



BOSTON REGION METROPOLITAN PLANNING ORGANIZATION

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

MEMORANDUM

DATE December 7, 2017
TO Boston Region Metropolitan Planning Organization
FROM Karl H. Quackenbush, Executive Director
RE Work Program for: MBTA 2018 Title VI Program Monitoring

Action Required

Review and approval

Proposed Motion

That the Boston Region Metropolitan Planning Organization (MPO), upon the recommendation of the Massachusetts Bay Transportation Authority (MBTA), votes to approve the work program for MBTA 2018 Title VI Program Monitoring presented in this memorandum

Project Identification

Unified Planning Work Program Classification

Agency and Other Client Transportation Planning Studies and Technical Analyses

CTPS Project Number

11413

Clients

Massachusetts Bay Transportation Authority

Project Supervisor: Miles Walters

Massachusetts Department of Transportation, Office of Diversity and Civil Rights

Project Supervisor: John Lozada

CTPS Project Supervisors

Principal: Kate Pincus

Manager: Nicholas Hart

Funding

Future MBTA Contract

Impact on MPO Work

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

Background

Every three years, the 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 MBTA submitted its most recent triennial Title VI report to the FTA in 2017. For years in which the MBTA does not submit a triennial report, the FTA requires the Authority to perform annual Title VI monitoring and internal reporting to identify and address problems early and ensure ongoing Title VI compliance. Under the MBTA's monitoring schedule, the Authority collects and analyzes data annually for some service indicators, and every two years for others. When possible, 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 compliance assessments; and indicated responsive action that would be taken with respect to Title VI concerns in the interim years (2018 and 2019) prior to the 2020 triennial report.

The Central Transportation Planning Staff (CTPS) to the Boston Region MPO has performed data collection and analysis for MBTA Title VI reporting since the 1980s and has produced the MBTA's 2005, 2008, 2011, 2014, and 2017 Title VI triennial reports to submit to the FTA. CTPS has also conducted 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, and outlines the monitoring that will be completed in state fiscal year (SFY) 2018.

Objectives

CTPS will assist the MBTA by collecting data and assessing performance (based on existing MBTA service standards and policies) of specific service indicators, according to the MBTA's monitoring schedule. CTPS will then compare the performance of services rendered to predominantly minority riders with the performance of services rendered to predominantly nonminority riders, as required by the MBTA's Disparate Impact and Disproportionate Burden Policy, to determine if there are disparate impacts on the basis of race, color, or national origin.

Work Description

The Title VI Circular identifies a number of service indicators for service monitoring for which a comparative analysis must be completed. The MBTA monitors most service indicators annually, including vehicle load, vehicle headway, on-time performance, availability, span of service, platform accessibility, vehicle accessibility, vehicle assignment, and the distribution, and/or operability of two types of transit amenities: 1) automated-fare-collection (AFC) gates, fare vending machines, and retail sales outlets; and 2) station escalators. For reporting in even-numbered years, the MBTA monitors rapid transit and commuter rail station conditions and amenities; distribution of neighborhood maps and bus transfer maps; and distribution and operability of variable-message signs. For reporting in odd-numbered years, the MBTA monitors bus shelter and bench placement, and bus shelter conditions and amenities.

Most service analyses rely on the latest demographic ridership data maintained by CTPS. This data—which has been updated using results from the 2015–17 MBTA systemwide passenger survey—allow CTPS to discern which MBTA services support predominantly minority and/or low-income riders.¹

Task 1 Review Station and Stop Condition and Amenities Metrics and AFC Data Collection

CTPS will coordinate with the MBTA to review and, if requested, revise existing station and stop condition and amenities metrics. CTPS will also coordinate with the MBTA to ensure that AFC device operability data remain available throughout migration to the MBTA's new fare system.

Product of Task 1

Revised station and stop condition and amenities metrics and AFC device operability data

Task 2 Monitor Service Performance

The first step in service performance monitoring is to assess the performance and/or distribution of specified services against established service standards and policies. The performance and/or distribution of the services provided for predominantly minority riders is then compared with the performance and/or distribution of services provided for predominantly nonminority riders to determine if there are disparate impacts on the basis of race, color, or national origin, as required by the MBTA's Disparate Impact and Disproportionate Burden Policy. The service indicators for which CTPS will collect and/or analyze data and the actions that will be taken by CTPS are described below.

¹ The FTA no longer requires analysis of service performance by income level, but does require consideration of the impacts of service and fare changes on low-income populations.

