



BOSTON REGION METROPOLITAN PLANNING ORGANIZATION

Stephanie Pollack, MassDOT Secretary and CEO and MPO Chair
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WORK PROGRAM

REVERSE COMMUTE AREA ANALYSIS

NOVEMBER 8, 2018

Proposed Motion

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

Project Identification

Unified Planning Work Program (UPWP) Classification

Boston Region MPO Planning Studies and Technical Analyses

Project Number 14359

Client

Boston Region MPO

Project Supervisors

Principal: Katie Pincus Stetner

Manager: Thomas J. Humphrey

Funding Source

MPO Planning Contract #105757 and MPO §5303 Contract #102694

Schedule and Budget

Schedule: Ten months after work commences

Budget: \$65,000

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

Relationship to MPO Goals

The Boston Region MPO elected to fund this study with its federally allocated metropolitan planning funds during federal fiscal year (FFY) 2019. The work completed through this study will address the following goal areas established in the MPO's Long-Range Transportation Plan: capacity management and mobility, clean air and clean communities, transportation equity, and economic vitality.

Background

The term reverse commuting usually refers to work trips by residents of a major urban area, such as Boston, to and from work locations in its suburbs—the opposite direction from more traditional commuting. Some counter-flow work trips by residents of nearby urbanized areas could also be classified as reverse commuting.

According to figures from the American Community Survey (ACS), more than 90 percent of home-to-work trips by residents of the 97 municipalities in the Boston MPO region are to work locations within that region. Of these, approximately 40 percent are to work locations in Boston or Cambridge. Approximately 30 percent of all work trips by Boston MPO Region residents begin and end in the same municipality, but approximately 75 percent of work trips by Boston residents are to Boston or Cambridge work locations. Other destinations for work trips are widely scattered, with few municipalities accounting for shares of one percent or more of work trips from Boston.

The 2015–17 Massachusetts Bay Transportation Authority (MBTA) systemwide passenger survey found that travel to or from work was the most common trip purpose for MBTA users, accounting for 73 percent of all trips on the system. Of the reported work ends of these trips, 90 percent were in Boston or Cambridge, compared to 40 percent of the work-trip destinations for all transportation modes combined. These results suggest that for many work trips to destinations outside of Boston or Cambridge, using the present transit system is currently not a viable option.

Anecdotally, some suburban areas within the Boston region with significant job concentrations are facing challenges filling jobs with local residents. Some of these jobs could potentially be filled by urban core residents who are prevented from doing so by a lack of viable transportation options.

This study will examine the present magnitude of reverse commuting in the metropolitan Boston region, the limitations on such travel imposed by the transportation system, and potential strategies for improving viability of reverse commuting.

Objectives

1. To gain a better understanding of the importance of reverse commuting as an element of overall journey-to-work travel in the metropolitan Boston region and of the potential to match suburban employment opportunities with underemployed urban core residents.
2. To identify barriers to commuting between the urban core and significant suburban employment sources and to develop potential strategies for improving transportation options for such trips.

Work Description

Task 1 Review Existing Reverse Commuting Volumes and Mode Shares

In this task, staff will analyze journey-to-work data from the ACS and other sources, as available, including Longitudinal Employer-Household Dynamics data from the US Census Bureau, to determine the magnitude of present reverse commuting in the metropolitan Boston region. Results will be examined by mode of travel to the extent that databases provide statistically valid sample sizes.

For each city or town in the region, employment of Boston and other urban core residents will be compared with total employment using journey-to-work data and US census data. Employment locations will be categorized by distance from the urban core and by proximity to commuter rail, to rapid transit, or to other transit service from core communities. Relationships between available transit alternatives and percentages of jobs filled by core residents will be identified.

Products of Task 1

Tables showing the total number of jobs provided in each city and town in the Boston MPO region, the number and percentage of these jobs held by residents of Boston or adjoining urbanized areas, and the modes of transit service currently available for reverse commuting trips. The tables will also summarize the magnitude of reverse commuting as a whole in the region.

Task 2 Case Studies of Reverse Commuting in the Region

Staff will identify one or more reverse commuting areas for more detailed analysis of barriers to worker access from the urban core to suburban employment, and potential means of reducing the impacts of these barriers. If any reverse commute corridors with a small transit mode share are identified in Task 1, one of those locations will be included as a case study. If staff is able to obtain data about job vacancies in suburban locations that could be filled by reverse commuting, staff will include one of those locations as a case study. CTPS will seek input about job vacancy locations from the Transportation Management Associations and Regional Coordinating Councils in the Boston MPO region.

