

STRIDE

Southeastern Transportation Research,
Innovation, Development and Education Center

Technology Transfer Final Report

STRIDE Project G

Transit in the Era of Shared Mobility

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1. Project Description

There are several conflicting trends in the rapidly changing transportation market, which are impacting transit ridership in varying ways. Transportation Network Companies have the potential to reduce or replace the need for auto ownership and may serve some populations better than transitional transit services, but limited survey research indicates that they may be adding more trips than they reduce. With recent surges in technology that negate the need for trips, low gas prices and a strong economy, and shifting populations, fixed route transit ridership is on the decline. However, research on all of these factors is limited and largely inconclusive. While it is useful to track ridership trends at the national level on a city-by-city basis, such analysis only yields limited insight.

Ongoing research by the study team compares trends within similar groups of agencies and metropolitan areas. Use of these clusters in ridership analysis suggests that changes in ridership are not uniform across modes and clusters. By conducting disaggregate level research in three cities (Portland, Minneapolis, and Miami), the study team found that the most productive routes are those losing the most ridership. Models also indicated that economic displacement of transit-dependent patrons may be causing ridership to decline in three systems studied. Future research by the research team will extend this work by considering housing prices and ride-hailing usage.

At the same time, through this research, the study team encountered various avenues through which innovation in shared mobility is driving the evolution of healthcare transportation. Across the country, care providers are partnering with ridehailing services such as Uber and Lyft to establish new ways for patients to travel to and from medical appointments. While new partnerships and companies continue to emerge in healthcare mobility services, it is important for both healthcare providers and transportation providers to evaluate programs to ensure that they are accessible to the most vulnerable patient populations.

2. Performance Metrics

| Metric | # Completed |
|---|---|
| OUTPUTS | |
| Product(s): Number of new or improved tools, technologies, products, methods, practices, and processes created or improved | 2 |
| Technical Report: Number of client-based technical reports published | 1 (STRIDE Final Report) |
| OUTCOMES | |
| Body of Knowledge: Number of trainings for transportation professionals | 2 (STRIDE Webinars) |
| Professionals Trained: Number of professionals participating in trainings | 166 total (51 live participants; 115 YouTube views) |
| IMPACTS | |
| Stakeholders: Number of stakeholders met with to encourage adoption or implementation of product(s) | 2 Stakeholders (MARTA, Uber Health) |
| Adoption/Implementation: Number of incidences outputs of research have been implemented or adopted | 1 – MARTA use of cluster analysis |

3. Products

Product 1: Cluster analysis of transit agencies – Produced a cluster analysis showing which transit agencies are grouped as peers based on factors that influence transit ridership. Agencies can use their cluster to choose peer agencies for future benchmarking studies.

