



MBTA TITLE VI REPORT

OCTOBER 2017



THIS PAGE INTENTIONALLY BLANK

MBTA Title VI Report

MBTA Project Manager

John Lozada

Project Manager

Nicholas Hart

Project Principal

Annette Demchur

Data Analysts

Steven Andrews

Nicholas Hart

Katie Pincus

Andrew Reker

Graphic Design

Kim DeLauri

The preparation of this document was funded by the Massachusetts Bay Transportation Authority.

Prepared for the Massachusetts Bay Transportation Authority by the Central Transportation Planning Staff

Central Transportation Planning Staff
Directed by the Boston Region Metropolitan Planning Organization. The MPO is composed of state and regional agencies and authorities, and local governments.

September 2017



THIS PAGE INTENTIONALLY BLANK

Table of Contents

CHAPTER 1: INTRODUCTION

Introduction	1-1
About the MBTA	1-2
Organizational Structure	1-2
What is Title VI of the Civil Rights Act of 1964, and how does it apply to the MBTA?	1-3
Related Federal and State Nondiscrimination Requirements	1-4
Additional Protections for Low-Income, Minority, and Limited-English-Proficiency Individuals	1-4
How can nondiscrimination requirements under Title VI be violated?	1-5
Definitions	1-5

CHAPTER 2: GENERAL REPORTING REQUIREMENTS

Introduction	2-1
Title VI Notice to the Public (FTA C 4702.1B, III-4)	2-2
Notice of Nondiscrimination Rights and Protections to Beneficiaries	2-3
Summary Title VI Notice - English	2-6
Noticia de Título VI - Spanish	2-6
MBTA Title VI Complaint Procedures	2-6
The Complaint Process	2-7
Title VI Investigations, Complaints, and Lawsuits [FTA C 4702.1B, IV.3.]	2-12
MBTA/MassDOT Public Participation Plan (FTA C 4702.1B, III-5)	2-26
Overview	2-26
MBTA Public Engagement Process and Outreach Tools	2-27
Plan to Engage Minority and Limited-English-Proficient Populations	2-33
Summary of Department-Level Public Engagement Activities	2-37
Language Assistance Plan (FTA C 4702.1B, III.9)	2-68
Minority Representation on Planning and Advisory Bodies (FTA C 4702.1B, III.10)	2-68

Subrecipient Assistance and Monitoring (FTA C 4702.1B, III.11 and 12)	2-69
Title VI Equity Analysis for Determination of Location of Constructed Facilities (FTA C 4702.1B, III.13)	2-71

CHAPTER 3:DEMOGRAPHIC AND SERVICE PROFILE MAPS AND CHARTS

CHAPTER 4: DEMOGRAPHIC RIDERSHIP AND TRAVEL PATTERNS

Modal Use	4-2
Fare Type Usage	4-4
Frequency of Use	4-8
Transfer Rates	4-9
Transit Dependency	4-10
Survey Languages and Preferred Languages for Information	4-13

CHAPTER 5: SERVICE STANDARDS AND POLICIES

Systemwide Service Standards (FTA C 4702.1B, IV.4.a)	5-1
Vehicle Load (FTA C 4702.1B, IV.4.a.1)	5-3
Vehicle Headway (FTA C 4702.1B, IV.4.a.2)	5-4
On-Time Performance (FTA C 4702.1B, IV.4.a.3)	5-6
Service Availability (FTA C 4702.1B, IV.4.a.4)	5-8
Span of Service	5-9
Platform Accessibility	5-11
Vehicle Accessibility	5-11
Service Operated	5-12
Systemwide Service Policies (FTA C 4702.1B, IV.4.b)	5-12
Distribution of Transit Amenities (FTA C 4702.1B, IV.4.b.1)	5-12
Vehicle Assignment (FTA C 4702.1B, IV.4.b.2)	5-24

CHAPTER 6: SERVICE MONITORING

- Minority Classification 6-3
 - Classifications Based on Ridership Data 6-3
 - Classifications Based on Population Data 6-5
- Disparate Impact Threshold for Service Monitoring 6-6
- Systemwide Service Standards (FTA C 4702.1B, IV.4.a) 6-6
 - Vehicle Load (FTA C 4702.1B, IV.4.a.1) 6-6
 - Vehicle Headway (FTA C 4702.1B, IV.4.a.2) 6-12
 - On-Time Performance (FTA C 4702.1B, IV.4.a.3) 6-20
 - Service Availability (FTA C 4702.1B, IV.4.a.4) 6-29
 - Span of Service 6-32
 - Platform Accessibility 6-40
 - Vehicle Accessibility 6-43
 - Service Operated 6-44
- Systemwide Service Policies (FTA C 4702.1B, IV.4.b) 6-51
 - Distribution of Transit Amenities (FTA C 4702.1B, IV.4.b.1) 6-52
 - Vehicle Assignment (FTA C 4702.1B, IV.4.b.2) 6-87

CHAPTER 7: REQUIREMENT TO EVALUATE SERVICE AND FARE CHANGES

- Introduction 7-1
- Disparate Impact/Disproportionate Burden Policy 7-3
 - Requirement 7-3
 - Purpose 7-4
 - Service Equity Analysis 7-4
 - Fare Equity Analysis 7-6
 - Definitions 7-7
- MBTA Service and Fare Equity Analyses, 2014–17 7-9
 - Fare Equity Analysis: MBTA Youth Pass Pilot Program 7-9
 - Fare Equity Analysis: SFY 2017 MBTA Fare Change 7-11
 - Service Equity Analysis: Termination of Late Night Service Pilot 7-12
 - Service Equity Analysis: Fitchburg Line Improvement Project 7-17
 - Service Equity Analysis: Wachusett Extension Project 7-20

APPENDICES

- 2-A MBTA Language Access Plan
 - 2-B MBTA Public Participation Plan
 - 2-C MBTA Community Engagement PowerPoint
 - 2-D MBTA List of Public Engagement Activities
 - 2-E GLX Public Engagement Plan
 - 2-F MBTA Service Delivery Policy
 - 2-G MBTA Subrecipient Monitoring Checklist
 - 2-H Title VI Subrecipient Review Procedures
 - 2-I FONSI for the Wachusett Extension Project
-
- 6-A Summary of MBTA Service Monitoring Results
 - 6-B Minority Classifications of MBTA Services
-
- 7-A MBTA Youth Pass Pilot Evaluation
 - 7-B CTPS Fare Equity Analysis of MBTA Youth Pass Pilot
 - 7-C FMCB Approval of MBTA Youth Pass Pilot Fare Equity Analysis
 - 7-D CTPS Fare Equity Analysis of SFY 2017 MBTA Fare Change
 - 7-E FMCB Approval of Fare Equity Analysis of SFY 2017 MBTA Fare Change
 - 7-F CTPS Service Equity Analysis for the Termination of MBTA Late Night Service Pilot
 - 7-G FMCB Approval of Service Equity Analysis for the Termination of MBTA Late Night Service Pilot
 - 7-H CTPS Service Equity Analysis for the Fitchburg Line Improvement Project and Wachusett Extension Project
 - 7-I FMCB Approval of Service Equity Analysis for the Fitchburg Line Improvement Project and Wachusett Extension Project

Tables

1-1:	2017 MBTA Triennial Title VI Report	1-9
2-1:	Title VI Complaints, Lawsuits, and Investigations	2-12
3-1:	Distribution of Commuter Rail and Boat Transit Facilities: Number and Percentage of Facilities by Tract Classification	3-3
3-2:	Distribution of Commuter Rail and Boat Transit Facilities: Number of Facilities per 100 Tracts, by Tract Classification	3-4
3-3:	Distribution of Commuter Rail and Boat Transit Facilities: Percentage of Tracts with Facility, by Tract Classification	3-4
3-4:	Distribution of Bus and Rapid Transit Facilities: Number and Percentage of Facilities by Tract Classification	3-5
3-5:	Distribution of Bus and Rapid Transit Facilities: Number of Facilities per 100 Tracts, by Tract Classification	3-5
3-6:	Distribution of Bus and Rapid Transit Facilities: Percentage of Tracts with Facility, by Tract Classification	3-6
3-7:	Distribution of Commuter Rail Operational Facilities: Number and Percentage of Facilities by Tract Classification	3-11
3-8:	Distribution of Commuter Rail Operational Facilities: Number of Facilities per 100 Tracts, by Tract Classification	3-11
3-9:	Distribution of Commuter Rail Operational Facilities: Percentage of Tracts with Facility, by Tract Classification	3-12
3-10:	Distribution of Bus and Rapid Transit Operational Facilities: Number and Percentage of Facilities by Tract Classification	3-12
3-11:	Distribution of Bus and Rapid Transit Operational Facilities: Number of Facilities per 100 Tracts, by Tract Classification	3-13
3-12:	Distribution of Bus and Rapid Transit Operational Facilities: Percentage of Tracts with Facility, by Tract Classification	3-13
3-13:	Distribution of Commuter Rail Improvements: Number and Percentage of Improvements by Tract Classification	3-31
3-14:	Distribution of Commuter Rail Improvements: Number of Improvements per 100 Tracts, by Tract Classification	3-32

3-15: Distribution of Commuter Rail Improvements: Percentage of Tracts with Improvement, by Tract Classification	3-32
3-16: Distribution of Bus and Rapid Transit Improvements: Number and Percentage of Improvements by Tract Classification	3-33
3-17: Distribution of Bus and Rapid Transit Improvements: Number of Improvements per 100 Tracts, by Tract Classification	3-33
3-18: Distribution of Bus and Rapid Transit Improvements: Percentage of Tracts with Improvement, by Tract Classification	3-34
4-1: Modal Use by Minority Status	4-3
4-2: Fare Type by Mode and Minority Status	4-5
4-3: Fare Type by Mode and Low-Income Status	4-7
4-4: Frequency of Use by Mode and Minority Status	4-9
4-5: Riders Possessing a Driver’s License by Mode and Minority Status	4-11
4-6: Vehicles per Household by Mode and Minority Status	4-13
5-1: Service Frequency	5-5
5-2: Span of Service	5-10
5-3: Bus Shelter Eligibility	5-16
5-4: Bus Fleet Roster	5-25
5-5: Light Rail Fleet Roster	5-27
5-6: Heavy Rail Fleet Roster	5-28
5-7: Commuter Rail Fleet Roster	5-30
6-1: MBTA Title VI Service Monitoring Schedule	6-2
6-2: Bus Vehicle Load - Weekday	6-7
6-3: Bus Vehicle Load - Saturday	6-8
6-4: Bus Vehicle Load - Sunday	6-9
6-5: Commuter Rail Vehicle Load - Weekday	6-10
6-6: Commuter Rail Vehicle Load - Saturday	6-11
6-7: Commuter Rail Vehicle Load - Sunday	6-12

6-8:	Bus Vehicle Headway - Weekday	6-13
6-9:	Bus Vehicle Headway - Saturday	6-14
6-10:	Bus Vehicle Headway - Sunday	6-15
6-11:	Heavy and Light Rail Vehicle Headway - Weekday	6-16
6-12:	Heavy and Light Rail Vehicle Headway - Saturday	6-17
6-13:	Heavy and Light Rail Vehicle Headway - Sunday	6-18
6-14:	Commuter Rail Vehicle Headway - Weekday	6-19
6-15:	Commuter Rail Vehicle Headway - Saturday	6-20
6-16:	Bus On-Time Performance - Weekday	6-21
6-17:	Bus On-Time Performance - Saturday	6-22
6-18:	Bus On-Time Performance - Sunday	6-23
6-19:	Heavy and Light Rail On-Time Performance - Weekday	6-24
6-20:	Heavy and Light Rail On-Time Performance - Saturday	6-25
6-21:	Heavy and Light Rail On-Time Performance - Sunday	6-26
6-22:	Commuter Rail On-Time Performance - Weekday	6-27
6-23:	Commuter Rail On-Time Performance - Saturday	6-28
6-24:	Commuter Rail On-Time Performance - Sunday	6-29
6-25:	Service Availability - Weekday	6-30
6-26:	Service Availability - Saturday	6-31
6-27:	Service Availability - Sunday	6-32
6-28:	Bus Span of Service - Weekday	6-33
6-29:	Bus Span of Service - Saturday	6-34
6-30:	Bus Span of Service - Sunday	6-35
6-31:	Heavy and Light Rail Span of Service - Weekday	6-36
6-32:	Heavy and Light Rail Span of Service - Saturday	6-37
6-33:	Heavy and Light Rail Span of Service - Sunday	6-38
6-34:	Commuter Rail Span of Service - Weekday	6-39
6-35:	Commuter Rail Span of Service - Saturday	6-40
6-36:	Platform Accessibility - Gated Rapid Transit Stations with Elevators	6-41
6-37:	Platform Accessibility - Gated Rapid Transit Stations, Including those without Elevators	6-42
6-38:	Platform Accessibility – Commuter Rail Stations	6-43
6-39:	Bus Service Operated - Weekday	6-45

6-40: Bus Service Operated - Saturday	6-46
6-41: Bus Service Operated - Sunday	6-47
6-42: Heavy Rail and Light Rail Service Operated	6-48
6-43: Commuter Rail Service Operated - Weekday	6-49
6-44: Commuter Rail Service Operated - Saturday	6-50
6-45: Commuter Rail Service Operated - Sunday	6-51
6-46: Shelter Placement – Bus Stops with more than 70 Average Daily Boardings	6-54
6-47: Shelter Placement – Bus Stops with more than 25 Average Daily Boardings	6-55
6-48: Bench Placement – Bus Stops without a Shelter and more than 50 Average Daily Boardings	6-56
6-49: Bench Placement – All Bus Stops without a Shelter	6-57
6-50: Seating Fixtures at Bus Stops	6-58
6-51: Bus Shelter Conditions	6-59
6-52: Subway Rapid Transit Lobby Amenities	6-60
6-53: Subway Rapid Transit Platform Amenities	6-61
6-54: Components of Subway Rapid Transit Station Condition Monitoring	6-62
6-55: Subway Rapid Transit Exterior Station Conditions	6-64
6-56: Subway Rapid Transit Lobby Conditions	6-65
6-57: Subway Rapid Transit Platform Conditions	6-67
6-58: Surface Rapid Transit Station Amenities	6-69
6-59: Components of Surface Rapid Transit Station Condition Monitoring	6-70
6-60: Surface Rapid Transit Shelter Conditions	6-71
6-61: Surface Rapid Transit Platform Conditions	6-72
6-62: Commuter Rail Station Amenities	6-73
6-63: Components of Commuter Rail Station Condition Monitoring	6-74
6-64: Commuter Rail Shelter Conditions	6-75
6-65: Commuter Rail Platform Conditions	6-77
6-66: Faregate Operability	6-78
6-67: Availability of Full-Service Fare Vending Machines	6-79
6-68: Availability of Full-Service and/or Cashless Fare Vending Machines	6-80
6-69: Populations Served by CharlieCard Retail Sales Terminals	6-81

6-70: Neighborhood Maps at Subway Rapid Transit Stations	6-82
6-71: Bus Transfer Maps at Subway Rapid Transit Stations with Bus Connections	6-83
6-72: Variable-Message Sign Operability	6-84
6-73: Variable-Message Signs Displaying Bus Arrival Information at Subway Rapid Transit Stations with a Bus Connection	6-85
6-74: Escalator Operability	6-86
6-75: Bus Vehicle Age	6-87
6-76: Bus Air Conditioning Operability	6-88
6-77: Commuter Rail Vehicle Age	6-89
7-1: Minority and Low-Income Participation in Youth Pass Pilot Program	7-10
7-2: Existing and Proposed Average Fares and Price Changes (Weighted by Fare Usage Frequency)	7-11
7-3: Assessment of Disparate Burdens on Minority Riders for the Termination of Late-Night Service on Bus Routes using Ridership Data . . .	7-14
7-4: Assessment of Disproportionate Burdens on Low-Income Riders for the Termination of Late-Night Service on Bus Routes using Ridership Data	7-14
7-5: Assessment of Disparate Burdens on Minority Riders for the Termination of Late-Night Service on Rapid Transit Lines using Ridership Data	7-15
7-6: Assessment of Disproportionate Burdens on Low-Income Riders for the Termination of Late-Night Service on Rapid Transit Lines using Ridership Data	7-15
7-7: Assessment of Disparate Burdens on Minority Riders for the Termination of Late-Night Service using Population Data Weighted Based on System Access	7-16
7-8: Assessment of Disproportionate Burdens on Low-Income Riders for the Termination of Late-Night Service using Population Data Weighted Based on System Access	7-17
7-9: Assessment of Disparate Benefits for the Fitchburg Line Improvement Project	7-19

7-10: Assessment of Disproportionate Benefits for the Fitchburg Line Improvement Project	7-19
7-11: Assessment of Disparate Benefits for the Wachusett Extension Project . .	7-21
7-12: Assessment of Disproportionate Benefits for the Wachusett Extension Project	7-22

Figures

3-1a: MBTA Fixed Transit Facilities: Commuter Rail Service Area	3-7
3-1b: MBTA Fixed Transit Facilities: Core Service Area	3-9
3-2a: MBTA Operational Facilities: Commuter Rail Service Area	3-15
3-2b: MBTA Operational Facilities: Core Service Area	3-17
3-3a: Major Transit Trip Generators: Commuter Rail Service Area	3-21
3-3b: Major Transit Trip Generators: Core Service Area	3-23
3-4a: Major Streets and Highways: Commuter Rail Service Area	3-27
3-4b: Major Streets and Highways: Core Service Area	3-29
3-5a: MBTA Improvements: Commuter Rail Service Area	3-35
3-5b: MBTA Improvements: Core Service Area	3-37
4-1: Modal Use by Minority Status	4-3
4-2: Fare Type by Mode and Minority Status	4-4
4-3: Fare Type by Mode and Low-Income Status	4-6
4-4: Frequency of Use by Mode and Minority Status	4-8
4-5: Riders Possessing a Driver’s License by Mode and Minority Status	4-11
4-6: Vehicles per Household by Mode and Minority Status	4-12
4-7: Number of Surveys Returned in Languages Other Than English by Minority Status	4-14



Chapter 1: Introduction

INTRODUCTION

This Title VI report has been prepared by the Massachusetts Bay Transportation Authority (MBTA) in compliance with the United States Department of Transportation (USDOT) Title VI regulations, 49 CFR § 21.9 (b), and with Federal Transit Administration (FTA) Circular 4702.1B guidelines, titled *Title VI Requirements and Guidelines for Federal Transit Administration Recipients*, issued October 1, 2012.

The purpose of this report is to demonstrate the MBTA's commitment to respecting the rights of minority and low-income individuals and communities, by actively monitoring, evaluating, and applying solutions to eliminate the risk of discrimination in its programs, services, and activities. The policies, practices, and analyses presented in this document show how the MBTA meets its civil rights obligations and complies with Title VI of the Civil Rights Act of 1964, 42 U.S.C. § 2000d et seq., and related federal and state laws and regulations.

ABOUT THE MBTA

The MBTA is the fifth largest and oldest public transportation system in the United States, providing a variety of transit services and more than 1.3 million trips on an average weekday. The MBTA maintains and operates 183 bus routes, four of which are bus rapid transit lines; three heavy rail lines (Red, Orange, and Blue Line); five branches of light rail service (Green Line B, C, D, and E, and Mattapan-Ashmont); three trackless trolley lines; 13 commuter rail lines; and three commuter ferry routes.

ORGANIZATIONAL STRUCTURE

In June 2009, the Massachusetts State Legislature passed transportation reform legislation under Chapter 25 of the Acts of 2009, *An Act Modernizing the Transportation Systems of the Commonwealth of Massachusetts* [as amended by Chapter 26 of the Act]. As a result, the Commonwealth's transportation agencies and authorities (with the exception of the Massachusetts Port Authority) merged into the Massachusetts Department of Transportation (MassDOT).

The MBTA operates the largest transit system in Massachusetts and is responsible for multimodal transit operations within Greater Boston, including the provision of commuter rail service that extends beyond the core of the MBTA service area. MassDOT is administered by a Governor-appointed Secretary of Transportation, who acts as Chief Executive Officer. On July 17, 2015, Massachusetts Governor Charlie Baker appointed a five-member Fiscal and Management Control Board (FMCB) to bring oversight, support, and fiscal accountability to the MBTA. The FMCB includes one member with experience in transportation finance, one member with expertise in mass transit operations, and three members of the MassDOT Board of Directors.¹ The FMCB has been directed to get the MBTA “back on track” to deliver a high-quality transportation system by modernizing its infrastructure and providing accountability.

Since its inception, the FMCB has set an aggressive schedule that has included weekly meetings that focus on key fiscal and operational matters, which are sometimes conducted as joint meetings of the MassDOT Board of Directors and the FMCB. The MBTA's General Manager, Deputy General Manager (formerly Chief Operating Officer), and Chief Administrative Officer report regularly to the

¹ An Act for a Reliable, Sustainable Massachusetts Bay Transportation Authority, H, NO. 3613

FMCB on the current state of system performance, operation, and finances. The FMCB was originally established to exist until 2018, but its term was extended until June 30, 2020, as provided by statute, after an extension request from the FMCB was granted by Governor Baker in May 2017.

The General Manager, as Chief Executive Officer of the MBTA, has overall responsibility for providing assurance to the FTA of the MBTA's commitment to comply with Title VI, which includes this triennial program submission. MassDOT's Office of Diversity and Civil Rights (ODCR) has the delegated responsibility of coordinating Title VI program procedures, overseeing implementation, and monitoring and reporting on how the MBTA is meeting its Title VI compliance obligation. The Title VI requirements apply to all MBTA operations, and all MBTA managers, supervisors, and employees share the responsibility for conducting all programs, services, and activities in a nondiscriminatory manner.

WHAT IS TITLE VI OF THE CIVIL RIGHTS ACT OF 1964, AND HOW DOES IT APPLY TO THE MBTA?

Title VI of the Civil Rights Act of 1964 requires that “no person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity receiving federal financial assistance.”

Moreover, Title VI requires that that public funds not be “spent in any fashion which encourages, entrenches, subsidizes, or results in racial discrimination.”² The United States Department of Justice (USDOJ) is authorized to apply the provisions of Title VI to each program or activity by issuing applicable rules, regulations, or requirements in order to accomplish the purpose and spirit of Title VI. Under this authority, USDOT has delegated responsibility to its operating and administrative agencies, including the FTA, to effectuate the provisions of Title VI and issue guidance for recipients, including the MBTA, to ensure compliance with this civil rights requirement.³

² See H.R. Misc. Doc. No. 124, 88th Cong., 1st Sess. 3, 12 (1963) (A message from President Kennedy on Civil Rights and Job Opportunities, June 19, 1963).

³ 49 CFR part 21.1

RELATED FEDERAL AND STATE NONDISCRIMINATION REQUIREMENTS

The MBTA also complies with and incorporates related federal and state nondiscrimination authorities into its policies and practices. The additional federal prohibitions respected by the MBTA include those against discrimination based on sex, age, and disability. On the state level, the MBTA incorporates standards under the Massachusetts Public Accommodation Law, M.G.L c272 §§ 92a, 98, 98a, and Governor’s Executive Order 526, Section 4, which require that access to programs, services, and benefits be provided without regard to religion, creed, sexual orientation, gender identity or expression, veteran’s status, and/or ancestry.

ADDITIONAL PROTECTIONS FOR LOW-INCOME, MINORITY, AND LIMITED-ENGLISH-PROFICIENCY INDIVIDUALS

In addition to the Title VI protections, and those provided by related federal and state laws and regulations, the MBTA also complies with two presidential executive orders designed to remove obstacles for and harmful effects on persons who are low-income, minority, and/or have limited English proficiency. In 1994, former President Bill Clinton signed Executive Order 12898 to address adverse health and environmental effects on minority and low-income populations, and to provide minority and low-income communities access to public information and public participation opportunities. Protections under this executive order refer to ensuring “environmental justice.” Although low-income populations are not designated a protected class of individuals under Title VI, FTA guidance requires that transit providers evaluate whether a service or fare change will have a disproportionate or adverse impact on low-income communities.

In 2000, former President Bill Clinton signed Executive Order 13166, requiring federal agencies and recipients of federal financial assistance to provide meaningful access to persons who, as a result of their national origin, have limited English proficiency. To help government agencies meet this requirement and to avoid the risk of discrimination on the basis of national origin under Title VI, the USDOJ issued guidance for federal agencies and recipients of federal funds to ensure that any program or activity provided in English is also available to persons with limited English proficiency. The standards that apply in this area are also governed by the decision of the United States Supreme Court in the case of *Lau v. Nichols*, 414 U.S. 563 (1974), which connected the failure to address a language barrier in a public education context as a violation of Title VI.

HOW CAN NONDISCRIMINATION REQUIREMENTS UNDER TITLE VI BE VIOLATED?

There are two ways an agency can be in violation of Title VI—by actions resulting in “disparate treatment” or “disparate impact.” *Disparate treatment* occurs when a policy or practice denies an opportunity to or otherwise adversely impacts a person within a protected class (including race, color, or national origin) because of their protected characteristic. *Disparate impact* occurs when an otherwise facially neutral policy or decision, i.e., one that on its surface does not make a discriminatory distinction, results in a discriminatory effect on a protected class. An analytical approach is often required to determine if a disparate impact occurs as a result of a facially neutral policy or decision. Such analysis compares the benefits or burdens received by those who are members of a protected class to the benefits or burdens received by those who are not members of the protected class. This type of analytical approach is applied when determining the impacts of a fare change or major transit service change, and when monitoring transit performance relative to a transit operator’s systemwide service standards and policies.

However, a decision or policy that is considered to result in disparate treatment or a disparate impact can be determined non-discriminatory if there is a substantial, legitimate, nondiscriminatory justification or reason for the decision or policy, and if no alternative means of achieving the legitimate policy objective exist. If there is an alternative means of achieving the policy objective that would reduce the degree of disparate impacts, that alternative should be adopted.

DEFINITIONS

The following terms and definitions are drawn from the FTA Title VI Circular 4702.1B and are helpful for understanding the facts, analyses, and other components within this report. Many of these terms are incorporated in the MBTA’s nondiscrimination policies and will be referenced within this document.

- **Direct Recipient:** An entity that receives funding directly from FTA. For purposes of Title VI, a direct recipient is distinguished from a primary recipient in that a direct recipient does not extend financial assistance to subrecipients, whereas a primary recipient does.
- **Discrimination:** Any action or inaction, whether intentional or unintentional, in any program or activity of a federal-aid recipient, subrecipient, or contractor that results in disparate impact, disparate treatment, or perpetuating the effects of prior discrimination based on race, color, or national origin.

