

Exhibit D – Research Project Requirement Template

Integrating Transportation Data to Address Representation and Measurement Limitations in Travel Behavior and Demand Analysis

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): Atiyya Shaw

Project Partners: N/A

Research Project Funding: \$148,409 (Federal and non-Federal funding amounts.)

Project Start and End Date: 06/2026-05/2027

Project Description: Expanding transportation data availability is creating new opportunities for a richer, potentially more representative, and broader data landscape to support the measurement and modeling of evolving travel behaviors and outcomes. This project addresses the need for clearer guidance on when, where, and how multiple data sources can be integrated to overcome common data limitations in travel behavior and demand research. The proposed work will develop an accessible taxonomy and application framework organized by stage of analysis – survey design, data preparation, analysis and modeling, validation, and calibration – and by the specific limitation being addressed: insufficient sample size, lack of population representativeness, unobserved key variables, and measurement error. By linking data limitations to appropriate integration strategies and transportation applications, this work will help move the field beyond isolated, ad hoc uses of data fusion toward a more systematic and transferable practice. The expected outcome is practical guidance that supports more credible, representative, and policy-relevant travel behavior and demand analysis in an increasingly complex data environment.

US DOT Priorities: The methodological and applied aims of this research align with the USDOT priority of investing in transformative technologies, specifically corresponding to the stated sub-objective to leverage new and emerging data sources. This effort aims to advance the use of multiple data sources, most typically by integrating new and emerging sources with traditional data, to improve infrastructure forecasting and planning.

Outputs: The primary output of this work will be an accessible taxonomy of multiple data use methods for transportation applications. We will apply this taxonomy to illustrate the data limitations that can be addressed by using new and emerging data alongside traditional data sources.

Outcomes/Impacts: This work is intended to widen the adoption of multiple data usage and to inform strategic data collection in transportation research and practice. The developed taxonomy and framework will be developed and shared in venues that are accessible for practitioners and researchers. Improved utilization and awareness of methods for multiple data usage may result in improved population representation and thereby more accurate and useful models and forecasting tools for the travel behavior and demand community.

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