Exhibit D

Research Project Requirement Template

> **Promoting Sustainable Travel within Communities through Behavioral Interventions and Emerging Mobility Solutions: Stage 2**

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): Srinivas Peeta

Project Partners: N/A

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

Project Start and End Date: 6/1/2024 - 5/31/2025

Project Description: The primary objective of the project is to systematically nudge communities towards societal travel goals of mobility, accessibility, environmental sustainability, and equity by addressing the challenges of low adoption of sustainable travel modes (e.g., transit, walking, biking) and limited access to societal services/activities (e.g., jobs, medical, grocery stores) for disadvantaged groups (e.g., travelers in transit deserts, low-income neighborhoods). It seeks to address these challenges by implementing the systematic framework developed in Stage 1 by leveraging behavioral interventions and emerging mobility solutions. Key outputs of Stage 1 included the development of behavioral models (based on data collected through online surveys) and exploration of emerging mobility solutions (e.g., micromobility, ridehailing, and partnerships between public and private mobility service providers) in a generic context. Complementing the foundational work in Stage 1, Stage 2 focuses on the practical implementation of the framework by leveraging the City of Peachtree Corners (PTC), GA, as a living lab. It involves:

- Prototype App Development: The prototype smartphone app, currently in development, builds on the progress in Stage 1. It features functionalities to collect sociodemographic and travel data, deliver real-time interventions for sustainable travel, and gather participant feedback.
- Community Engagement: Engaging with PTC stakeholders (i.e., residents, governance, and mobility service providers) is crucial to ensure alignment of behavioral interventions and emerging mobility solutions with community needs. The project team will leverage the ongoing partnership with PTC and its mobility service providers and utilize the smartphone app to connect with residents to foster a collaborative approach to solution development.
- Behavioral Intervention-Related Field Test: A field test will be conducted to assess the effectiveness of the portfolio of behavioral interventions to promote sustainable travel behavior. A representative PTC sample will be recruited. Baseline data related to sociodemographics and travel behavior collected via the app will guide customization of interventions and modification of Stage 1 behavioral models to ensure consistency with PTC travel-related behaviors. Personalized real-time interventions will be delivered to the participants via the app. Data and feedback will be collected on their effectiveness.
- Development of Emerging Mobility Solutions: Emerging modes, such as micromobility and autonomous shuttles, are already initiated in PTC. The project will leverage these modes to customize the emerging mobility solutions (from Stage 1) to enhance access and equity in PTC. Recommendations for other communities will be made to ensure broader impact and scalability.

- Framework Evaluation: Using the data collected during field tests and insights gained through the development of emerging mobility solutions, the proposed framework will be evaluated to verify its efficacy in addressing societal challenges. This will lead to actionable recommendations and guidelines for other communities to adopt the framework and make progress towards their societal travel goals.

The novelty of this proposal lies in its interdisciplinary approach and its focus on practical implementation. By integrating knowledge from transportation, urban planning, multimodal operations, behavioral economics, machine learning, optimization, and data analytics, it generates innovative solutions to complex societal challenges. Additionally, the emphasis on real-world applicability, demonstrated through engagement with PTC and the development of a prototype smartphone app, sets this project apart. By bridging the gap between theory and practice, the project helps advance the field of sustainable travel.

US DOT Priorities: The text/specific section and page numbers of the RD&T document this project addresses include (but not limited to): 1) Page 63: "…advance health, prosperity, security, environmental quality, and justice…"; 2) Page 64: "…delivering R&D results to people who will put it to use..."; 3) Page 64: "…evaluating the performance of new technologies and identifying and assessing best practices … publish technical papers and guides; present webinars and deliver presentations to stakeholders; … outreach materials highlighting research results."; 4) Page 65: "…develop and pilot practical solutions, promote the adoption of these solutions, and evaluate their use and effectiveness."

Outputs: The anticipated project outputs are: 1) A prototype smartphone app that serves as a tool to deliver personalized behavioral interventions to travelers; 2) Travel behavior models for community residents under various travel options and personalized behavioral interventions; 3) Partnership models for emerging mobility solutions by integrating the traditional and emerging modes available in a community; 4) Guidelines for implementing the framework in diverse community contexts, informed by real-world field tests and feedback from PTC residents; 5) A rich dataset capturing travel behavior and preferences of community residents, gathered through the prototype smartphone app during field tests, facilitating evidence-based decision-making for policymakers and urban planners; 6) Evidence-based policy recommendations derived from the project findings, aimed at promoting sustainable travel behaviors and enhancing accessibility for disadvantaged groups in communities. The proposed models and research findings have strong potential to advance the literature on sustainable travel in communities, and will be disseminated through journal articles and conferences.

Outcomes/Impacts: The anticipated outcomes are: 1) Implementation of behavioral interventions and emerging mobility solutions in communities to address mobility, accessibility, and environmental sustainability disparities, resulting in enhanced quality of life for community residents; 2) Adoption of sustainable travel behaviors among community residents, leading to reduced reliance on personal vehicles and increased utilization of sustainable modes, fostering environmental sustainability; 3) Implementation of the prototype smartphone app in communities, serving as a tool for promoting sustainable travel behaviors; 4) Adoption of evidence-based policy recommendations derived from the project's findings, leading to the development of new policies, regulations, or legislative measures. The anticipated impacts of the project include: 1) Enhancement of quality of life for community residents by promoting sustainable travel behaviors and enhancing access to societal services/activities, fostering social inclusion and addressing transportation-related disparities within communities; 2) Reduction of carbon emissions and environmental impacts through the adoption of sustainable travel modes and emerging mobility solutions, contributing to a more sustainable transportation system; 3) Advancement of interdisciplinary knowledge in transportation, urban planning, behavioral economics, and multimodal operations, with the dissemination of project findings contributing to the broader scientific community and fostering cross-sector collaborations.

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