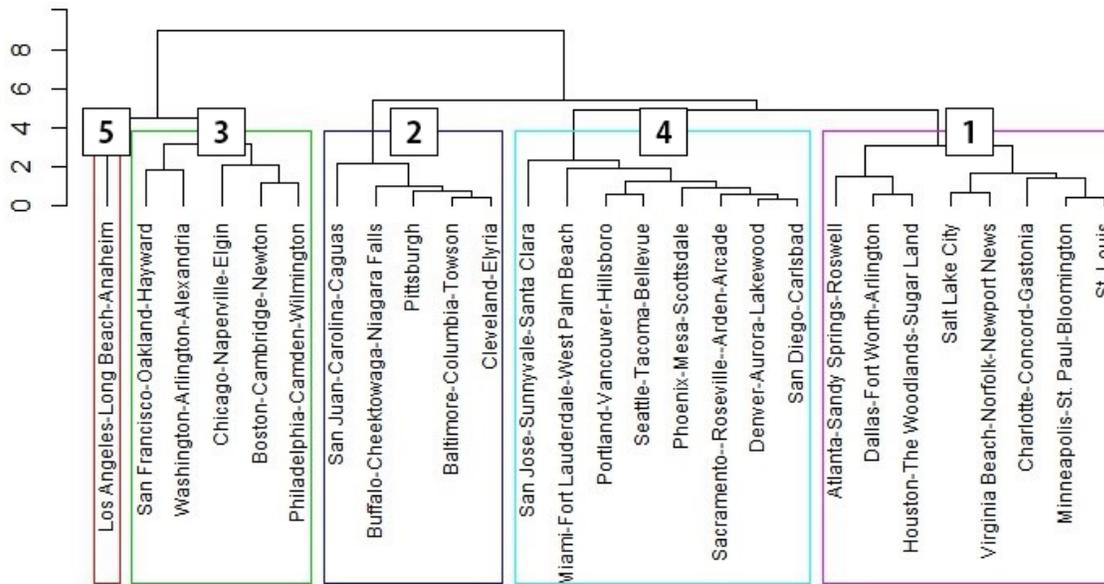


Figure 1. Dedicated Right-of-way (Rail) Cluster Peer Agencies

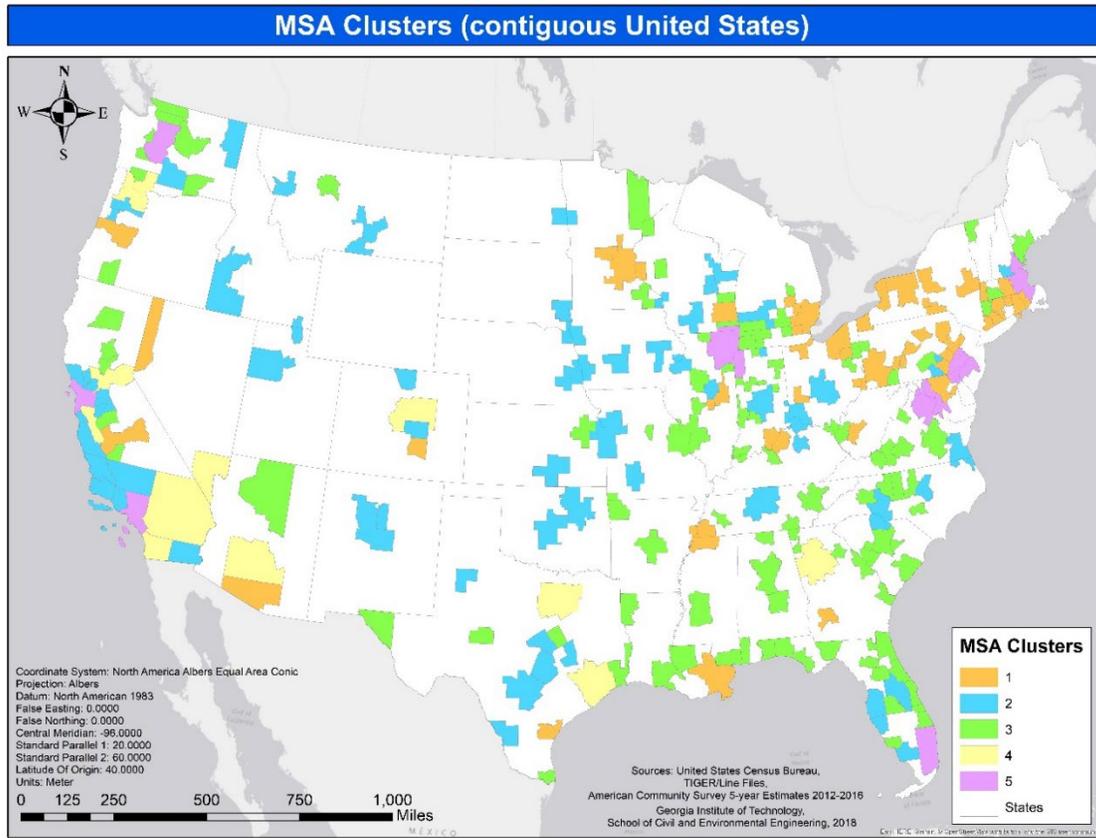


Figure 2. Mixed Right-of-way (Bus) Cluster Peer Agencies

Product 2: Taxonomy of shared mobility options for healthcare – Produced a taxonomy of shared mobility options for accessing healthcare.

