Research in Progress

Optimizing ADA Paratransit Operations with Taxi and Ride Share Programs

Research Need

Transit agencies, including the Massachusetts Bay Transportation Authority (MBTA), must provide demand responsive service to customers with disabilities in order to comply with the Americans with Disabilities Act (ADA). The growing demand and costs of The Ride, the MBTA's ADA paratransit service, have led the MBTA to initiate a pilot program in March 2017 to allow eligible customers to use ride sharing services (Uber, Lyft, or Curb) for subsidized trips. The research need is to understand the effect of this program on ADA paratransit operations and demand.

Goals/Objectives

This project has three objectives in support of the MBTA's need to understand the impacts of the ride sharing pilot on The Ride:

1. Identify the effect of the pilot program on demand for The Ride and for subsidized ride share trips.
2. Model and analyze the effect of changing demand on operations for The Ride and the corresponding costs.
3. Use the operations model and understanding of demand to optimize the cost-effective provision of service to eligible customers using conventional paratransit and ride sharing.

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Project Information

This project is being conducted as part of the Massachusetts Department of Transportation (MassDOT) Research Program with funding from Federal Highway Administration (FHWA) State Planning and Research (SPR) funds.

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December 6, 2017

Expected Project Completion Date:
May 31, 2019

Key Words:
Demand Responsive Transit; Americans with Disabilities Act; Ride Sharing; Operations; Demand

Methodology

This study makes use of trip data from The Ride from Jan. 2016 – Mar. 2018 (i.e., before and during the pilot). An operations model is used to estimate the required fleet size, vehicle miles, and vehicle hours of operation, which are associated with operating costs. Aggregated monthly data from pilot participants is used to quantify the impact on demand. An algorithm is developed to quantify the impact of shifting specific trips from The Ride to ride sharing providers.

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