



## BOSTON REGION METROPOLITAN PLANNING ORGANIZATION

Richard A. Davey, MassDOT Secretary and CEO and MPO Chairman  
Karl H. Quackenbush, Executive Director, MPO Staff

### MEMORANDUM

**DATE** May 2, 2013  
**TO** Boston Region Metropolitan Planning  
**FROM** Karl H. Quackenbush  
CTPS Executive Director  
**RE** Work Program for: MBTA 2014 Triennial Title VI Report

#### Action Required

Review and approval

#### Proposed Motion

That the Boston Region Metropolitan Planning Organization, upon the recommendation of the MBTA, vote to approve the work program for MBTA 2014 Triennial Title VI Report in the form of the draft dated May 2, 2013.

#### Project Identification

##### Unified Planning Work Program Classification

Technical Support/Operations Analysis

##### CTPS Project Number

11388

##### Client

Massachusetts Bay Transportation Authority  
*Project Supervisor:* Joseph Cosgrove

##### CTPS Project Supervisors

*Principal:* Elizabeth Moore  
*Manager:* Annette Demchur

##### Funding

Future 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

Every three years, the Massachusetts Bay Transportation Authority (MBTA) is required to submit a report to the Federal Transit Administration (FTA) Office of Civil Rights detailing the MBTA's efforts to comply with Title VI of the Civil Rights Act of 1964. The purpose of this Title VI report is to ensure that, as a recipient of federal funds, the MBTA provides a comparable level and quality of transportation services to all customers without regard to race, color, or national origin. The requirements for demonstrating compliance with Title VI are outlined in FTA Circular 4702.1B.

The most recent triennial Title VI report was provided by the MBTA to the FTA in 2011. In the years when the MBTA does not submit a triennial report, the FTA requires the Authority to complete annual Title VI monitoring and internal reporting to identify and address problems early and to ensure ongoing Title VI compliance. Under the MBTA's monitoring schedule, data collection and analysis are completed annually for some service indicators, and every two or three years for others. When possible, the results of biennial monitoring are folded into subsequent triennial Title VI reports for the FTA. The most recent triennial report outlined an ongoing process of Title VI data collection and analysis; documented the results of current assessments of compliance; and indicated responsive action that would be taken with respect to Title VI concerns in the interim years before the 2014 report.

CTPS has performed data collection and analysis for MBTA Title VI reporting since the 1980s and has been responsible for producing the MBTA's 2005, 2008, and 2011 Title VI triennial reports for submittal to the FTA. CTPS has also completed annual internal reports for the MBTA since 2005 and quarterly reports for the FTA, as required. This work program represents a continuation of CTPS's involvement in the MBTA's Title VI monitoring efforts. It outlines the monitoring that will be completed for both the 2014 triennial Title VI Report and the 2013 annual monitoring, which will provide some of the data for the analyses that will be reported in the triennial report.

## Objectives

The primary objective of this study is to produce a report that meets all of the requirements set forth in FTA Circular 4702.1B so that the FTA can make a determination about the MBTA's compliance with Title VI regulations. To do so, CTPS will work closely with the MBTA to collect and analyze transit service data as

they relate to minority populations within the MBTA's service area. CTPS will provide ongoing technical support to the MBTA's Title VI Working Group and will produce a final report for submittal to the FTA by June 1, 2014. This report will address all of the general reporting requirements (for which most of the documentation will be provided by the MBTA), as well as the required program-specific elements, which will be evaluated in the context of this work program, and will include:

1. Documentation of the General Requirements set forth in FTA Circular 4702.1B
2. Production of demographic, trip generator, transit service, and transit amenity maps and overlays
3. Documentation of systemwide service standards and policies, along with analysis of service monitoring data, to compare the performance of services provided in minority areas with those in nonminority areas
4. Documentation of completed equity analyses performed for any proposed fare changes or major service changes that have occurred since the submittal of the MBTA's last triennial Title VI report (in 2011) and a copy of board meeting minutes or a resolution demonstrating the board's consideration, awareness, and approval of the equity analyses for any service or fare changes
5. Documentation of the public engagement process for setting the major service change policy and disparate impact policy, and a copy of board meeting minutes or a resolution demonstrating the board's consideration, awareness, and approval of the major service change policy and disparate impact policy
6. Continued outreach to MBTA departments regarding their roles in Title VI compliance