- **Vehicle Load:** Using SFY 2017 vehicle load data provided by the MBTA, CTPS will determine compliance with the MBTA's vehicle load standard for each route/line. CTPS will then conduct a disparate impact analysis by comparing compliance with the standard for routes/lines that serve predominantly minority riders to compliance with the standard for routes/lines that serve predominantly nonminority riders, for each transit mode. At this time, the MBTA is unable to collect the data necessary to assess vehicle load, as defined by its written standards, for heavy rail, light rail, and commuter rail. In the meantime, CTPS will conduct a disparate impact analysis for vehicle load for these modes using the results from supplemental vehicle load analyses developed by the MBTA.
- **Vehicle Headway:** Using SFY 2017 timetables, CTPS will determine adherence to the MBTA's vehicle headway standard for each route/line. CTPS will then conduct a disparate impact analysis by comparing compliance with the standard for routes/lines that serve predominantly minority riders to compliance with the standard for routes/lines that serve predominantly nonminority riders, for each mode.
- **On-Time Performance:** Using SFY 2017 on-time performance data provided by the MBTA, CTPS will determine adherence to the MBTA's on-time performance standard for each route/line. CTPS will then conduct a disparate impact analysis by comparing compliance with the standard for routes/lines that serve predominantly minority riders to compliance with the standard for routes/lines that serve predominantly nonminority riders, for each mode.
- **Service Availability:** Using its geographic information systems (GIS) database, CTPS will determine the distances that populations must travel to access MBTA transit service (of any mode) for the transit network in place during SFY 2017. CTPS will evaluate those distances using the MBTA's coverage standard (which applies to the MBTA's core service area, excluding municipalities that are members of another regional transit authority). CTPS will then conduct a disparate impact analysis by comparing the percentage of the minority population in the service area that has access to transit to the percentage of the nonminority population in the service area that has access to transit, as defined by the coverage standard.
- **Span of Service:** Using SFY 2017 timetables, CTPS will determine adherence to the MBTA's span of service standard for each route/line. CTPS will then conduct a disparate impact analysis by comparing compliance with the standard for routes/lines that serve predominantly

minority riders to compliance with the standard for routes/lines that serve predominantly nonminority riders, for each mode.

- **Platform Accessibility:** For gated rapid transit stations, CTPS will use SFY 2017 elevator operability data provided by the MBTA to measure the percentage of platform hours that were accessible in each station. CTPS will then conduct a disparate impact analysis by comparing the percentage of platform hours that are accessible in stations that serve predominantly minority riders to the percentage of platform hours that are accessible in stations that serve predominantly nonminority riders. For commuter rail stations, CTPS will conduct a disparate impact analysis by comparing the percentage of stations that serve predominantly minority riders that are built to be accessible to the percentage of stations that serve predominantly nonminority riders that are built to be accessible.
- **Vehicle Accessibility:** Using SFY 2017 vehicle assignment data provided by the MBTA, CTPS will determine adherence to the MBTA's vehicle accessibility standard for each branch of the Green Line. CTPS will then conduct a disparate impact analysis by comparing the percentage of trainsets that are equipped with a low-floor Type 8 Breda car operating on Green Line branches that serve predominantly minority riders to the percentage of trainsets that are equipped with a low-floor Type 8 Breda car operating on Green Line branches that serve predominantly nonminority riders. At this time, the MBTA lacks the data to assess full commuter rail vehicle accessibility (as measured by the percentage of stops where the accessible bathroom-equipped coaches, on trains with bathrooms, line up at an accessible boarding location at each station). Should this data become available, CTPS will conduct a disparate impact analysis by comparing the percentage of vehicles that line up properly at stations that serve predominantly minority riders to the percentage of vehicles that line up properly at stations that serve predominantly nonminority riders. CTPS will not analyze heavy rail and bus vehicle accessibility because each heavy rail vehicle and bus in the MBTA's fleet is fully accessible.
- **Service Operated:** Using SFY 2017 dropped trip data provided by the MBTA, CTPS will determine adherence to the MBTA's service operated standard for each route/line. CTPS will conduct a disparate impact analysis by comparing compliance with the standard for routes/lines that serve predominantly minority riders to compliance with the standard for routes/lines that serve predominantly nonminority riders, for each mode.
- **Distribution of Transit Amenities:** CTPS will monitor the following transit amenities in the context of this work program: the condition of rapid transit, commuter rail, and commuter boat stations, including provision of seating

fixtures, trash/recycling receptacles, system/line maps, and Title VI notices in the stations; distribution of neighborhood maps and bus transfer maps; distribution and/or operability of variable message signs; distribution and/or operability of AFC fare gates, fare vending machines, and retail sales terminals; and distribution and operability of station escalators. CTPS will collect the monitoring data for the condition of rapid transit, commuter rail, and commuter boat stations and provision of station amenities through field observations. The MBTA will provide data on the location and operability of all other amenities to CTPS. CTPS will evaluate the location, condition, and/or operability of each amenity according to MBTA policy and will compare performance of the amenities in predominantly minority areas or stations to performance of the amenities in predominantly nonminority areas or stations, as required by the MBTA's Disparate Impact and Disproportionate Burden Policy.

