



# BOSTON REGION METROPOLITAN PLANNING ORGANIZATION

Monica Tibbits-Nutt, MPO Chair | Secretary and CEO, Massachusetts Department of Transportation  
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## WORK PROGRAM

# UNDERSTANDING DEMOGRAPHIC AND RIDERSHIP CHANGES IN THE MBTA REGION

APRIL 17, 2025

### Proposed Motion

The Boston Region Metropolitan Planning Organization (MPO) votes to approve this work program.

### Project Identification

#### Unified Planning Work Program (UPWP) Classification

Agency and Other Client Transportation Planning Studies and Technical Analyses

**Project Number** 13824

#### Client

Massachusetts Bay Transportation Authority

*Client Supervisor: Sandy Johnston/Janet Baker*

#### Project Supervisors

*Principal: Rose McCarron*

*Manager: Joe Delorto*

#### Funding Source

FFY 2025 MassDOT-Directed Planning funds

### Schedule and Budget

**Schedule:** 12 months from notice to proceed

**Budget:** \$140,000

Schedule and budget details are shown in Exhibits 1 and 2, respectively.

### Relationship to MPO Work

This study is supported in full with non-MPO funding. Committing MPO staff to this project will not impinge on the quality or timeliness of MPO-funded work.

## Background

This study seeks to provide the Massachusetts Bay Transportation Authority (MBTA) with a data-centered framework for analyzing demographic changes across its service area and ridership. Supported by demographic, land use, and ridership data from across the MBTA system, this framework will help guide the MBTA's long-term thinking about service priorities. This may include high-level recommendations for (1) how the MBTA could evaluate investment in new or improved service or infrastructure and (2) navigating potential trade-offs between its various values and goals. These recommendations may be based on populations or geographies that appear underserved or locations where there are opportunities to generate ridership and mode shift. This work supports the MBTA's "Full T Ahead" service priorities initiative and will generate data and frameworks to support the upcoming Program for Mass Transportation.

## Objective(s)

1. Understand Existing Methodologies for Transit Demographic Analyses

Research existing literature alongside MBTA and Massachusetts Department of Transportation (MassDOT) practices and policies to understand what precedent exists for service planning in the short and long term based on demographic changes.

2. Qualitative and Quantitative Analysis

Engage with internal and external stakeholders to understand their perspectives on demographic shifts throughout the MBTA service area over the last several decades and how those shifts may relate to transit ridership. Use data from the US Census, MBTA Rider Census, and other sources (pre- and post-pandemic) to determine where and what demographic changes have occurred and whether these changes are reflected in ridership changes.

3. Provide Recommendations

Synthesize qualitative and quantitative data to provide a potential evaluation framework for developing long-term service priorities in light of ridership and demographic shifts.

## Work Description

### Task 1 Literature Review

Staff will review available research and conduct targeted outreach to peer agencies to determine how other transit agencies study, track, and continually respond to ridership and demographic shifts in their service areas.

***Products of Task 1***

Summary of current practices and research.

List of peer contacts for MBTA staff.

**Task 2 Exploration of Available Data and Tools**

Staff will conduct exploratory data analysis with various data sources and analytical tools to understand the possible analyses that can be performed with the available data, identify gaps in data availability, and understand what types of data could be further developed.

***Products of Task 2***

Summary of available data sources and analytical tools.

List of future data needs for further analysis.

**Task 3 Qualitative Research**

Staff will engage with internal and external stakeholders and solicit diverse perspectives on ridership changes and demographic shifts in the MBTA's service area to inform the analysis and final report.

***Product of Task 3***

Summary of stakeholder perspectives.

**Task 4 Quantify Ridership Changes**

Staff will use various data products, including the US Census and the American Community Survey, the MBTA Rider Census, and land use data, to determine where and how ridership and demographic patterns have changed in the MBTA's service area over the past 20–30 years and explore ways to anticipate how demographics might change in the future.

Staff will measure the relationship between demographic characteristics and transit ridership behavior, as well as how changes in ridership demographics reflect broader demographic changes over time.

Staff will use analytical tools to understand how land use and demographic characteristics can inform service planning.

***Products of Task 4***

Statistical analysis of demographic changes in the MBTA service area and MBTA ridership.

List of metrics that may indicate a need for service changes in a given area.

**Task 5 Develop Framework**

Staff will synthesize data from previous tasks into a framework to guide MBTA staff in how to consider prioritizing service in light of demographic changes. This framework will help define potential trade-offs in long-term service planning, such as investing in service that shifts more trips to transit versus investing in services that have more potential to reduce regional vehicle miles travelled.

***Products of Task 5***

Written report detailing the research performed in Tasks 1–4 and ideas to inform long-term service priority evaluation frameworks.

**Exhibit 1**  
**ESTIMATED SCHEDULE**  
**Understanding Demographic and Ridership Changes in the MBTA Region**

Task	Month												
	1	2	3	4	5	6	7	8	9	10	11	12	
1. Literature Review	█												
2. Exploration of Available Data and Tools		█											
3. Qualitative Research			█										
4. Quantify Ridership Changes					█								
5. Develop Framework										█			A

Products/Milestones

A: Written report for MBTA

**Exhibit 2**

**ESTIMATED COST**

**Understanding Demographic and Ridership Changes in the MBTA Region**

<b>Direct Salary and Overhead</b>	<b>\$140,000</b>
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Task	Person-Weeks by Pay Grade						Direct Salary	Overhead (120.3%)	Total Cost
	G-9	G-8	G-7	G-6	G-5	Total			
1. Literature Review	0.0	0.3	1.4	3.6	0.0	5.3	\$8,867	\$10,667	\$19,534
2. Exploration of Available Data and Tools	0.0	0.2	3.2	3.8	0.0	7.2	\$12,465	\$14,996	\$27,461
3. Qualitative Research	0.0	0.3	1.2	4.0	0.0	5.5	\$9,070	\$10,912	\$19,982
4. Quantify Ridership Changes	0.0	0.4	3.4	7.8	0.0	11.6	\$19,288	\$23,204	\$42,492
5. Develop Framework	0.2	0.4	1.6	5.8	0.4	8.4	\$13,859	\$16,672	\$30,531
Total	0.2	1.6	10.8	25.0	0.4	38.0	\$63,550	\$76,450	\$140,000

<b>Other Direct Costs</b>	<b>\$0</b>
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<b>TOTAL COST</b>	<b>\$140,000</b>
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**Funding**

FFY 2025 MassDOT-directed PL funds

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