## Work Description

In addition to the general reporting requirements, FTA Title VI Circular 4702.1B, dated October 1, 2012, sets forth a specific set of reporting requirements for transit providers who operate 50 or more fixed-route vehicles in peak service and that are located in an Urbanized Area (UZA) with a population of 200,000 or greater. As one of these transit providers, the MBTA is therefore required to collect and report data through a series of demographic and service profile maps and charts, monitor and report transit service through comparative analysis based on the MBTA's systemwide service standards and service policies, and evaluate major service and fare changes with regard to equity.

The production of demographic and service profile maps and charts relies heavily on up-to-date data coverages of MBTA transit routes and amenities in the geographic information system (GIS) database maintained by CTPS. These coverages, which have been updated using 2010 census data, allow CTPS to designate transit routes as serving, and transit amenities as being located in, predominantly minority areas.

Data needed for the comparative analysis of transit service is collected according to the MBTA level-of-service monitoring schedule. Certain indicators are monitored annually, while others are monitored every two or three years. The analyses conducted for the 2014 triennial Title VI report will utilize the most recent data available for each of the indicators.

The MBTA is currently in the process of developing policies and procedures for determining the existence of disparate impacts and disproportionate burdens in relation to service and fare changes. Once these policies go into effect, all major service and fare change proposals will need to follow these procedures in order to be consistent with the reporting requirements in the MBTA 2014 Triennial Title VI Report.

#### **Task 1 Produce Demographic and Service Profile Maps and Charts**

The following maps, overlays, and summary statistics will be produced for the MBTA service area by census tract using demographic data from the 2010 census databases. In addition, narrative explanations of the maps will be provided. This task will consist of the following steps:

- Produce a base map of the MBTA's service area that includes each census tract, major streets and highways, the MBTA's fixed-guideway services, and MBTA stations.
- Produce demographic maps displaying all of the above, highlighting the census tracts that are defined as predominantly minority. Areas that are predominantly low-income will also be identified for the purpose of any environmental justice analyses that may be required for major service or fare changes.
- Summarize statistics on the number and percentage of minority and low-income persons in each census tract and indicate which census tracts are defined as predominantly minority and/or predominantly low-income.
- Produce an overlay to the base map showing population by first language spoken.
- Produce additional overlays to the demographic maps showing all of the following:

- MBTA depots, maintenance and garage facilities, and administrative buildings (highlighting those that were recently modernized or are scheduled for modernization in the next five years)
  - Major activity centers or other transit trip generators, including the central business district, outlying high-employment areas, schools, and hospitals
  - The coverage of all transit services provided by the MBTA, highlighting areas within a reasonable walking distance of the access points
  - The locations of bus shelters
  - The locations of all CharlieCard retail sales outlets
  - Station accessibility and the distribution and operability of elevators and escalators
- Produce additional maps and summary statistics as needed to satisfy the requirements of Title VI reporting

#### *Products of Task 1*

Base maps, demographic maps, and all required map overlays, as well as summary statistics and written descriptions and interpretations of the maps and overlays

#### **Task 2 Monitor the Level of Service**

Most of the level-of-service analyses associated with Title VI reporting rely on up-to-date data coverages of MBTA transit routes and amenities in the GIS database maintained by CTPS. These coverages allow CTPS to designate amenities as being located in, and routes as serving, predominantly minority or nonminority areas according to FTA Title VI guidelines.

##### *Subtask 2.1 Document Service Standards and Policies*

For the level-of-service analysis, CTPS will first document the MBTA's standards and policies for the service indicators specified in the Title VI Circular. CTPS will use existing documentation when available and will work with the applicable MBTA departments to document additional standards and policies as necessary.

##### *Subtask 2.2 Collect Level-of-Service Data*

For each of the service indicators specified in the Title VI Circular, CTPS will either directly collect the data required for performing the required level-of-service analyses described in Subtask 2.3 below or will work with the applicable MBTA departments to obtain the necessary data. Data collection activities not described here will be completed by the MBTA departments specified, and the results will be provided to CTPS for inclusion in the final triennial report.