Table 1 Typology of innovative healthcare mobility services

| | <i>Type I</i> Healthcare provider leverages ridesourcing tech. | <i>Type II</i> Insurer partners with TNC | <i>Type III</i> Paratransit provider partners with TNC |
|---|---|--|---|
| Who books the ride? | Clinician (on patient’s behalf); patient (sometimes) | Patient or clinician | Usually the riders/patients |
| Who pays? | Healthcare providers; brokers; patient | Insurance companies; health plans | Transit agency; patient pays ‘fare’ with substantial subsidy from transit agency |
| Eligible for Medicaid reimbursement? | Varies by TNC; in many cases, yes, given patient eligibility | n/a | Yes, given patient eligibility |
| Patient Benefits: | Shorter wait times & less uncertainty; Reminders and tracking through smartphone, flip phone, or analog phone | Financial support for patients; Addresses social determinant of health Greater patient engagement | Dynamic booking circumvents need for advance booking; Increased trip reliability; Patients who otherwise can’t afford TNC service have access |
| Healthcare Provider Benefits: | Can track patients’ trips as well as own spending; Dynamic booking (instant or in advance) | Greater patient engagement; reduced costs in long-term | Reduced appt. no-shows |

Source: authors’ own analysis of findings of nationwide scan

4. Body of Knowledge & Professionals Trained

- 1) STRIDE webinar - Kari Watkins, PhD, Georgia Institute of Technology, Comparing Transit Agency Peer Groups using Cluster Analysis (6/12/2019; 16 participants, 53 YouTube views)
- 2) STRIDE webinar - Noreen McDonald, PhD and Mary Wolfe, Innovation in Access to Healthcare: Understanding Transport Barriers (9/18/2019; 35 participants, 62 YouTube views)

5. Stakeholder Engagement

| MEETING DETAILS | | NARRATIVE DESCRIPTION |
|------------------------------|---|---|
| STRIDE representative | Kari Watkins, Simon Berrebi | Presentation on literature review findings regarding transit ridership change factors, including impacts of TNCs. |
| Date of Activity | 4/30/2019 | |
| Type of Activity | <i>in-person meeting</i> | |
| Location | Atlanta, GA | |
| Stakeholder(s) | MARTA (Metropolitan Atlanta Rapid Transit Authority) – Rob Goodwin and team | |

| | | |
|------------------------------|---|---|
| STRIDE representative | Kari Watkins, Simon Berrebi | Presentation of MARTA and peer data on ridership change and other operating data. |
| Date of Activity | 9/21/2018 | |
| Type of Activity | in-person meeting | |
| Location | Atlanta, GA | |
| Stakeholder(s) | MARTA (Metropolitan Atlanta Rapid Transit Authority) – Rob Goodwin/team | |
| | | |
| STRIDE representative | Noreen McDonald, Mary Wolfe | Shared research results and discussed possible future research projects. |
| Date of Activity | 2/4/2019 | |
| Type of Activity | phone meeting | |
| Location | Chapel Hill, NC | |
| Stakeholder(s) | Uber Health | |
| | | |
| STRIDE representative | Noreen McDonald | Shared research results and discussed data sharing. |
| Date of Activity | 2/7/2019 | |
| Type of Activity | phone meeting | |
| Location | Chapel Hill, NC | |
| Stakeholder(s) | Uber Health | |

6. Adoption/Implementation

Adoption (Product 1): Product 1 is a cluster analysis showing which transit agencies are grouped as peers based on factors that influence transit ridership. This allows agencies such as MARTA (the public transportation operator in the Atlanta metropolitan area) to use these clusters to choose peer agencies for future benchmarking studies, a key component of strategic planning and process improvement. MARTA has used this product to change the peer benchmarking agencies they use for future performance metric assessment.

7. Broader Impacts

Product 1: Cluster analysis of transit agencies - Identification of the peer agencies from the cluster analysis has enabled the analysis of transit ridership change by both the researchers and internally within agencies. This understanding of ridership is helping agencies improve the sustainability of transportation by identifying areas that are the greatest threat to their business practices. As agencies work to improve performance, they can use the peer agency metrics to identify areas from improvement.

Product 2: Taxonomy of shared mobility options for healthcare - Technological advances are reshaping paratransit and dial-a-ride services quickly, and it has been difficult for practitioners and transportation providers to understand these swift changes. Our review and subsequent typology provides a structured language and categorization through which these new offerings can be understood. This typology is useful especially for transit providers who may be interested in leveraging new technology via partnerships in their own service. It is also useful for health care providers and clinicians who want to learn about potential new solutions that can be put in place for their patients with transportation barriers.