



BOSTON REGION METROPOLITAN PLANNING ORGANIZATION

Stephanie Pollack, MassDOT Secretary and CEO and MPO Chairman
Karl H. Quackenbush, Executive Director, MPO Staff

MEMORANDUM

DATE June 4, 2014
TO Boston Region Metropolitan Planning Organization
FROM Karl H. Quackenbush
CTPS Executive Director
RE Work Program for: Household-Survey-Based Travel Profiles and Trends:
Selected Policy Topics

Action Required

Review and approval

Proposed Motion

That the Boston Region Metropolitan Planning Organization vote to approve the work program for Household-Survey-Based Travel Profiles and Trends: Selected Policy Topics, presented in this memorandum

Project Identification

Unified Planning Work Program Classification

Technical Support/Operations Analysis Projects

CTPS Project Number

11152

Client

Boston Region Metropolitan Planning Organization

CTPS Project Supervisors

Principal: Mark Abbott

Manager: William Kuttner

Funding

MPO Planning Contract #84053

MPO §5303 Contract #84080

Impact on MPO Work

This is MPO work and will be carried out in conformance with the priorities established by the MPO.

Background

In 2011, the Massachusetts Travel Survey (2011-MTS) obtained travel information from about 15,000 households across the state—10,400 of them located in the Boston Region MPO model region (164 cities and towns in the metropolitan Boston area). A similar survey, administered only in the MPO model region, had been performed in 1991. These kinds of travel surveys are generally performed to obtain data with which to build or rebuild travel models.

In addition to being used in model building, the data from these household travel surveys are a rich source of information about the travel behavior of Massachusetts households, and provide an opportunity for MPO staff and others to gain valuable insights that are particularly useful in the transportation-planning process. To that end, the federal fiscal year (FFY) 2013 United Planning Work Program (UPWP) listed a study entitled Household-Survey-Based Travel Profiles and Trends, which was intended to be the first step in mining information from the 2011 survey. However, that study wound up going further than that—the final report yielded a general profile of household travel behavior measured in 2011 and compared the characteristics of work trips reported and described in 2011 to those reported in the earlier (1991) survey.¹

Now that the initial study of the 2011-MTS has been completed, MPO staff will commence a second, more in-depth study during FFY 2015. In this study, the 2011-MTS will be mined to develop commuting profiles for the state, the Boston Region MPO area (101 cities and towns within the MPO's model area), other Massachusetts MPO areas, and the Boston Region MPO subregions.

Objective

The objective of this study is to develop a set of commuting travel profiles for the state, the Boston Region MPO area, other Massachusetts MPO areas, and MPO subregions. The profiles will include trip types, trip patterns, categories of travelers, and travel modes. Comparing the travel profiles of different areas in Massachusetts will illustrate how and to what extent service and infrastructure needs vary between different regions of the state.

¹ Bill Kuttner, *Exploring the 2011 Massachusetts Travel Survey: Focus on Journeys to Work*, Boston Region MPO, April 2014.

The final report will include the travel profiles, which will be supplemented by readily available demographic information. The document will also include a summary of the results and methodology, and an analysis of planning implications.

Work Description

MPO staff will perform the following tasks:

Task 1 Develop Statewide Database of Survey Respondents' Stated Preferences

The data from the 2011-MTS was stored in several distinct data files. Survey participants were asked questions pertaining to each of them as an individual: their employment situation, travel practices, and other information. The information about individual participants is stored in the "person file," one of several databases developed as part of the 2011-MTS work. The person file served as the foundation of what is referred to for this project as the Stated Preference database, which can be used in Excel or MS Access depending on user preference. This database gives a more complete picture of an individual's travel practices than data in the "trip file," one of the companion databases from the 2011-MTS. The trip file recorded only the trips that respondents made on the survey day; therefore, important aspects of commuting habits might have been missed.