- **Disparate Impact:** A facially neutral policy or practice that disproportionately affects members of a group identified by race, color, or national origin, where the recipient's policy or practice lacks a substantial legitimate justification and where there exist one or more alternatives that would serve the same legitimate objectives but with less disproportionate effect on the basis of race, color, or national origin.
- **Disproportionate Burden:** A neutral policy or practice that disproportionately affects low-income populations more than non-low-income populations. A finding of disproportionate burden requires the recipient to evaluate alternatives and mitigate burdens where practicable.
- **Disparate Treatment:** Actions that result in circumstances where similarly situated persons are intentionally treated differently (i.e. less favorably) than others because of their race, color, or national origin.
- **Equity Analysis:** An analytical study that requires transit providers to evaluate, before implementation, any proposed service change that exceeds the provider's major service change threshold, as well as any proposed fare change. The objective of the analysis is to determine whether those changes will have a discriminatory impact on minority populations within the transit provider's service area. Low-income populations, while not a protected class under Title VI, are protected by FTA within its implementation of the Environmental Justice Executive Order. As such, FTA requires transit providers to evaluate whether any proposed major service change or any fare change would place a disproportionate burden on low-income populations.
- **Fixed Route:** Public transportation service provided in vehicles operated along a pre-determined route according to a fixed schedule.
- **Limited English Proficient (LEP):** Persons for whom English is not their primary language and who have a limited ability to read, write, speak, or understand English. It includes individuals who reported to the US Census that they speak English less than very well, not well, or not at all.
- **Low-Income Person:** An individual whose household income is at or below twice the federal poverty level of 2014—as defined in Section 673(2) of the Community Services Block Grant Act (42 U.S.C § 9902(2)) including any revision required by that section for a family of the size involved.
- **Low-Income Population:** Any readily identifiable group of low-income persons who live in geographic proximity and, if circumstances warrant, geographically dispersed or transient persons (such as migrant workers or Native Americans) who will be similarly affected by a proposed FTA program, policy, or activity.

- **Minority Persons include the following:**
 1. American Indian and Alaska Native, which refers to people having origins in any of the original peoples of North and South America (including Central America), and who maintain tribal affiliations or community attachment.
 2. Asian, which refers to people having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent, including, for example, Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, the Philippine Islands, Thailand, and Vietnam.
 3. Black or African American, which refers to people having origins in any of the Black racial groups of Africa.
 4. Hispanic or Latino, which includes persons of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin, regardless of race.
 5. Native Hawaiian or Other Pacific Islander, which refers to people having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands.

- **Minority Populations:** Any readily identifiable group of minority persons who live in geographic proximity and, if circumstances warrant, geographically dispersed or transient populations (such as migrant workers or Native Americans) who will be similarly affected by a proposed USDOT program, policy, or activity.

- **Minority Transit Route:** A route that has more than 40 percent of its boardings in minority census tracts. To strengthen the statistical reliability of analyses on passengers who ride or have access to the system, in certain cases, the MBTA may use route specific ridership data that does not reflect the characteristics of the census block, block group, or tract.

- **National Origin:** The particular nation in which a person was born or where the person's parents or ancestors were born.

- **Recipient:** Any public or private entity that receives federal financial assistance from FTA, whether directly from FTA or indirectly through a primary recipient. This term includes subrecipients, direct recipients, designated recipients, and primary recipients. The term does not include any ultimate beneficiary under any such assistance program.

- **Service Standard/Policy:** An established service performance measure or policy used by a transit provider or other recipient as a means to plan or distribute services and benefits within its service area.
- **Subrecipient:** An entity that receives federal financial assistance from FTA through a primary recipient.
- **Title VI Program:** A document developed by an FTA recipient (e.g., MBTA) to demonstrate how the recipient is complying with Title VI requirements. Direct and primary recipients must submit their Title VI Programs to FTA every three years. The Title VI Program must be approved by the recipient's board of directors or appropriate governing entity or official(s) responsible for policy decisions prior to submission to FTA.

This document constitutes the MBTA's Title VI Program, adopted with the approval of General Manager Luis Ramírez and the FMCB. It has been prepared in accordance with FTA C 4702.1B and incorporates the reporting requirements set forth therein. Table 1-1 summarizes the reporting requirements that relate to the chapters in this report. As shown in Table 1-1, Chapter 2 addresses the MBTA's general reporting requirements that conform to the circular. This chapter includes a copy of the MBTA's notice to the public regarding protection under Title VI; a list of the locations where the notice is posted; a description of the MBTA's procedures for filing civil rights complaints; a copy of the complaint form; a list of Title VI investigations, complaints, and lawsuits; the MBTA's public-participation plan; a summary of outreach efforts since the last submission; a copy of the MBTA's Language Assistance Plan; a narrative description of the MBTA's efforts to ensure that subrecipients are complying with Title VI; and a copy of the Title VI analyses conducted during the planning phase of MBTA-constructed facilities.

Chapter 3 includes several maps that show the MBTA's extensive transit-service network and the locations of minority and low-income areas. Chapter 4 describes the service policies and standards under which the MBTA operates to ensure high-quality and safe service to the public. Chapter 5 evaluates the effects of major service changes and fare increases. Chapter 6 analyzes in depth the extent to which the MBTA has met its service standards, and it compares the levels and quality of service provided to the various communities served by the MBTA. Finally, Chapter 7 presents the service and fare equity analyses that have been conducted by the MBTA since the last Title VI submission.

The MBTA developed this report with technical support for data collection and analysis from the Central Transportation Planning Staff (CTPS) of the Boston Region Metropolitan Planning Organization. CTPS was also responsible for the layout and production of the document. Any questions or comments about the content of this program can be addressed to Miles Walters, Title VI Specialist, MBTA, Room 3541, 10 Park Plaza, Boston, MA 02116, mwalters@mbta.com, or John Lozada, Manager of Federal Programs, Office of Diversity and Civil Rights, MassDOT and MBTA, 10 Park Plaza, Boston, MA 02116, jlozada@mbta.com.

Table 1-1
2017 MBTA Triennial Title VI Report

Report Chapter	Provisions	FTA C 4702.1B Reference	Reporting Requirements
Introduction			
General Reporting Requirements	Notify beneficiaries of protection under Title VI	III.5.	A notice that contains (1) a statement that the agency operates programs without regard to race, color, or national origin, (2) a description of the procedures that members of the public should follow in order to request additional information on the recipient's Title VI obligations, and (3) a description of the procedures that members of the public shall follow in order to file a Title VI discrimination complaint against the recipient.
	Develop Title VI complaint procedures and complaint form	III.6.	(1) A copy of the procedures for investigating and tracking Title VI complaints and (2) a copy of the recipient's Title VI complaint form.
	Record transit-related Title VI investigations, complaints, and lawsuits	III.7.	A list of any of the following that allege discrimination on the basis of race, color, or national origin since the time of the last submittal: (1) active investigations conducted by entities other than FTA, (2) lawsuits, and (3) complaints naming the recipient. This list shall include (1) the date that the investigation, lawsuit, or complaint was filed, (2) a summary of the allegation(s), (3) the status of the investigation, lawsuit, or complaint, and (4) actions taken by the recipient in response to, or final findings related to, the investigation, lawsuit, or complaint.
	Promote inclusive public participation	III.8.	(1) A copy of the recipient's public participation plan and (2) a summary of efforts to involve minority and LEP populations in public participation activities.

(Table 1-1 Cont.)

Report Chapter	Provisions	FTA C 4702.1B Reference	Reporting Requirements
General Reporting Requirements	Provide meaningful access to persons with limited English proficiency (LEP persons)	III.9.	A copy of the recipient's Language Assistance Plan which shall, at a minimum, (1) include the results of a Four-Factor Analysis, (2) describe how the recipient provides language assistance services by language, (3) describe how the recipient provides notice to LEP persons about the availability of language assistance, (4) describe how the recipient monitors, evaluates, and updates the Language Assistance Plan, and (5) describe how the recipient trains employees to provide timely and reasonable language assistance to LEP populations.
	Document minority representation on planning and advisory boards	III.10.	(1) A table depicting the racial breakdown of the membership of transit-related, non-elected planning boards, advisory councils or committees, or similar committees of which membership is selected by the recipient, and (2) a description of efforts made to encourage the participation of minorities on such committees.
	Provide assistance to and monitor subrecipients	III.11. & III.12.	(1) Documentation of the process for ensuring that all subrecipients are complying with Title VI requirements, (2) collection and review of subrecipient Title VI programs for compliance, and (3) requests that subrecipients verify that their level and quality of service is provided on an equitable basis.
	Determine the site or location of facilities	III.13.	A copy of Title VI equity analyses of the locations of constructed facilities.
	Provide additional information upon request	III.14.	By FTA request, information other than that required by FTA C 4702.1B needed by the FTA to investigate complaints of discrimination or resolve concerns about possible noncompliance with the USDOT's Title VI regulations.

(Table 1-1 Cont.)

Report Chapter	Provisions	FTA C 4702.1B Reference	Reporting Requirements
Demographic Data and Maps	Provide demographic and service profile maps and charts	IV.5.a.	(1) A base map of the transit provider's service area that overlays census tract, block, or block group data depicting minority populations with fixed transit facilities, as well as major activity centers or transit trip generators, and major streets and highways, (2) a similar map, which highlights the transit facilities that were recently replaced, improved, or are scheduled for an update in the next five years, (3) a demographic map that plots the information listed in 1 and 2 and also shades the geographic zones where the percent of the total minority population residing in these areas exceeds the average percent of minority populations for the service area as a whole, and (4) a demographic map that plots the information listed in 1 and 2 and also shades the geographic zones where the percent of the total low-income population residing in these areas exceeds the percentage of the low-income population for the service area as a whole.
Customer Survey Data	Collect and report survey data related to customer demographic and travel patterns	IV.5.b.	Utilization of customer surveys to provide (1) a demographic profile comparing minority riders and nonminority riders, and trips taken by minority riders and nonminority riders, and (2) a summary in tabular format of information collected on race, color, national origin, English proficiency, language spoken at home, household income, travel patterns, and fare usage by fare type.
Service Standards and Policies	Set systemwide service standards	IV.4.a.	Quantitative service standards for (1) vehicle load, (2) vehicle headway, (3) on-time performance, and (4) service availability.
	Set systemwide service policies	IV.4.b.	Systemwide policies for (1) the distribution of transit amenities, and (2) vehicle assignment.
Service Monitoring	Monitor transit services	IV.6.	(1) An assessment and comparison of minority and nonminority routes for each mode and each service standard and service policy, (2) application of a policy or procedure to determine whether disparate impacts exist based on the results of the monitoring activities, and (3) documentation to verify the board's consideration, awareness, and approval of the monitoring results.

(Table 1-1 Cont.)

Report Chapter	Provisions	FTA C 4702.1B Reference	Reporting Requirements
Service and Fare Changes	Perform a service equity analysis	IV.7.a.	(1) Documentation of a major service change policy; (2) definition and analysis of the adverse effects related to the major service change, measured by the change between the existing and proposed service levels; (3) documentation of policies on disparate impacts and disproportionate burdens that establish thresholds for determining when adverse effects of service changes are borne disproportionately by minority and/or low-income populations, presented as a statistical percentage, and applied uniformly across all modes; (4) documentation that the transit provider engaged the public in the decision-making process to develop the major service change policy, disparate impact policy, and disproportionate burden policy; (5) a description of the datasets and the tools and/or technologies used to collect the data; and (6) an evaluation of the impacts of proposed service changes on minority and low-income populations using the recommended framework.
Service and Fare Changes	Perform a fare equity analysis	IV.7.b.	(1) A description of the datasets and the tools and/or technologies used to collect data that indicates whether minority and or low-income riders are disproportionately more likely to use the mode of service, payment type, or payment media that would be subject to a fare change; (2) documentation of disparate impact and disproportionate burden policies which establish thresholds for determining whether minority and/or low-income riders are bearing a disproportionate impact of the change between the existing cost and the proposed cost, presented as a statistical percent, and applied uniformly regardless of fare media; (3) documentation that the transit provider engaged the public in the decision-making process to develop the disparate impact and disproportionate burden thresholds; and (4) an evaluation of the impacts of the proposed fare changes on minority and low-income populations using the recommended framework.



Chapter 2: General Reporting Requirements

INTRODUCTION

In accordance with FTA Title VI Circular 4702.1B requirements for Title VI, “each recipient of federal financial assistance is required to submit a Title VI program to their FTA Regional Civil Rights Officer, once every three years. Further, FTA mandates that all recipients must have their Title VI programs approved by the recipient’s board of directors or appropriate governing entity or official(s) responsible for policy decisions before submitting to FTA.” Within the MBTA, the Fiscal and Management Control Board (FMCB) has this responsibility. This section outlines the general reporting requirements in Chapter III of the FTA C 4702.1B, which includes the following information:

1. Title VI Notice to the Public
2. Title VI Complaint Procedures
3. List of Title VI Investigations, Complaints, and Lawsuits
4. Public Participation Plan
5. Language Assistance Plan
6. Board Membership and Recruitment Efforts
7. Monitoring of Subrecipients
8. Equity Analyses for Locations of Constructed Facilities

TITLE VI NOTICE TO THE PUBLIC (FTA C 4702.1B, III-4)

“Recipients are required to provide information to the public regarding the recipient’s obligations under DOT’s Title VI regulations and apprise members of the public of the protections against discrimination afforded to them by Title VI. At a minimum, recipients shall disseminate this information to the public by posting a Title VI Notice on the agency’s website and in public areas of the agency’s office(s), including the reception desk, meeting rooms, etc. Recipients should also post Title VI Notices at stations or stops, and/or on transit vehicles.”

The MBTA’s Title VI notice informs members of the public of their right to request information and/or file a complaint under Title VI of the Civil Rights Act of 1964. The MBTA has developed an expanded version of this notice that also addresses related federal and state nondiscrimination laws and regulations. During 2017, the MBTA revised the full notice for brevity and heightened clarity, in coordination with efforts to improve signage for safety purposes and enhance service to the public at the Authority’s call center. The MBTA Title VI notice includes the following elements:

1. A statement that the Authority operates its programs without regard to race, color, or national origin
2. A description of the steps members of the public can take to request additional information about the recipient’s Title VI obligations
3. A description of the steps members of the public can take to file a Title VI discrimination complaint relating to the programs, services, and activities managed by the MBTA

In transit stations, Title VI notices appear in each of the top seven languages used by limited-English-proficient (LEP) individuals within the MBTA service area, including Spanish, Chinese (Traditional and Simplified), Portuguese, French, Vietnamese, and Russian. Where above-ground MBTA Green Line and trolley stations do not have space for posting information, customers may view the Title VI notice inside each trolley vehicle and at other stations.

In accordance with the MBTA’s Language Assistance Plan, and given limited space and safety requirements, the Title VI notices posted inside MBTA rapid transit and commuter rail vehicles are translated into Spanish, which is the most commonly spoken non-English language in the service area. As previously noted, however, customers can access the Title VI notice in seven languages at each rapid transit station. See, the MBTA’s Language Assistance Plan, attached in

Appendix 2-A. The MBTA's strategy for disseminating the Title VI Notice includes posting it in the following locations:

1. MBTA website¹
2. Transit stations (subject to Green Line and trolley station limitations)
3. Vehicles (rapid transit cars, buses, and commuter rail coaches)
4. Ferry vessels, docks, and ticketing offices
5. Public-facing offices at the MBTA, including the Office of Diversity and Civil Rights, Human Resources, and the Office of the Secretary of Transportation

In addition, the MBTA displays the notice at public meeting/hearing locations, and includes it in key publications (including reports, maps, and meeting notices).

The full text of the MBTA's Title VI/Nondiscrimination Notice is presented below:

Notice of Nondiscrimination Rights and Protections to Beneficiaries

Federal "Title VI/Nondiscrimination" Protections

The Massachusetts Bay Transportation Authority (MBTA) operates its programs, services, and activities in compliance with federal nondiscrimination laws including Title VI of the Civil Rights Act of 1964 (Title VI), the Civil Rights Restoration Act of 1987, and related statutes and regulations. Title VI prohibits discrimination in federally assisted programs and requires that no person in the United States of America shall, on the grounds of **race, color, or national origin** (including limited English proficiency), be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity receiving federal assistance. Related federal nondiscrimination laws administered by the Federal Transit Administration prohibit discrimination on the basis of **age, sex, and disability**. These protected categories are contemplated within the MBTA Title VI Program consistent with federal interpretation and administration. Additionally, the MBTA provides meaningful access to its programs, services, and activities to individuals with limited English proficiency, in compliance with US Department of Transportation policy and guidance on federal Executive Order 13166.

¹ www.mbta.com/TitleVI

State Nondiscrimination Protections

The MBTA also complies with the Massachusetts Public Accommodation Law, M.G.L. c 272 § 92a, 98, 98a, prohibiting making any distinction, discrimination, or restriction in admission to or treatment in a place of public accommodation based on **race, color, religious creed, national origin, sex, sexual orientation, disability, or ancestry**. Likewise, the MBTA complies with the Governor's Executive Order 526, Section 4 requiring all programs, activities, and services provided, performed, licensed, chartered, funded, regulated, or contracted for by the state shall be conducted without unlawful discrimination based on **race, color, age, gender, ethnicity, sexual orientation, gender identity or expression, religion, creed, ancestry, national origin, disability, veteran's status** (including Vietnam-era veterans), or **background**.

Additional Information

To request additional information regarding Title VI and related federal and state nondiscrimination obligations, please contact:

MBTA Customer Communications
10 Park Plaza Room 5610
Boston, MA 02116
(617) 222-3200
TTY: (617) 222-5416
www.mbtta.com

Complaint Filing

To file a complaint alleging a violation of Title VI or related federal nondiscrimination law, contact the MBTA Title VI Specialist (via MBTA Customer Communications) within 180 days of the alleged discriminatory conduct.

To file a complaint alleging a violation of the state's Public Accommodation Law, contact the Massachusetts Commission Against Discrimination within 300 days of the alleged discriminatory conduct at:

Massachusetts Commission Against Discrimination (MCAD)
One Ashburton Place, 6th Floor
Boston, MA 02109
(617) 994-6000
TTY: (617) 994-6196

Translation

English: If this information is needed in another language, please contact the MBTA Title VI Specialist at 617-222-3200.

Portuguese: Caso esta informação seja necessária em outro idioma, favor contar o Especialista em Título VI do MBTA pelo telefone 617-222-3200.

Spanish: Si necesita esta información en otro idioma, por favor contacte al especialista de MBTA del Título VI al 617-222-3200.

Chinese Simplified: (mainland & Singapore): 如果需要使用其它语言了解信息，请联系麻纱湾区交通局（MBTA）《民权法案》第六章专员，电话617-222-3200。

Chinese Traditional: (Hong Kong & Taiwan): 如果需要使用其它語言了解信息，請聯繫麻省灣區交通局（MBTA）《民權法案》第六章專員，電話617-222-3200。

Russian: Если Вам необходима данная информация на любом другом языке, пожалуйста, свяжитесь со специалистом по Титулу VI MBTA по тел:617-222-3200.

Haitian Creole: Si yon moun vle genyen enfòmasyon sa yo nan yon lòt lang, tanpri kontakte Espesyalis MBTA Title VI la nan nimewo 617-222-3200.

Vietnamese: Nếu quý vị cần thông tin này bằng tiếng khác, vui lòng liên hệ Chuyên viên Luật VI của MBTA theo số điện thoại 617-222-3200.

French: Si vous avez besoin d'obtenir une copie de la présente dans une autre langue, veuillez contacter le spécialiste du Titre VI de MBTA en composant le 617-222-3200.

Italian: Se ha bisogno di ricevere queste informazioni in un'altra lingua si prega di contattare lo Specialista MBTA del Titolo VI al numero 617-222-3200.

Khmer: ប្រសិនបើលោក-អ្នកត្រូវការបកប្រែព័ត៌មាននេះ សូមទាក់ទងអ្នកឯកទេសលើជំពូកទី6 របស់MBTA តាមរយៈលេខទូរស័ព្ទ 617-222-3200

Arabic: إن كنت بحاجة إلى هذه المعلومات بلغة أخرى، يُرجى الاتصال بأخصائي الفقرة السادسة على الهاتف 617-222-3200

The MBTA's summary Title VI Notice in English and Spanish is provided below:

Summary Title VI Notice - English

Under Title VI of the Civil Rights Act of 1964, the MBTA does not discriminate against any person in its programs, services, and activities based on race, color, or national origin. To learn more about your civil rights or to file a complaint, please contact:

MBTA Title VI Specialist
Office of Diversity and Civil Rights
10 Park Plaza
Boston, MA 02116
(617) 222-3200
Email: MBTACivilRights@mbta.com
Website: www.mbta.com/TitleVI

Noticia de Título VI - Spanish

Conforme al Título VI de la Ley de Derechos Civiles de 1964, MBTA no discrimina a ningún individuo en sus programas, servicios y actividades por razones de raza, color u origen nacional. Si desea conocer más sobre sus derechos civiles o presentar una reclamación, favor contactar a:

Especialista del Título VI de MBTA (*MBTA Title VI Specialist*)
Oficina de Diversidad y Derechos Civiles (*Office of Diversity and Civil Rights*)
10 Park Plaza
Boston, MA 02116
(617) 222-3200
7-1-1 para servicio de relevo de voz
E-mail: MBTACivilRights@mbta.com
Sitio web: www.mbta.com/TitleVI

MBTA TITLE VI COMPLAINT PROCEDURES

This section details the Massachusetts Bay Transportation Authority's (MBTA) procedures for processing Title VI discrimination complaints (on the basis of race, color, or national origin, including limited English proficiency). Federal law and regulations governing Title VI of the Civil Rights Act of 1964 (Title VI) places the overall coordination authority for the investigation of civil rights complaints with the United States Department of Justice (USDOJ), which works collaboratively

with federal agencies that carry out this responsibility. In the transportation sector, this investigative authority rests with the US Department of Transportation (USDOT) and its agencies for the different modes of transportation, including the Federal Transit Administration (FTA). In coordination with USDOT requirements, FTA has established regulations and guidance that require recipients and subrecipients of financial assistance, through FTA, to establish procedures for processing Title VI complaints filed with these organizations.

The procedures described below, modeled on recommended complaint procedures promulgated by the USDOJ, are designed to provide a fair opportunity for addressing complaints that respect due process for both complainants and respondents. In addition to the formal complaint resolution process detailed here, the MBTA takes affirmative steps to pursue informal resolution of any and all Title VI complaints, when possible.

The Complaint Process

1. Who can file a complaint?

Any member of the public, along with all MBTA customers, applicants, contractors, or subrecipients who believe that they themselves, a third party, or a class of persons were mistreated or treated unfairly because of their race, color, or national origin (including limited English proficiency) in violation of Title VI of the Civil Rights Act of 1964, related federal and state laws and executive orders, or the MBTA's Anti-Discrimination Harassment Prevention (ADHP) Policy. Retaliation against a member of the public on the basis of race, color, or national origin is also prohibited under Title VI and the ADHP policy.

2. Where do I file a complaint?

The MBTA Title VI Specialist

Massachusetts Bay Transportation Authority
Office of Diversity and Civil Rights
Attention: Title VI Specialist
10 Park Plaza, Suite 3800, Boston, MA 02116
Phone: (857) 368-8580 or 7-1-1 for Relay Service
Email: MBTACivilRights@mbta.com

The MBTA Customer Call Center

Customers may also contact the MBTA's Call Center regarding a discrimination concern by calling 617-222-3200. The Call Center staff will seek to obtain basic information about the matter from the caller, and details of the call will be forwarded to the Office of Diversity and Civil Rights for processing according to these procedures.

The Federal Transit Administration

Complaints may also be filed directly with the FTA:

Federal Transit Administration
Office of Civil Rights
Attention: Complaint Team
East Building, 5th Floor - TCR
1200 New Jersey Avenue, SE
Washington, DC 20590

Please note: when FTA receives a Title VI complaint regarding the MBTA, a subrecipient, or a contractor, the FTA may request the matter be investigated by the MBTA.

3. What do I need to include in a complaint?

A complaint form is available electronically on the MBTA Title VI website (www.mbta.com/titlevi) or in hardcopy from the MBTA Title VI Specialist, identified above.

Alternatively, a complainant may submit correspondence in an alternative format that should include:

1. Contact information

Please note: Complaints can be filed anonymously. However, doing so may make it more difficult for MBTA investigators to look into the allegations as they may not be able to obtain additional and/or clarifying information from the complainant as the investigation progresses.

2. The basis for the alleged discrimination (e.g., race, color, national origin, limited English proficiency, etc.)

3. The person or group injured by the alleged discrimination, as well as the person, agency, organization, or institution alleged to have discriminated
 4. An explanation of the alleged discrimination, including the name and contact information of any witnesses
- A. In cases where the complainant is unable to provide a written statement, a verbal complaint may be made. Please call or visit the MBTA Office of Diversity and Civil Rights and request assistance to file a verbal complaint.

Massachusetts Bay Transportation Authority
Office of Diversity and Civil Rights
Attention: Title VI Specialist
10 Park Plaza, Suite 3800, Boston, MA 02116
Phone: (857) 368-8580 or 7-1-1 for Relay Service
Email: MBTACivilRights@mbta.com

- B. All complaints should be signed by the complainant.
- C. Complaints will be accepted in any recognized language. Multilingual complaint forms are available.

4. How long do I have to file a complaint?

- A. A complaint alleging violation of Title VI and/or the MBTA's ADHP policy must be filed no later than one hundred and eighty (180) days from the date of the alleged violation.
- B. Complaints alleging violations of state or federal law must be filed within the timeframes established by statute, regulation, or case law.

5. How will my complaint be handled?

When a complaint is received, it is assigned to a Civil Rights Investigator (CRI). The CRI will determine jurisdiction based on whether the complaint:

- A. Involves a statement or conduct that violates:
1. The MBTA's legal obligation and commitment to prevent discrimination, harassment or retaliation on the basis of a protected characteristic with regard to any aspect of the Authority's service to the public; or

2. The commitment made by subrecipients and contractors working with MBTA to adhere to MBTA policies; AND

B. Is filed within 180 days.

If the CRI determines that the MBTA has jurisdiction over the complaint, the CRI will:

- A. Acknowledge receipt of the complaint and describe outcome of jurisdictional determination within ten (10) business days of receipt of the complaint.

If the CRI determines that any complaint does not have the potential to establish a civil rights violation, then the CRI shall notify the complainant and Title VI Specialist in writing of its finding and the matter shall be closed.

