Exhibit D – Research Project Requirement Template

The Home as a Trip Attractor: An Exploratory Study of Residential Service Demand

Recipient/Grant (Contract) Number: The University of Texas at Austin; The City College of New York/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): Alison Conway

Project Partners: N/A

Research Project Funding: $130,000

Project Start and End Date: 06/01/2025 - 08/31/2026

Project Description: Taking a two-phase approach, this study aims to investigate the nature and scale of household-based service demands, and to establish a baseline for better data collection and modeling of this under-studied component of travel demand in future research efforts. Part 1 of this project will utilize data from the recently completed Transportation Heartbeat of America (THA) survey to develop frequency choice models for both household service trip demands and household delivery demands. These models will enable us to quantify household demands for service; to identify the demographic, household, and location-based characteristics that are drivers of these demands; and to compare the scale and characteristics of service demands vs. delivery demands.

In Part 2, we will identify a set of key household service industries, and conduct a comprehensive review of multi-disciplinary literature and of existing data sources for each. We will characterize the industry, investigating industry structural characteristics and typical workday travel characteristics, and evaluate the utility of existing data sources to inform future industry-specific travel demand modeling. Results will be published as a succinct guidebook on potential data sources for modeling household service demand. This deliverable is also expected to serve as the foundation for a second phase of research that will aim to develop advanced supply-side modeling approaches for estimating and characterizing service-related travel demand.

US DOT Priorities: This project addresses a segment of travel demand – household-based service trips – that is not well-understood or effectively quantified in existing travel demand modeling approaches. A better understanding of this demand is needed to align transportation infrastructure and service capacities with the needs of employees in service-providing industries, both to support **worker quality of life** and to support more **efficient industry operations**. The project is also expected to improve system **safety** by reducing unexpected conflicts.

Outputs: This project will produce two primary outputs. A Part 1 report will detail methods and results from our Transportation Heartbeat of America survey-based household service demand models. This report will provide an assessment of the scale of this under-studied travel segment that will help planners to evaluate the importance of accounting for this activity in future data collection and modeling efforts.

A guidebook produced in Part 2 will provide industry-specific guidance for future measurement and modeling of service demands, including industry descriptions, industry-specific travel activity summaries, available data sources, and data quality and gap analysis. This tool will serve as an informational resource

to researchers and practitioners aiming to conduct future research or to measure local activities to inform planning decisions.

Outcomes/Impacts: By helping planners to understand an element of travel not captured by common household and freight demand models, this project can inform better system planning. The models developed in Part 1 of this project will enable assessment of the volume of service trips generated by households. Part 2 will facilitate awareness of travel characteristics for specific household-based service industry segments, and by improving awareness of existing data sources useful to advance related research and analysis efforts. By directly addressing a critical gap in the travel demand modeling literature (household-based service activity) and contributing a comprehensive assessment of data sources to measure this activity, this study both contributes to the scientific body of knowledge and enables future practical system planning decisions that recognize the scale and unique characteristics of household service providers. Data-informed planning should ultimately result in improved service provision (e.g. transit services serving non-traditional commuters) and infrastructure (e.g. dedicated parking) to meet the needs of household service providers, enabling them to maximize revenues by eliminating wasted time traveling between locations and providing more reliable customer service times. Improved planning will also benefit communities by better aligning infrastructure supply – particularly in residential areas – with real demands, reducing unexpected conflicts (e.g. unavailability of legal parking alternatives, conflicts between service and delivery uses) and associated traffic congestion, collision risk, and related externalities.

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