

Exhibit D – Research Project Requirement Template

Micromobility Adoption, Ownership, and Use Patterns in the United States

Recipient/Grant (Contract) Number: The University of Texas at Austin/Grant # 69A3552344815 and 69A3552348320

Center Name: National Center for Understanding Future Travel Behavior and Demand (TBD)

Research Priority: Improving Mobility of People and Goods

Principal Investigator(s): Irfan Batur; Ram M. Pendyala

Project Partners: N/A

Research Project Funding: \$200,000 (Federal + non-Federal funding)

Project Start and End Date: 6/1/2026 – 5/31/2027

Project Description: Micromobility modes—including conventional bicycles, electric bicycles, electric scooters, shared micromobility services, and other emerging personal mobility devices—are becoming increasingly important components of the U.S. transportation system. These modes offer opportunities to support short-distance travel, improve first- and last-mile access to transit, reduce automobile dependence, and promote healthier and more sustainable travel behavior. Despite growing adoption, there remains limited national evidence regarding who owns and uses micromobility devices, how frequently they are used, the purposes they serve, and the extent to which they substitute for automobile, transit, ridehailing, walking, or other travel modes.

This project aims to provide a comprehensive assessment of micromobility adoption, ownership, and use patterns in the United States using data from Wave 2 of the Transportation Heartbeat of America (THA) Survey, a nationally representative travel behavior survey of more than 8,000 U.S. adults. The study will examine household ownership and familiarity with a broad range of micromobility devices; characterize utilitarian and recreational use across demographic, household, geographic, and work-arrangement segments; analyze trip characteristics such as distance, duration, timing, and purpose; and investigate mode substitution patterns, safety perceptions, and motivations for use.

The project will employ weighted descriptive analyses, cross-tabulations, and visualization techniques to identify meaningful differences in micromobility ownership and travel behavior across population groups. Findings will provide a comprehensive national characterization of how micromobility modes are integrated into everyday travel and the roles they play in expanding mobility options, supporting first- and last-mile connectivity, and reducing reliance on motorized transportation.

US DOT Priorities: This project aligns with three strategic goals of the U.S. Department of Transportation's FY 2026–2030 Strategic Plan: Innovation, Safety, and Infrastructure. By leveraging the nationwide Transportation Heartbeat of America (THA) Survey to examine micromobility ownership, adoption, use patterns, trip characteristics, and mode substitution, the project generates new evidence on emerging travel behavior and supports the Department's objective of leveraging new and emerging data sources to improve transportation planning and decision-making. The study also advances understanding of how emerging mobility options are integrated into everyday travel across diverse population groups, providing an empirical foundation for future transportation policies and investments.

The project also contributes to the Department's Safety goal by examining safety perceptions, travel contexts, and user characteristics across personal and shared micromobility modes. These findings will help transportation agencies better understand where safety concerns exist and inform targeted safety interventions, educational efforts, and infrastructure improvements for micromobility users. Finally, the project supports the infrastructure goal by identifying the travel contexts and population groups for which micromobility expands mobility options and strengthens first- and last-mile connectivity. These insights can inform investments in bicycle facilities, shared micromobility infrastructure, and other micromobility transportation improvements that enhance system reliability and accessibility.

Outputs: The project will generate a set of research products that advance understanding of micromobility behavior in the United States. These outputs include: (1) a peer-reviewed journal article submitted to a transportation journal, such as Transportation Research Part D, Transportation Policy, or a comparable outlet, presenting national descriptive evidence on micromobility ownership, use patterns, trip characteristics, and substitution behavior; (2) a conference paper and presentation at the Transportation Research Board Annual Meeting; (3) a technical data/policy brief summarizing key findings and planning implications for micromobility investments, first- and last-mile connectivity, safety, and targeted outreach; and (4) a descriptive analytical framework for characterizing micromobility target populations, household ownership patterns, utilitarian and recreational use contexts, and mode substitution across demographic, household, geographic, and work-arrangement segments.

Outcomes/Impacts: By identifying the population groups and travel contexts in which micromobility is used, this research will support more targeted transportation investments, first- and last-mile strategies, and safety interventions. Evidence on mode substitution will help transportation agencies understand whether micromobility reduces reliance on private vehicles, complements or substitutes public transit, replaces ridehailing or walking trips, or enables trips that might not otherwise be made. These insights will inform transportation policies and infrastructure investments aimed at expanding mobility options, improving accessibility, and supporting sustainable and efficient transportation systems. The project will also contribute to the growing body of knowledge on emerging mobility by providing national descriptive evidence across personal and shared micromobility modes. In addition, the research will contribute to graduate student training in travel behavior analysis, survey data processing, weighted descriptive methods, and transportation data visualization, helping prepare the next generation of transportation professionals.

Final Research Report: A URL link to the final report will be provided upon completion of the project.