

Rural Safe Efficient Advanced Transportation (R-SEAT) Center

Research Project Name: Addressing Active Transportation Gaps in Communities with Limited Transportation Access
Recipient/Grant (Contract) Number: Florida A&M University; University of Washington Tacoma
Center Name: Rural Safe Efficient Advanced Transportation (R-SEAT) Center
Research Priority: Improving Mobility of People and Goods
Principal Investigator(s): Angela Kitali, Thobias Sando, Emmanuel Kidando, Sagar Keshari, Ren Moses, Jeffrey Walters, and Heather Dillon
Project Partners: Washington State Department of Transportation (WSDOT)
Research Project Funding: \$98,258.19 (Federal request); \$49,130 (Non-Federal cost share)
Project Start and End Date: 9/1/2024 to 5/31/2026
Project Description: Many populations with limited transportation access reside in rural residential clusters (RRCs) just outside major population centers. In the context of this research, an RRC is defined as a small, unincorporated cluster of adjacent homes located along a state highway or major county road outside the limits of any city/town limits, urban growth area, or census-designated place. These communities are under county governance and generally lack municipal services, as well as on-site essential services. They typically depend on nearby population centers or other trip generators, such as grocery stores, schools, or clinics. These individuals often lack access to personal vehicles and must rely on walking, biking, or public transit to reach essential services and destinations. However, the active transportation infrastructure connecting these rural residential clusters to key service centers is frequently inadequate, posing significant challenges and safety concerns for pedestrians and bicyclists. This project addresses these gaps in active transportation access for residents in RRCs. The key objectives are to 1) develop a method for identifying RRCs that lack adequate active transportation infrastructure; 2) assess the specific active transportation needs and challenges faced by residents in these communities; and 3) create resources for implementing targeted interventions to improve connectivity and safety for active transportation means. The research approach will involve a comprehensive literature review, spatial data collection and analysis, integration of community characteristics, land use, and transportation network data, as well as demographic data, and qualitative community assessments. The team will utilize geographic information system (GIS) mapping and comparative analyses to quantify the gaps in active transportation infrastructure between RRCs with limited transportation options and other neighborhoods. Surveys, interviews, and focus groups will provide deeper insights into the lived experiences and perceptions of residents. By addressing these gaps, the project seeks to improve access to essential services and support the overall transportation access and mobility for community residents. The anticipated outcomes include enhanced connectivity and safety for pedestrians and cyclists, increased access to opportunities, reduced transportation costs, and the development of more resilient and efficient transportation systems. The findings and recommendations will assist transportation agencies in facilitating active transportation and improving access in RRCs with limited transportation access.
US DOT Priorities*:

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Outputs: This project will produce an approach for identifying RRCs with limited transportation access, a comprehensive needs assessment integrating spatial and community data, and targeted policy and design recommendations to enhance active transportation infrastructure. Additionally, it will provide data-driven tools and implementation resources for transportation agencies to improve mobility and safety in these communities.

Publications

Mrema, R., Kitali, A., Sando, T., and Kalambay, P. (2025). “Development and Implementation of a GIS-Based Active Transportation Infrastructure Assessment and Navigation Tool,” *Institute of Transportation Engineers (ITE) Journal*, 98(7), 35-39.

Outcomes/Impacts: The successful implementation of this project is expected to yield the following outcomes: (1) improved connectivity for pedestrians and bicyclists in RRCs with limited transportation access; (2) enhanced safety and reduced risk of collision for active transportation users; (3) increased access to essential services; (4) reduced transportation-related costs and improved economic opportunities for residents in communities with limited transportation options; (5) promotion of more resilient transportation systems within the region; and (6) improved sense of safety and comfort for residents resulting from improved active transportation infrastructure.

Final Research Report: In progress