- B. Conduct a thorough investigation of the allegations contained in the complaint in accordance with the MBTA Internal Complaint Procedures.

C. Complainants will be interviewed by a Civil Rights Investigator (CRI).

6. What happens after the investigation?

At the conclusion of the investigation, the CRI will transmit to the complainant and the respondent one of the following three letters based on the findings:

- A. A letter of resolution that explains the steps the respondent has taken or will take to comply with Title VI and/or the ADHP policy.
- B. A letter of finding that is issued when the respondent is found to be in compliance with Title VI and/or the ADHP policy. This letter will include an explanation of why the respondent was found to be in compliance, and provide notification of the complainant's appeal rights. A finding of compliance may still include recommendations from the CRI to further avoid the risk of Title VI and/or ADHP policy violations.
- C. A letter of finding that is issued when the respondent is found to be in noncompliance. This letter will include each violation referenced as to the applicable regulations, a brief description of findings/ recommendations, the consequences of failure to achieve voluntary compliance, and an offer of assistance in devising a remedial plan for compliance, if appropriate.

7. How can I appeal a Finding?

If a complainant or respondent does not agree with the findings of the CRI then he/she/they may appeal to the Assistant Secretary of Diversity and Civil Rights. The appealing party must provide any new information that was not readily available during the course of the original investigation that would lead the MBTA to reconsider its determinations. The request for an appeal and any new information must be submitted within sixty (60) days of the date the letter of the finding was transmitted. After reviewing this information, the MBTA will respond either by issuing a revised letter of resolution or by informing the appealing party that the original letter of resolution or finding remains in force. To file a request for an appeal, please contact:

Massachusetts Bay Transportation Authority
Office of Diversity and Civil Rights
Attention: Assistant Secretary for Civil Rights
10 Park Plaza, Suite 3800, Boston, MA 02116
Phone: (857) 368-8580 or 7-1-1 for Relay Service
Email: MBTACivilRights@mbta.com

8. Definitions:

Complainant – A person who files a complaint with the MBTA alleging a violation of Title VI, the ADHP Policy, or related nondiscrimination obligation.

Complaint – Written, verbal, or electronic statement concerning an allegation of discrimination based on race, color, or national origin (including limited English proficiency). Where a person with a disability or a person with limited English proficiency files a complaint, the term complaint encompasses alternative formats and languages other than English.

Discrimination – An act or inaction, which can be either intentional or unintentional, through which a person or group of persons has been subjected to unequal treatment or disparate impact on the basis of race, color, or national origin (including limited English proficiency).

Respondent – The person, agency, institution, or organization alleged to have engaged in behavior that violates Title VI, the ADHP Policy, or related nondiscrimination obligations.

TITLE VI INVESTIGATIONS, COMPLAINTS, AND LAWSUITS [FTA C 4702.1B, IV.3.]

“In order to comply with the reporting requirements of 49 CFR Section 21.9(b), FTA requires all recipients to prepare and maintain a list of any of the following that allege discrimination on the basis of race, color, or national origin: active investigations conducted by entities other than FTA; lawsuits; and complaints naming the recipient. This list shall include the date that the investigation, lawsuit, or complaint was filed; a summary of the allegation(s); the status of the investigation, lawsuit, or complaint; and actions taken by the recipient in response, or final findings related to, the investigation, lawsuit, or complaint. This list shall be included in the Title VI Program submitted to FTA every three years.”

Table 2-1
Title VI Complaints, Lawsuits, and Investigations

(ADHP = Anti-Discrimination and Harassment Prevention. CAC=Corrective Action Committee. CP = Complainant. CRI = Civil Rights Investigation. CSA = Customer Service Agent. EEO = Equal Employment Opportunity. MCAD = Massachusetts Commission Against Discrimination. RSP =Respondent. SCMP = Street Car Motor Person. TPD = Transit Police Department.)

Date	Basis	Action Taken	Summary
8/16/2013	Race	Close Letters CP	No evidence of discrimination.
9/4/2013	National Origin	Referred to Area	Insufficient evidence to support complaint. Unable to identify operator.
9/4/2013	National Origin	Referred to Area	Non-civil rights. Referred to area for possible courtesy rule violation.
9/11/2013	Race	Referred to Area	Insufficient evidence of discrimination. Referred to area for possible courtesy rule violation.
9/12/2013	National Origin	Referred to Area	Insufficient information to support civil rights violation. Referred to area for possible courtesy rule violation.
9/13/2013	National Origin	Non-civil rights	Insufficient information to investigate complaint.

(Table 2-1 Cont.)

Date	Basis	Action Taken	Summary
9/13/2013	National Origin	Referred to Area	CP alleged that RSP stated he hated "immigrants" in CP's non-English language to another person. Unable to identify operator.
9/13/2013	Race	Close Letters Supervisor	CP alleged that RSP lied that bus was out of service. No evidence of discrimination.
9/26/2013	Race	Referred to Area	CP did not respond to calls. Insufficient evidence of civil rights violation.
9/27/2013	National Origin	Close Letters RSP	Insufficient evidence to support claim. Unable to contact CP for follow-up.
12/1/2013	National Origin	Close Letters RSP	Employee retired prior to meeting with ODCR. Cause Finding. No discipline could be given because of retirement.
12/20/2013	National Origin	RSP Training	CP alleged inappropriate comments made towards customers. No other witnesses or video. Closed. No Cause. Area will further investigate for possible courtesy rule violation.
1/16/2014	National Origin	Close Letters RSP	No Cause. Closed. Customer has filed MCAD complaint.
4/14/2014	Race	Referred to Area	Non-civil rights. Referred to area.
5/1/2014	Race	Non-civil rights	Unable to contact CP. Closed, insufficient evidence.
5/1/2014	Race	Close Letters RSP	Non-civil rights. Closed. Referred to area.

(Table 2-1 Cont.)

Date	Basis	Action Taken	Summary
6/23/2014	National Origin	Close Letters RSP	Non-civil rights. Closed. Referred to area.
6/24/2014	Color	Non-civil rights	Unable to reach CP. Unable to identify RSP. No Cause. Closed.
6/25/2014	Color	Close Letters RSP	No Cause.
7/14/2014	Race	Close Letters CP	Non-civil rights. Referred to area. Reinstuctured operator on new fare policy rule.
7/21/2014	Race	Close Letters RSP	No Cause. Closed. Customer has filed MCAD complaint.
7/24/2014	Race	Close Letters CP	CP alleged operator discriminated against RSP based on race. Inappropriate comments. No Cause. Closed.
8/14/2014	Race	Non-civil rights	No Cause. Unable to identify operator.
9/5/2014	Color	Close Letters CP	Complaint was non-civil rights.
9/7/2014	Race	Close Letters CP	No Cause. Insufficient evidence.
10/14/2014	National Origin	Close Letters CP	No Cause. Closed.
11/2/2014	Race	Close Letters CP	Non-civil rights. No Cause.
11/14/2014	National Origin	Close Letters RSP	CP alleged harassment based on national origin. No Cause. Closed.
11/20/2014	National Origin	Close Letters CP	Letters sent. Witness statement aligns with RSP's statement. No Cause.
12/1/2014	Race	Close Letters CP	CP alleged discrimination based on gender. No Cause. Closed.

(Table 2-1 Cont.)

Date	Basis	Action Taken	Summary
12/5/2014	Race	Close Letters RSP	CP alleged harassment based on race. No Cause. Close letter sent.
12/14/2014	Race	Close Letters RSP	CP alleged discrimination based on race. No Cause.
1/2/2015	Race	Close Letters CP	Non-civil rights. Referred to area.
1/22/2015	Race	Close Letters CP	CP alleged discrimination based on race. Non-civil rights. Closed.
1/23/2015	Race	Close Letters CP	CP alleged discrimination based on race. No Cause.
1/30/2015	Race	Close Letters CP	CP alleged discrimination based on race. No Cause.
2/19/2015	Race	Close Letters Supervisor	Insufficient evidence. Closed.
2/23/2015	National Origin	Close Letters CP	CP alleged harassment based national origin. No Cause.
3/1/2015	National Origin	Close Letters CP	CP alleged harassment based on national origin. No Cause.
3/5/2015	Race	Close Letters CP	CP alleged discriminatory comments based on race. No Cause.
3/10/2015	Race	Close Letters RSP	CP alleged harassing comments by RSP based on race. No Cause.
4/18/2015	National Origin	Close Letters CP	CP alleged discrimination based on national origin. No Cause.
5/2/2015	Race	Close Letters CP	CP alleged discrimination based on race. No Cause.
5/8/2015	Race	Close Letters CP	CP alleged discriminatory behavior based on race. No Cause. Closed.

(Table 2-1 Cont.)

Date	Basis	Action Taken	Summary
5/22/2015	Race	Close Letters CP	CP alleged discriminatory behavior based on race. No Cause. Closed.
5/26/2015	National Origin	Close Letters CP	CP alleged harassment based on national origin. No Cause.
5/28/2015	National Origin	Close Letters CP	CP alleged discriminatory comments based on national origin. No Cause. Closed.
6/4/2015	Race	Close Letters CP	No Cause. Closed.
6/5/2015	National Origin	Close Letters CP	No Cause for discrimination based on national origin. Referred to area for possible courtesy rule violation.
6/6/2015	Race	Close Letters CP	CP alleged discriminatory conduct based on race. No Cause. Closed.
6/16/2015	Race	Close Letters CP	CP alleged another customer being harassed based on race. Insufficient evidence. Closed.
6/24/2015	Race	Close Letters RSP	CP alleged discriminatory conduct based on race. No Cause. Closed.
6/30/2015	Race	Close Letters CP	CP alleged inappropriate comments based on race. Unable to identify operator. Closed.
7/9/2015	Race	Close Letters CP	No Cause. Non-civil rights. Closed.
7/17/2015	Race	Close Letters CP	CP alleged discriminatory conduct based on race. No Cause. Closed.
7/26/2015	Race	Close Letters CP	CP alleged discriminatory conduct based on Race. No Cause. Closed.

(Table 2-1 Cont.)

Date	Basis	Action Taken	Summary
7/27/2015	Race	Close Letters CP	CP alleged discriminatory conduct based on Race. Cause Finding. Three-day suspension and ADHP training. Closed.
7/28/2015	Race	Close Letters CP	CP alleged discrimination based on race. No Cause. Closed.
7/31/2015	Race	Close Letters CP	CP alleged removed from bus based on race. No Cause. Closed.
8/7/2015	Race	Close Letters RSP	Reviewed video. Video does not support allegations. No Cause. Closed.
8/20/2015	Race	Close Letters Supervisor	CP alleged discrimination based on race. Non-civil rights. Closed.
9/8/2015	National Origin	Close Letters RSP	CP alleged discrimination based on national origin. Non-civil rights. Closed.
9/8/2015	Race	Close Letters CP	CP alleged discriminatory comment because operator said "thank you" in another language. Non-civil rights. Closed.
9/10/2015	Race	Close Letters CP	No response from complainant. Closed.
9/14/2015	Race	Close Letters RSP	Non-civil rights. Closed. Referred to area.
9/18/2015	National Origin	Close Letters RSP	Anonymous complaint alleging discrimination based on national origin. No Cause. Closed.

(Table 2-1 Cont.)

Date	Basis	Action Taken	Summary
9/26/2015	Race	Close Letters RSP	Anonymous complaint alleging operator made racial slurs towards people outside bus. No Cause. Closed.
10/1/2015	Race	Close Letters Supervisor	CP alleged discrimination based on race. No Cause. Closed.
10/5/2015	Race	Close Letters Supervisor	Non-civil rights. Closed.
10/7/2015	Race	Close Letters CP	CP alleged operator allowed "white" people to board without paying and made people of color pay. No Cause. Closed.
10/8/2015	National Origin	Close Letters CP	CP alleged discrimination based on national origin. No Cause. Closed.
10/20/2015	Race	Close Letters RSP	CP alleged discrimination based on race. No response from CP. No Cause. Closed.
11/9/2015	Race	Close Letters CP	CP alleged discrimination based on race. No Cause. Closed.
11/25/2015	Race	Close Letters CP	CP alleged discrimination based on race. No Cause. Closed.
12/7/2015	Race	Close Letters CP	CP alleged he was told "sit down" by operator because of his race. No Cause. Closed.
12/14/2015	Race	Close Letters CP	CP alleged he was not allowed on bus because of race. No Cause. Closed.
12/16/2015	National Origin	Close Letters CP	CP alleged discrimination based on race. He was speaking Spanish to a co-worker. No Cause. Closed.

(Table 2-1 Cont.)

Date	Basis	Action Taken	Summary
12/23/2015	Race	Close Letters CP	CP alleged discrimination based on race. No Cause. Closed.
12/29/2015	Race	Close Letters RSP	CP alleged discrimination based on race. No Cause. Closed.
1/8/2016	Race	Close Letters CP	CP alleged discrimination based on race. No Cause. Closed.
1/20/2016	Race	Close Letters CP	CP alleged harassment based on national origin. Non-civil rights. Closed.
1/21/2016	National Origin	Close Letters CP	CP alleged harassment based on national origin. Non-civil rights. Closed.
1/24/2016	National Origin	Close Letters CP	CP alleged operator made inappropriate comment based on national origin No Cause. Closed.
1/24/2016	National Origin	Close Letters CP	CP alleged operator harassed him based on national origin. Non-civil rights. Closed.
2/26/2016	Race	Close Letters RSP	CP alleged operator used racial slur. No Cause. Closed.
3/30/2016	Race	Close Letters RSP	CP alleged operator made offensive comment based on race. No Cause. Closed.
3/30/2016	Race	Close Letters CP	CP alleged operator bypassed people and would not let her use student ID because of race. No Cause. Closed.
4/7/2016	Race	Close Letters CP	CP alleged harassment based race. No Cause. Closed.

(Table 2-1 Cont.)

Date	Basis	Action Taken	Summary
4/7/2016	Race	Close Letters CP	CP alleged that operator shut off bus and called her "you people." Non-civil rights. Referred to area for possible courtesy rule violation.
4/15/2016	National Origin	Close Letters Supervisor	CP failed to respond. Closed.
4/17/2016	National Origin	Close Letters CP	CP alleged discrimination based on national origin. No Cause. Closed.
4/28/2016	Race	Close Letters RSP	CP alleged discrimination based on race. No Cause. Closed.
5/20/2016	National Origin	Close Letters RSP	CP alleged discrimination based on national origin. No Cause. Closed.
6/3/2016	Race	Close Letters CP	Customer alleged operator made racial comment. CP failed to respond. No Cause. Closed.
6/4/2016	National Origin	Close Letters RSP	CP alleged discrimination based on national origin. CP failed to respond. No Cause. Closed.
6/6/2016	National Origin	Close Letters RSP	Anonymous complaint alleging discrimination based on national origin. No Cause. Closed.
6/13/2016	Race	Close Letters CP	CP alleged discrimination based on race because bus pulled-off and left him. No Cause. Closed.
7/3/2016	Race	Close Letters RSP	CP's email address bounced back. Received RSP statement. No Cause. Closed.
7/16/2016	National Origin	Referred to Area	Received statement from area. Non-civil rights. Referred back to area.

(Table 2-1 Cont.)

Date	Basis	Action Taken	Summary
7/23/2016	National Origin	Close Letters RSP	No Cause. Closed.
7/26/2016	Minority and Low-Income	Closed	CP alleged MBTA failed to perform equity analysis related to Late-Night Service elimination. FTA investigation concluded the MBTA had properly conducted the necessary analysis.
8/15/2016	Race	Close Letters CP	No Cause. Closed.
8/22/2016	Race	Close Letters Supervisor	CP provided wrong phone number. Received statement from RSP. No Cause. Closed.
8/28/2016	Race	Referred to Area	CP alleged different treatment of "black woman on #66 bus compared to Green (B) Line treatment of white men." Non-civil rights. Closed.
8/30/2016	Race	Close Letters CP	CP alleged that RSP called him a "Paki." Video was viewed. RSP interviewed. No Cause. Closed.
9/14/2016	Race	Referred to Area	CP alleged demeaning statement on the basis of a protected characteristic. Referred to area. Non-civil rights. Closed.
9/15/2016	Race	Close Letters RSP	CP filed two complaints in close succession alleging same thing. Received RSP statement. No Cause.
9/19/2016	Race	Referred to Area	CP alleged demeaning statement on the basis of a protected characteristic. Referred to area. Non-civil rights. Closed.

(Table 2-1 Cont.)

Date	Basis	Action Taken	Summary
10/7/2016	Race	Close Letters RSP	RSP admitted to the conversation. Cause finding. RSP received three-day suspension and ADHP training.
10/10/2016	Race	Close Letters CP	Email to CP requesting follow-up. RSP statement received. No Cause.
10/14/2016	Race	Referred to Area	No response from CP. No Cause.
10/29/2016	Race	Referred to Area	Operator was right to restrict exit to front door only on Green Line outbound above ground. Non-civil rights. Closed.
11/4/2016	Race	Referred to Area	Bus operator not required to stop physical assault of passenger by another passenger. Non-civil rights. Closed.
11/7/2016	Race	Close Letters CP	Interviewed RSP. No Cause.
11/20/2016	Race	Close Letters Supervisor	Email to CP requesting additional information. Received RSP statement. No Cause.
11/21/2016	Minority and Low-Income	Keolis developed new cancellation policy to minimize risk of disparities; Keolis Diversity Officer now tracks cancellations.	CP alleged Keolis commuter rail cancellations on the Fairmount line had a disparate impact on minority and low-income ridership. FTA investigation found no Title VI violation. Keolis developed new cancellation policy to minimize risk of disparities. Keolis Diversity Officer now tracks cancellations.
12/2/2016	Race	Close Letters RSP	No response from CP. No Cause.
12/29/2016	Race	Close Letters CP	No Cause. Closed.

(Table 2-1 Cont.)

Date	Basis	Action Taken	Summary
1/20/2017	Race	Referred to Area	CP alleged discrimination based on race because she was not allowed to use bathroom without paying to enter gate area. No Cause.
1/23/2017	Race	Non-civil rights	CP emailed back requesting to withdraw complaint.
1/25/2017	Race	Close Letters CP	CP alleged getting hit by the bus door. No Cause.
1/25/2017	Race	Referred to Area	Unable to reach CP. Unable to identify RSP. No Cause. Closed.
2/1/2017	Race	Close Letters CP	No Cause.
2/2/2017	Race	Close Letters Supervisor	Insufficient evidence for cause. Referred to area for possible courtesy rule violation.
2/6/2017	Race	Referred to Area	No response from CP. No Cause. Closed.
2/7/2017	Race	Referred to Area	No Cause. Closed.
2/8/2017	National Origin	RSP Three-Day Suspension	CP alleged RSP mocked her English and chased her into train station. Cause. RSP suspended three days and required to take ADHP and Diversity training.
2/9/2017	National Origin	Close Letters RSP	No Cause.
2/13/2017	National Origin	Referred to Area	CP never returned call. No Cause. Closed.
3/2/2017	Race	Close Letters CP	E-mailed CP questions about incident. No Cause.

(Table 2-1 Cont.)

Date	Basis	Action Taken	Summary
3/9/2017	Race	Close Letters Supervisor	Unable to identify RSP. No info from CP. No Cause.
3/10/2017	Race	Close Letters RSP	CP alleged inappropriate comments made to "porters." No Cause.
3/10/2017	Race	Close Letters CP	No allegation of civil rights violation. No Cause. Closed.
3/13/2017	Race	Close Letters RSP	Sent out close letters to area and RSP.
3/30/2017	Race	Referred to Area	No response from CP for additional information. No Cause.
4/5/2017	Race	Close Letters CP	Interviewed CP about incident. No Cause.
4/10/2017	Race	Referred to Area	Non-civil rights. Closed.
4/15/2017	Race	Close Letters CP	No Cause.
4/16/2017	Race	Close Letters CP	No Cause.
4/19/2017	Race	Close Letters CP	Issues with cash box. No Cause.
4/25/2017	Race	Close Letters CP	CP alleged denied access to bathroom based on race. No Cause.
4/26/2017	Race	Close Letters RSP	Unable to reach CP. No Cause.
5/3/2017	Race	Close Letters CP	Advised potential courtesy rule violation. No Cause. Closed.
5/10/2017	Race	Close Letters RSP	Anonymous CP alleged RSP used racial slur. RSP did not admit to using racial slur. No Cause. Closed.
5/11/2017	Race	Close Letters CP	No Cause. Closed.

(Table 2-1 Cont.)

Date	Basis	Action Taken	Summary
5/11/2017	Race	Close Letters RSP	Closing as No Cause with advice to re-instruct RSP about the usage of Spanish without confirming lack of understanding English.
6/6/2017	Race	Close Letters RSP	No Cause. Closed.
6/12/2017	Race	Close Letter CP	CP alleged he was removed from train based on race. CP mistakenly removed as part of disruptive group. Allowed back on train when learned not part of group.
6/13/2017	Race	Close Letters RSP	Unable to reach CP. No Cause.
6/29/2017	Race	Close Letters RSP	CP alleged race/gender harassment. Two companion complaints from witnesses; one supports CP story, one disputes claim. No Cause. Referred to area for possible courtesy rule violation.
7/21/2017	Race	Referred to Area	Non-civil rights.
7/23/2017	Race	Close Letters CP	No Cause. Closed.
7/27/2017	Race	Close Letters CP	No Cause. Closed.

MBTA/MASSDOT PUBLIC PARTICIPATION PLAN (FTA C 4702.1B, III-5)

“The content and considerations of Title VI, the Executive Order on LEP, and the DOT LEP Guidance shall be integrated into each recipient’s established public participation plan or process (i.e. the document that explicitly describes the proactive strategies, procedures, and desired outcomes that underpin the recipients public participation activities)...Recipients should make these determinations based on demographic analysis of the population(s) affected, the type of plan, program, and/or service under consideration, and the resources available.”

Overview

The MBTA’s Public Participation Plan (PPP) is an Authority-wide guide that promotes flexible methods and tools to ensure broad and diverse representation in transit-related decision-making processes, and is included as Appendix 2-B. The MBTA’s PPP adopted elements from the MassDOT Title VI Program PPPs for the Highway Division and the FTA-funded, state-managed Rail and Transit Programs. This “shared” structure was approved by FTA and FHWA in February 2014 and was subsequently adopted, with Authority-specific modifications, by the MBTA within its April 2014 triennial Title VI Report. The guidelines, techniques, and reference information used in the MBTA’s PPP derive from research as well as past and current practices, which successfully help staff plan and organize inclusive and accessible public meetings.

In this triennial cycle, the MBTA is working to revise the PPP to address changes in the MBTA business model, while retaining the essential philosophy, guidance, and standards that were established in 2014, and also to incorporate language that supports the Authority’s aggressive work to address fiscal and infrastructure challenges. To illustrate, since the inauguration of an MBTA-focused Fiscal and Management Control Board (FMCB) in 2015, this group has met nearly weekly to address a host of fiscal and operational policy issues, such that as of August 2017, the FMCB had received 500 PowerPoint presentations in support of deliberations and decisions. This pace has proven difficult, and at times impossible, to allow for providing meeting notices with lead times of longer than a week.

It has similarly been problematic to have all documents prepared accessibly or converted into accessible formats in time for each weekly FMCB meeting. Nonetheless, strategies have been established to help staff create accessible documents in the first instance, or to quickly remediate inaccessible documents

as soon after a meeting as possible. Further, the schedule of FMBC meetings is calendared to the MBTA website well in advance, and weekly agendas are posted online as soon as they are confirmed. The agendas provide notice to the public of the availability of reasonable accommodations and identify the contact person for such requests, who is the Senior Counsel to the FMBC.

New language has been added to the draft PPP that reflects the nature of these meetings, discusses the FMBC's mission to improve the Authority's transparency and accountability, and describes the strategies employed to ensure that the public has fair access to these FMBC discussions. The revised PPP, which has been preliminarily reviewed by MBTA internally and will be shared with the public for input, is designed to better reflect strategies that will involve customers in the decision-making process. The document will continue to outline tools for meeting planners that integrate technology to promote public participation. In any instance where modifications to PPP protocols are considered necessary to meet the robust public engagement goal of the MBTA, the Office of Diversity and Civil Rights and the Office of Systemwide Accessibility should be contacted to provide advice and guidance on alternate means to address the need for inclusion and access.

MBTA Public Engagement Process and Outreach Tools

This section highlights the various tools the MBTA has at its disposal to engage diverse communities. The MBTA employs both traditional and novel methods to disseminate vital information to the public, depending on the circumstance, to include minority and low-income community members at project locations or throughout the MBTA service area. The MBTA typically communicates to the general public through one or more of the following methods:

- Newspaper, radio, and television advertisements
- Authority website
- Real-time applications
- Press releases, posters, flyers, and mailings
- GovDelivery email blast
- Signs and handouts available inside vehicles and stations
- Community meetings
- Grassroots outreach
- Information tables at local events

The MBTA hosts public/community meetings and workshops to share project information and/or solicit input from the community on important policy matters. These meetings are publicized through press releases, mailings, and/or distribution of informational meeting flyers. The MBTA distributes accessible informational material in multiple languages, as appropriate, starting with the top seven languages most prevalent in the service area, and then others based on request.

Public/community meetings are planned and publicized as early as possible and made available on the MBTA website. It is the responsibility of the Community Relations Department staff and/or the MBTA department coordinating a public meeting to ensure diverse outreach, including translating materials, offering free interpretation/accommodation assistance and ensuring accessible meeting locations. Key departments at the MBTA frequently contact ODCR for help in reaching out to minority and low-income communities, particularly with regard to complex or challenging projects and initiatives. These engagements reflect on ODCR's experience and support to ensure meaningful public participation that is in compliance with Title VI principles.

For individuals with disabilities who need accommodation to participate at a public/community meeting, support is in place or made available upon request, including room set-up for access (seating, listening devices), alternate formats of handouts, and American Sign Language (ASL) interpreters. All meeting planners are given a checklist that helps ensure that the meeting locations are accessible. These forms are also used to update the online resources that the MBTA uses to identify accessible meeting locations. The Office of System-Wide Accessibility (SWA) helps the MBTA achieve its goal of improving accessibility to public transportation, and ensuring that public meetings are accessible to persons of all abilities. SWA proactively assesses meeting locations throughout the MBTA service area by using a checklist to ensure that they meet ADA requirements. Once a location is identified as meeting the required accessibility standards, SWA will store the information in its database and share it with other departments. The MBTA/MassDOT Accessible Meeting checklist for the current PPP is included in the Public Participation Plan in Appendix 2-B.

