Understanding Transit User Experience and Expectations in Under-served Communities

Recipient/Grant (Contract) Number: University of New Orleans; University of Colorado Denver/69A3552348337

Center Name: Center for Transit Oriented Communities (CETOC)

Research Priority: Preserving the Environment

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Project Partners:
Jonathan Wade; Regional Transportation District; Jonathan.Wade@rtd-denver.com; Role: Collaborative and in-Kind support with staff time to identify stakeholders and groups for interviews and focus groups.

Research Project Funding: $150,000 (USDOT) + $75,000 (matching funds) = $225,000

Project Start and End Date: 10/01/2023 to 5/31/2025

Project Description: Wait times for transit have been shown by researchers, and in practice, to be onerous for riders. Though transit agencies invest in capital improvements such as bus stop amenities, the consensus is that such capital investments do little to improve how people experience wait times at bus stops. Different cohorts of the population – such as women, older adults, children who travel independently on transit, people with disabilities, and people of color – may experience the same bus stop differently based on when they are waiting for a bus. This temporal aspect may be related to the time of day (e.g., late morning versus late evening), might be seasonal (e.g., summer versus winter), or linked to days with extreme weather (e.g., >80° F or below <40° F). We ask: which capital improvements have the biggest return on investment at bus stops that might reduce the negative experience of waiting for transit? Methodologically, by relying on video/phone-based interviews with transit experts across the United States, we are interested in learning agency-side responses to effective investments at bus stops, including constraints that agencies face. We will also conduct a series of focus groups and/or interviews with bus riders, particularly those in low-income and under-served communities, to hear transit experiences and learn about the specific needs of riders. This work will be conducted in the Denver region in coordination with the Regional Transportation District. Based on this body of evidence, we will design and implement a national-wide survey, built on a choice-experiment framework, that will test tradeoffs between operational improvements (e.g., increasing frequency), various types of bus top investments (e.g., shelters, benches, ADA-compliant ramps, real time information, lighting, safety call buttons, cameras, among others), and other

programmatic investments (e.g., fare-free transit). We will vary the weather attributes in the choice set to seek better insights from riders who experience daily and seasonal variations differently than automobile travelers. This approach will control respondents' preference ordering as well as internal contradictory among preferences. By asking respondents to evaluate trade-offs, the results will better speak to preferences as well as facilitate a weighted economic benefit analysis where we can score preferences based on dollars spent. By trying to decipher how various investments impact the value of wait time, we will create a generalizable set of findings that can apply across various situations and contexts.

USDOT Priorities: This project primarily seeks to address the strategic goal of *Equity*, ensuring transit experiences are equitable across populations, as well as the research priorities of *System Performance* and *Data-Driven Insight.* The research aims to provide insights on attainable methods for improving transit systems in ways which both increase equity for riders as well as system-wide efficiency in terms of both operations and costs.

Outputs: 1) At least two conference papers to be submitted to Transportation Research Board Annual Meeting and/or Association of Collegiate Schools of Planning Annual Meeting; 2) At least one peer-reviewed journal publications; 3) A replicable attitudinal stated choice survey instrument for identifying transit investment priorities and user expectations.

Outcomes/Impacts: 1) Examine how wait time at bus stops can be reduced using various types of investments; 2) Understand the relative importance of investing in different types of transit infrastructure, thereby developing a new understanding of value of wait time. Given the challenges transit riders face, it is important to understand the change in rider experience based on investments in low-cost transit infrastructure such as bus shelters or by providing real-time information. The benefits of investing in such amenities could outweigh more expensive investments in operational efficiency. The outcome of the proposed research will help transit agencies in making customer-driven investment decisions that can boost ridership through better experience.

Final Research Report: (Link to be provided after project completion).