- **Vehicle Load:** CTPS will use bus and rapid transit vehicle load data compiled by the MBTA Service Planning department as a part of its biennial service planning process. Commuter Rail vehicle load data will be obtained from MBTA Railroad Operations.
- **Vehicle Headway:** CTPS will use bus and rapid transit vehicle headway data compiled by the MBTA Service Planning department as a part of its biennial service planning process. Commuter Rail vehicle headway data will be obtained from MBTA Railroad Operations.
- **On-Time Performance:** CTPS will use bus and rapid transit vehicle on-time performance data compiled by the MBTA Service Planning department as a part of its biennial service planning process. Commuter Rail vehicle on-time performance data will be obtained from MBTA Railroad Operations.
- **Percent of Scheduled Bus Service Operated:** Using data compiled monthly by the MBTA for its online ScoreCard, CTPS will analyze, by bus route, the percentage of trips operated.
- **Availability and Condition of Transit Amenities:** Data on transit amenities will be collected by CTPS through field observations and/or will be provided to CTPS by the MBTA. These amenities include station and shelter conditions; the distribution of benches, timetables, route maps, neighborhood maps, trash and recycling receptacles, bicycle facilities, and variable message signs at stations; the distribution and operability of fare gates, fare vending machines, and retail sales terminals; and the distribution and operability of station elevators and escalators. For the location and condition of bus shelters, as well as the benches, timetables, and route maps that are provided in the shelters, CTPS will utilize data that were collected as a part of the MBTA's 2012 Title VI monitoring program.
  - CTPS will conduct field observations of station conditions and the amenities present at stations. During the field observations, CTPS will cross-reference inventories provided by the MBTA of neighborhood maps, trash and recycling receptacles, and variable message signs at stations.
  - Information about the distribution and operability of AFC fare gates, fare vending machines, and retail sales terminals and the distribution and operability of station elevators and escalators will be obtained from the MBTA.

For each amenity, CTPS will compare the location, condition, and/or operability of those found in predominantly minority areas or stations to amenities in nonminority areas or stations.

- **Service Availability:** Using its GIS database, CTPS will determine the distances that all customers in the MBTA's service area must travel to access a transit service (of any mode). Those distances will be evaluated against the MBTA's coverage standard (which applies to the urban fixed-route service area), and compliance with the standard will be used to compare predominantly minority areas to nonminority areas.
- **Vehicle Assignment:** For bus vehicle assignment, CTPS will obtain and analyze Bus Operations garage pullout and maintenance records for at least one sampled hot day during the summer. With these data, CTPS will analyze the functionality of air conditioning and the vehicle age of buses on routes that serve predominantly minority areas and will compare the results to those for buses on routes that serve nonminority areas. The same type of vehicle assignment analysis will be completed for rapid transit and commuter rail—for vehicle age only—using data collected through CTPS field observations and/or provided by the MBTA.
- **Transit Security:** Using data provided by the MBTA, CTPS will compare the deployment of surveillance technology and security personnel throughout the system along routes and at stations in predominantly minority areas with the deployment in nonminority areas. CTPS will also use data provided by the MBTA to compare the distribution of call boxes and the percentage of passenger inspections at transit stations in minority areas with the percentage at stations in nonminority areas.
- **Vehicle Load:** CTPS will use bus and rapid transit vehicle load data compiled by the MBTA Service Planning department as a part of its biennial service planning process. Commuter Rail vehicle load data will be obtained from MBTA Railroad Operations.

### *Subtask 2.3 Level-of-Service Analyses*

For each of the service indicators specified in the Title VI Circular, CTPS will use the data discussed in Subtask 2.2 to assess the performance of all services by applying the service standards and policies documented in Subtask 2.1 and to compare the performance of the services provided to predominantly minority areas with the performance of services provided to nonminority areas. If, based on these monitoring activities, it is found that a service does not meet the established service standards or policies, CTPS will work with the MBTA to analyze why the discrepancy exists and will develop steps that can be taken to reduce the potential discrepancy. In addition, if a disparate impact is found to exist on the basis of race, color, or national origin, CTPS will work with the MBTA to determine why the disparity exists and will assist in developing corrective actions to remedy the disparity.

to the greatest extent possible. A discussion of any corrective actions will be documented in the final report.