“Engage” Tool

ODCR's Title VI unit and MassDOT's Planning Department have developed an innovative online public engagement tool, called Engage, to support departments that are planning a public meeting, or staff who are interested in learning more about a particular community for an upcoming project. This unique tool is designed to simplify the complexity of planning public meetings by giving

MassDOT/MBTA staff ready access to information on languages spoken by geocoded location, more than 4,000 community organizations statewide that are downloadable to the Microsoft Office suite, and more than 300 accessible meeting locations.² Further, to make Engage a more viable resource for MBTA staff when planning a public meeting, this tool has been enhanced to provide additional data concerning bus stops, route definitions, train stations, and transit-related projects. As part of planned assessments of individual public-facing departments at the MBTA, ODCR will be adapting training tools developed within MassDOT's Title VI work, to support MBTA managers and staff in departments with public-facing responsibilities on using the PPP and the Engage tool for future public-participation activities.

Newspaper

The MBTA publicizes pertinent and timely service information and distributes it via press releases to citywide and community-oriented newspapers, including publications geared toward minority and low-income communities. Some minority and low-income passengers are without a cell phone or computer and therefore rely on local newspapers to receive updated information about the MBTA. Press releases are sent to area newspapers that reach a broad range of ethnic and racial groups with varying income levels.

The Communications Unit maintains relationships with and provides content to various area news networks, including publications that reach low-income and minority community members, to ensure that those who rely on receiving information from newspapers are made aware of recent news or meetings related to the MBTA.

Internet

The MBTA website provides customers with real-time travel information, including ongoing or proposed MBTA projects, public meeting and hearing schedules, transit and diversion schedules, and other information, including system maps and FMCB meeting dates. The website is also used to solicit input from interested parties regarding MBTA plans, projects, and services. The website offers customers a way to register complaints and submit recommendations about MBTA services. Further, the website contains information regarding Title VI

² See MassDOT Engage Tool at: <http://gis.massdot.state.ma.us/maptemplate/engage>

and the Authority's nondiscrimination policies and complaint forms. Key pieces of this content, such as the notice to beneficiaries and the discrimination complaint form, are available in multiple languages as indicated in the Authority's Language Assistance Plan.³

Moreover, the MBTA is in the process of updating its website to improve design, content, navigation, and accessibility so that information is easier for transit customers to access.⁴ The new site will include an interactive scheduling Trip Planner, real-time bus and train updates, fare information, and recent news related to the MBTA and/or MassDOT. The MBTA is currently seeking feedback from the public on the beta version, now available online.⁵ Also, as a part of the FMCB directive to improve transparency and accountability, the MBTA has released a Performance Dashboard for customers to track how well the system is performing in various categories such as financials, system reliability, and ridership.⁶

Customers can also provide input to the MBTA by sending an email to feedback@mbta.com.

Real-Time Information/Applications

In 2009, the MBTA began releasing schedule data and real-time location data for transit vehicles, which can be used by software developers to build applications for the public. Currently, this data is available for all modes of transit except ferries; but the MBTA is working to publish real-time information for ferry customers as well.

To date, developers have built many applications (generally known as apps) with the data for computers, cell phones, and smartphones. Some of these applications are available at no charge, while some have a user fee. These applications show users the actual location of the next bus or train and/ or predict when the vehicle will arrive at a selected stop. Some applications can be used from any cell phone, with the information provided to the user via voice or text message. The MBTA maintains a showcase of many of these software applications at www.mbta.com/apps to help people know what programs are available.

³ See: www.mbta.com/TitleVI

⁴ See: www.mbta.com

⁵ See: <https://beta.mbta.com/>

⁶ See: <http://www.mbtackontrack.com/performance/index.html#/home>

In 2016, the MBTA held a competition for the best MBTA-related software application and selected and endorsed “Transit,” a free app for iOS and Android devices. The MBTA works with the developers of Transit to ensure MBTA information is timely and accurate in the application, and promotes this application to its customers as a preferred way to get real-time MBTA service information. Transit has native support for English, Spanish, Portuguese, French, Italian, and German.

In addition, the MBTA uses social media, including Twitter, to share real-time information with customers about service delays, public meetings, and other travel updates. The effective and consistent use of Twitter provides customers with a platform to submit real-time complaints, and the MBTA Operations and Control Center, which monitors the Twitter account, typically responds to the complaint immediately. In one instance, using Twitter helped the Authority update its Spanish translations of safety and emergency signage, as it responded to a customer who tweeted a complaint about the quality of the translations. The MBTA’s Safety Department, in coordination with ODCR and other departments, is currently updating all emergency and safety signage on heavy rail vehicles, which will include language translations consistent with the MBTA’s Language Assistance Plan.

Since 2007, the MBTA has offered “T-Alerts,” an application designed to provide customized service updates to customers via email, mobile phones, and personal-digital-assistant (PDA) devices. The application, T-Alerts gives customers the opportunity to receive instant service notifications with the option to receive information via email and/or text message.

Posters and Flyers

The Authority displays posters on vehicles, in stations, and at high-volume bus shelters that detail service changes that would have an impact on customers. The Authority makes flyers available in different languages and distributes them to individual passengers and area homes, businesses, and/or community organizations, where appropriate, by the most effective means.

Schedule Cards

The MBTA produces and distributes 2.5 million schedule cards every quarter (10 million annually) to ensure that the public has access to route and schedule information for the bus routes operated by the MBTA (the Authority reviews the routes’ timetables four times per year). To assist the public, if a route or schedule has changed since publication of the previous schedule, the front panel of the

schedule card notes the type of change. Major bus terminals have display cases where customers may reference schedule card information easily. Also at these terminals are racks where passengers may obtain schedule cards. Signs at schedule racks inform passengers about routes that have had some change since the last quarterly schedule was published. The MBTA website also contains HTML and PDF versions of all schedules.

Remix

The MBTA Planning and Schedules Department recently acquired an innovative transit software solution, called Remix, to assist service planners in designing new routes, estimating costs, and understanding the demographic profile of a particular community. This tool also can be used as a resource during a public meeting to help customers visualize a proposed service or schedule change, assess tradeoffs, and provide instant feedback either in person or online in response to suggestions.

Remix offers several features that can be used to enhance public participation and engage diverse audiences:

- In an in-person feedback situation, a planner can make changes to a proposed route alignment and immediately show the impacts in terms of cost and the characteristics of the population served in each scenario, including amounts of population and jobs served, household income, minority status, car-ownership status, and number of seniors, youths, and persons with disabilities.
- Static or interactive display of travel time isochrones, showing how far an individual can get from any location using the transit network in 15, 30, 45, and 60 minutes.
- Interactive online map with the option to leave comments and zoom/pan to a particular location and view bus stop locations and summary schedule information.
- A geographic visualization of population and job density, income, and demographic information from the American Community Survey.

GovDelivery

The MBTA utilizes an outreach tool, called GovDelivery, which is the largest sender of government-to-constituent emails in the United States. This messaging tool provides the MBTA with the capacity to reach thousands of community-

based organizations and stakeholders from across the Commonwealth of Massachusetts; it gives staff members the ability to target their outreach to inform and engage customers about an upcoming project and/or public meeting. For example, during the Disparate Impact/Disproportionate Burden public process, the Community Relations Department utilized the GovDelivery software to inform diverse communities in the service area about upcoming public meetings and followed up with phone calls to encourage riders to be a part of the discussion about how the MBTA is evaluating equity in service and fare changes.

Plan to Engage Minority and Limited-English-Proficient Populations

Background — Recent Experiences that have Informed Outreach Planning

During this triennial cycle, the MBTA conducted public outreach to inform minority and limited-English-proficient members of the public about Title VI and to solicit input about their transit needs and concerns, including those with respect to civil rights matters. A great deal of this effort was led by ODCR, in collaboration with other public-facing MBTA departments. This Outreach Plan builds on that positive experience, and on the MBTA's commitment to strong communication with our customers and the general public.

Shortly after the MBTA hired its first Title VI Specialist, ODCR met with Transportation 4 Massachusetts, a diverse coalition of community-based organizations working to create safe, convenient, and affordable transportation. During this conversation, we 1) introduced the MBTA team members responsible for Title VI oversight; 2) provided an explanation of Title VI and the FTA Title VI Circular; 3) shared copies of the 2014 Title VI Report; and 4) provided ample opportunity for questions and answers. This conversation helped initiate relationships and ensured that local advocates had an equal footing in understanding the obligation and commitment to civil rights at the MBTA. In this discussion, we were particularly aware of recognizing community concerns raised in response to difficult fiscal and infrastructure decisions that the MBTA had made, including elimination of late-night service. We have included the PowerPoint presentation from that discussion, for reference, in Appendix 2-C.

ODCR learned from this discussion that there was great value in building understanding that could lead to trust in sharing our belief in the importance of community input and public involvement in transportation policy, project programming, and transit decision-making. This discussion led ODCR to invite members of this group as key community stakeholders when we revised the MBTA's Disparate Impact/Disproportionate Burden and Service Delivery policies.

When the MBTA undertook the effort to revise its Disparate Impact/ Disproportionate Burden and Service Delivery policies in 2016, our internal multidisciplinary team focused on building the knowledge base across key transportation community advocacy groups, as a wellspring to help gain input from the general public. We believed that key transit advocates could help us sharpen our policy draft, messaging, and strategy for engaging the public, and the results of our efforts were positive on all fronts. In this process, we better explained the limitations of the previous policies, compliance requirements under Title VI, and how the policies at issue affect the MBTA's obligation to prevent discrimination.

ODCR is now positioned to take steps that will bridge minority, low-income, and limited-English-proficient community members to better understand the transportation decision-making process. As we work with departments within the MBTA to improve the reach and effectiveness of Authority public engagement efforts, our theory is that the MBTA will further improve communication and collaboration that will serve to enhance our transit system.

Outreach Planning toward Minorities and Others under Public Participation Plan

The following language included in the MBTA's PPP relates to outreach to minority, low-income, and other vulnerable communities that we serve, and sets the tone for our plan to conduct related outreach over the upcoming triennial cycle.

Many people in minority and low-income communities, as well as those with low literacy and/or limited English proficiency, have traditionally been underserved by conventional outreach methods. Outreach to traditionally underserved groups helps ensure that all constituents have opportunities to affect the decision-making process. It sets the tone for subsequent project activities and promotes a spirit of inclusion. The greater the consensus among all community members, the more likely the position agreed upon will aid in decision making for the plan, program, or project. Inclusive outreach efforts are particularly useful because they:

- Provide fresh perspectives to project planners and developers
- Give MassDOT/MBTA firsthand information about community-specific issues and concerns
- Allow MassDOT/MBTA to understand potential controversies

- Provide feedback to MassDOT/MBTA on how to get these communities involved
- Ensure that the solutions ultimately selected will be those that best meet all of the communities' needs

To achieve these reasonable objectives, MassDOT/MBTA staff should strive to understand the full range of a community's needs in order to create more responsive and more innovative plans. By interacting with community members, MassDOT/MBTA staff will gain insight into the reasons why they agree or disagree with proposed plans or projects. The perspective of traditionally underserved people can inform the goals and outcomes of planning and project development by suggesting fresh approaches to transit issues that might not otherwise be raised. ODCR further understands that ignoring this input can seriously threaten a project from being approved. Such individuals can suggest fresh approaches to transportation issues that otherwise might not be raised. MassDOT/MBTA's public outreach efforts are designed to accommodate the needs of low-income, minority, limited English proficient, and other traditionally underserved people throughout all phases of any public participation process.

MassDOT/MBTA staff should recognize that traditional techniques are not always the most effective with these populations. Staff and managers employ a variety of public involvement techniques when working with underserved populations and communicates with community leaders to determine the best techniques for working with a particular group (e.g., which approaches to use, where and when to hold events, how to recruit people, and what to avoid doing).

MBTA PPP, pages 14-15, http://www.mbta.com/uploadedfiles/Contact_Us/PPPAppendixCfromAPPENDICES_FINAL.PDF

Outreach Plan

Over the next three years, the MBTA is advancing strategies to build upon the community engagement work for Title VI that we achieved during the 2014–17 triennial period. We will coordinate our work with ODCR and the Customer Experience Department to ensure that the MBTA has a strong profile for building connectivity to Title VI-protected individuals and other communities we serve. For example, the Customer Experience Department has launched an initiative to

provide Customer Service Agents with the resources and support necessary to help riders navigate the system. The impact of this initiative and the identification of any service delivery barriers that Operators, Customer Service Agents, and Inspectors encounter will be studied to recommend remediating approaches for engaging with riders, including those who are members of minority or limited-English-proficient groups.

During the first year, a key strategy is traveling across the MBTA service area to speak with riders, front-line staff, and community representatives about their experiences when interacting with the MBTA system. During the Disparate Impact/Disproportionate Burden and Service Delivery public process, we learned that customers would like the MBTA to be more active and visible in the community to better understand and address the challenges that the public encounters when accessing the transit system. This Outreach Plan will therefore be designed to increase visibility, identify concerns, and gauge the attitudes and experiences of riders, with emphasis on those who rely on the MBTA for social and economic mobility. In addition, the Title VI Unit will continue to 1) meet with local community-based organizations that advocate on transit matters, 2) introduce the MBTA's Title VI Program, and 3) respond to concerns and advise on how these groups can participate in the decision-making process.

Year One elements:

- In collaboration with the Customer Experience Department, ride the system to meet people and connect with key community agencies to learn more about how LEP and minority group members interface with the programs, services, and activities at the MBTA
- Meet with key transportation advocacy groups to provide updates on activities and share information on the MBTA and its approach to public participation, including available resources
- Develop the internal Title VI Working Group and establish a subcommittee on public participation to work with the data compiled from field visits, and collaborate with key public-facing departments on strategies to improve community engagement
- Structure and initiate assessments of public-facing departments to learn about work models, identify potential Title VI risk factors for non-compliance, and strategize about new approaches to engagement with affected communities
- Develop strategies to use civil rights complaint data to identify trends that reflect impacts on minority and low-income communities which may or may not involve bias, but indicate practices that could be improved

Year Two Elements:

- Learn from the first year experiences of how the Customer Experience Department assisted the travelling public, with focus on how Customer Experience initiatives are being deployed in communities with significant Title VI representation and low-income populations
- Compile report on experiences and lessons learned from traveling across the MBTA system, to incorporate into Title VI Working Group public engagement agenda
- Share input and recommendations with affected departments and MBTA leadership for approval to turn ideas into action
- Present recommendations and other indicators of efforts to improve engagement with the public to build faith in the MBTA's intention to make continuing improvements

Year Three Elements:

- Build strategies to capitalize on efforts to increase awareness and build trust with underrepresented community members, which might include a signature event or a structure to give voice to communities across the service area
- Build reporting streams from individual public-facing departments to document efforts to improve public engagement as a means to create institutional knowledge concerning the positive benefits of inclusive public engagement
- Identify and incorporate achievements into Title VI Triennial Report
- Develop strategy for continuing the work into the 2020–23 triennial cycle

Summary of Department-Level Public Engagement Activities

Overview

Since submitting the 2014 Title VI Report to FTA, the MBTA's affirmative response to infrastructure and fiscal challenges has heightened—understanding that, across MBTA departments, there is a strong need to engage effectively with the public. Some of these efforts focused on major projects, such as the Green Line Extension or the response to the snow challenge in 2015, while others

were related to policy matters involving the 2016 fare increase, equity analyses, and the Disparate Impact/Disproportionate Burden and Service Delivery policy development efforts.

In 2016, following leadership changes within the state and MBTA administrations, ODCR renewed training on the PPP with Legislative Affairs and Community Relations. The centrality of these groups in coordinating public engagement on MBTA projects, policies, and other initiatives made these units essential to work with to reinforce the importance of the PPP and promote compliance. Within this training, emphasis was given to FTA's requirement of a PPP and the MBTA's PPP policy document, as well as the need to adhere to the principles of this plan in connection with civil rights mandates under Title VI.

In 2015, the MBTA hired a full-time Title VI Specialist, whose job includes supporting inclusive community engagement and expanding the reach of ODCR's ability to identify risk factors in public participation by department, providing training in the PPP and identifying resources to improve the MBTA's public engagement profile.

In 2015, ODCR conducted a briefing regarding Title VI and our PPP with MassDOT and the MBTA's consultant community, through the MBTA leadership group to the American Council of Engineering Consultants – Massachusetts (ACEC-MA). These external consultants were made aware of the existence of the PPP and the need to adhere to PPP principles in MBTA projects. In 2017, ODCR met with this group a second time to provide an orientation to the Engage software and requested that ACEC-MA members work with the tool and provide feedback.

The remainder of this section outlines responsibilities and key efforts among the MBTA departments with significant public engagement activities during the 2014–17 triennial cycle, including noteworthy strategies and tactics used to reach diverse communities. Within each department identified, we have summarized the projects that reflect public involvement within the triennial period. A calendar year list of the majority of public engagement activities over the past three years may be found in Appendix 2-D.

Community Relations and Legislative Affairs Departments

Within the triennial reporting period, the Legislative Affairs and Community Relations Departments engaged with the public and with state and local public officials concerning projects that involved both the MBTA and MassDOT. These units collaborated to coordinate public outreach efforts related to capital

projects, policy development, capital investment planning, and other initiatives. The two units maintained an active working relationship with community-based organizations, stakeholders, and state and local elected officials, and for Title VI purposes, with the Black and Latino Legislative Caucus. At the project level, the Community Relations unit coordinated with project managers from various departments on public engagement matters.

With regard to civil rights-related outreach, as noted above, in 2016 the Community Relations unit, as part of a multidisciplinary team, helped ODCR organize public meetings to educate the public and obtain feedback while developing a revised MBTA Disparate Impact and Disproportionate Burden (DI/DB) Policy. Also during 2016, both Legislative Affairs and Community Relations worked with MBTA Planning and Schedules, Civil Rights, the Office of Performance Management and Innovation, and the General Manager's office on public engagement for the fiscal year 2017 fare increase. These units have helped ODCR to orient legislative leaders who represent communities with significant Title VI and environmental justice constituencies to Title VI at the MBTA, the proposed DI/DB policy, and about how to seek support for community outreach.

The collaborative efforts between ODCR and Legislative Affairs and Community Relations have led to broader and more effective outreach, both generally and toward minority and low-income communities, with shared strategies that are creatively designed to involve communities that traditionally are hard to reach.

During summer 2017, Legislative Affairs and Community Relations merged into a new External Affairs Department, which represents all agencies under the Department of Transportation, including the MBTA, and manages public engagement and targeted outreach for public meetings, as needed. The External Affairs Department plays a lead role in both proactively and reactively engaging with and responding to all transportation stakeholders in Massachusetts. Stakeholders include but are not limited to elected and appointed federal, state and municipal officials of the Commonwealth, business organizations such as Chambers of Commerce, and community and neighborhood groups, along with Title VI and Environmental Justice constituencies, elderly people, and individuals with disabilities. External Affairs works closely with the Communications Unit to ensure accurate and timely dissemination of information to the public, and coordinates the documentation of and response to public input for mandated public meetings about fare changes and major policy initiatives. ODCR will continue its collaboration with the External Affairs Department and continue to build on the strategies developed to solicit participation from and engage minority and low-income communities.

MBTA Service Diversions Communications Plan

Beginning in 2017, the MBTA will undertake several infrastructure improvements that will impact Commuter Rail customers by rerouting users' bus service, to facilitate the construction process. During summer 2017, the Newburyport/Rockport Commuter Rail line experienced two service diversions related to the installation of Positive Train Control (PTC) measures and the reconstruction of the Beverly drawbridge. Bus shuttles replaced rail service during these two major projects.

According to the MBTA's Communications Plan for Service Diversion, "the Newburyport/Rockport Diversion is the largest supplemental service plan the MBTA has provided for a construction project to date." For this effort, the MBTA initiated a communications pilot strategy, building a toolbox designed for staff to use on upcoming planned diversions around the MBTA system. This resource created the ability to measure the effectiveness of messaging before, during, and after the diversions to support continuous improvements prior to a subsequent diversion activity. The following elements reflect the outreach strategy that was contained in the toolbox for the Newburyport/Rockport Diversion, including the following:

- Posters at all stations with available ad space
- Website – promotion, landing page, contractor project page
- Pamphlets made available to customers with information and schedules
- North Station digital screen messages (eight screens) to inform passengers of alternative service
- Fare vending machine stickers at North Station
- Free parking signage at stations
- Shuttle bus identifiers
- Directional signage to shuttle buses for use at all stations inbound and Salem station outbound
- Curbside banners at bus shuttles at Salem Station and North Station (Newburyport and Rockport lines only)
- Posters at North Station ticket office and curbside banners
- Weekend tickets

The communications strategy utilized during the Newburyport/Rockport line diversions was effective and positively received by the public. This strategy will be adapted for related service diversions that are being planned for the future, with modifications to address differences in customer demographics for those communities impacted by future PTC projects.

MBTA/MassDOT Capital Investment Plan

Project Description:

In fall 2015, under lead coordination through Community Relations, Legislative Affairs, and the Office of Transportation Planning, the MBTA and MassDOT began the process of developing their first combined five-year capital plan for state fiscal year 2017–21. The Capital Investment Plan (CIP) is a multi-billion dollar program that determines how the MBTA/MassDOT prioritizes its largest investments, covering all transportation projects from highway and municipal projects to regional airports and regional transit authorities (RTAs). The draft CIP is published electronically, and public comments on the document are solicited through an online comment tool, US mail, and/or email. The Authority designates a public-comment period that begins approximately two weeks before public workshops and hearings on the draft. Also in fall 2015, MassDOT/MBTA held “Capital Conversations” throughout the Commonwealth to inform the public of the new approach to capital planning and seek public input before the first joint plan was drafted.

There were a total of 16 public meetings held throughout the state with 1,351 comments received from participants during the Capital Conversations event. MBTA/MassDOT staff synthesized the comments received and compiled a breakdown of the most frequent topics that came up during the meeting. The results showed that 39 percent of participants believed that improved service reliability and transit service expansion are critical to access better opportunities. Once the state fiscal year 2017–21 CIP was drafted, additional public meetings were held to discuss the proposed plan and receive public comment from constituents and customers. MassDOT staff conducted a social equity analysis of this public engagement process. Based on meeting attendance and submitted public comments, it was determined that people of color, low-income people, and limited-English proficient communities had been underrepresented in Capital Conversations. To address this, MassDOT changed the outreach strategy during the second round of Capital Conversations (conducted after the release of the draft CIP). The outreach list was broadened, and efforts were made to directly contact a variety of community-based organizations across the Commonwealth to more accurately reflect the diversity of MassDOT and MBTA customers. This effort led to public meeting attendance and comments that better reflected the Commonwealth’s constituents.

Public Outreach Activities:

To notify the public of the draft document, including any upcoming events, the MBTA/MassDOT posted meeting information on both agency websites and coordinated with the Boston Region Metropolitan Planning Organization to disseminate information, including published announcements in local newspapers. Members of the public were given options to submit comments via US mail and/or email, and during in-person meetings. Feedback collected through the public participation process was synthesized and presented to the MassDOT Board of Directors and the MBTA's Fiscal and Management Control Board.

The public meetings provided an opportunity for individuals to give their input on and ask questions about the proposed capital plan in person. Various MBTA departments designated key personnel to be present at each of the meetings to conduct presentations and respond to questions. All meeting locations were accessible to people with disabilities, including individuals with limited-English proficiency.

Public Meeting Formats:

CIP public meetings were conducted in one of the following two formats:

- **Public Hearing Format:** During the public hearings, the MBTA presented an overview of the draft CIP, with highlights of key existing and new projects. Members of the public were then invited to provide formal comments; however, no questions were answered during the hearing. An MBTA/MassDOT staff person recorded the entire meeting, including the comments submitted by each of the participants, which became part of the public record. After the meeting, members of the public were invited to meet informally with MBTA personnel to have their questions answered.
- **Workshop Format:** Each public workshop began with an overview of the draft CIP, including highlights of key existing and new projects. Since members of the public often came to the meetings expecting to have their questions answered, the workshop format included a question-and-answer segment. No stenographer was present to record the program in this format. However, MBTA staff members took notes during the session and incorporated the information into a report summarizing the public-participation process.

Locations/Meetings:

The Capital Conversations were held throughout Massachusetts in fall 2015 during the pre-CIP draft, and public meetings were organized across the Commonwealth during the CIP public comment period in spring 2016. There were a total of 15 meetings conducted during the 2016 CIP public process, both within and beyond the MBTA service area, with 10 of the meetings located in areas served by the MBTA. This process will be repeated annually, as each subsequent year's capital funding plan is developed.

Communications

MassDOT and the MBTA Communications Unit is engaged proactively, seven days each week, in delivering news and information to transportation customers about initiatives and events in all MassDOT and MBTA divisions and units. The Communications team utilizes both traditional outreach to news media and an aggressive social media presence in order to deliver information in a timely manner. The team works to respond promptly to news media and constituent inquiries while also proactively delivering positive updates about MassDOT and MBTA services. A comprehensive statewide list of news and constituent contacts is utilized to distribute news releases and other information. Social media tools, many used daily, include Twitter, Facebook, Instagram, Flickr, YouTube, and the active MassDOT blog, all of which provide important multimedia updates about agency happenings. The Communications team is guided by a commitment to highly responsive customer service in daily interactions with the public, news media, advocates, and all parties interested in MassDOT and MBTA services, as part of our commitment to transparency and civic engagement in government.

MBTA Customer Experience Department

The MBTA Customer Experience Department was established in July 2016, with the focus of enhancing the customer experience by developing timely, relevant, and clear communications that inform and engage customers and stakeholders. The department also leverages technology to enhance the customer experience cost effectively.

The Customer Experience Team is responsible for leadership of MBTA communications functions across all customer touchpoints, management of the Authority's call center, and in-station customer care services.

Recent Customer Experience initiatives include managing the new MBTA Call Center contracted-service initiative, which resulted in extended service hours and expanded language support. The Customer Experience Team is also supporting the introduction of contracted “Transit Ambassadors” in MBTA stations to augment the customer care provided by the Authority’s Customer Service Agents. While still in pilot mode, this initiative offers the opportunity to expand the number of hours and stations where customer care resources are available to help riders purchase fares, plan trips, and answer questions. The ODCR coordinated with the Customer Experience team to ensure that these Transit Ambassadors have the resources to meet language access needs, such as “I Speak” cards for LEP customers to identify the language in which they wish to communicate, and tablets that support translation software applications to provide an opportunity to meet such a language access need in realtime.

Finally, the Customer Experience team makes sure that all customer care agents have the appropriate training and subsequent knowledge to be more perceptive in assisting seniors and persons with disabilities. The Customer Experience team leads customer care training for MBTA in-station customer service agents, and is developing new technology-based tools to put information at their fingertips in order to best support our customers.

