will deploy workforce development activities at Central Carolina, Randolph, and Wake Technical CCs, which are located in close proximity to the following major



economic development projects, all of which were announced in 2022 and 2023:

- Triangle Innovation Point Megasite: VinFast is adding **7,500 jobs** as part of an approximately **\$4 billion** investment to produce fully EVs and batteries.
- Chatham Advanced Manufacturing Megasite: Wolfspeed is adding **1,800 jobs** as part of a **\$5 billion** investment to manufacture new semiconductors. This is the largest ever economic development project investment in NC.
- Greensboro-Randolph Megasite: Toyota Battery Manufacturing is adding **2,100 jobs** as part of a **\$5.9 billion** investment and to produce hybrid-electric and EV batteries.
- Kempower Inc.: This EV charging station manufacturer will create more than **300 jobs** at a new manufacturing facility in Durham County.

### SITING AND DESIGN FRAMEWORK

PowerNC will deploy 20 4-port Alternating Current (AC) Level 2 EV charging stations in publicly accessible surface parking facilities controlled by the participating CCs. The deployed EV charging stations will meet all applicable requirements of 23 Code of Federal Regulations (CFR) Part 680. Level 2 charging stations were selected for the Project because they charge vehicles quickly enough for many purposes, are economical, and generally do not require extensive electrical upgrades. The specific locations of these EV charging stations, including the campus(es) at which they will be located, will be determined during the Project's development phase. All charging stations will be sited to:

- Accommodate new electrical service equipment (including power meter, transformer, and switch gear), and minimize grid upgrades necessary to construct or upgrade each charging station to meet the planned power requirements.
- Integrate the charging needs of light- to medium-duty transit vehicles and active mobility options that provide alternatives to individual vehicle ownership based on each community's unique



mobility needs (see **Additional Project Narrative, Multimodal Hubs and Shared Use Fleets** for more information).

- Maximize the ability for EV charging station users to safely access nearby on- and off-campus essential services, amenities, parks and recreational facilities, and campus resources (including classrooms, libraries, computer labs, student support



services, eateries, bookstores, gyms, auditoriums, and community gathering spaces) without a vehicle.

- Minimize safety risks for pedestrians and other vulnerable road users through design elements, including lighting, pavement design, speed restrictions, sidewalk access, crosswalks, traffic control measures, and signage to reduce conflicts between motorized and non-motorized road users (see **Safety** for more information).
- Not impact Waters of the US (WOUS) or threatened and endangered species and avoid flood prone areas (see **Climate Change, Resilience, and Sustainability** for more information).

The new EV charging stations will be incorporated into each participating CC's electrical distribution system and no major utility upgrades are anticipated. Advanced hardware and software technologies will be employed where feasible to balance the load when multiple ports are operating simultaneously, ensuring that demand does not exceed supply. This will allow all four ports to operate simultaneously and prioritize charging at the highest power level possible without exceeding the available supply.

Additionally, powerNC will be compliant with the Americans with Disabilities Act (ADA) and will comply with all applicable US Department of Transportation (USDOT) and US Department of Justice (USDOJ) accessibility standards, as outlined in 49 CFR part 37 and 28 CFR parts 35 and 36, respectively. The Project will also align with the US Access Board's Design Recommendations for Accessible EV Charging Stations to ensure accessibility, ease of independent use, and safety for disabled drivers and vehicle occupants, including those using wheelchairs or other assistive equipment. Additionally, the user interface and payment systems on each charging station will comply with Section 508 of the Rehabilitation Act.

PowerNC supports the **Safer People, Safer Roads, and Safer Speeds** elements of USDOT's National Roadway Safety Strategy's (NRSS) Safe Systems Approach to provide holistic and comprehensive safety benefits for all users. The Project will incorporate proven safety countermeasures like lighting, crosswalk visibility enhancements, speed restrictions, and new signage to provide multiple layers of protections for drivers, pedestrians, bicyclists, and other vulnerable road users in each deployment location.