### *Products of Task 2*

Summaries from the MBTA's service standards and policies, maps displaying the distribution of transit amenities and transit accessibility, tables and charts displaying collected data and results from level-of-service analysis, and written descriptions of all procedures and findings.

### **Task 3 Document Service and Fare Equity Analyses**

CTPS conducted a service and fare equity (SAFE) analysis for the MBTA's service reductions and fare increases that were implemented in July 2012 (MBTA 2012 Review of Fare Structure, Tariffs, and Service) and is currently working with the MBTA under a separate work program to analyze possible service and fare changes that may be necessary in the near future (MBTA 2013 Review of Fare Structure, Tariffs, and Service). The results of the 2012 SAFE analysis, as well as any future SAFE analysis that may be completed before submittal of the MBTA's 2014 Triennial Title VI, will be documented in the triennial report.

At the time of the 2012 SAFE analysis, the MBTA had not adopted an official policy on the definitions of disparate impact and disproportionate burden that were reviewed by the public and approved by the MBTA's Board of Directors. Therefore, unofficial definitions, which assumed that any statistically significant difference between the impact on minority areas or riders and nonminority areas or riders represented a disparate impact, were used. Likewise, any statistically significant difference between the impact on low-income areas or riders and non-low-income areas or riders represented a disproportionate burden.

Documentation of the 2012 SAFE analysis and any additional SAFE analyses that may be performed before completion of the work outlined in this work program will be included in the MBTA's 2014 Triennial Title VI Report.

Should findings of a new SAFE analysis indicate that a disparate impact or disproportionate burden exist, CTPS will follow the same procedure that was used for the 2012 SAFE analysis; it will aid the MBTA in modifying the proposed changes in order to avoid, minimize, or mitigate the impacts and/or burdens. If it is found that no alternatives would have less of a disparate impact on minorities or less of a disproportionate burden on low-income populations, CTPS will work with the MBTA to document substantial legitimate justification for the changes, and analysis that shows there are no alternatives that would have less of a disparate impact or disproportionate burden while accomplishing the MBTA's legitimate program goals.



*Products of Task 3*

- Documentation of the SAFE analysis for the MBTA's 2012 service and fare changes
- Documentation of any additional SAFE analyses that may be completed before submittal of the MBTA's 2014 Triennial Title VI Report

**Task 4 Document Other General Reporting Requirements**

In addition to the program-specific data collection and analysis requirements outlined above, the Title VI Circular also includes a number of general reporting requirements that are completed by departments within the MBTA. These include, for example, public notification of protection under Title VI, Title VI complaint procedures and forms, a policy for providing access for limited-English-speaking populations based on the US Department of Transportation's limited-English-Proficiency (LEP) guidance inclusive public-participation processes, a breakdown of minority representation on planning and advisory bodies, and equity analyses of the locations of any proposed transit facilities. The MBTA will provide CTPS with all of the documentation related to these general reporting requirements.

*Product of Task 4*

Documentation of other general reporting requirements

**Task 5 Provide Technical Support to the MBTA's Title VI Working Group**

CTPS will participate as a member in the MBTA's Title VI Working Group in a technical-support role throughout development of the triennial Title VI 2014 report. CTPS will circulate draft sections of the triennial Title VI report for review and comment by the Working Group as they become available. A draft document will be provided in electronic form by February 1, 2014 for a two-week internal review.

In addition to providing general technical support to the MBTA in developing the triennial Title VI report, CTPS will assist the MBTA in developing policies and procedures for measuring and evaluating disparate impacts on minority populations and disproportionate burdens on low-income populations for equity analyses conducted for proposed major service changes and fare changes. While developing these policies, CTPS will assist the MBTA in the identification of disparate impact and disproportionate burden thresholds for use in future service and fare equity analyses.

The disparate impact and disproportionate burden policies must be developed with public engagement, and the MassDOT Board of Directors must approve them. In this task, CTPS will document the MBTA's disparate impact and disproportionate burden policies, procedures, and thresholds, along with the public engagement process that will have been used to set these policies, for

inclusion in the triennial Title VI Report. CTPS will also include a copy of the board meeting minutes and any supporting documentation that demonstrates the board's consideration, awareness, and approval of the policies.