A top priority of the Customer Experience team is increasing and targeting MBTA messages to limited-English-proficient customers, particularly during planned and unplanned service interruptions where non-English speaking customers often have the hardest time navigating the system. The Customer Experience team is also charged with developing more consistent, easy-to-understand, and timely messaging that keeps all of our customers “in the know.”

Recently, this team organized more than 150 staff volunteers from several departments across the Authority to assist with the expected high volume of customer traffic throughout the system during special events, including the New England Patriots Super Bowl Victory Parade, Boston Marathon, and Sail Boston. These efforts were roundly praised for demonstrating our customer service commitment to the riding public and supporting operations staff during times of great concern about safety and system burden.

The Customer Experience team routinely works on other project initiatives with several departments across the MBTA, including System-Wide Accessibility, the ODCR, MassDOT Community Relations Department, and the General Manager’s Office, among others.

Customer Call Center

During this triennial cycle, the MBTA Customer Call Center provided service information to more than 1,200 MBTA customers per day. Customers contacted the Call Center via telephone, email, letter, and walk-in visits regarding a broad range of questions about the MBTA and its services. During the past three years, MBTA Call Center inquiries have decreased by 32 percent as a result of the MBTA's enhanced customer communications through T-Alerts, web-based resources, and in-station information. The latter includes platform displays with real-time schedule information and improved signage, particularly regarding planned service interruptions.

Also during this triennial cycle, the Customer Support Services team was composed of a diverse work staff, which provided translation services to MBTA customers in Spanish, French, Haitian Creole, and Cantonese. The Customer Call Center tracking system, called HEAT/ISIS, allowed staff to track customer calls from start to finish. Each complaint was assigned an incident number, then prioritized and routed to various departments within the MBTA for investigation and resolution. HEAT also provided reports regarding complaints, recommendations, and trends in service levels, which enabled staff and managers to use this data to make changes in services to benefit our customers.

In late spring 2017, the Customer Call Center's responsibilities were contracted out to a private company, Global Contact Services (GCS). The principal focus of GCS is to provide advanced customer phone support, including enhanced language support services. This change has allowed for the creation of a new Issue Resolution Team that focuses on resolving customer complaints, investigating issues, and identifying trends in an effort to reduce complaints and improve service. ODCR and Systemwide Accessibility trained the GCS Call Center staff and managers about civil rights-related matters that they might encounter, and the role of ODCR in responding to civil rights-related inquiries and complaints. During the training, MBTA staff emphasized the need to accurately enter information into the HEAT system to support proper investigations.

While most complaints alleging civil rights concerns are received within the Call Center, ODCR also maintains separate means for customers to file complaints directly with that office. The Call Center continues to utilize the HEAT system for tracking matters, and that system has been updated to improve data accuracy and utility. When matters are received by the Call Center, each complaint is assigned a task number, then prioritized and assigned electronically to various departments within the MBTA for investigation, response, and reporting.

Complaints are divided into by four categories of complaint types: Safety, Accessibility, Title VI/Discrimination, and General Complaints. The complaints are prioritized based on type, category, and reason. All Safety, Accessibility, and Title VI/Discrimination complaints are given a “priority one” for immediate action. If the complaint is a “happening now” complaint (emergency, safety, or accessibility issue), the Operations Control Center is alerted immediately for action. ODCR is immediately alerted in the instance of Title VI/Discrimination complaints.

The HEAT system was recently updated to improve data collection, provide departments with a collaborative tool to investigate a complaint jointly, and facilitate identification and resolution of patterns of concern. Further, the ODCR partnered with Information Technology and the Customer Experience Department to change the Title VI complaint module to concur with the MBTA’s Title VI complaint form and FTA requirements. Lastly, ODCR provided definitions for each federal- and state-protected category to further assist frontline staff—who could encounter a complaint related to discrimination—in identifying the protected group so they might refer the matter appropriately.

Office of Transportation Planning

The Office of Transportation Planning (OTP)—the primary source of transportation planning for MassDOT—is also a part of the Enterprises Services office. OTP develops transportation plans, programs, and projects to advance the policies and objectives of the Governor and the Secretary of Transportation. OTP also ensures compliance with federal and state transportation and environmental laws and regulations, administers the statewide research program, and coordinates the state’s metropolitan planning organizations. MassDOT planning staff performs, participate in, and manage several types of transportation planning studies, conducted either internally or by other entities such as consultant firms, the regional planning agencies, and other divisions of MassDOT. OTP plans include content that ranges from overall vision concepts to specific recommendations for improving individual travel modes and enhancements to particular street configurations. Each plan differs in scale and complexity, but all incorporate a strategic and multi-modal approach focused on safety and customer service.

OTP supports the MBTA in a number of ways. Through its role coordinating the development of the annual CIP, OTP develops a civic engagement effort intended to solicit the input of a broad range of stakeholders. This work has included the use of an online platform — Engage, discussed earlier in this chapter — to facilitate public outreach by identifying LEP populations, diverse community contacts, and accessible meeting venues. For the long-range capital

needs of the MBTA, OTP is leading the Focus40 investment plan. This multi-year planning effort establishes a vision for the MBTA in 2040, and features an extensive outreach program that has connected with thousands of stakeholders through strategies designed to ensure that the input received is proportional to the demographic and geographic diversity of the MBTA's customer base. OTP has also led extensive on-the-ground engagement efforts in low-income, transit-dependent communities in support of short- to medium-term MBTA investment strategies through its work on the Roxbury/Dorchester/Mattapan Transit Needs Study, the Silver Line Gateway project, and the Everett Transit Action Plan.

MBTA Focus40

Project Description:

Focus40 is a 25-year investment plan to position the MBTA to meet the needs of the Greater Boston region in 2040. This project is meant to illustrate and describe the longer vision that recognizes today's infrastructure challenges, shifting demographics, climate change, and the growth of technology that may affect the role the MBTA will play in the future of Greater Boston. Focus40 aims to:

- Conduct an extensive public engagement process
- Prioritize long-term performance/reliability and capacity investments
- Solicit new ideas for system improvement and expansion
- Strengthen public partnerships for improved transit in our region

Public Outreach Activities:

Focus40 aimed to gather feedback from a broad range of stakeholders across the MBTA service area to help develop a vision for how the MBTA can meet the needs of the Boston region in 2040. To ensure that the process incorporated diverse viewpoints and values, particularly those of bus riders and low-income populations, who often are underrepresented in public processes, Focus40 created a multifaceted engagement strategy. The Focus40 Street Team spent 100 hours talking directly to customers at stops and stations throughout the system to collect ideas for the MBTA's long-range plan, ultimately reaching more than 1,500 individuals.

The Street Team outreach effort was designed to correspond with overall MBTA ridership by mode. As a result, the Street Team spent 60 hours at rapid transit stations, 30 hours at bus stops and 10 hours at commuter rail stations. More than a third of the Street Team outreach (40 hours) was spent talking to customers in low-income neighborhoods like Mattapan, Roxbury, and Dorchester. Since May 2016, the Focus40 project team has held three large-scale public events and three stakeholder workshops, and has participated in a range of activities conducted by a variety of interested parties, including business groups, educators, elected officials, non-profits, and students, to gather investment ideas they believe the MBTA should pursue in the future. The Focus40 project team also spent more than 50 hours in one-on-one meetings, discussing the future of the MBTA transit system with more than 80 different organizations, including municipalities, businesses, and community development groups.

As a result of this multifaceted engagement plan, Focus40 received more than 3,000 ideas from the public about the types of investment ideas they would like to see the MBTA pursue in the future. While MBTA civic engagement efforts will always be met with ideas for major system expansions, the majority of input was about improvements in the core system. What we heard also appeared to change based on the type of outreach. Through our Street Team outreach, we heard that creating a more reliable system with frequent service was the number one goal the MBTA should focus on in the long term. Conversely, expansion ideas appeared to be the top priority from various stakeholders. Overall, Focus40 outreach underscored that the public would like to see a more reliable and well-functioning MBTA system in the future.

Everett Transit Action Plan

The Everett Transit Action Plan aimed to identify near- and long-term solutions to the transit challenges facing Everett residents and workers. The Project Team conducted several types of outreach including stakeholder briefings, “tabling” at community events, hosting open houses, and talking to riders at bus stops in Everett and at Sullivan Square, where many riders transfer. The team also conducted two online surveys during the process, which were advertised by the City of Everett. All materials were available in Spanish, Portuguese, and Haitian Creole. Spanish interpreters were available at all meetings and for most additional outreach efforts, and Haitian Creole interpretation was also available at several of these events. One of the major outcomes of the Everett Transit Action Plan was a “pop-up” bus lane that the Mayor made permanent at the end of the week-long pilot.

Capital Delivery Department

The Capital Delivery Department consists of approximately 160 MBTA managers and staff, and is responsible for the delivery of capital construction projects in support of the MBTA's \$7.4 billion five-year Capital Investment Program (exclusive of the Green line Extension Project). The Capital Investment Program's priorities include reliability and modernization (state of good repair) and expansion. Capital projects encompass track, signal, power, bridges, stations, and other facilities throughout the system. The department is responsible for successfully delivering capital construction projects consistent with the Capital Investment Program and to ensure that projects are on time and within available funding.

The MBTA's Capital Delivery Department is also responsible for engaging with the public during the project design, development, and construction process, and for providing guidance based on this department's "2014 Standard Operating Procedure for Project Managers." In addition, project managers in capital delivery coordinate public engagement with MassDOT's Communications Department from the beginning of the initial design stage through the end of construction. ODCR is currently engaging with the Capital Delivery Department to train project managers in the MBTA's PPP protocol to ensure that the efforts of this department are fully in sync with our public engagement commitments under Title VI.

Blue Hill Avenue Design Public Process

During the triennial cycle, the public process leading to the construction of the Fairmount Line's Blue Hill Avenue Commuter Rail Station has been noteworthy. This location will be part of the commuter rail service from South Station through the Boston neighborhoods of Roxbury, Dorchester, and Mattapan, which are home to many minority and low-income residents and customers.

Starting in 2008, when the project was first conceptualized, the MBTA began a process of engagement that has included 13 public/working group meetings that have extended through the design phase. To improve meeting notices and messaging, during the past three years the Capital Delivery Department held six working group meetings and one public meeting, with the latter publicized at least four to six weeks in advance to give community members enough time to plan, review meeting materials, and participate in productive dialogues.

The working group for this effort is comprised of community members selected by public officials, and is responsible for representing the neighborhoods and their residents. Moreover, the outreach process implemented for the public meetings has included leafletting flyers with project information to riders at train stations, local businesses, churches, ethnic radio stations, libraries, and community health centers.

Project information and meeting materials have been made available in English, Spanish, and Haitian Creole, with appropriate notice advising the public of their right to request language assistance and/or accessibility accommodations. The Capital Delivery Department also hired a member of the community to provide grassroots support, outreach to local newspaper outlets, and recruit volunteer support to present relevant project information at public meetings. The meetings were scheduled on the first Tuesday and second Thursday of each month, from 5:30 PM to 7:30 PM at the newly renovated Mattapan Public Library, which has ample meeting space and is a heavily visited resource in the community.

Ruggles Station Commuter Rail Platform Project

Project Description:

The Ruggles Station Commuter Rail Platform Project involves constructing an 800-foot long commuter rail platform to service Track 2, which will increase direct access to the station for passengers, as well as accessibility and state of good repair improvements. Ruggles Station is the fourth-busiest commuter rail station in the MBTA system and accommodates 29 inbound trains, 49 outbound trains, and 14 bus routes. Ruggles Station is considered a minority rapid transit station, according to the most-recent MBTA passenger survey (conducted between 2015 and 2017), with the majority of bus routes and outbound rapid transit trains traveling within minority and low-income communities. As noted on the project homepage, “Ruggles Station, is the primary intermodal transfer point for suburban commuters working at the hospitals, colleges, and museums in the Longwood Medical Area and Back Bay. It is limited in its commuter rail operations because only two of the three tracks serve the existing platforms. The physical limitations of the station, in conjunction with daily congestion along the corridor from both MBTA and Amtrak trains, make it difficult to offer a complete schedule of trains at Ruggles Station. Today, more than 30 percent of the inbound trains bypass Ruggles Station, requiring inbound passengers to transfer from the commuter rail to the Orange Line at Back Bay to travel back to Ruggles Station.”

Planned improvements to the commuter rail platform include:

- Improved station accessibility
- Enhanced pedestrian safety and security
- Interior and exterior repairs to upgrade the station to current codes
- Replacement of existing station elevators
- An additional elevator
- Improved lower busway paths of travel

Public Outreach Activities:

In 2012, the MBTA held a series of 10 open house meetings at Northeastern University's African American Institute to solicit input on the proposed design of the new commuter rail platform, which included one legislative briefing. Further, the MBTA's Capital Delivery Department, in coordination with Community Relations, Legislative Affairs, and the Communications Unit held an open house and public meeting at the Boston Center for Youth and Families (in Boston) to discuss the construction that would take place during the summer and how it would affect traffic and transit users in the stations. The MBTA utilized several different public outreach methods to reach a wide-range of diverse community members and residents who travel to or live in proximity to the construction taking place at Ruggles Station. The MBTA reached out to individuals and community-based organization within the surrounding Roxbury neighborhoods to disseminate flyers and project information, while answering any questions or concerns from the public. All public meetings flyers were translated into Spanish and included information about the ability to request free language assistance and/or reasonable accommodations. In addition to flyers, the following tools were employed to support outreach:

- MBTA project web page
- Internet communications
- Media outreach
- Ongoing coordination with stakeholders, including:
 - Northeastern University
 - City of Boston
 - MASCO

- o Amtrak
- o Longwood Medical Area
- o Roxbury neighborhoods
- o Mission Hill
- o Wentworth Institute
- o Museum of Fine Arts
- o Mass College of Art

Green Line Extension (GLX) Project

The Green Line Extension Project is a design-build project that will extend the existing MBTA Green Line light rail service from the relocated Lechmere Station in East Cambridge north to College Avenue in Medford (along the New Hampshire Main Commuter Rail Line) and northwest to Union Square in Somerville (along the Fitchburg Commuter Rail Line). The goal of this project is to increase mobility, encourage public transit usage, improve regional air quality, ensure a more equitable distribution of transportation services, and support opportunities for sustainable development. The Project includes the following elements:

- Relocate Lowell commuter rail tracks and new Medford Branch light rail tracks (3.4 miles)
- Relocate Fitchburg commuter rail tracks and new Union Square branch light rail tracks (0.9 miles)
- Add or relocate seven stations – Lechmere, Union Square, Washington Street, Gilman Square, Lowell Street, Ball Square, and College Avenue
- Construct a vehicle maintenance and storage facility, including a transportation building and parking deck
- Replace/rehabilitate eight bridges
- Construct new drainage conduits, viaducts, retaining walls, and communications systems
- Improve roadways and intersections
- Purchase new Green Line vehicles (24)

Throughout the long history of planning this project, multiple public outreach events have taken place to keep members of the community informed and involved during all phases of the project development process. The public meetings and workshops were held in neighborhoods for which the new Green Line Stations will be built. For example, on June 21, 2017, the MBTA/MassDOT staff held a community meeting in Medford, MA, to give residents an update on the status of the GLX Design-Build implementation process.⁷ In addition to the project update discussion, it was noted during the presentation that the MBTA will develop a GLX Communication Working Group to:

- Facilitate timely issuance of near-term construction schedules
- Identify upcoming community impacts and other project updates
- Include community members, other stakeholders, and MBTA GLX team staff in the initial working group
- Include representation from the Design-Build team after the Design-Build Notice-to-proceed is issued

The MBTA/MassDOT has developed and implemented a comprehensive public engagement strategy for outreach during the design, engineering, and construction stages of the GLX project. Because of the design-build nature of this project, the MBTA has required that the selected contractor engage a full-time Title VI Coordinator to support public participation, respond to concerns, and support compliance reporting and related activities. The Public Engagement Plan as outlined in the project's Final Environmental Impact Statement is contained in Appendix 2-E.

MassDOT Security and Emergency Management Department

The MassDOT Security and Emergency Management Department handles all emergency management initiatives for all four divisions of MassDOT — the MBTA, MassDOT Highway Division, the Registry of Motor Vehicles, and the MassDOT Aeronautics Division — and works closely with the Massachusetts Port Authority (MassPort) which runs Logan and Worcester Airports, as well as Hanscom Field. As stated in the MBTA's 2016 Safety Plan, the MassDOT Security and Emergency Management Department is responsible for administering and maintaining the MBTA Emergency Management Plan (EMP) and other procedures, in addition to conducting and assessing emergency drills, exercises, training, and after-action reviews.

⁷ To learn more about this meeting or the GLX project, please see the project homepage at: <http://greenlineextension.eot.state.ma.us/>

Each emergency drill acts out the scenario of a plausible major mass casualty emergency involving the MBTA transit system. The department is also responsible for coordinating with external responders participating in the drill, including local fire, police, emergency medical services, hospital emergency room personnel, and regulatory agencies, as applicable. The MassDOT Emergency Management Department works in collaboration with other agencies including the Registry of Motor Vehicles, MassDOT Aeronautics Division, and MassPort to assist with planning and coordinating emergency drills, training videos, and community outreach, including finding community volunteers to participate in exercises. The department also reaches out to local newspapers, radio stations, and television shows to help recruit volunteers within the community where the drill will be held.

After a drill has concluded, volunteers and participants are asked to submit written feedback about their experience during the exercise, including citing any improvements that could be made to the evacuation process in the future. The purpose of these drills is to establish a learning environment for first responders and MBTA staff in situations where the public's health, safety, and security are in imminent danger. The MBTA has an obligation to develop policies and procedures for when critical incidents occur throughout the system and is responsible for conducting exercises to test their practices, in accordance with the Massachusetts Department of Public Utilities regulations.

On October 29, 2016, the MBTA and MassDOT conducted a subway evacuation drill in the City of Cambridge at Alewife Station, where responders and participants were given a scenario involving smoke on the train. In planning this exercise, multiple departments and local officials met for months to ensure the drill was carefully planned and executed. To support the exercise, the MassDOT Security and Emergency Management Department solicited volunteers to act as passengers, including some who were injured, during the simulated incident. Outreach for volunteers focused on area schools and local community-based organizations, and on local hospitals for emergency medical technicians and nursing staff. The Office of Systemwide Accessibility assisted the Emergency Management Team in finding participants with disabilities to ensure that first responders were given real-life scenarios in which they could practice their procedures of getting vulnerable passengers to safety. The MassDOT Security and Emergency Management Department, the MBTA/MassDOT ODCR and the MBTA Office of Systemwide Accessibility will continue to include communities and individuals who reflect the diverse profile and characteristics of the MBTA service area in these critical safety activities.

MBTA Transit Police

The MBTA Transit Police Department's mission is to maintain a safe environment for all riders throughout the system and all members of the community. As with many police organizations across the country, a valuable resource to help curb and proactively address public safety issues, such as crime, terrorism, or social disorder is the commitment to building trust and relationships with the community.

In providing excellent service to the community, while also respecting the differences that exist between neighborhoods, the MBTA Transit Police Department is structured into three geographical areas (designated as districts). The three districts divide into sectors that closely match the geographic boundaries of neighborhoods within the city of Boston, but still allow transit police to serve other cities and towns within their jurisdiction. A sergeant supervises each district and is overseen by one of two lieutenants at all times, during which they are all responsible for the quality of police service in their assigned areas, including engaging with the community to develop policing strategies tailored to local needs. Furthermore, the department places great emphasis on community policing as the cornerstone of the policing strategy. Community policing is designed to include the regular use of partnerships and problem-solving techniques that proactively address the immediate conditions that give rise to public safety issues. Each district engages in community outreach and involvement activities.

The MBTA Transit Police, moreover, participate in a variety of public engagement activities such as attending local community meetings, volunteering in youth programs, and launching the "See Something, Say Something" campaign. Some riders in minority and low-income communities believe that the "See Something, Say Something" initiative is helping to deter and discourage gang violence and drug use throughout the system. In addition, the ODCR in coordination with other departments, translated the "See Something, Say Something" public advisory announcement into Spanish, which is currently available in transit stations located in predominantly Spanish-speaking communities, and on select bus routes and rapid transit vehicles. Also, another useful tool for riders to remain vigilant and engaged is the utilization of a transit police mobile app, "See Say," which gives customers the flexibility and discretion to report a problem, call the police, and/or receive real-time alerts on their cell phones regarding events related to public safety.

Finally, a major focus for the MBTA Transit Police Department is participating in youth development programs. A few of the programs that are attended regularly by transit police include:

- Children’s Services of Roxbury (CSR) Mentoring Program: This program strives to connect Youth and Police in Partnership (YPP) in a program to provide youth with a mentor relationship that will help to ensure a successful transition to a healthy adulthood and create life-long connections.
- CSR Round Table Discussion: Monthly discussions held at youth lock-down facilities and alternative schools to address a particular issue that affects youth—such as, how to forge healthy interpersonal relationships, the potential negative effects of social media, and so forth.
- Youth/Police Dialogues hosted by the YWCA – Boston: A six-week program between youth and police that facilitates open communication to discuss issues that may help to break down biases and stereotypes between the two groups.
- Volley Against Violence (Sportsmen’s Tennis & Enrichment Center): A group of programs designed and offered by Sportsmen’s in an effort to decrease violence among Boston area youth by providing them with positive experiences, skill building to promote positive decision-making, and connections to adult role models, including police officers.

Office of Performance Management and Innovation

The Massachusetts Department of Transportation’s Office of Performance Management and Innovation (OPMI) is responsible for:

- Evaluating the goals and measures established by the department and its divisions, and monitoring reported results
- Recommending changes to proposed goals and measures as are appropriate to align them with the strategic priorities of the Secretary of Transportation
- Reporting regularly to the public on the progress that the department and its divisions are making to achieve stated goals⁸

⁸ An Act Modernizing the Transportation Systems of the Commonwealth

In meeting its statutory requirements, the Office of Performance Management and Innovation (OMPI) undertakes efforts to make performance information readily and publicly accessible. For instance, OMPI has developed an online dashboard that monitors the overall performance of the MBTA system, where riders are frequently updated on reliability, financial data, ridership, and customer satisfaction measures. Since its inception in 2009, MassDOT has utilized performance management throughout the agency, including the MBTA. After eight years of activity, MassDOT has fully integrated the concepts and tools of performance monitoring and management into enterprise processes and practices. Among other benefits, this approach helps the executive leadership team make strategic decisions, allows management-level staff to allocate personnel resources on a daily basis, and provides front-line employees with a picture of the impact their work has on improving the transportation system and the customer experience.⁹

To restate the MBTA's Service Delivery Policy, OMPI helped establish the metrics needed to measure transit quality and distribution of service throughout the system. These standards are used in the Title VI performance monitoring analysis, which ensures that no person is unjustly denied or discriminated against with regard to the "routing, scheduling, or quality of transportation service on the basis of race, color, or national origin."¹⁰ Moreover, the Service Delivery Policy provides the MBTA's Planning and Schedules Department with the standards needed to create a comprehensive Rolling Service Plan to improve the reliability of bus service throughout the system. The development of the Service Delivery Policy required an extensive public engagement process to solicit customer feedback on the proposed measures. The information below highlights the Service Delivery Policy public process that further demonstrates OMPI's commitment to community engagement.

MBTA Service Delivery Policy – Public Engagement Effort

Project Description:

The purpose of the Service Delivery Policy (SDP) is to set the standards needed for the MBTA to measure transit quality and allocation of service to ensure that riders have access to a high-quality transportation system throughout the MBTA service area. The SDP, developed by the OMPI, provides staff with tools and guidance to begin a bus service planning process that encompasses a variety of measures to improve the service. These measures include service availability

⁹ MassDOT's Annual Performance Report Fiscal Year 2016

¹⁰ FTA C 4702.1B Chap. IV -4

(span and frequency of service), reliability (schedule adherence, passenger wait times), and comfort (vehicle load and crowding). This policy also sets the standards and criteria for the MBTA's Title VI Service Performance Monitoring analysis to ensure that transit service is distributed equitably across the system.

OMPI conducted a comprehensive public participation process that involved surveying riders and facilitating both stakeholder and public meetings to learn more about the specific needs facing the community as it relates to transit. OMPI also participated in the DI/DB public process to continue engaging with riders from diverse communities to discuss how the SDP and the DI/DB policy work together to ensure that service design and operations do not result in discrimination on the basis of race, color, or national origin. OPMI then synthesized all the comments received during the public engagement process and developed a priority-setting strategy that focused on prioritizing certain standards and maintaining acceptable levels for all other measures. The SDP, attached in Appendix 2-F, was approved by the FMCB in January 2017.

Public Outreach Activities

The Service Delivery Public Engagement Process is summarized below.

- Collaborative process between the MBTA, MassDOT, the Central Transportation Planning Staff (CTPS), and stakeholders since early 2015
- Policy Advisory Committee of internal and external stakeholders met four times to draft objectives and review measures
- Technical Advisory Committee met seven times to determine measures based on best available data
- Online survey with more than 6,000 responses
- Ten workshops with community organizations
- Participated in the four DI/DB public meetings

MBTA Planning and Schedules Department

The Planning and Schedules Department is responsible for monitoring and reviewing transit services, recommending schedule or route changes, and developing transportation plans to improve service quality and performance. This department also prepares vehicle and crew assignments for the Operations Department and interfaces scheduled information with internal and external downstream systems, such as payroll, pick, daily operations, and public-facing timetables.

Following the January 2017 approval of a revised SDP by the FMCB, the Planning and Schedules Department began work with the new policy standards to construct a Service Plan, focusing primarily on improving bus service performance. This strategy is being designed to address each bus district prospectively on a regular, rolling basis and will recommend a number of tiered approaches that focus on updating scheduled running times, right-sizing frequency of service, and addressing overcrowding.

Public engagement for this effort is anticipated to be conducted by in-house staff with the support of consultant teams who have broad public engagement experience with MassDOT and the MBTA. It is anticipated that this work will involve assisting MBTA staff in administering multiple open houses and/or public meetings in each bus district. The effort will include non-traditional outreach methods, such as deploying trained street teams to conduct in-person interviews/information sessions at key bus stop locations throughout the system. The in-person interviews will be supplemented by an online feedback form for riders to complete. Other outreach methods will include emails through GovDelivery, a project website with an online comment tool, social media, and meeting flyers/postcards available in multiple languages.

