

Exhibit D

Research Project Requirement Template

Investigating Travel Survey Representativeness: Who's Missing and What Can We Do?

Recipient/Grant (Contract) Number: The University of Texas at Austin; University of Michigan, Ann Arbor / Grant # 69A3552344815 and 69A3552348320

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

Research Priority: Improving Mobility of People and Goods

Principal Investigator(s): Atiyya Shaw

Project Partners: N/A

Research Project Funding: \$300,000 (Federal + non-Federal funding)

Project Start and End Date: 1/1/2024 - 5/31/2025

Project Description: The core source of data for transportation planning and forecasting comes from household travel surveys. Travel surveys are used to obtain insight into the behavioral decisions of travelers; for example: (1) trip purposes such as work or shopping; (2) means/mode of transport such as car, walk, bus, etc.; (3) travel time; and (4) time of day/week. However, these surveys tend to underrepresent the views and needs of people of color and low-income travelers, precisely the groups that depend most on historically underfunded travel modes like public transit, biking, and walking. In addition to this underrepresentation, it is increasingly difficult to obtain high quality data from those who do respond (e.g., response biases, measurement errors for underrepresented groups), as well as to obtain the detailed contextual and psychological attribute information needed for accurate behavioral forecasting. The goal of this project is to investigate household travel survey biases to identify the causes and propose potential solutions. This goal will be achieved via the following tasks:

- **Task 1:** a quantitative investigation of national and state transportation household survey biases across diverse metropolitan regions in the United States;
- **Task 2:** the documentation and comparison of the sampling methods, instrument evaluation, and post-processing correction methods utilized across these various household survey implementations;
- **Task 3:** a case study for the Detroit metro area that more closely analyzes and seeks to define hard-to-reach populations and geographies, and provides targeted insight for sampling methods, outreach, and instrument design; and
- **Task 4:** the development of a methodological guide in the form of a white paper oriented toward approaches that can be used by transportation organizations, agencies, and firms.

US DOT Priorities:

Equity (page 33), *“Equity and Accessibility Assessment: Develop data, tools, and research to evaluate and advance the equity and accessibility of transportation systems, projects, jobs, and policies.”*): A foundational goal of the proposed project is to improve the representation of hard-to-reach populations in travel survey data.

Climate and sustainability (page 42), *“U.S. DOT aims to reduce air pollution and greenhouse gas emissions from transportation and to advance a more sustainable transportation system.”* : Data biases underrepresent individuals who are more likely to use active transportation and transit, modes of transport that are key in the effort to reduce carbon emissions from transportation.

Transformation research (page 52), *“Placing humans at the center of the transportation system with all outcomes oriented to supporting human needs, and public leadership ensuring the deployment of emerging technologies meets the needs of all people while supporting equitable and inclusive growth and governance.”*: The methodological and applied aims of this research align well with this research priority. The primary aim of this project is to develop people-centered data and outcomes for transportation policy development and decision-making.

This project addresses the following USDOT technology transfer priorities:

Page 65, *“By getting data, tools, and skills into the hands of transportation officials, entrepreneurs, and other stakeholders, technology transfer drives improvements to our transportation system and spurs economic growth.”*: This work will be conducted with input from MPO and state transportation officials and in turn will aim to create white papers and policy briefs that can influence state and federal transportation methods (e.g., sampling) and policies.

Page 68, *“U.S. DOT encourages UTCs to engage in research, education, and workforce development.”*: As part of the UTC program, this project falls within this aspect of the technology transfer aims.

Outputs: It is expected that the proposed efforts will yield at least one white paper and one research publication.

Outcomes/Impacts:

- The sampling methods and approaches highlighted can be a significant methodological contribution to future mobility surveys and data collection efforts (Year 1).
- It is anticipated that results from this work will influence the state of practice in the field as regards user-centered transportation survey data collection.

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