*Fayetteville Technical CC student*





Lastly, powerNC will support the development of multimodal hubs at each participating CC by increasing access to EV charging that supports alternatives to personal vehicle ownership. The Project will transform existing, vehicle-dominated parking lots on campus into more multimodal facilities that support a range of travel modes, including active mobility options, micromobility, and EV carshares. In addition to considerations for these active transportation modes, the placement of EV charging stations will take into consideration planned transit-oriented development (TOD) and transit needs, including [S-Line TOD](#) and Raleigh’s bus rapid transit (BRT) service (currently under construction). By considering the needs of multiple electric transportation modes in siting and design decisions, powerNC’s comprehensive approach will create more equitable mobility outcomes and support each community’s transition to cleaner transportation (see **CFI Program Vision** for more information).

### COMMUNITY ENGAGEMENT ACTIVITIES

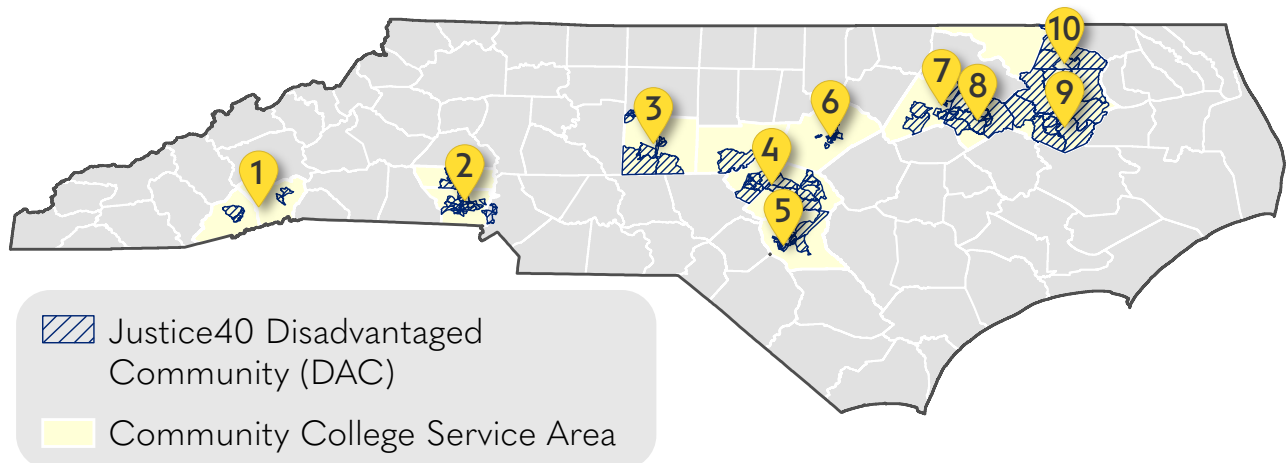
NCDOT OCR and STEPs4GROWTH will partner with local community-based organizations to perform robust outreach and recruitment into job training programs in the counties served by the participating CCs, with the goal of engaging K-12 students, adults, DBEs, and others while building trust with communities that have not been historically involved in the clean energy sector. By engaging the community, powerNC will

build a pipeline of workers to pursue hi-tech and well-paying careers. These community engagement activities will include, but not be limited to, career days for K-12 students, “pop-up” engagements and informational booths at community events for adults and DBEs, HCTA training opportunities, and Summer Career Accelerator programs to introduce high school students to careers in the clean vehicle sector.

### PROJECT LOCATION

PowerNC will deploy new community EV charging stations and leverage NCDOT OCR’s and STEPs4GROWTH’s workforce development tools and community engagement programs at 10 CCs across North Carolina. Six of the 10 participating CCs serve Tier 1 counties as designated by the North Carolina Department of Commerce (NCDOC). These counties are among the 40 most economically distressed counties in the State, determined based on factors such as unemployment rate, household income, population growth, and per-capita property tax base. Eight CCs have at least one campus located in a Justice40 DAC or Historically Disadvantaged Community (HDC), and there are 153 Justice40 DACs and 140 HDCs within 5 miles of the participating CCs. Siting of the EV charging stations at specific campuses, and locations within those campuses, will be determined during development phase activities.