This Stated Preference database had already been developed for the Boston Region MPO model area and had been used successfully in other studies. Information from the 2011-MTS about each participant's household, such as income and the number of automobiles, was copied from the survey's "household file" and added to the person file. Other demographic and geographic information, such as population and employment densities near home, work, and school locations, and commute distances and distances to transit services, were also appended to each respondent's record.

For this project, 2011-MTS data for the 4,600 respondents in the remainder of the state will be incorporated into the Stated Preference database to allow for interregional comparisons. Data from the person and household files for the areas outside of the Boston Region MPO model area will be augmented.

Product of Task 1

Expanded version of the Stated Preference database for the entire state

Task 2 Develop Statewide, Regional, and Subregional Profiles

Travel, geographic, and demographic data in the Stated Preference database will be used to characterize the travel patterns and practices of the entire statewide sample. Staff will calculate the number of commuters at different ranges of commuting distances for each mode and purpose (whether the commute is for

work or for school). These trip calculations will also be characterized by relevant socioeconomic variables. Available data about shopping and other travel purposes will also be analyzed.

Travel profiles will be developed for each MPO region in the state for both interregional and intraregional travel. The Boston Region MPO is the state's largest by population, and is organized into eight subregions. This study will develop travel profiles for each of the subregions and perhaps for the central city, Boston.

Task 3 Relate Travel Profiles to Planning Issues

The differences and similarities in travel behavior and travel market size between different MPO regions within the state and between different Boston Region MPO subregions can have implications for regional and statewide transportation planning and related planning, since the amount of transportation infrastructure and services in a region is related to the travel activity characterized in that region's travel profile.

An example of a planning question that this study may investigate is the role of nonmotorized travel modes—walking and bicycling—in commuting. Achievable upper limits of the nonmotorized mode shares may be estimated by looking at the share of each nonmotorized mode at different distances between home and work for each of the state's MPO regions and for the Boston Region MPO subregions. In addition, practical approaches to increasing these mode shares may be identified.

Task 4 Document the Results in a Report

Staff will prepare a final report documenting the process that was used to create the travel profiles and the analytical conclusions and policy considerations that are drawn from the data, and will identify other types of investigations the travel profiles could be used for.

Product of Task 4

A final report

Estimated Schedule

It is estimated that this project will be completed six months after work commences. The proposed schedule, by task, is shown in Exhibit 1.

Estimated Cost

The total cost of this project is estimated to be \$75,000. This includes the cost of 26.2 person-weeks of staff time and overhead at the rate of 91.82 percent. A detailed breakdown of estimated costs is presented in Exhibit 2.

KQ/WSK/wsk

Exhibit 1

ESTIMATED SCHEDULE

Household-Survey-Based Travel Profiles and Trends: Selected Policy Topics

Task	Month					
	1	2	3	4	5	6
1. Develop Statewide Database of Respondents' Stated Preferences	█					
2. Develop Statewide, Regional, and Subregional Profiles		█				
3. Relate Travel Profiles to Planning Issues			█			
4. Document the Results in a Report				█		

Exhibit 2
ESTIMATED COST
Household-Survey-Based Travel Profiles and Trends: Selected Policy Topics

Direct Salary and Overhead	\$75,000
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Task	Person-Weeks				Direct Salary	Overhead (91.82%)	Total Cost
	M-1	P-5	P-2	Total			
1. Develop Statewide Database of Respondents' Stated Preferences	0.4	3.3	2.5	6.2	\$8,852	\$8,128	\$16,980
2. Develop Statewide, Regional, and Subregional Profiles	0.4	3.3	2.5	6.2	\$8,852	\$8,128	\$16,980
3. Relate Travel Profiles to Planning Issues	0.4	3.3	2.5	6.2	\$8,864	\$8,139	\$17,004
4. Document the Results in a Report	2.0	4.6	1.0	7.6	\$12,530	\$11,505	\$24,036
Total	3.2	14.5	8.5	26.2	\$39,099	\$35,901	\$75,000

Other Direct Costs	\$0
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TOTAL COST	\$75,000
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Funding
MPO Planning Contract #84053
MPO §5303 Contract #84080