#### ***Products of Task 5***

Documentation of the MBTA's policies, procedures, and thresholds related to the measurement of disparate impacts and disproportionate burdens; the public engagement process used in developing these policies; and the board meeting minutes that demonstrate the board's consideration, awareness, and approval of the policies

#### **Task 6 Assemble the 2014 Triennial Title VI Report**

In addition to the summary statistics, maps, and documentation produced in Tasks 1–3, CTPS will assemble and format all documentation provided by individual MBTA departments to produce the MBTA's triennial Title VI report to the FTA, which is due June 1, 2014. CTPS will provide 20 print copies of the report by March 1, 2014, for review by the MassDOT Board of Directors prior to submittal of the final report to the FTA. CTPS will produce the final report in a format that is accessible to people with disabilities and acceptable to the FTA, including a cover with a graphical design and graphical presentations of materials contained in the report, as appropriate. Subsequent to this submission, CTPS will provide follow-up assistance to MBTA staff to respond to issues raised by the FTA in its review of the MBTA's 2014 Title VI program.

#### ***Product of Task 6***

MBTA 2014 Triennial Title VI Report for the FTA in an electronic format and 20 print copies

#### **Task 7 Provide Ongoing Technical Support to the MBTA**

CTPS staff will provide ongoing technical assistance to the MBTA to address Title VI issues as necessary.

#### ***Product of Task 7***

Technical support provided to the MBTA as necessary.

### **Estimated Schedule**

It is estimated that this project will be completed 12 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 \$135,270. This includes the cost of 59.9 person-weeks of staff time, overhead at the rate of 96.58 percent, and travel. A detailed breakdown of estimated costs is presented in Exhibit 2.

KQ/NAH/AD/ad



**Exhibit 2**  
**ESTIMATED COST**  
**MBTA 2014 Triennial Title VI Report**

| <b>Direct Salary and Overhead</b>                          |              |     |     |      |     |      |       |               |                   | <b>\$134,770</b> |
|--|--------------|-----|-----|------|-----|------|-------|---------------|-------------------|------------------|
| Task   | Person-Weeks |     |     |      |     |      |       | Direct Salary | Overhead (96.58%) | Total Cost       |
|  | M-1          | P-5 | P-4 | P-3  | P-2 | Temp | Total |               |                   |                  |
| 1. Produce Demographic Maps and Charts                     | 0.7          | 2.5 | 0.4 | 1.6  | 0.0 | 0.0  | 5.2   | \$7,561       | \$7,302           | \$14,863         |
| 2. Monitor the Level of Service                            | 2.3          | 2.0 | 3.0 | 8.0  | 0.0 | 13.0 | 28.3  | \$25,703      | \$24,824          | \$50,527         |
| 3. Document Service and Fare Equity Analyses               | 0.7          | 0.0 | 0.0 | 0.5  | 0.0 | 0.0  | 1.2   | \$1,710       | \$1,651           | \$3,361          |
| 4. Document Other General Reporting Requirements           | 1.1          | 0.0 | 0.0 | 1.0  | 0.0 | 0.0  | 2.1   | \$2,911       | \$2,812           | \$5,723          |
| 5. Provide Technical Support to the Title VI Working Group | 2.2          | 0.0 | 0.0 | 2.5  | 0.0 | 0.0  | 4.7   | \$6,346       | \$6,129           | \$12,475         |
| 6. Assemble the 2014 Triennial Title VI Report             | 6.6          | 0.0 | 0.4 | 3.0  | 4.2 | 0.0  | 14.2  | \$18,504      | \$17,871          | \$36,376         |
| 7. Provide Ongoing Technical Support to the MBTA           | 2.2          | 0.0 | 0.0 | 2.0  | 0.0 | 0.0  | 4.2   | \$5,822       | \$5,623           | \$11,445         |
| Total  | 15.8         | 4.5 | 3.8 | 18.6 | 4.2 | 13.0 | 59.9  | \$68,557      | \$66,213          | \$134,770        |
| <b>Other Direct Costs</b>                                  |              |     |     |      |     |      |       |               |                   | <b>\$500</b>     |
| Travel   |              |     |     |      |     |      |       |               |                   | \$500            |
| <b>TOTAL COST</b>  |              |     |     |      |     |      |       |               |                   | <b>\$135,270</b> |

**Funding**  
 Future MBTA contract