

Research Project Name: Examining the Distribution and Utilization of Electric Vehicle Charging Stations Infrastructure in Small Towns and Rural Areas
Recipient/Grant (Contract) Number: Florida A&M University; Cleveland State University
Center Name: Rural Safe Efficient Advanced Transportation (R-SEAT) Center
Research Priority: Improving Mobility of People and Goods
Principal Investigator(s): Emmanuel Kidando and Thobias Sando
Project Partners: Washington State Department of Transportation (WSDOT)
Research Project Funding: \$99,135.84 (Federal request); \$81,578.73 (Non-Federal cost share)
Project Start and End Date: 9/1/2024 to 12/31/2025
Project Description: Despite the rapid growth in electric vehicle (EV) adoption, small towns and rural areas face significant challenges in adequate supply of charging facilities. These infrastructure gaps hinder the expansion of EV usage in these regions, where public charging stations are often sparse or nonexistent. This project aims to analyze the current distribution, utilization and availability of EV charging stations in rural and small-town settings, identifying infrastructure gaps compared to urban and suburban areas. A core objective is to examine the underlying factors contributing to this uneven distribution. To achieve this, the study will employ spatial and statistical analysis of quantitative data, alongside qualitative insights gathered through stakeholder interviews and public surveys. Beyond infrastructure, the project will explore how the availability of charging stations influences public perception of EV adoption and the willingness of residents to transition to electric vehicles. Based on these findings, we will develop targeted strategies to improve charging infrastructure, including policy recommendations, funding mechanisms, and community engagement initiatives. The goal is to support the expansion of EV infrastructure in small towns and rural areas, ensuring that these regions are integrated into the broader shift toward cleaner and more efficient transportation solutions.
US DOT Priorities: Improving Mobility of People and Goods, focusing on rural transportation.
Outputs: The primary output of this study is a comprehensive assessment of the challenges associated with EV charging infrastructure in rural and small-town communities. Addressing these challenges will support transportation system improvements, encourage EV adoption, and inform strategies to expand public charging accessibility. Rigorous statistical models will be used along with spatial analysis tools to evaluate the current state of EV infrastructure, ensuring data-driven insights for policy and investment decisions.
Outcomes/Impacts: This research will generate a strategic framework for EV charging station expansion in rural areas, enabling governments and businesses to allocate resources effectively in alignment with future EV adoption trends. Other outcomes are increased access to EV charging infrastructure, reducing range concerns and improving the feasibility of EV ownership. Also, it will provide economic and environmental insights, highlighting the benefits of expanding rural EV infrastructure, including potential economic growth and emission reductions. Ultimately, this research will offer a standardized methodology for evaluating charging station deployment, providing a tool for policymakers, researchers, and investors to optimize infrastructure planning and expansion. Generally, this project plans to enhance EVCS network growth and utilization



which will increase the confidence in EV ownership in rural areas supporting broader EV adoption.

Final Research Report: N/A