Department of System-wide Accessibility

In 2006, the MBTA created a Department of System-wide Accessibility to guide the Authority's ongoing efforts to provide accessible transit services, in compliance with the Americans with Disabilities Act (ADA) and related legal protections against discrimination on the basis of disability. Articulated through a court settlement, the mission statement of SWA establishes a clear, public-facing objective regarding the interface between the public transit services provided by the Authority and the public served by the agency, namely that "all people with

disabilities must have every opportunity to be fully participating members of our community and that fundamental to this opportunity is the right and ability to use public transportation in an equal, effective, and dignified manner.”¹¹

On a daily basis, SWA serves as a clearinghouse for accessibility information, guidance, case studies, and best practices, and staff consists of subject matter experts on wide-ranging access-related issues, projects, and initiatives. To facilitate the crucial objective of providing accessible transit service across the MBTA’s fixed-route network, SWA has systematized a number of public engagement opportunities to understand the needs of the transit-riding public from an accessibility perspective and to include the advocacy community in the development of new initiatives to improve the accessibility compliance profile of the MBTA’s operation.

Below is a sample of recurring interfaces between the public and SWA staff, leadership, and project development partners:

- **Ad Hoc Vehicle Advisory Committee**

This group of customers and advocates is convened as needed to evaluate new vehicle design concepts at the early conceptual stages of any vehicle modification or procurement activity.

- **Settlement Agreement Semi-Annual Meetings**

Following a settlement agreement between the MBTA and the Boston Center for Independent Living (BCIL) in 2006 in which both parties agreed to strategic accessibility improvements across the MBTA network, including both capital investments and operating modifications, the MBTA has hosted semi-annual public meetings on progress and related initiatives. These meetings provide a public forum to discuss progress updates on settlement-agreement initiatives and each session includes a public input component to ensure that public sentiment is considered on an ongoing basis as part of the evaluation of achieving the objectives of the settlement agreement and as an opportunity to consider new and evolving access challenges as they are encountered.

¹¹ C.A. No. 02 CV 11504 MEL, preamble, dated April 10, 2006

- **Senior Leadership Field Work**

SWA's management team regularly attends local advocacy meetings, transit conferences, and other such public forums to publically share information on accessibility compliance efforts and innovations at the MBTA. It is common for these interface moments to include detailed information on travel training opportunities for the constituents of these advocacy groups and other organizations. It also ensures that the MBTA places these departmental leaders in a position to effectively coordinate with those individuals and organizations across the service area that either represent the community of individuals with disabilities or are positioned to spread vital information about improved access opportunities or to identify challenges in this regard.

- **Accessibility Advisory Committee to the MBTA**

The Access Advisory Committee to the MBTA (AACT) is an advocacy group that was created to provide the MBTA with independent third-party advice about transit accessibility for persons with disabilities and seniors. AACT holds monthly meetings to discuss issues related to accessible transportation. SWA is an integral partner with AACT, providing monthly reports on accessibility issues and innovations at the MBTA to AACT membership and leaders, serving as a liaison between AACT and the MBTA's fixed-route services, and seeking input on key initiatives (like accessibility considerations in the procurement of new vehicles). A recent initiative included a customer survey designed in collaboration between SWA and AACT to identify areas for possible accessibility improvements across the MBTA's service area.

- **Project-Level Support**

On an as-needed basis, SWA is available to provide recommendations around project-level public engagement strategies and highlight possible accessibility considerations that may be encountered by the project management team during the development process.

- **Complaint Handling**

SWA regularly works with ODCR on disability-related complaint investigations. This can include communicating with the complainant, respondent, or staff supervisors/managers to address issues presented in individual cases and to extrapolate from those considerations to develop Authority-wide initiatives, such as staff trainings, that can help avoid the risk of disability-related discrimination complaints going forward.

By continuing the compliance oversight and monitoring that is integral to the operation of SWA, as well as soliciting feedback from advocates, riders, and the general public, this office will continue to strive towards the goal of making the MBTA the global benchmark for accessible and inclusive public transportation.

Access Advisory Committee to the MBTA

AACT is an independent body that ensures the viewpoints of people with disabilities are shared with the MBTA. The Boston Region Metropolitan Planning Organization supports ACCT with a full-time staff person to assist with coordinating meetings and public outreach but does not have an official representation on the committee. ACCT works on a variety of issues to improve safety, efficiency, and accessibility of the MBTA system, including monitoring compliance with the ADA in coordination with the Office for Transportation Access, SWA, and other key MBTA departments.

AACT meets once a month with MBTA officials and paratransit operators to identify accessibility problems in the service area and develop innovative solutions. ACCT meetings are open to the public and convene on the fourth Wednesday of each month, between 1:00 PM and 3:00 PM, at the Massachusetts State Transportation Building in Boston. Meeting information is distributed in several formats, in accordance with ADA requirements. Additionally, upon request, AACT makes an effort to ensure a Sign Language interpreter is available at committee meetings.

ACCT's membership is open to the public, particularly persons with disabilities, seniors, or representatives of human services agencies. As a volunteer organization, ACCT requires members to attend regularly in order to maintain their eligibility to vote on a variety of policy issues and positions related to MBTA services or facilities. Members also elect a board of directors who are tasked with representing the interests of ACCT's constituency on many MBTA committees, including the Regional Transportation Advisory Council to the Boston Region Metropolitan Planning Organization.

MBTA Rider Oversight Committee

In 2004, the MBTA established the Rider Oversight Committee (ROC) to discuss customer-service improvements and service-quality issues. Through the ROC, which meets monthly, the MBTA has developed a structure for ongoing public participation in all aspects of the Authority's operations.

The MBTA ROC's mission statement is as follows:

“The MBTA ROC, a diverse group of riders, advocates, and MBTA employees, provides recommendations to the MBTA that communicate the needs and concerns of all passengers to assist the MBTA in providing affordable, safe, and quality service.”

The 21-member committee is comprised of members of the public and diverse advocacy groups throughout the MBTA service area. The MBTA provides staff support as a resource for ROC members, which includes assisting with scheduling conference rooms at the State Transportation Building at 10 Park Plaza, Boston, MA. MBTA staff updates the committee on information regarding transit service, and engages in dialogue about customer service-improvements and service quality issues. The ROC live streams its meetings and invites a range of guests to discuss topical issues. ODCR has provided this group with a general orientation to Title VI and review of the equity policy development work that took place in 2016.

The ROC also addresses various transit-related issues, including but not limited to the MBTA's fare policy and structure, fare equity issues, service improvements, service quality standards, ridership data collection, and alternative funding sources for both the capital program and the operating budget.

MBTA/MassDOT Office of Diversity and Civil Rights

ODCR assists all MassDOT divisions and the MBTA in the development, implementation, and oversight of all policies and programs regarding civil rights in the Commonwealth's transportation system. ODCR ensures that MassDOT and the MBTA comply with the USDOT's and federal modal agency civil rights regulations, in both internal and external programs.

ODCR is comprised of both internal and external operations of which there are several subunits tasked with specific program area compliance responsibilities. The list below highlights the various units and subunits within ODCR:

- Internal Unit (Equal Employment Opportunity and Affirmative Action)
- External Unit (Disadvantaged Business Enterprises and Contractor Compliance)
- Access Unit (Title VI and ADA)
- Investigations (processing employee and public discrimination allegations)

The profile for engaging the public on MBTA matters has been enhanced during this past reporting cycle, with the employment of a full-time dedicated MBTA Title VI Specialist, whose role is to provide front-line support in creating, documenting, implementing, and reporting on Title VI. The MBTA Title VI Specialist provides technical assistance on civil rights matters raised by departments across the Authority on a range of issues, including public engagement efforts, to help ensure diverse outreach and participation among minority, LEP and low-income communities. This role is supervised by the ODCR Manager of Federal Programs, with support and guidance provided by MassDOT's Senior Title VI Specialist.

During the triennial cycle, the MBTA Title VI Specialist, MassDOT's Senior Title VI Specialist, and the Manager of Federal Programs focused on issue-specific and general orientation meetings with key transportation-interested community nonprofits and activists who represent diverse constituencies. Among the meetings conducted were the following:

- Introduction to Title VI with Transportation 4 Massachusetts Collaborative
- Introduction to Title VI with leader of local NAACP chapter
- Meetings with ad hoc transit advocacy stakeholder group on proposed DI/DB and Service Delivery policies
- Community meetings on DI/DB policy development in Lynn, Roxbury, Boston MBTA headquarters and Mattapan
- Presentations to MBTA Rider Oversight Committee on Title VI
- Meeting with MBTA Rider Oversight Committee members on autonomous vehicles
- Presentation on Language Access and effort to include Spanish on Blue Line and bus service at Veronica Robles Cultural Center
- Presentation to the Access Advisory Committee to the MBTA
- Panel presenter on Creating Language Assistance Plans for Asian Pacific Islanders Community Action Network, Language Access Conference
- Presentation on Public Participation Plan to American Council of Engineering Companies, Massachusetts Chapter (ACEC-MA)

As noted above, in 2016, ODCR, in coordination with other departments, revised the MBTA's DI/DB Policy, which included a public engagement strategy that featured both online comments solicitation and in-person public meetings.

The public meeting component began with two key stakeholder meetings with organizations focused on civil rights and transit. The purpose of these meetings was to educate community leaders on the complex DI/DB policy structure, the need for the MBTA to revise this policy, and preliminary recommended standards, and to offer advocates an opportunity to weigh in on proposed standards and definitions. The result of these conversations was that the MBTA incorporated community-based recommendations into its DI/DB policy before board review and approval.

Part of this work included developing a computer-based graphical interface to depict the impact of types of service changes for disparity and disproportionality at different threshold levels that helped key leaders recommended standards and approaches for broader community engagement. The MBTA's PPP helped ensure that the meetings we conducted were informative, and engaged a diverse group of community leaders; and that it further expanded the visibility of and intention to engage with key Title VI leadership. Below is a list of the key stakeholder groups that participated the policy-development process:

- Transportation for Massachusetts (T4MA)
- Lawyers Committee for Civil Rights and Economic Justice
- Charles Hamilton Houston Institute
- Conservation Law Foundation
- Codman Square Neighborhood Development Corporation (CSNDC)
- Massachusetts Institute of Technology (MIT)
- Black Economic Justice Coalition
- Greater Four Corners Action Coalition
- United Neighbors of Fitchburg
- Ridership Oversight Committee
- The Alliance for Business Leadership
- Action for Boston Community Development (ABCD)
- Massachusetts Senior Action Council
- Alternatives for Community and Environment (ACE)

The proposed policies were then brought to the larger community through a series of public meetings at which members of the strategic team contributed time, resources, and participation to ensure that the public was well informed and could provide input on these critical policies.

MBTA/MassDOT staff held four public meetings in Lynn, Roxbury, Boston, and Mattapan to solicit comments from the general public. The public meetings gave members of the community an opportunity to engage in the policy-development process and share their experiences in riding the system. During these meetings, MBTA/MassDOT staff explained the role of the DI/DB policy while providing a visual representation of theoretical service changes and comparing the proposed policy changes with the proposed standards and definitions. The public meetings were designed to educate the public on the proposed policy while gathering various points of view from diverse riders to develop informed recommendations for the final policy draft.

To encourage participation, MBTA/MassDOT staff employed various methods and techniques to connect with riders and share information in several languages about the proposed DI/DB policy. The outreach activities conducted during this process included door to door outreach in the Mattapan, Dorchester, and Roxbury communities, attending community meetings, and email blasts to reach local organizations throughout the MBTA service area.

Central Transportation Planning Staff

CTPS, staff to the Boston Region Metropolitan Planning Organization, has a long-standing relationship with the MBTA to provide support to the Title VI program and various forms of technical assistance. This support falls into the following areas:

- Service and fare equity analysis
- Survey development, implementation, and analysis
- Data collection and analysis
- Policy development and analysis
- Planning studies
- Operations analysis

A component of this support is assistance to the MBTA in communicating with and engaging the public. CTPS prepares handouts and other materials for distribution to the public, presents policies and technical materials at stakeholder and public meetings, develops interactive web-based educational tools to enhance stakeholder understanding and obtain feedback, explains analyses of policy proposals and implementation during stakeholder and public meetings, and responds to questions about the analyses.

During the three years ending fiscal year 2017, CTPS assisted the MBTA with the following:

- Developing the new MBTA DI/DB Policy
- Developing the new MBTA SDP
- Obtaining customer input on the MBTA SDP
- Evaluating the ridership, revenue, and equity impacts of the FY 2017 fare changes
- Evaluating the ridership, revenue, and equity impacts of the Youth Pass Program
- Developing criteria for determining which accessibility improvements would have the greatest positive impacts on seniors, people with disabilities, and others who rely on accessible infrastructure, and developing an algorithm for prioritizing accessibility improvements for the MBTA's Plan for Accessible Transit Infrastructure (PATI)
- Conducting the MBTA's annual Title VI performance monitoring
- Developing standards and ensuring consistency in all surveys conducted about the MBTA
- Developing cost-allocation models for the MBTA
- Collecting data for and reporting to the National Transit Database

Also, in its role serving the Boston Region Metropolitan Planning Organization, CTPS has promoted the MBTA's public outreach process to people who subscribe to or follow the Boston Region MPO public involvement notices. CTPS has used MBTA materials in its own social media accounts, retweeting calls for public input and involvement in meetings and posting materials online. In addition, CTPS has used its email distribution list to promote the MBTA's public outreach efforts.

LANGUAGE ASSISTANCE PLAN (FTA C 4702.1B, III.9)

“After completing the Four Factor Analysis, the recipient shall use the results of the analyses to determine which language assistance services are appropriate. Additionally, the recipient shall develop an assistance plan to address the identified needs of the LEP population(s) it serves. The DOT LEP Guidance recognizes that certain recipients, such as those serving very few LEP persons or those with very limited resources, may choose not to develop a written plan. However, FTA has determined it is necessary to require its recipients to develop an assistance plan in order to ensure compliance.”

The MBTA’s Language Assistance Plan is provided in Appendix 2-A.

MINORITY REPRESENTATION ON PLANNING AND ADVISORY BODIES (FTA C 4702.1B, III.10)

“Title 49 CFR Section 21.5(b) (1) (vii) states that a “recipient may not, on the grounds of race, color, or national origin, “deny a person the opportunity to participate as a member of a planning, advisory, or similar body which is an integral part of the program.” Recipients that have transit-related, non-elected planning boards, advisory councils or committees, or similar committees, the membership of which is selected by the recipient, must provide a table depicting the racial breakdown of the membership of those committees, and a description of efforts made to encourage the participation of minorities on such committees.”

The MBTA does not have appointed transit-related boards, councils, or committees that meet this description. The five-member FMCB is the governing body of the MBTA, and members are appointed by the Governor of Massachusetts, pursuant to legislation, “An Act for a Reliable, Sustainable Massachusetts Bay Transportation Authority.”

As stated in Section 2 (a) of this legislation, “There shall be within the department of transportation, and reporting to the Secretary of Transportation, a Massachusetts Bay Transportation Authority Fiscal and Management Control Board (in this section, the board). Section 2 (b) further states that, the board shall consist of 5 members appointed by the Governor, 1 of whom shall be an individual referred to the Governor by the President of Senate, and 1 of whom shall be an individual referred to the Governor by the Speaker of the House.”¹²

¹² For more information about this legislation, please see: An Act for a Reliable Sustainable Massachusetts Bay Transportation Authority, H, 3613

Members of the FMCB are directed to serve for the entire time that the board is in existence, unless removed by the Governor. Any vacancy in the board shall be filled by the Governor in the same manner as the original appointment of the member who is being replaced. This process is not influenced by the agency that will receive the appointee(s).

SUBRECIPIENT ASSISTANCE AND MONITORING (FTA C 4702.1B, III.11 AND 12)

“In accordance with 49 CFR 21.9(b), and to ensure that subrecipients are complying with the DOT Title VI regulations, primary recipients must monitor their subrecipients for compliance with the regulations.”

While it remains uncommon for the MBTA to have any significant number of FTA-funded subrecipients, the Authority’s fiscal and project management processes include a requirement for subrecipients to acknowledge their Title VI obligations, submit a Title VI Program, and make any adjustments/improvements to their activities as identified by the MBTA to ensure their compliance. In evaluating the effectiveness of this existing monitoring process while preparing this triennial report, the MBTA’s Title VI staff has identified several improvements that will be implemented during the interim period between this submission and the forthcoming 2020 submission. These improvements are articulated in more detail in the sections that follow.

During this triennial reporting period, the MBTA’s FTA-funded subrecipient universe is limited to three organizations, one of which is a carry-over of the single subrecipient from the previous triennial cycle with which the MBTA had partnered on a multi-year project. This subrecipient, the Dorchester Bay Economic Development Corporation, had partnered with the MBTA to assist with public engagement regarding the opening of new commuter rail stations along the Fairmount line. The majority of this subrecipient’s public engagement work was conducted during the previous triennial reporting period when the new stations were still in development and construction. With several new stations already operational during this reporting period, Dorchester Bay’s public engagement activities have been significantly reduced. As a result, the risk of potential Title VI implications is minimal as it relates to their MBTA-related outreach on the Fairmount line. Therefore, the active monitoring of this subrecipient was scaled back to allow more time for the MBTA’s Title VI Unit to concentrate on other matters such as pending equity analyses, required policy development, and production of this new triennial program.

Currently, for all federally aided MBTA projects that include partnering with and funding a subrecipient organization, the MBTA designates a project manager whose oversight responsibilities include monitoring compliance with federal requirements, including those described in the Title VI guidelines of FTA C 4702.1B. This process is meant to ensure that all subrecipients comply with all applicable laws and regulations, including USDOT Title VI regulations. The project managers conduct routine audits to ensure that the subrecipient is meeting project deadlines and is compliant with applicable USDOT and FTA regulations. Currently, project managers rely on a subrecipient monitoring checklist, included as Appendix 2-G, that encompasses all compliance areas, including Title VI, and employ desk-audit strategies to achieve compliance. By expanding this monitoring process to include more active oversight of subrecipients through technical assistance and onsite compliance reviews—a strategy currently in use by MassDOT—ODCR’s Title VI staff is aiming to implement a more holistic strategy for ensuring meaningful compliance with Title VI obligations by subrecipients. Appendix 2-H includes MassDOT’s Title VI subrecipient review procedures.

The MassDOT subrecipient monitoring process, which will serve as a model for upcoming revisions to the MBTA’s process, is in place in the Highway and Rail and Transit divisions of the agency. This adaptive monitoring and technical assistance strategy is reflective of a risk-based prioritization to focus the limited monitoring resources of the agency and to effectively modulate compliance-related initiatives to meet the nature of the subrecipient organization and inherent Title VI risk factors in their work. For instance, MassDOT can provide substantial sustained collaboration with the regional planning agencies while still ensuring that single-cycle grant recipients are operating under compliant Title VI programs. With these modifications to the MBTA’s monitoring strategy, the MBTA is aiming for a more efficient monitoring process that maximizes the limited resources available for this work. Instituting field assessments are a key to ensuring compliance with Title VI regulations, such as: the posting and location of the Title VI Notice, evidence of distribution of vital documents in different languages, in accordance with the MBTA’s Language Assistance Plan, and complaint procedures, as applicable. This work will be reflected upon in the subsequent MBTA Title VI triennial submission in 2020.

TITLE VI EQUITY ANALYSIS FOR DETERMINATION OF LOCATION OF CONSTRUCTED FACILITIES (FTA C 4702.1B, III.13)

Title 49 CFR Section 21.9(b)(3) states, “In determining the site or location of facilities, a recipient or applicant may not make selections with the purpose or effect of excluding persons from, denying them the benefits of, or subjecting them to discrimination under any program to which this regulation applies, on the grounds of race, color, or national origin; or with the purpose or effect of defeating or substantially impairing the accomplishment of the objectives of the Act or this part.” Title 49 CFR part 21, Appendix C, Section (3)(iv) provides, “The location of projects requiring land acquisition and the displacement of persons from their residences and businesses may not be determined on the basis of race, color, or national origin.” For purposes of this requirement, “facilities” does not include bus shelters, as these are transit amenities and are covered in Chapter IV, nor does it include transit stations, power substations, etc., as those are evaluated during project development and the NEPA process. Facilities included in this provision include, but are not limited to, storage facilities, maintenance facilities, operations centers, etc. In order to comply with the regulations:

As part of the MBTA’s Wachusett Extension Project, a new Fitchburg Line layover facility was built in Westminster, replacing the existing layover facility in Lunenburg. The new facility is located approximately 1.5 miles west of Wachusett Station in the Westminster Business Park, and contains six train storage tracks, an employee parking area, a maintenance building, and an electrical substation. The siting of the Westminster layover facility was determined through the National Environmental Policy Act (NEPA) process, which resulted in a Finding of No Significant Impact (FONSI). Since the siting of the facility was evaluated during project development and the NEPA process, the MBTA is not required to complete a Title VI equity analysis with regard to the determination of the location of the facility, as stated in FTA C 4702.1B, III.13. A copy of the FONSI for the Wachusett Extension Project is provided in Appendix 2-I.



THIS PAGE INTENTIONALLY BLANK



Chapter 3: Demographic and Service Profile Maps and Charts

For each Title VI triennial program update, the MBTA provides maps and charts depicting the demographics of the service area, using the most recently available US Census data. These materials are used to identify neighborhoods and municipalities that have higher concentrations of minority and low-income populations, and their spatial relationship in reference to the location of MBTA transit services, transit facilities, and planned system improvements.

The MBTA uses the Federal Transit Administration's (FTA) Title VI guidelines for defining a minority person as one who identifies as any of the following:

- American Indian and Alaska Native, which refers to people having origins in any of the original peoples of North and South America (including Central America), and who maintain tribal affiliation or community attachment.
- Asian, which refers to people having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent, including, for example, Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, the Philippine Islands, Thailand, and Vietnam.
- Black or African American, which refers to people having origins in any of the Black racial groups of Africa.

- Hispanic or Latino, which includes persons of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin, regardless of race.
- Native Hawaiian or Other Pacific Islander, which refers to people having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands.

As encouraged by FTA's Title VI guidelines, the MBTA uses a locally developed threshold for defining a low-income individual. Since the cost of living in Massachusetts is much higher than the national average, the MBTA defines a low-income individual as one who resides in a household that has a combined income less than two times the federal poverty level, determined using the US Department of Health and Human Services' (HHS) poverty guidelines.

To identify neighborhoods that have higher concentrations of minority and/or low-income populations on each demographic map, the FTA requires transit operators to shade in census tracts where the percentage of the minority and/or low-income population exceeds the average minority and/or low-income percentage of the population for the service area as a whole. Since the MBTA provides different modes of service that primarily serve distinct geographic areas with different demographics, the MBTA has defined two separate service areas: one for the urban fixed-route transit, or core, service area, and a second for the commuter rail system.

- **Core service area:** The core service area is comprised of the 65 municipalities that have access to MBTA bus and rapid transit services. Using data from the 2010 US Census, 31.3 percent of the population in the core service area are members of minority groups, and a minority census tract is defined as one in which the minority percentage of the population exceeds 31.3 percent. Using data from the 2010–14 American Community Survey (ACS) five-year estimates, 24.7 percent of the population in the core service area resides in households that have a combined income less than two times the federal poverty level, and a low-income census tract is defined as one in which the percent of the population residing in households that have a combined income less than two times the federal poverty level exceeds 24.7 percent.
- **Commuter rail service area:** The commuter rail service area is comprised of the 175 municipalities that have access to MBTA commuter rail service. Using data from the 2010 US Census, 26.2 percent of the population in the commuter rail service area are members of minority groups, and a minority census tract is defined as one in which the

minority percentage of the population exceeds 26.2 percent. Using data from the 2010–14 ACS five-year estimates, 23.3 percent of the population in the commuter rail service area resides in households that have a combined income less than two times the federal poverty level, and a low-income census tract is defined as one in which the percent of the population residing in households that have a combined income less than two times the federal poverty level exceeds 23.3 percent.

The remainder of this chapter contains a set of demographic maps that shows the location of MBTA transit services, transit facilities, major transit trip generators, major streets and highways, and planned system improvements. Each map has a version “a” that references the extent of the 175-municipality commuter rail service area and a version “b” that references the extent of the 65-municipality core service area. Accompanying each map is a description of the distribution of the items that are depicted.

Figures 3-1a and 3-1b show MBTA services and fixed transit facilities (parking lots; transit routes, lines, and stations; and bus shelters) in relation to the minority and low-income populations in each of the MBTA service areas.

Figure 3-1a shows that while the majority of census tracts served by the MBTA commuter rail outside of the core service area are neither minority nor low-income, most of the minority and/or low-income areas outside of the core are either directly served by or are near commuter rail service. Tables 3-1, 3-2, and 3-3 summarize the distribution of commuter rail and boat stations and commuter rail and boat parking lots across minority and low-income census tracts in the commuter rail service area.

Table 3-1
Distribution of Commuter Rail and Boat Transit Facilities:
Number and Percentage of Facilities by Tract Classification

Facility	Total Number of Facilities	Number of Facilities in Minority Tracts	Number of Facilities in Low-Income Tracts	Percentage of Facilities in Minority Tracts	Percentage of Facilities in Low-Income Tracts
Commuter rail/boat station	146	41	47	28%	32%
Commuter rail/boat parking	118	22	28	19%	24%

Note: For tracts in the MBTA commuter rail service area. A line improvement was counted as benefitting a station upstream or downstream of the improvement if the improvement enhanced service or reliability for riders accessing the system via that station. South Coast Rail was omitted because proposed station locations are located outside of the current commuter rail service area.

Table 3-2
 Distribution of Commuter Rail and Boat Transit Facilities:
 Number of Facilities per 100 Tracts, by Tract Classification

Facility	Number of Facilities in Minority Tracts, per 100 Minority Tracts	Number of Facilities in Nonminority Tracts, per 100 Nonminority Tracts	Number of Facilities in Low-Income Tracts, per 100 Low-Income Tracts	Number of Facilities in Non-Low-Income Tracts, per 100 Non-Low-Income Tracts
Commuter rail/boat station	10	16	11	16
Commuter rail/boat parking	5	15	7	14

Note: For tracts in the MBTA commuter rail service area. A line improvement was counted as benefitting a station upstream or downstream of the improvement if the improvement enhanced service or reliability for riders accessing the system via that station. South Coast Rail was omitted because proposed station locations are located outside of the current commuter rail service area.

