Exhibit D – Research Project Requirement Template

Understanding Transportation Investment Priorities in Suburban Communities

Recipient/Grant (Contract) Number: The University of Texas at Austin; Arizona State University/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): Ram M. Pendyala, Irfan Batur

Project Partners: N/A

Research Project Funding: $100,000

Project Start and End Date: 6/1/2025 - 5/31/2026

Project Description: Over the past several decades, suburbs have become home to a majority of Americans, experiencing significant growth, especially in Sun Belt metropolitan regions. Characterized by low-density land use and separated residential and commercial zones, suburban communities face substantial transportation challenges due to heavy reliance on private automobiles. This auto-dependency has led to increased congestion, safety concerns, and limited mobility options in these areas, especially for individuals with constrained transportation access.

Despite these challenges, there is limited empirical evidence about the transportation investments that suburban residents value most and how the ranking of transportation priorities varies among suburban residents. The influence of attitudes, perceptions, and lifestyle choices in shaping these priorities is also not well understood. This project aims to examine the heterogeneity of transportation investment priorities among suburban residents to inform community-level infrastructure planning and policy development.

The project will utilize a unique dataset collected in 2024 through a detailed survey of more than 800 residents in a rapidly growing suburban community in the southwestern United States. This dataset includes comprehensive information on travel patterns, mobility attitudes, and transportation investment preferences and priorities, enabling rich behavioral analyses. Using these data, the project will first conduct a comprehensive descriptive analysis to examine patterns of variability in suburban residents' prioritization of transportation investments. This analysis will highlight how preferences and priorities are correlated with travel behavior, attitudes, and perceptions, laying the groundwork for subsequent modeling efforts.

The study will then employ a Rank-Ordered Probit (ROP) model within a Generalized Heterogeneous Data Model (GHDM) framework to jointly account for observed and unobserved attitudinal factors influencing transportation priorities. The model will capture the heterogeneity of preferences across the population and examine how latent attitudes such as transportation satisfaction, perceived investment needs, and mobility variety-seeking tendencies shape the prioritization of investments in roadway, transit, micromobility, and emerging mobility technologies.

By revealing the behavioral mechanisms underlying transportation investment preferences in suburban contexts, the project will generate robust empirical evidence to support more informed suburban transportation planning, investment evaluation, and demand forecasting.

US DOT Priorities: Section left blank until USDOT's new priorities and RD&T strategic goals are available in Spring 2026.

Outputs: The project will generate a set of research products that contribute to improved behavioral modeling and provide practical insights for transportation planning applications. The study will develop a Rank-Ordered Probit (ROP) model specification to examine how individual characteristics, travel behavior, and attitudinal factors shape the transportation investment priorities of residents in suburban contexts. The model specification and estimation results will be documented in detail, providing a methodological reference for similar behavioral analyses in future studies.

In addition, the analysis will yield clear empirical evidence on how investment priorities are shaped by heterogeneity in travel behavior, mobility choices, and the attitudes and perceptions of residents. The findings will be synthesized in a peer-reviewed journal paper, a concise policy brief highlighting actionable implications for planning and investment decisions, and accompanying technical documentation. Results will also be presented at national conferences, research seminars, and workshops to share insights with a broad range of audiences, including academics, researchers, practitioners, policymakers, and the public.

Outcomes/Impacts: The project will produce policy-relevant insights into how suburban residents view and prioritize different types of transportation investments, including roadway safety improvements, congestion-relief measures, coordination of lane closures, economic-growth-oriented projects, bicycle and pedestrian infrastructure, regional transit services, micromobility options, and emerging technologies such as ridehailing, microtransit, and automated mobility services. By quantifying the relative importance of these investment types and examining the variability of preferences within the population, as well as their associations with attitudes and perceptions, the findings will help planners and decision-makers better align investment strategies with community needs and mobility expectations.

The analysis will provide actionable evidence indicating which types of transportation improvements are most likely to gain public support in suburban contexts and where opportunities exist to promote alternative mode use in these settings. These insights can directly inform investment prioritization, public communication strategies, and long-range planning processes in rapidly growing suburban regions.

Beyond its immediate policy relevance, the project will contribute to improved behavioral realism in planning and forecasting by linking attitudinal factors to investment preferences. The work will also support workforce development by engaging graduate students in behavioral analysis, model estimation, and interpretation of policy implications.

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