Exhibit D

Research Project Requirement Template

The Travel Behavior and Data (TBD) Hub

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): Chandra Bhat, Co-PIs: Alison Conway, Atiyya Shaw, Cynthia Chen, James Tutt, Patricia Mokhtarian, Ram M. Pendyala, Wen Cheng

Project Partners: N/A

Research Project Funding: $375,000

Project Start and End Date: 6/1/2024 - 5/30/2029

Project Description: In an era characterized by transformative shifts in demographics, lifestyles, work patterns, technological advances, societal values, and climate and environmental conditions, decision-makers are now confronted with ever-increasing, multifaceted uncertainties. The TBD National Center has launched a flagship initiative, called the TBD Hub, to provide transportation decision-makers information and deep insights about the state of the transportation system from multiple perspectives, thereby helping navigate and shape the evolving landscape of mobility. The TBD Hub is a **t**ravel **b**ehavior **d**ata hub that brings a variety of data sets into a single unified platform, thus serving as a one-stop shop for data-driven insights on travel behavior and demand. Examples of the datasets that the platform will bring together include, but are not limited to, American Community Survey (ACS) census data, National Household Travel Survey (NHTS) data, American Time Use Survey (ATUS) data, Consumer Expenditure Survey (CES) data, Commodity Flow Survey (CFS) data, Vehicle Inventory and Use Survey (VIUS) data, National Health and Nutrition Examination Survey (NHANES), Residential Energy Consumption Survey (RECS) data, Commercial Buildings Energy Consumption Survey (CBECS) data, and Air Quality (AirNow) data. In addition, through a unique partnership with data vendors and aggregators, including **StreetLight Data**, the platform will integrate aggregated origin-destination flow data derived from billions of trajectories. The platform will be built through a multi-year, multi-university effort that spans multiple disciplines and thrust areas. The team will harness the latest techniques in data aggregation, data fusion and integration, data imputation and weighting, data prediction (using machine learning algorithms), and data visualization to build a national TBD hub that the public, planners, and policy-makers alike can leverage to understand the state of the transportation system. In addition to providing a wide variety of tabulations, charts, and dynamic visualizations, the hub will integrate a **well-being calculator**, an **energy footprint calculator**, and a **mobility poverty calculator** to aid in planning for equity, sustainability, and community well-being. The primary data source for these analyses will be American Community Survey (ACS) census data, National Household Travel Survey (NHTS) data, American Time Use Survey (ATUS) data, and Consumer Expenditure Survey (CES) data. Other data sources will also be considered as the project moves into its subsequent phases.

This TBD flagship project will be built through a multi-year and multi-university effort. It is envisioned that the Hub will feature numerous separate but complementary data dashboards, each designed to focus on a specific topical area and/or data set. There will be two types of dashboards: the first type will focus on insights from a single data set, such as ATUS or NHTS, across multiple topical areas; the second

type will integrate multiple data sets to provide a comprehensive view of a single topical area. These individual dashboards that will form the TBD Hub will be developed as separate TBD research projects. Thus, the current proposal is dedicated to creating a single, unified platform that will host all of these individual dashboards thematically. The TBD Hub anticipates democratizing access to publicly available data sets through the development of user-friendly dashboards that will be available on a one-stop shop. Through this Hub, TBD envisions providing resources, data, and tools that will greatly advance the ability of agencies and industries to implement data-driven methods, policies, and investments that improve mobility for all in an equitable and sustainable way.

US DOT Priorities: The project aligns closely with the USDOT RD&T Strategic Plan goals, particularly in advancing research and development efforts related to transportation transformation, climate and sustainability, and equity. The TBD Hub addresses the transformation research priority by enhancing data accessibility and usability, enabling more informed decision-making processes. By providing comprehensive insights into various topical areas into travel behavior and demand, the Hub enables transportation planners and policymakers to identify opportunities for optimizing transportation systems, thus having the potential to contribute to the climate and sustainability priority. Additionally, the Hub supports equity goals by democratizing access to data and insights, ensuring diverse stakeholder groups can benefit from evidence-based research. This project directly corresponds to the objectives outlined on pages 50-62 for transformation research, pages 41-49 for climate sustainability, and pages 33-40 for equity priorities of the RD&T Strategic Plan.

Outputs: The anticipated outputs of the TBD Hub project are multi-faceted. The Hub will generate a series of comprehensive dashboards, providing users with intuitive access to many publicly available data sets for instant and in-depth analysis of travel behavior and demand patterns and associated factors. This innovative tool will be openly accessible to the public, facilitating broad utilization across academia, industry, and policymaking spheres. Additionally, the project will yield methodological advancements in data preprocessing and analysis algorithms, enhancing the efficiency and accuracy of extracting insights from large-scale datasets. These developments will be documented in academic publications and conference presentations, contributing to the advancement of knowledge in transportation planning and data science domains. Overall, the Hub aims to deliver tangible outputs that not only advance research in the field but also have practical implications for transportation planning and policy development.

Outcomes/Impacts: By featuring publicly available data sets across numerous topical areas on user-friendly dashboards, the TBD Hub will provide decision-makers with rapid and nuanced insights into travel behavior and demand. This will assist them in shaping their research agendas, formulating policies, and making both short- and long-term decisions. Additionally, the project may include the development of new methodologies for analyzing large-scale data sets, thereby enhancing the skills of transportation professionals. Ultimately, the Hub will provide data tools that will significantly advance the ability of decision-makers to implement data-driven methods, policies, and investments that improve mobility for all.

The TBD Hub will improve transportation practice by providing accessible fast, efficient, and actionable insights into travel behavior and demand dynamics. Its user-friendly dashboards will enhance decision-making, leading to better demand management, policymaking, and equitable planning outcomes. Additionally, the project's findings will advance scientific understanding of data analytics and visualization methodologies, contributing to the body of knowledge in data analysis. By promoting evidence-based strategies, it will foster sustainability and equity in a rapidly evolving societal and technological landscape.

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