Charles D. Baker, Governor
Karyn E. Polito, Lieutenant. Governor
Stephanie Pollack, MassDOT Secretary & CEO

massDOT
Massachusetts Department of Transportation

2020 RESEARCH PROJECT STATEMENT

Research Topic:
Flexible Transit Services in Rural Areas Research Award – [max $165,000]

Problem Statement and Objectives

Public transportation service in Massachusetts is operated by the MBTA and 15 Regional Transit Authorities (RTAs). Outside of the larger cities, the density of demand for transit is low, which makes the provision of service costly. The research problem is to identify if there are flexible transit services that could be operated more cost-effectively in rural and low-density communities than conventional fixed routes to increase ridership. Flexible transit can take many forms, ranging from a fully flexible paratransit system to a more structured service that allows flag stops or route deviations. This research will synthesize insights from the pilot programs that are now being started in order to develop guidelines for best practices based on the experiences of local agencies.

This project has the following research objectives:

- Develop a method for identifying potential markets for flexible transit service and the type of flexible service that would most cost-effectively serve the demand. This will require comparing the cost-effectiveness of operations for a range of potential levels of demand associated with rural and low-density communities.
- Identify the data requirements and opportunities associated with General Transit Feed Specification (GTFS)-flex specification, particularly focusing on the requirements for implementing an automated reservation system for flexible services.
- As data from pilot flexible transit pilot programs in Massachusetts become available, compare the theoretical analysis with the pilot program data and connect it with lessons learned in practice in order to develop guidelines and best practices for future implementations.

Anticipated Outcomes and Deliverables

- Procedure for identifying appropriate markets for flexible transit service in Massachusetts. It is expected that this will depend on the density of demand, the size of the service area, and the availability of alternative transportation services.
- Guidelines or best practices recommendations for the use of data in implementing new transit services. They should address the types of data that are most important for selecting markets, designing flexible services, and implementing the desired systems for trip reservations and performance monitoring.