### Project Location Map



## Participating CC Snapshots

Map ID	CC	Project Chargers	Campus	County	Urban/Rural	NCDOC Tier	HDCs <sup>1</sup>	DACs <sup>2</sup>
1	Blue Ridge CC 	2	Henderson	Henderson	Urban	3	1	2
			Transylvania	Transylvania	Rural	2	1	2
4	Central Carolina CC 	2	Lee Main	Lee	Rural	2	10	10
			Chatham Main	Chatham	Rural	3	1	1
			Harnett Main	Harnett	Rural	2	9	9
8	Edgecombe CC 	2	Tarboro	Edgecombe	Rural	1	8	9
			Rocky Mount	Edgecombe	Urban	1	8	12
5	Fayetteville Technical CC 	2	Main	Cumberland	Urban	1	23	24
2	Gaston College 	2	Dallas	Gaston	Urban	2	20	21
			Kimbrell	Gaston	Urban	2	11	11
			Lincoln	Lincoln	Rural	3	7	7
9	Martin CC 	2	Martin	Martin	Rural	1	6	6
			Bertie	Bertie	Rural	1	4	4
7	Nash CC 	2	Main	Nash	Rural	1	7	8
3	Randolph CC 	2	Asheboro	Randolph	Rural	1	8	8
			Archdale Center	Randolph	Urban	1	10	10
10	Roanoke-Chowan CC 	2	Main	Hertford	Rural	1	3	4
6	Wake Technical CC 	2	Beltline	Wake	Urban	3	14	15
			Public Safety	Wake	Urban	3	11	12
			Northern Wake	Wake	Urban	3	6	6

<sup>1</sup> HDCs within 5 miles of each campus according to data from USDOT's [Dashboard](#).

<sup>2</sup> DACs within 5 miles of each campus according to data from the [EV Charging Justice40 map](#).



## ADDITIONAL PROJECT NARRATIVE INFORMATION

PowerNC expands community access to EV charging infrastructure in rural, suburban, and urban areas across the State, with an emphasis on rural areas and underserved communities where the private sector may not invest absent Federal funding. The Project addresses community charging needs and creates benefits related to all of the Federal Highway Administration's (FHWA's) focus areas (see **CFI Program Vision** for more information):

### Multi-Modal Hubs and Shared-Use Fleets and Services



PowerNC will support the future development of multimodal hubs by increasing access to EV charging stations that support alternatives to conventional vehicle ownership, including e-bikes, e-scooters, electric rental vehicles, ride-shares, and vehicles operated by local transit agencies. The new EV charging stations will create new opportunities for charging multiple active mobility and shared mobility modes, appropriate for Level 2 charging and each site's context. This will help transform existing, vehicle-dominated parking lots into more multimodal facilities for students, teachers, and the community at-large. The Project will support students who lack access to a car to use more affordable active mobility options, such as e-bikes or e-scooters, by including amenities like racks, where feasible and appropriate.

### Urban/Suburban Area Charging and Fueling Solutions



PowerNC will add up to nine EV charging stations in urban and suburban areas to expand public access to convenient, equitable, accessible, and affordable electric charging. These participating CCs are centrally located in counties across the State, and the new EV charging stations will improve convenience and address the higher number of short trips taken by EV users in urban settings to provide students, faculty, and visitors with accessible and affordable electric charging solutions.

### Rural Area Charging and Fueling Solutions



PowerNC will add up to 11 EV charging stations in rural areas to support multipurpose use and address the unique needs and challenges of these communities. PowerNC is consistent with USDOT's Rural Opportunities to Use Transportation for Economic Success (ROUTES).

### Fleet Vehicles that Serve and Operate in Communities



PowerNC will support the electrification of each CC's vehicle fleet by providing on-campus infrastructure that can be used by CC staff to charge these vehicles. If awarded, NCDOT will coordinate with each CC to develop policies that facilitate both public use and fleet vehicle charging, including exploring overnight charging. Vehicle classes commonly used in CC fleet vehicles include sedans, sports utility vehicles (SUVs), and shuttles.

### Payment Solutions and Cybersecurity



PowerNC will use secure and reliable payment methods that are accessible to people with disabilities and do not require a membership. Both traditional payment systems and innovative payment approaches, including contactless technology and mobile wallets, will be supported in accordance with the applicable requirements of 23 CFR Part 680 and section 508 of the Rehabilitation Act. Each participating CC will identify additional ways to make payment systems accessible to diverse populations, including the unbanked and underbanked. The charging stations will utilize NEVI interoperability and cybersecurity standards.



# *power*NC

IN PARTNERSHIP WITH  
**STEPS4GROWTH & NC COMMUNITY COLLEGE SYSTEM**

**USDOT Charging and Fueling  
Infrastructure Grant  
APPLICATION  
JUNE 2023**