Subtask 2.1 Identify Existing Transit Alternatives

For each case study area, staff will identify existing transit alternatives for reverse commuting from Boston or adjoining urbanized areas, including service frequency, travel times, and schedule compatibility with starting and ending times of work shifts at the employment locations, where data are available. Also considered will be the proximity of stations or stops on the transit service to the work locations and to urban residential neighborhoods.

Subtask 2.2 Identify Last-Mile Transit Options Including Shuttles

Most suburban employment locations are not located in the immediate vicinity of stations or stops on existing fixed-route transit services. Therefore, commuters require some form of connecting transportation to travel the “last mile,” which may actually be even farther than one mile. For each case study area, staff will identify the potential for connections between existing transit services and work locations via ride-share services or fixed-route shuttles.

Subtask 2.3 Identify Potential Pedestrian and Bicycle Improvements

Employment locations within walking distance of transit stations may not be linked to the stations by safe walking paths. In this task, staff will examine pedestrian egress and access paths at transit stations in each case study area and identify barriers to their use, such as missing or poorly maintained sections of sidewalk, hazardous road crossings, and inadequate lighting.

Bicycles can provide connections between transit stations and work locations beyond reasonable walking distance if there are suitable routes. Present MBTA policy allows passengers to bring bicycles on all commuter rail trains except weekday inbound AM peak and outbound PM peak trips. On the rail rapid transit system, the bicycle restriction on the Blue Line is similar to that on the commuter rail system. The Red and Orange Lines do not allow bicycles on trains in either direction in AM peak or PM peak hours. Bicycles are not allowed on the Green Line at any time. However, bicycle-sharing programs are now available at increasing numbers of stations, reducing the need to bring bicycles on trains. Staff will examine bicycle egress and access paths at transit stations in each case study area and identify barriers to their use, such as heavy motor vehicle traffic, poorly maintained sections of pavement, lack of sidewalks, and conflicting vehicle turning moves. Staff will also consider the potential for new bicycle sharing locations or system expansions.

Subtask 2.4 Examine Guaranteed Ride Home Programs

A deterrent to reverse commuting by transit services with long headways is the lack of flexibility for returning home at off-peak times, such as in the midday in the event of an emergency or in the evening after working later than usual. Guaranteed ride home programs assure reverse commuters that they will not be stranded at their work locations if they are unable to return home on their usual transit routes. A guaranteed ride home could be in the form of a complete ride home or a ride to an alternate transit line with more frequent service.

Staff will review literature for best practices of guaranteed ride home programs, including MassRIDES' Emergency Ride Home program, and identify alternatives appropriate for each case study area.

Products of Task 2

For each case study area, inventories summarizing existing barriers to reverse commuting, existing transit alternatives for reverse commuting, and opportunities for improving multimodal reverse commute options, including potential last-mile connections, potential pedestrian and bicycle access and egress improvements, potential expansion of bicycle sharing locations or systems, and potential guaranteed ride home programs.

Task 3 Prepare Final Report

Staff will develop a final report that includes the findings from Task 1 and Task 2. The report will summarize the magnitude of reverse commuting in the region and detail the locations of the case study areas. For each case study, the report will describe the barriers to reverse commuting and identify potential solutions.

Product of Task 3

Final report

Task 4 Present Findings to the Boston Region MPO

Staff will present the findings of the study to the Boston Region MPO board.

Product of Task 4

Presentation to the MPO board

Exhibit 2
ESTIMATED COST
Reverse Commute Area Analysis

Direct Salary and Overhead	\$65,000
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Task	Person-Weeks					Direct Salary	Overhead (99.00%)	Total Cost
	M-1	P-5	P-4	P-2	Total			
1. Review Existing Reverse Commuting Volumes and Mode Shares	0.6	2.2	0.0	0.0	2.8	\$5,429	\$5,374	\$10,803
2. Case Studies of Reverse Commuting in the Region	1.5	3.2	0.0	2.0	6.7	\$11,336	\$11,223	\$22,558
3. Prepare Final Report	3.4	3.7	0.2	0.0	7.3	\$13,799	\$13,661	\$27,459
4. Present Findings to the Boston Region MPO	0.5	0.6	0.0	0.0	1.1	\$2,100	\$2,079	\$4,179
Total	6.0	9.7	0.2	2.0	17.9	\$32,663	\$32,336	\$65,000

Other Direct Costs	\$0
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TOTAL COST	\$65,000
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Funding

MPO Planning Contract #105757
MPO §5303 Contract #102694