- **Vehicle Assignment:** For bus vehicle assignment, CTPS will obtain and analyze MBTA Bus Operations' garage pullout and maintenance records for at least one sample hot day during SFY 2017. Using these data, CTPS will analyze provision of buses with functioning air conditioning and the vehicle age of buses on routes that serve predominantly minority areas, and will compare those data to the data for buses on routes that serve predominantly nonminority areas. Vehicle assignment analyses, which are performed only for vehicle age, will be conducted for rapid transit and commuter rail using SFY 2017 data provided by the MBTA. CTPS will then conduct disparate impact analyses of vehicle age and air-conditioning functionality as required by the MBTA's Disparate Impact and Disproportionate Burden Policy.

Products of Task 2

- Compliance summaries for each service indicator listed in Task 2, including data summarized for each route, line, station, or population, and grouped by minority classification
- Results of a disparate impact analysis for each service indicator listed in Task 2, including the figures that form each disparate impact ratio for comparison to the MBTA's disparate impact threshold

Task 3 Document Findings in Memorandum to MBTA

CTPS will compile the results of the level-of-service analysis into the 2018 Title VI memorandum to the MBTA. This memorandum will provide the data needed for the MBTA to determine whether any corrective actions need to be taken to ensure that services rendered to predominantly minority riders are comparable to services rendered to predominantly nonminority riders.

Product of Task 3

2018 Title VI service monitoring memorandum to the MBTA

Task 4 Provide Technical Assistance to the MBTA and Massachusetts Department of Transportation Office of Diversity and Civil Rights (ODCR)

CTPS will support the development and operation of a Title VI working group and provide technical assistance to the MBTA and ODCR to address Title VI issues as necessary.

Product of Task 4

Technical assistance provided to the MBTA and ODCR 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 \$77,150. This includes the cost of 32.4 person-weeks of staff time, a billing overhead rate of 105.66 percent as approved by the Boston Region MPO for SFY 2018, and travel. On each consecutive July 1, beginning with July 1, 2018, the overhead rate will be adjusted to reflect the state fiscal year rate approved by the MPO. A detailed breakdown of estimated costs is presented in Exhibit 2.

KQ/AD/NH/ad

**Exhibit 1
ESTIMATED SCHEDULE
MBTA 2018 Title VI Program Monitoring**

Task	Month												
	1	2	3	4	5	6	7	8	9	10	11	12	
1. Review Station and Stop Condition and Amenities Metrics and AFC Data Collection													
2. Monitor Service Performance													
3. Document Findings in Memorandum to MBTA													A
4. Provide Technical Assistance to the MBTA and the MassDOT Office of Diversity and Civil Rights (ODCR)													

Products/Milestones

A: Technical Memorandum

Exhibit 2
ESTIMATED COST
MBTA 2018 Title VI Program Monitoring

Direct Salary and Overhead	\$76,850
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Task	Person-Weeks						Direct Salary	Overhead (105.66%)	Total Cost
	M-1	P-4	P-3	P-1	Temp	Total			
1. Review Station and Stop Condition and Amenities Metrics and AFC Data Collection	0.4	0.0	0.6	0.2	0.0	1.2	\$1,645	\$1,738	\$3,383
2. Monitor Service Performance	1.4	3.6	2.0	4.4	8.6	20.0	\$18,101	\$19,126	\$37,227
3. Document Findings in Memorandum to MBTA	2.2	0.9	0.9	0.0	0.0	4.0	\$6,442	\$6,807	\$13,250
4. Provide Technical Assistance to the MBTA and the MassDOT Office of Diversity and Civil Rights (ODCR)	3.2	2.0	2.0	0.0	0.0	7.2	\$11,179	\$11,812	\$22,991
Total	7.2	6.5	5.5	4.6	8.6	32.4	\$37,368	\$39,483	\$76,850

Other Direct Costs	\$300
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Travel	\$300
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TOTAL COST	\$77,150
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Funding
 Future MBTA Contract