Table 3-3
 Distribution of Commuter Rail and Boat Transit Facilities:
 Percentage of Tracts with Facility, by Tract Classification

Facility	Percentage of Minority Tracts with Facility	Percentage of Nonminority Tracts with Facility	Percentage of Low-Income Tracts with Facility	Percentage of Non-Low-Income Tracts with Facility
Commuter rail/boat station	9%	14%	10%	14%
Commuter rail/boat parking	5%	14%	6%	13%

Note: For tracts in the MBTA commuter rail service area. A line improvement was counted as benefitting a station upstream or downstream of the improvement if the improvement enhanced service or reliability for riders accessing the system via that station. South Coast Rail was omitted because proposed station locations are located outside of the current commuter rail service area.

Figure 3-1b shows that much of the core service area is classified as minority and/or low income, and that more bus and rapid transit facilities are located in minority and/or low-income areas than are not. Tables 3-4, 3-5, and 3-6 summarize the distribution of bus shelters, rapid transit stations, and rapid transit parking lots across minority and low-income census tracts in the core service area.

Table 3-4
 Distribution of Bus and Rapid Transit Facilities:
 Number and Percentage of Facilities by Tract Classification

Facility	Total Number of Facilities	Number of Facilities in Minority Tracts	Number of Facilities in Low-Income Tracts	Percentage of Facilities in Minority Tracts	Percentage of Facilities in Low-Income Tracts
Bus shelter	747	495	531	66%	71%
Rapid transit station	119	64	77	54%	65%
Rapid transit parking	25	16	15	64%	60%

Note: For tracts in the MBTA commuter rail service area. A line improvement was counted as benefitting a station upstream or downstream of the improvement if the improvement enhanced service or reliability for riders accessing the system via that station. South Coast Rail was omitted because proposed station locations are located outside of the current commuter rail service area.

Table 3-5
 Distribution of Bus and Rapid Transit Facilities:
 Number of Facilities per 100 Tracts, by Tract Classification

Facility	Number of Facilities in Minority Tracts, per 100 Minority Tracts	Number of Facilities in Nonminority Tracts, per 100 Nonminority Tracts	Number of Facilities in Low-Income Tracts, per 100 Low-Income Tracts	Number of Facilities in Non-Low-Income Tracts, per 100 Non-Low-Income Tracts
Bus shelter	205	71	202	65
Rapid transit station	27	16	29	13
Rapid transit parking	7	3	6	3

Note: For tracts in the MBTA commuter rail service area. A line improvement was counted as benefitting a station upstream or downstream of the improvement if the improvement enhanced service or reliability for riders accessing the system via that station. South Coast Rail was omitted because proposed station locations are located outside of the current commuter rail service area.

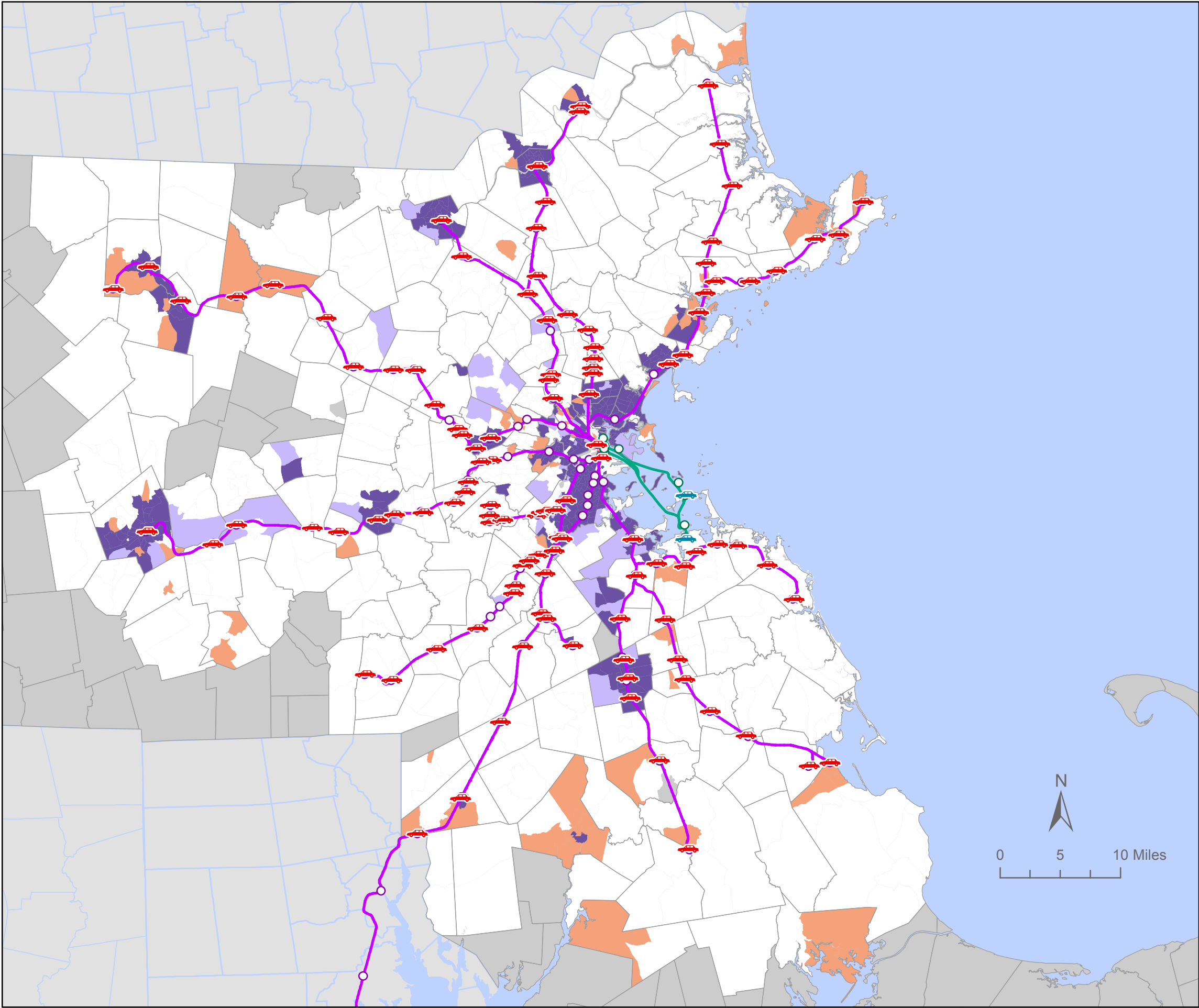
Table 3-6
 Distribution of Bus and Rapid Transit Facilities:
 Percentage of Tracts with Facility, by Tract Classification

Facility	Percentage of Minority Tracts with Facility	Percentage of Nonminority Tracts with Facility	Percentage of Low-Income Tracts with Facility	Percentage of Non-Low-Income Tracts with Facility
Bus shelter	76%	46%	77%	43%
Rapid transit station	18%	8%	17%	8%
Rapid transit parking	6%	3%	5%	3%

Note: For tracts in the MBTA commuter rail service area. A line improvement was counted as benefitting a station upstream or downstream of the improvement if the improvement enhanced service or reliability for riders accessing the system via that station. South Coast Rail was omitted because proposed station locations are located outside of the current commuter rail service area.

FIGURE 3-1a
MBTA 2017 Title VI Report

**MBTA Fixed Transit
 Facilities: Commuter
 Rail Service Area**



MBTA Transit Facility

- Commuter rail station with parking
- Commuter boat station with parking
- Commuter rail station
- Commuter boat station
- Commuter rail line
- Commuter boat route

Minority and Low-Income Classification

- Minority and low-income tract
- Minority tract
- Low-income tract
- Nonminority, non-low-income tract
- Outside MBTA commuter rail service area

In the 175 municipalities of the MBTA commuter rail service area, 26.2% of the residents were members of minority groups in 2010. A minority census tract is defined as one in which the minority percentage exceeds 26.2%.

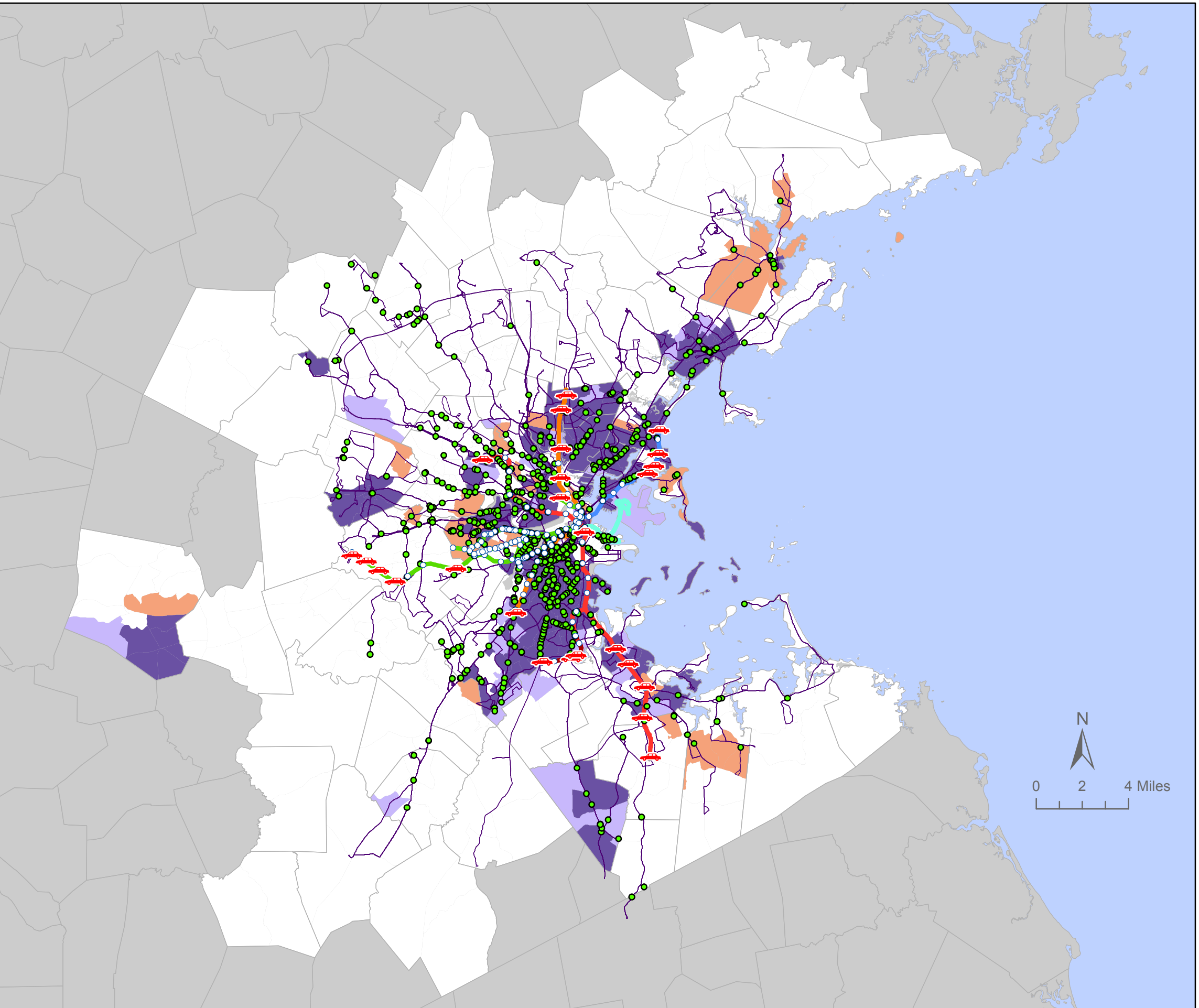
In the 175 municipalities of the MBTA commuter rail service area, 23.3% of the residents lived in households with incomes below two times the federal poverty level in 2014. A low-income census tract is defined as one in which the percentage of residents living in households with incomes below two times the federal poverty level exceeds 23.3%.



THIS PAGE INTENTIONALLY BLANK

FIGURE 3-1b
MBTA 2017 Title VI Report

**MBTA Fixed Transit
 Facilities: Core
 Service Area**



- MBTA Transit Facility**
- Rapid transit station with parking
 - Rapid transit station
 - Bus shelter
 - Blue Line
 - Green Line
 - Orange Line
 - Red Line
 - Mattapan Line
 - Silver Line
 - Bus route
- Minority and Low-Income Classification**
- Minority and low-income tract
 - Minority tract
 - Low-income tract
 - Nonminority, non-low-income tract
 - Outside MBTA core service area

In the 65 municipalities of the MBTA core service area, 31.3% of the residents were members of minority groups in 2010. A minority census tract is defined as one in which the minority percentage exceeds 31.3%.

In the 65 municipalities of the MBTA core service area, 24.7% of the residents lived in households with incomes below two times the federal poverty level in 2014. A low-income census tract is defined as one in which the percentage of residents living in households with incomes below two times the federal poverty level exceeds 24.7%.



THIS PAGE INTENTIONALLY BLANK

Figures 3-2a and 3-2b show MBTA operational facilities (remote layover facilities, maintenance facilities, offices, yards, and shops) in relation to the minority and low-income populations in each of the MBTA service areas.

Figure 3-2a shows that the majority of tracts served by the MBTA commuter rail outside of the core service area are neither minority nor low-income, and a majority of the remote layover facilities are located at or near the ends of commuter rail lines in census tracts that are neither minority nor low-income. Tables 3-7, 3-8, and 3-9 summarize the distribution of commuter rail layover facilities and maintenance facilities across minority and low-income census tracts in the commuter rail service area.

Table 3-7
Distribution of Commuter Rail Operational Facilities:
Number and Percentage of Facilities by Tract Classification

Facility	Total Number of Facilities	Number of Facilities in Minority Tracts	Number of Facilities in Low-Income Tracts	Percentage of Facilities in Minority Tracts	Percentage of Facilities in Low-Income Tracts
Layover facility	11	2	3	18%	27%
Maintenance facility	5	3	2	60%	40%

Note: For tracts in the MBTA commuter rail service area. A line improvement was counted as benefitting a station upstream or downstream of the improvement if the improvement enhanced service or reliability for riders accessing the system via that station. South Coast Rail was omitted because proposed station locations are located outside of the current commuter rail service area.

Table 3-8
Distribution of Commuter Rail Operational Facilities:
Number of Facilities per 100 Tracts, by Tract Classification

Facility	Number of Facilities in Minority Tracts, per 100 Minority Tracts	Number of Facilities in Nonminority Tracts, per 100 Nonminority Tracts	Number of Facilities in Low-Income Tracts, per 100 Low-Income Tracts	Number of Facilities in Non-Low-Income Tracts, per 100 Non-Low-Income Tracts
Layover facility	<1	1	<1	1
Maintenance facility	<1	<1	<1	<1

Note: For tracts in the MBTA commuter rail service area. A line improvement was counted as benefitting a station upstream or downstream of the improvement if the improvement enhanced service or reliability for riders accessing the system via that station. South Coast Rail was omitted because proposed station locations are located outside of the current commuter rail service area.

Table 3-9
Distribution of Commuter Rail Operational Facilities:
Percentage of Tracts with Facility, by Tract Classification

Facility	Percentage of Minority Tracts with Facility	Percentage of Nonminority Tracts with Facility	Percentage of Low-Income Tracts with Facility	Percentage of Non-Low-Income Tracts with Facility
Layover facility	<1%	1%	<1%	1%
Maintenance facility	<1%	<1%	<1%	<1%

Note: For tracts in the MBTA commuter rail service area. A line improvement was counted as benefitting a station upstream or downstream of the improvement if the improvement enhanced service or reliability for riders accessing the system via that station. South Coast Rail was omitted because proposed station locations are located outside of the current commuter rail service area.

Figure 3-2b shows that much of the core service area is classified as minority and/or low-income, and that more MBTA offices and operational facilities are located in census tracts that are minority and/or low-income than are not. There are clusters of facilities both north and south of downtown Boston in non-residential areas. The rapid transit facilities are generally located at or near the ends of the lines, and the bus facilities are distributed throughout the core service area. Most of the MBTA offices are located in the city of Boston. Tables 3-10,

3-11, and 3-12 summarize the distribution of MBTA offices and bus and rapid transit garages, yards, and shops across minority and low-income census tracts in the core service area.

Table 3-10
Distribution of Bus and Rapid Transit Operational Facilities:
Number and Percentage of Facilities by Tract Classification

Facility	Total Number of Facilities	Number of Facilities in Minority Tracts	Number of Facilities in Low-Income Tracts	Percentage of Facilities in Minority Tracts	Percentage of Facilities in Low-Income Tracts
MBTA office	9	8	7	89%	78%
Garage, yard, or shop	33	13	12	39%	36%

Note: For tracts in the MBTA commuter rail service area. A line improvement was counted as benefitting a station upstream or downstream of the improvement if the improvement enhanced service or reliability for riders accessing the system via that station. South Coast Rail was omitted because proposed station locations are located outside of the current commuter rail service area.

Table 3-11
Distribution of Bus and Rapid Transit Operational Facilities:
Number of Facilities per 100 Tracts, by Tract Classification

Facility	Number of Facilities in Minority Tracts, per 100 Minority Tracts	Number of Facilities in Nonminority Tracts, per 100 Nonminority Tracts	Number of Facilities in Low-Income Tracts, per 100 Low-Income Tracts	Number of Facilities in Non-Low-Income Tracts, per 100 Non-Low-Income Tracts
MBTA office	3	<1	3	<1
Garage, yard, or shop	5	6	5	6

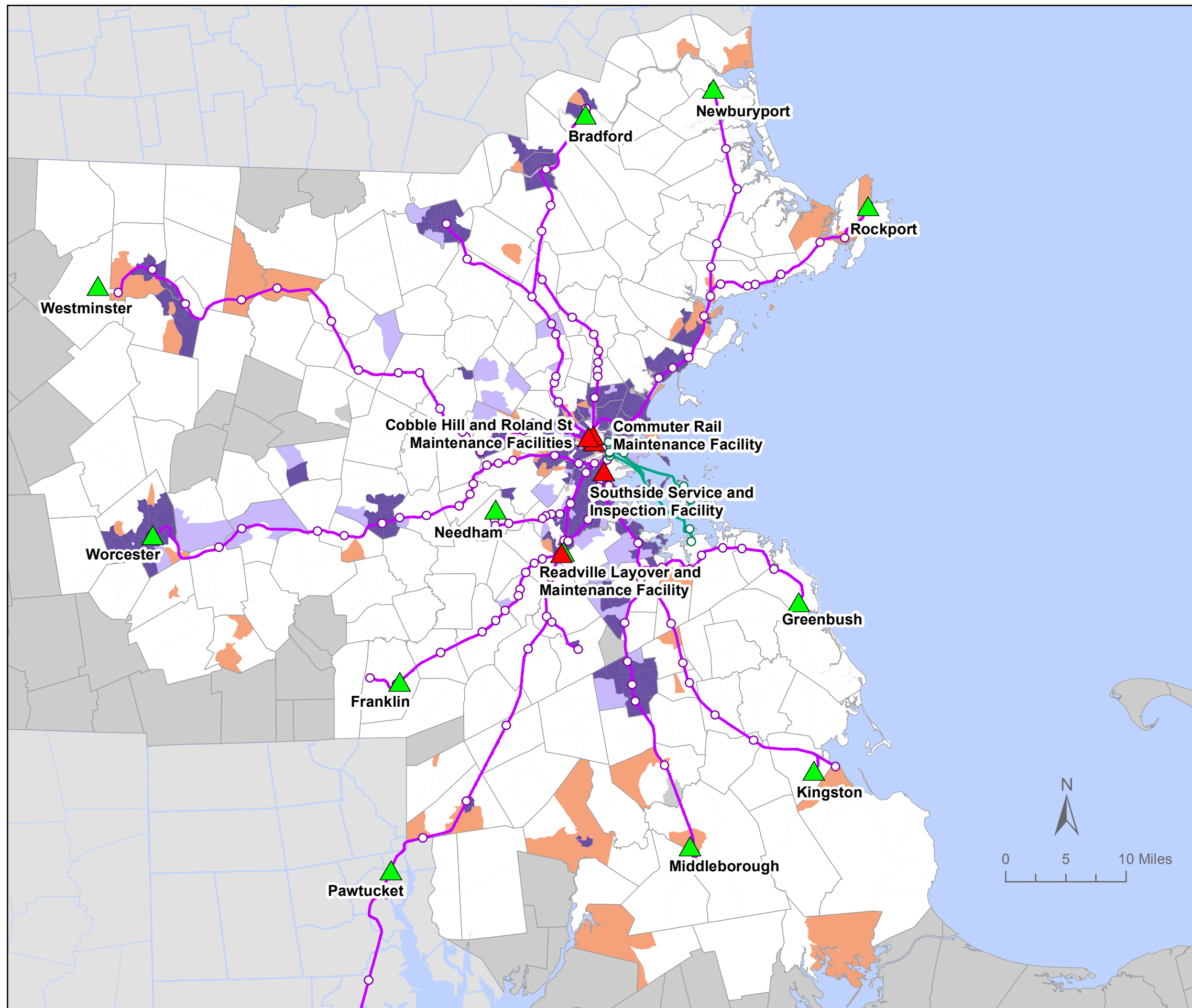
Note: For tracts in the MBTA commuter rail service area. A line improvement was counted as benefitting a station upstream or downstream of the improvement if the improvement enhanced service or reliability for riders accessing the system via that station. South Coast Rail was omitted because proposed station locations are located outside of the current commuter rail service area.



THIS PAGE INTENTIONALLY BLANK

FIGURE 3-2a
MBTA 2017 Title VI Report

**MBTA Operational
 Facilities: Commuter Rail
 Service Area**



MBTA Operational Facility

- ▲ Maintenance facility
- ▲ Remote layover facility

MBTA Transit Facility

- Commuter rail station
- Commuter boat station
- Commuter rail line
- Commuter boat route

Minority and Low-Income Classification

- Minority and low-income tract
- Minority tract
- Low-income tract
- Nonminority, non-low-income tract
- Outside MBTA commuter rail service area

In the 175 municipalities of the MBTA commuter rail service area, 26.2% of the residents were members of minority groups in 2010. A minority census tract is defined as one in which the minority percentage exceeds 26.2%.

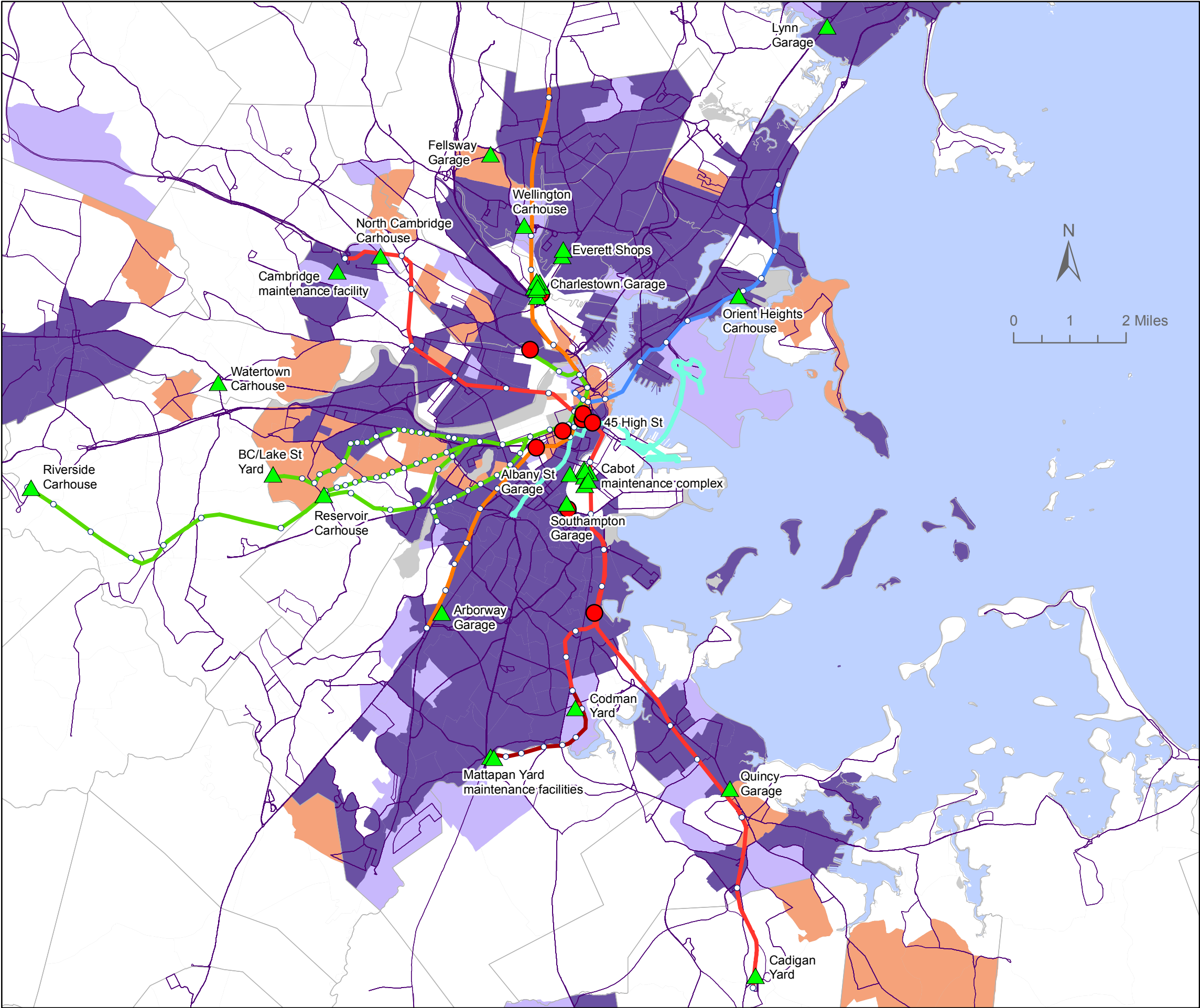
In the 175 municipalities of the MBTA commuter rail service area, 23.3% of the residents lived in households with incomes below two times the federal poverty level in 2014. A low-income census tract is defined as one in which the percentage of residents living in households with incomes below two times the federal poverty level exceeds 23.3%.



THIS PAGE INTENTIONALLY BLANK

FIGURE 3-2b
MBTA 2017 Title VI Report

**MBTA Operational
 Facilities: Core
 Service Area**



MBTA Facility

- ▲ MBTA garage, yard, or shop
- MBTA office

MBTA Transit

- Rapid transit station
- Bus route
- Blue Line
- Green Line
- Orange Line
- Red Line
- Mattapan Line
- Silver Line

Minority and Low-Income Classification

- Minority and low-income tract
- Minority tract
- Low-income tract
- Nonminority, non-low-income tract
- Outside MBTA core service area

In the 65 municipalities of the MBTA core service area, 31.3% of the residents were members of minority groups in 2010. A minority census tract is defined as one in which the minority percentage exceeds 31.3%.

