



# BOSTON REGION METROPOLITAN PLANNING ORGANIZATION

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The Boston Region MPO is  
composed of:

Massachusetts Department of  
Transportation  
Metropolitan Area Planning Council  
Massachusetts Bay Transportation  
Authority Advisory Board  
Massachusetts Bay Transportation  
Authority  
Massachusetts Port Authority  
Regional Transportation Advisory  
Council  
City of Boston  
City of Beverly  
City of Everett  
City of Newton  
City of Somerville  
City of Woburn  
Town of Arlington  
Town of Bedford  
Town of Braintree  
Town of Framingham  
Town of Lexington  
Town of Medway  
Town of Norwood  
Federal Highway Administration  
(nonvoting)  
Federal Transit Administration  
(nonvoting)

## MEMORANDUM

**DATE** February 16, 2012  
**TO** Boston Region Metropolitan Planning Organization  
**FROM** Karl H. Quackenbush  
CTPS Executive Director  
**RE** Amendment to the Work Program for: MBTA 2012 Review of Fare  
Structure, Tariffs, and Service

### ACTION REQUIRED

Review and approval

### PROPOSED MOTION

That the Boston Region Metropolitan Planning Organization, upon the recommendation of the Massachusetts Bay Transportation Authority, vote to approve the work program for MBTA 2012 Review of Fare Structure, Tariffs, and Service in the form of the draft dated February 16, 2012.

### PROJECT IDENTIFICATION

**Unified Planning Work Program Classification**  
Technical Support/Operations Analysis Projects

**CTPS Project Number**  
11376

**Client**  
Massachusetts Bay Transportation Authority  
*Project Supervisor:* Charles Planck

**CTPS Project Supervisors**  
*Principal:* Elizabeth Moore  
*Manager:* Robert Guptill

**Funding**  
Amendment to Current MBTA contract

## **IMPACT ON MPO WORK**

The MPO staff has sufficient resources to complete this work in a capable and timely manner. By undertaking this work, the MPO staff will neither delay the completion of nor reduce the quality of other work in the UPWP.

## **BACKGROUND**

CTPS has provided support to the MBTA in terms of analysis of the impacts of potential changes in the fare structure, tariffs, and service. This support included attending meetings of the Rider Oversight Committee, assisting MBTA staff in identifying services for elimination, providing the MBTA with estimates from the spreadsheet model and the regional travel demand model of the estimated ridership and revenue impacts of fare changes, supplying the MBTA with maps and other communications materials for various public meetings, and performing additional analyses for the MBTA as requested. The results of two fare increase and service reduction scenarios were documented in a draft report for public review.

The MBTA has decided that CTPS should analyze an additional scenario. This work program amendment describes this and other new work and estimates the additional budget needed.

## **OBJECTIVES**

Through this work program amendment, CTPS will forecast the ridership, revenue, environmental, and socioeconomic impacts of potential changes in MBTA fare structure, tariffs, and service; ensure adherence to current Title VI requirements and guidance related to fare and service changes; and prepare a report for the final fare and service change scenario that the MBTA will implement.

## **WORK DESCRIPTION**

### **Task 1 Assist the MBTA in Preparing Communication Materials for Public Hearings and Fare Change Implementation**

CTPS will continue to provide the MBTA with explanatory materials in the desired formats for use at public meetings and hearings and for general customer communication.

#### ***Product of Task 1***

Information and materials needed by the MBTA for public hearings

**Task 2 Provide the MBTA with Analysis of an Additional Proposed Scenario**

CTPS will support the MBTA in all needed aspects of analysis with respect to the proposed fare increase, service reductions, or fare structure changes in the new scenario. This includes using the spreadsheet model to analyze various fare increase and structure changes, assisting the MBTA's Service Planning Department in its analysis of routes for elimination, and providing support to the MBTA in complying with Title VI requirements and guidance related to fare and service changes. CTPS will also continue to respond to any data requests related to the new or previous scenarios.

**Task 3 Forecast Ridership, Revenue, Air Quality, and Environmental Justice Impacts of Potential Changes in Fare Structure, Tariffs, and Service**

As with the analysis of the prior scenarios, CTPS will use two methodologies – the regional travel demand model and the spreadsheet model – to model the projected ridership and revenue impacts of the new scenario. The regional travel demand model will also be used to project and analyze the air quality and environmental justice impacts.

***Products of Task 3***

- Forecasts of ridership changes by line and mode resulting from the proposed fare-structure, tariff, and service scenario
- Forecasts of diversions to the drive-alone, carpool, and walk modes
- Forecasts of change in vehicle-miles traveled (VMT) due to diversions to the drive-alone and carpool modes
- Forecast of fare-revenue impact
- Forecasts of emissions changes
- Comparative analysis of the environmental-justice impacts, specifically the change in average fare, average VMT per square mile, and average carbon monoxide emissions per square mile, and also, if the proposed scenario includes service changes, of the impact on average walk-access time, average wait time, and accessibility

**Task 4 Prepare Final Report**

A report that documents all analyses and findings will be prepared. In addition, if a fare increase is proposed as a result of the process, CTPS will assist the MBTA in preparing the environmental-findings document for the Board of Directors, which will describe the purpose of and need for a fare increase; actions taken to avoid a fare increase; the projected impacts of the fare increase, including economic, transportation, air quality, and environmental-justice impacts; alternatives to a fare increase, including impacts of no fare increase; and measures to reduce impacts.

***Products of Task 4***

- Final report in electronic format
- Environmental findings

**ESTIMATED SCHEDULE**

It is estimated that this project will be completed four months after the notice to proceed is received. The proposed schedule, by task, is shown in Exhibit 1.

**ESTIMATED COST**

The total cost of this project is estimated to be \$37,064. This includes the cost of 14.1 person-weeks of staff time and overhead at the rate of 94.57 percent. A detailed breakdown of estimated costs is presented in Exhibit 2.

KQ/RG/rg

Exhibit 1  
 ESTIMATED SCHEDULE  
 MBTA 2012 Review of Fare Structure, Tariffs, and Service: Amendment

Task	Month			
	1	2	3	4
1. Prepare Communication Materials	■			
2. Provide Analysis to MBTA	■			
3. Model Final Scenario		■		
4. Prepare Final Report			■ A	

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Products/Milestones

A: Final report and environmental findings

Exhibit 2  
 ESTIMATED COST  
 MBTA 2012 Review of Fare Structure, Tariffs, and Service: Amendment

**Direct Salary and Overhead** \$37,064

Task	Person-Weeks					Direct Salary	Overhead (@ 94.57%)	Total Cost
	M-1	P-5	P-4	P-2	Total			
1. Prepare Communication Materials	0.0	1.0	0.4	0.0	1.4	\$2,124	\$2,009	\$4,133
2. Provide Analysis to MBTA	1.0	0.0	6.0	0.0	7.0	\$9,004	\$8,515	\$17,519
3. Model Final Scenario	1.0	0.0	2.5	0.0	3.5	\$4,715	\$4,459	\$9,173
4. Prepare Final Report	1.2	0.0	1.0	0.0	2.2	\$3,206	\$3,032	\$6,239
Total	3.2	1.0	9.9	0.0	14.1	\$19,049	\$18,015	\$37,064

**Other Direct Costs** \$0

**TOTAL COST** \$37,064

*Funding*  
 Amendment to Current MBTA Contract