

# Research in Progress

## Flexible Transit Services in Rural Areas

### Research Need

Outside of the larger cities, the density of demand for transit is low, which makes the provision of service costly. There is a research need to identify flexible transit services that could be operated more cost-effectively in low-density rural and suburban communities. There is also a need for systematic methods to collect, track, and report data for flexible transit services.

### Goals/Objectives

The three main objectives of this project are:

- 1) to develop a method for identifying potential markets for flexible transit service and the type of service that would most cost-effectively serve the demand;
- 2) to identify the data requirements and opportunities associated with the General Transit Feed Specification (GTFS)-flex, particularly focusing on the requirements for implementing an automated reservation system for flexible transit services; and
- 3) to use data from flexible transit pilot programs in Massachusetts, as it becomes available, to compare theoretical analysis and pilot program data in order to identify lessons learned in practice to develop guidelines for future implementations.

The overall goal of the project is to combine theoretical analysis with data from implementations in Massachusetts to develop useful guidance for future transit operations.

### 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.

#### Principal Investigators:

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#### Performing Organization:

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#### Project Champion:

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#### Project Start Date:

February 8, 2020

#### Expected Project Completion Date:

July 31, 2021

### Methodology

Public transit services in Massachusetts typically operate fixed routes with a published schedule. Fixed routes are not cost-effective for low-density rural and suburban areas. The first part of this study is to conduct a theoretical analysis of the various forms of flexible transit service, ranging from deviating routes and schedules to fully demand responsive service. The models will be used to compare costs of different services or communities of varying density and size. The second part of the study will involve analysis of data from flexible transit pilot programs implemented by Regional Transit Authorities (RTAs) in Massachusetts in order to synthesize needs and best practices related to data collection, management, and reporting. The experiences of RTAs will be compared and combined with the results of the theoretical analysis to make recommendations for future flexible transit implementations

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