

## Exhibit D

### Research Project Requirement Template

#### Identifying Travel Needs, Barriers, and Solutions

**Recipient/Grant (Contract) Number:** The University of Texas at Austin/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):** Alex Karner

**Project Partners:** N/A

**Research Project Funding:** \$100,000 (Federal + non-Federal funding)

**Project Start and End Date:** 9/1/2023 - 5/31/2025

**Project Description:** Access to affordable, reliable, safe, and convenient transportation resources is a fundamental determinant of well-being and social inclusion. Historically and currently disadvantaged population groups often face unique travel needs and barriers that can significantly impact their daily lives. This research project aims to investigate and address these challenges within these communities, ultimately contributing to improved access to essential services and enhanced quality of life. Specifically, we will use mixed methods to develop and test a novel survey instrument capable of quantifying travel needs and barriers across a population. We will also provide insights into the needs and barriers faced by specific groups. The work will also involve producing policy-relevant insights that speak to the extent to which currently proposed transportation “solutions” including connected and automated vehicles, smart cities, and microtransit can be designed and deployed to address transportation equity goals.

#### **US DOT Priorities:**

The RD&T Strategic Plan includes “Equitable Mobility for all” as a “Grand Challenge” which requires purpose-driven research on transport disadvantaged communities (women, people with color, LGBTQI+ communities, people with physical, cognitive, and sensory disabilities as identified in 1<sup>st</sup>, 4<sup>th</sup>, 5<sup>th</sup> point of page 34 of *RD&T Strategic Plan 2022-2026*) for innovative, equitable and accessible mobility technologies and services. The plan outlined a research priority area on “Equity and Accessibility Assessment” (*page 33*) which encompasses developing analytical tools and frameworks to measure the transport needs of disadvantaged and underserved communities (3<sup>rd</sup> point *page 34*). Also, the proposed research would aid the “Mobility Innovation” strategy (*page 34*) as this involves considering the impact of new mobility services on access and barriers to use emerging modes and transport services. Most importantly, this research call for a people-centered approach where needs assessment of different socio-demographic groups would help to create an Integrated System-of-Systems and Data Driven Insight for future mobility (research priority areas of US DOT RD&T plan, *page 50 Table 6*).

While this research project will not involve the creation of new physical technology products per se, it will produce new methods for evaluating travel needs and barriers. The RD&T document describes technology transfer (T2) as being critical for making transportation better for people using “data, tools, and skills” (p. 65). Accordingly, the work will facilitate T2 in this sense. Our partnerships with non-profit organizations and agencies will facilitate the translation of our work into practice. Specifically, we will collaborate with agencies and staff that currently employ travel demand models and their attendant data collection pipelines to ensure that the questions we develop and propose meet any relevant standards that they employ in terms of required language and phrasing. We will also consider developing and validating

questions that get at related concepts specifically of concern to them. We will also summarize our work in academic articles, conference presentations, and other forms and venues (including a policy paper) that should help to translate the work from academia to practice.

### **Outputs:**

This research project anticipates yielding a diverse range of outputs that promise to contribute to our understanding of transportation equity and provide practical solutions for addressing access barriers. These outputs encompass:

**Publications and Conference Papers:** 1-2 peer-reviewed academic publications and associated conference papers including one comprehensive literature review and one reporting on mixed-methods analysis and results.

**Policy Paper:** One policy paper that translates our research into actionable recommendations for decision-makers and agency staff. These papers will outline strategies for enhancing transportation equity.

**Web-Based Resources:** We will establish dedicated websites and online resources that centralize our research findings, making them accessible to a wide audience, including community organizations, transportation planners, and the general public. These platforms will serve as hubs for sharing insights and best practices.

**Survey Instrument:** A novel and robust survey instrument will be developed and shared, enabling other researchers and organizations to quantify travel needs and barriers across different populations. This tool will facilitate future studies on transportation equity.

**Practical Solutions and Policy Recommendations:** As a core objective, this research project will offer practical solutions and policy recommendations to mitigate identified travel barriers.

### **Outcomes/Impacts:**

Our research outputs will drive transformative outcomes, including:

- \* Increased awareness and deeper understanding of transportation equity issues that will catalyze constructive discussions among stakeholders.
- \* The growth of transportation equity knowledge, fostering further research and innovation.
- \* Better assessment and mitigation practices for transportation needs and barriers.
- \* The adoption of new technologies and practices (e.g., related to improved survey methods), fostering more equitable transportation systems

The desired impacts of the work include transportation policy, planning, decision-making, and investments that directly address the needs of populations that have historically been and/or are currently underserved by the system. Understanding and addressing these needs is a critically important for achieving transportation equity.

We will communicate that that transportation solutions are not one-size-fits-all, but rather tailored to the unique challenges faced by disadvantaged groups. The project could ultimately reconfigure the transportation landscape, placing historically marginalized and underserved communities at the center of all aspects of transportation planning and decision making.

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