In the 65 municipalities of the MBTA core service area, 24.7% of the residents lived in households with incomes below two times the federal poverty level in 2014. A low-income census tract is defined as one in which the percentage of residents living in households with incomes below two times the federal poverty level exceeds 24.7%.



THIS PAGE INTENTIONALLY BLANK

Table 3-12
Distribution of Bus and Rapid Transit Operational Facilities:
Percentage of Tracts with Facility, by Tract Classification

Facility	Percentage of Minority Tracts with Facility	Percentage of Nonminority Tracts with Facility	Percentage of Low-Income Tracts with Facility	Percentage of Non-Low-Income Tracts with Facility
MBTA office	2%	<1%	3%	<1%
Garage, yard, or shop	5%	3%	4%	3%

Note: For tracts in the MBTA commuter rail service area. A line improvement was counted as benefitting a station upstream or downstream of the improvement if the improvement enhanced service or reliability for riders accessing the system via that station. South Coast Rail was omitted because proposed station locations are located outside of the current commuter rail service area.

Figures 3-3a and 3-3b show major transit trip generators (colleges and universities, high schools, hospitals, libraries, and town halls) in relation to the minority and low-income populations in each of the MBTA service areas.

Figure 3-3a shows that while the majority of census tracts served by the MBTA commuter rail outside of the core service area are neither minority nor low-income, most of the minority and/or low-income areas outside of the core are either directly served by or are near commuter rail service. While the major trip generators are spread throughout the commuter rail service area, many of the locations with higher concentrations of transit trip generators are located in urban areas that are served by commuter rail. In many areas where commuter rail service is not offered, regional transit authorities and local transit services provide access to the trip generators.

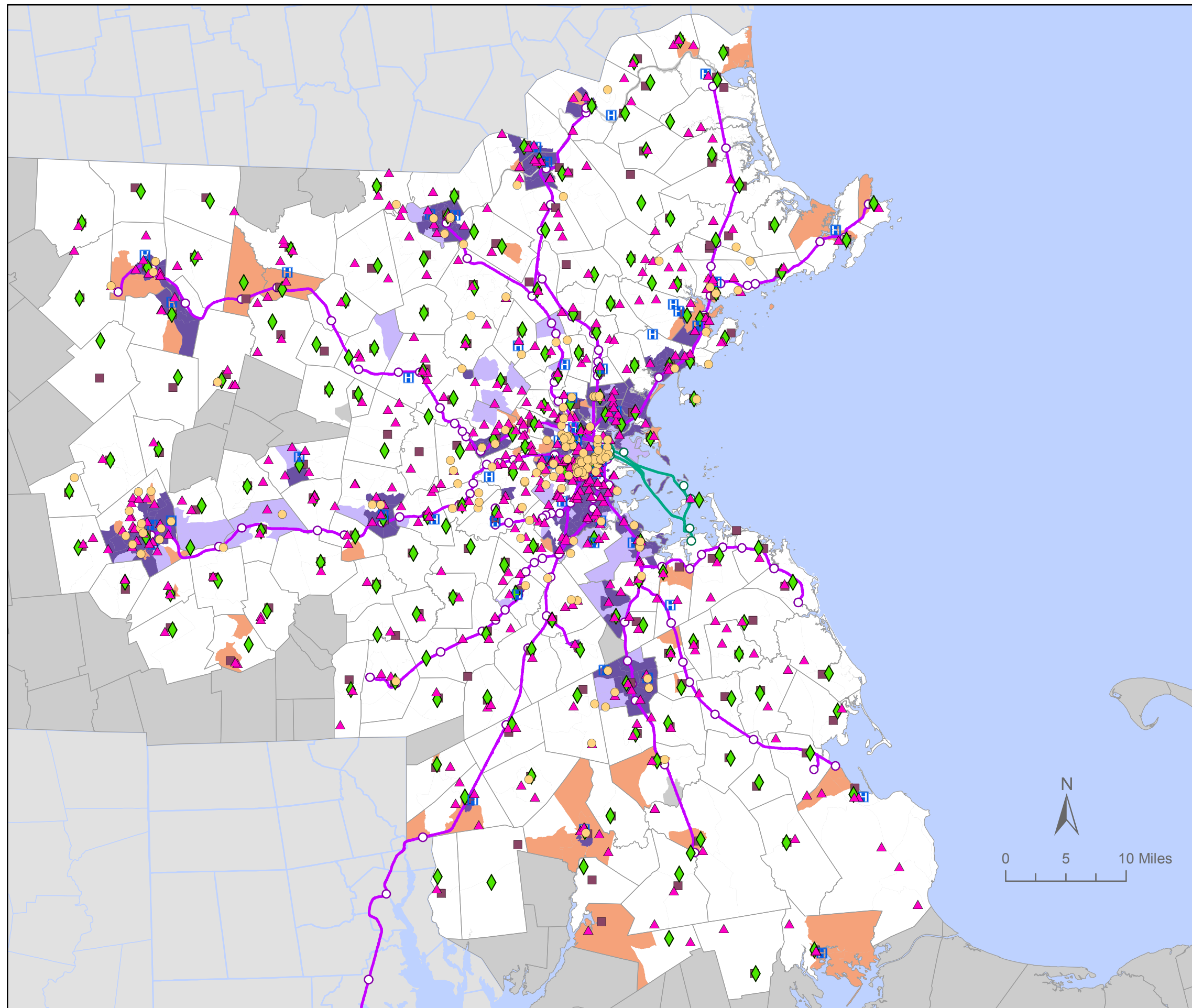
Figure 3-3b shows that much of the core service area is classified as minority and/or low-income, and that the major transit trip generators are spread throughout the entire core service area along with the MBTA bus and rapid transit network. The one noticeable area with minority and low-income census tracts not served by the MBTA bus and rapid transit network is in Framingham, which is served by the MetroWest Regional Transit Authority (MWRTA). Therefore any perceived “gap” in MBTA service in this minority and low-income community is in fact mitigated by the service provided by another regional transit authority (RTA) that provides local service in and around Framingham, including connections to the MBTA network should MWRTA riders from Framingham seek to travel elsewhere in the MBTA service area.



THIS PAGE INTENTIONALLY BLANK

FIGURE 3-3a
MBTA 2017 Title VI Report

**Major Transit Trip
 Generators: Commuter
 Rail Service Area**



Trip Generator

- College or university
- ▲ High school
- Hospital
- ◆ Library
- Town hall

MBTA Transit Facility

- Commuter rail station
- Commuter boat station
- Commuter rail line
- Commuter boat route

Minority and Low-Income Classification

- Minority and low-income tract
- Minority tract
- Low-income tract
- Nonminority, non-low-income tract
- Outside MBTA commuter rail service area

In the 175 municipalities of the MBTA commuter rail service area, 26.2% of the residents were members of minority groups in 2010. A minority census tract is defined as one in which the minority percentage exceeds 26.2%.

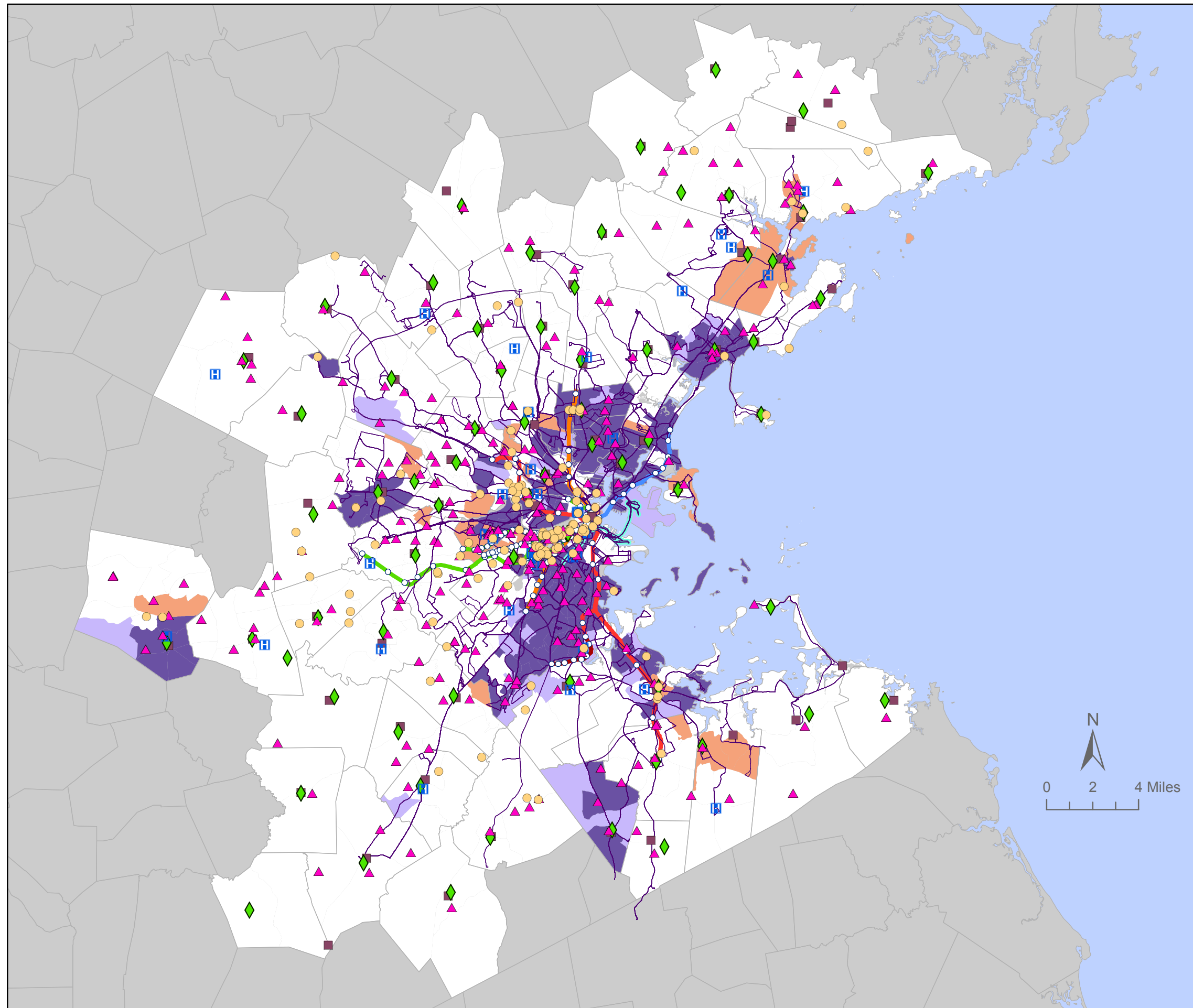
In the 175 municipalities of the MBTA commuter rail service area, 23.3% of the residents lived in households with incomes below two times the federal poverty level in 2014. A low-income census tract is defined as one in which the percentage of residents living in households with incomes below two times the federal poverty level exceeds 23.3%.



THIS PAGE INTENTIONALLY BLANK

FIGURE 3-3b
MBTA 2017 Title VI Report

**Major Transit Trip
 Generators:
 Core Service Area**



Trip Generator

- College or university
- ▲ High school
- ⊠ Hospital
- ◆ Library
- Town hall

MBTA Transit

- Rapid transit station
- Bus route
- Blue Line
- Green Line
- Orange Line
- Red Line
- Mattapan Line
- Silver Line

Minority and Low-Income Classification

- Minority and low-income tract
- Minority tract
- Low-income tract
- Nonminority, non-low-income tract
- Outside MBTA core service area

In the 65 municipalities of the MBTA core service area, 31.3% of the residents were members of minority groups in 2010. A minority census tract is defined as one in which the minority percentage exceeds 31.3%.

In the 65 municipalities of the MBTA core service area, 24.7% of the residents lived in households with incomes below two times the federal poverty level in 2014. A low-income census tract is defined as one in which the percentage of residents living in households with incomes below two times the federal poverty level exceeds 24.7%.



THIS PAGE INTENTIONALLY BLANK

Figures 3-4a and 3-4b show the major streets and highways in relation to the MBTA network and the minority and low-income populations in each of the MBTA service areas.

Figure 3-4a shows that while the majority of census tracts served by the MBTA commuter rail outside of the core service area are neither minority nor low-income, most of the minority and/or low-income areas outside of the core are either directly served by or are near commuter rail service, and that the commuter rail service provided by the MBTA provides access to and from Boston similar to that provided by the region's highway system.

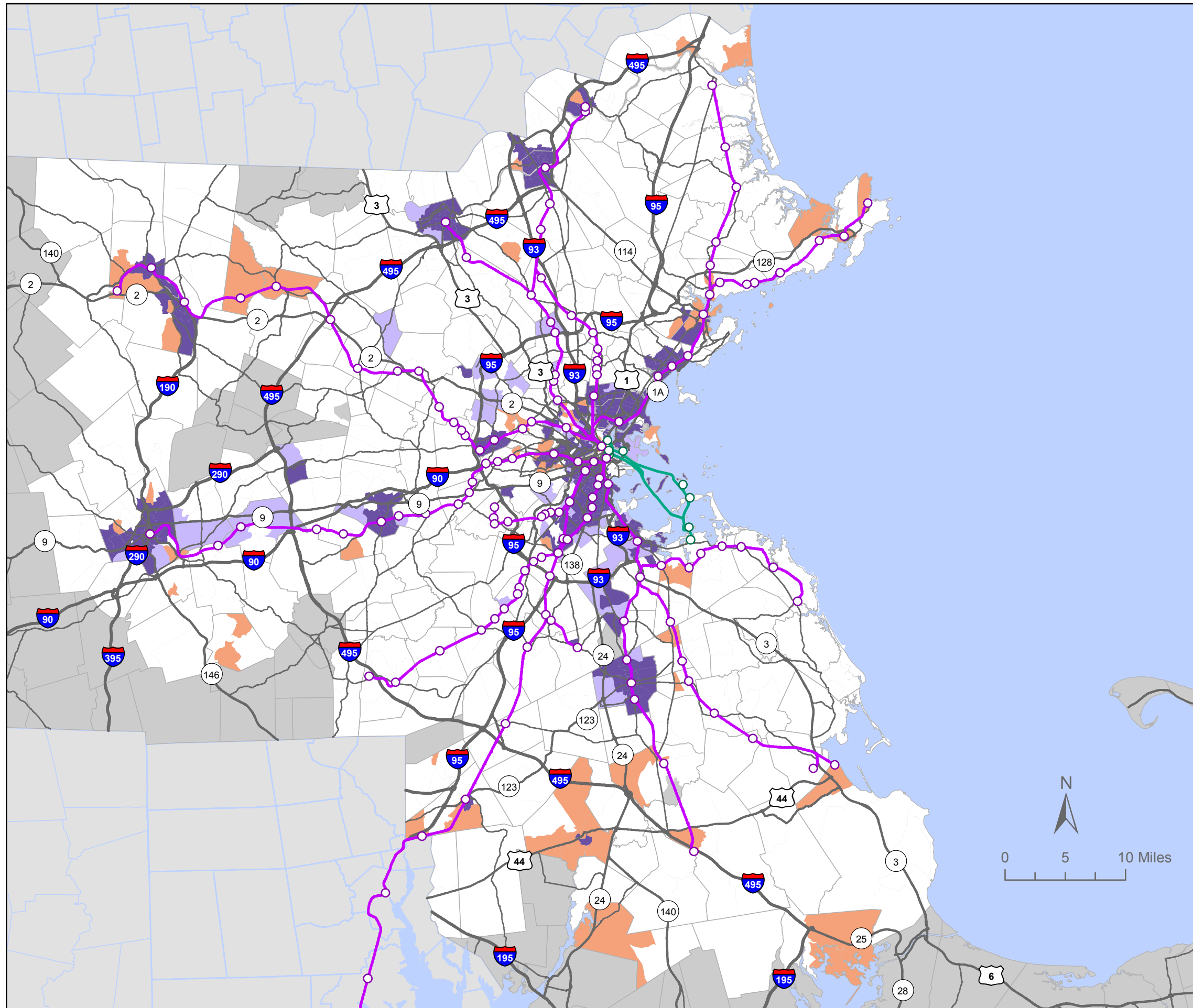
Figure 3-4b shows that much of the core service area is classified as minority and/or low-income, and that most of the tracts in the core service area that are classified as minority and/or low-income are served by the bus and rapid transit network, which provides similar access across the metropolitan area to that of the major street and highway network.



THIS PAGE INTENTIONALLY BLANK

FIGURE 3-4a
MBTA 2017 Title VI Report

Major Streets and Highways: Commuter Rail Service Area



Road Network

- Interstate
- Principal arterial
- Other arterial

MBTA Transit Facility

- Commuter rail station
- Commuter boat station
- Commuter rail line
- Commuter boat route

Minority and Low-Income Classification

- Minority and low-income tract
- Minority tract
- Low-income tract
- Nonminority, non-low-income tract
- Outside MBTA commuter rail service area

In the 175 municipalities of the MBTA commuter rail service area, 26.2% of the residents were members of minority groups in 2010. A minority census tract is defined as one in which the minority percentage exceeds 26.2%.

In the 175 municipalities of the MBTA commuter rail service area, 23.3% of the residents lived in households with incomes below two times the federal poverty level in 2014. A low-income census tract is defined as one in which the percentage of residents living in households with incomes below two times the federal poverty level exceeds 23.3%.



THIS PAGE INTENTIONALLY BLANK

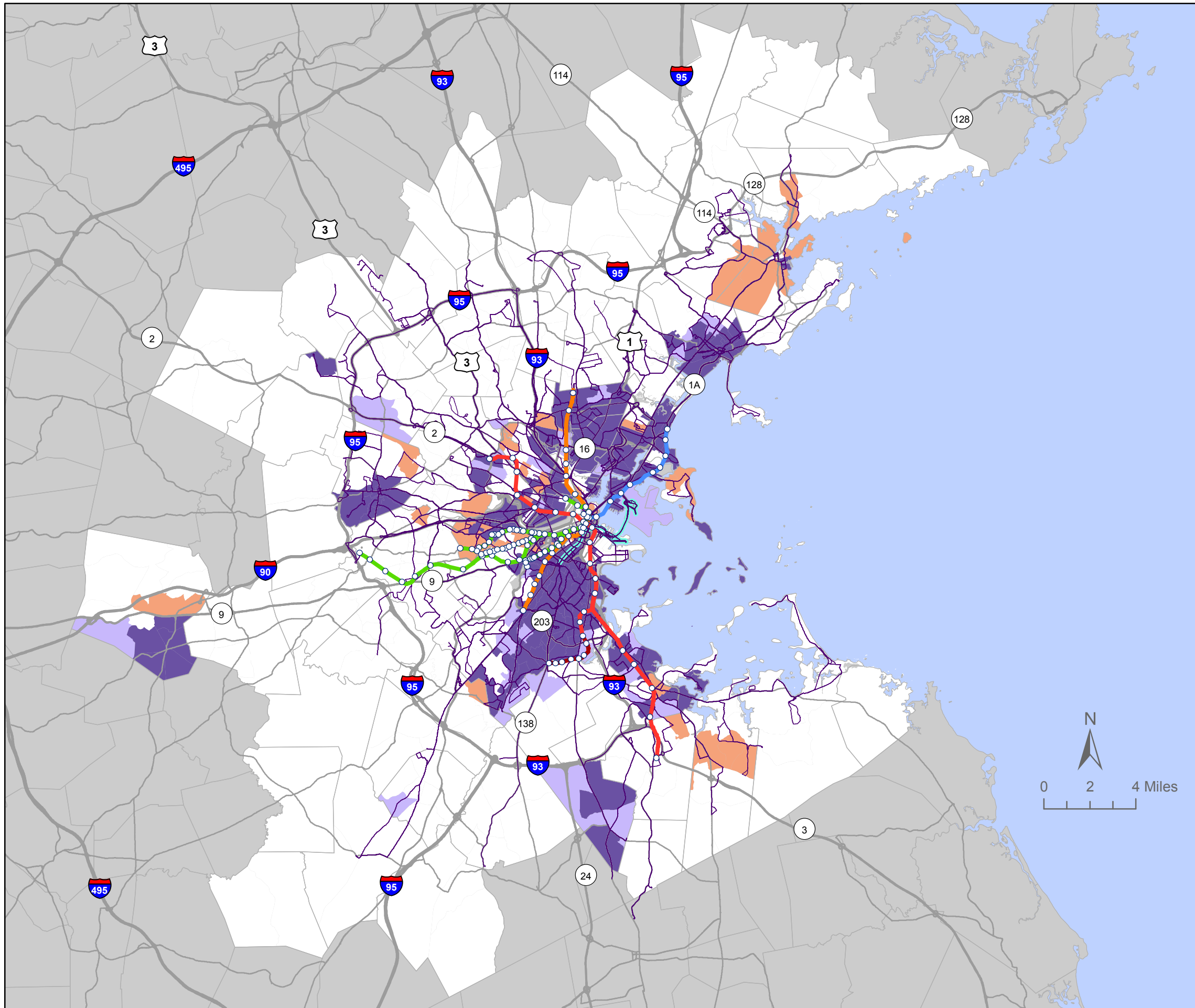


FIGURE 3-4b
MBTA 2017 Title VI Report

Major Streets and Highways: Core Service Area

Road Network

- Interstate
- Principal arterial
- Other arterial

MBTA Transit

- Rapid transit station
- Bus route
- Blue Line
- Green Line
- Orange Line
- Red Line
- Mattapan Line
- Silver Line

Minority and Low-Income Classification

- Minority and low-income tract
- Minority tract
- Low-income tract
- Nonminority, non-low-income tract
- Outside MBTA core service area

In the 65 municipalities of the MBTA core service area, 31.3% of the residents were members of minority groups in 2010. A minority census tract is defined as one in which the minority percentage exceeds 31.3%.

In the 65 municipalities of the MBTA core service area, 24.7% of the residents lived in households with incomes below two times the federal poverty level in 2014. A low-income census tract is defined as one in which the percentage of residents living in households with incomes below two times the federal poverty level exceeds 24.7%.



THIS PAGE INTENTIONALLY BLANK

Figures 3-5a and 3-5b show the MBTA projects from the Capital Improvement Plan (2018–22) in relation to the minority and low-income populations in each of the MBTA service areas.

Figure 3-5a shows that while the majority of census tracts served by the MBTA commuter rail outside of the core service area are neither minority nor low-income, most of the MBTA commuter rail projects outside the core area of greatest significance are improvements along rail lines that serve minority and low-income areas. Tables 3-13, 3-14, and 3-15 summarize the distribution of commuter rail line improvements and station and facility improvements across minority and low-income census tracts in the commuter rail service area.

Table 3-13
Distribution of Commuter Rail Improvements:
Number and Percentage of Improvements by Tract Classification

Improvement Type	Total Number of Imps.	Number of Imps. Serving Minority Tracts	Number of Imps. Serving Low-Income Tracts	Percentage of Imps. Serving Minority Tracts	Percentage of Imps. Serving Low-Income Tracts
Line	44	10	12	23%	27%
Station or facility	27	9	7	33%	26%

Imps. = improvements

Note: For tracts in the MBTA commuter rail service area. A line improvement was counted as benefitting a station upstream or downstream of the improvement if the improvement enhanced service or reliability for riders accessing the system via that station. South Coast Rail was omitted because proposed station locations are located outside of the current commuter rail service area.

Table 3-14
Distribution of Commuter Rail Improvements:
Number of Improvements per 100 Tracts, by Tract Classification

Facility	Number of Imps. Serving Minority Tracts, per 100 Minority Tracts	Number of Imps. Serving Nonminority Tracts, per 100 Nonminority Tracts	Number of Imps. Serving Low-Income Tracts, per 100 Low-Income Tracts	Number of Imps. Serving Non-Low-Income Tracts, per 100 Non-Low-Income Tracts
Line	2	5	3	5
Station or facility	2	3	2	3

Imps. = improvements

Note: For tracts in the MBTA commuter rail service area. The number of line improvements was counted at the station level, as stations that benefited from the segment of line that was improved. South Coast Rail was omitted because proposed station locations are located outside of the current commuter rail service area.

Table 3-15
Distribution of Commuter Rail Improvements:
Percentage of Tracts with Improvement, by Tract Classification

Facility	Percentage of Minority Tracts Served by Imps.	Percentage of Nonminority Tracts Served by Imps.	Percentage of Low-Income Tracts Served by Imps.	Percentage of Non-Low-Income Tracts Served by Imps.
Line	2%	5%	3%	5%
Station or facility	1%	2%	1%	3%

Imps. = improvements

Note: For tracts in the MBTA commuter rail service area. The number of line improvements was counted at the station level, as stations that benefited from the segment of line that was improved. South Coast Rail was omitted because proposed station locations are located outside of the current commuter rail service area.

Figure 3-5b shows that much of the core service area is classified as minority and/or low-income, and that most of MBTA bus and rapid transit projects are located in census tracts that are classified as minority and/or low-income. Tables 3-16, 3-17, and 3-18 summarize the distribution of rapid transit line and station improvements and bus and rapid transit facility improvements across minority and low-income census tracts in the core service area.

Table 3-16
 Distribution of Bus and Rapid Transit Improvements:
 Number and Percentage of Improvements by Tract Classification

Improvement Type	Total Number of Imps.	Number of Imps. Serving Minority Tracts	Number of Imps. Serving Low-Income Tracts	Percentage of Imps. Serving Minority Tracts	Percentage of Imps. Serving Low-Income Tracts
Line	22	17	15	77%	68%
Station or facility	41	25	24	61%	59%

Imps. = improvements

Note: For tracts in the MBTA core service area. The number of line improvements was counted at the station level, as stations that benefited from the segment of line that was improved.

Table 3-17
 Distribution of Bus and Rapid Transit Improvements:
 Number of Improvements per 100 Tracts, by Tract Classification

Facility	Number of Imps. Serving Minority Tracts, per 100 Minority Tracts	Number of Imps. Serving Nonminority Tracts, per 100 Nonminority Tracts	Number of Imps. Serving Low-Income Tracts, per 100 Low-Income Tracts	Number of Imps. Serving Non-Low-Income Tracts, per 100 Non-Low-Income Tracts
Line	7	<1	3	1
Station or facility	10	5	9	5

Imps. = improvements

Note: For tracts in the MBTA core service area. The number of line improvements was counted at the station level, as stations that benefited from the segment of line that was improved.

Table 3-18
 Distribution of Bus and Rapid Transit Improvements:
 Percentage of Tracts with Improvement, by Tract Classification

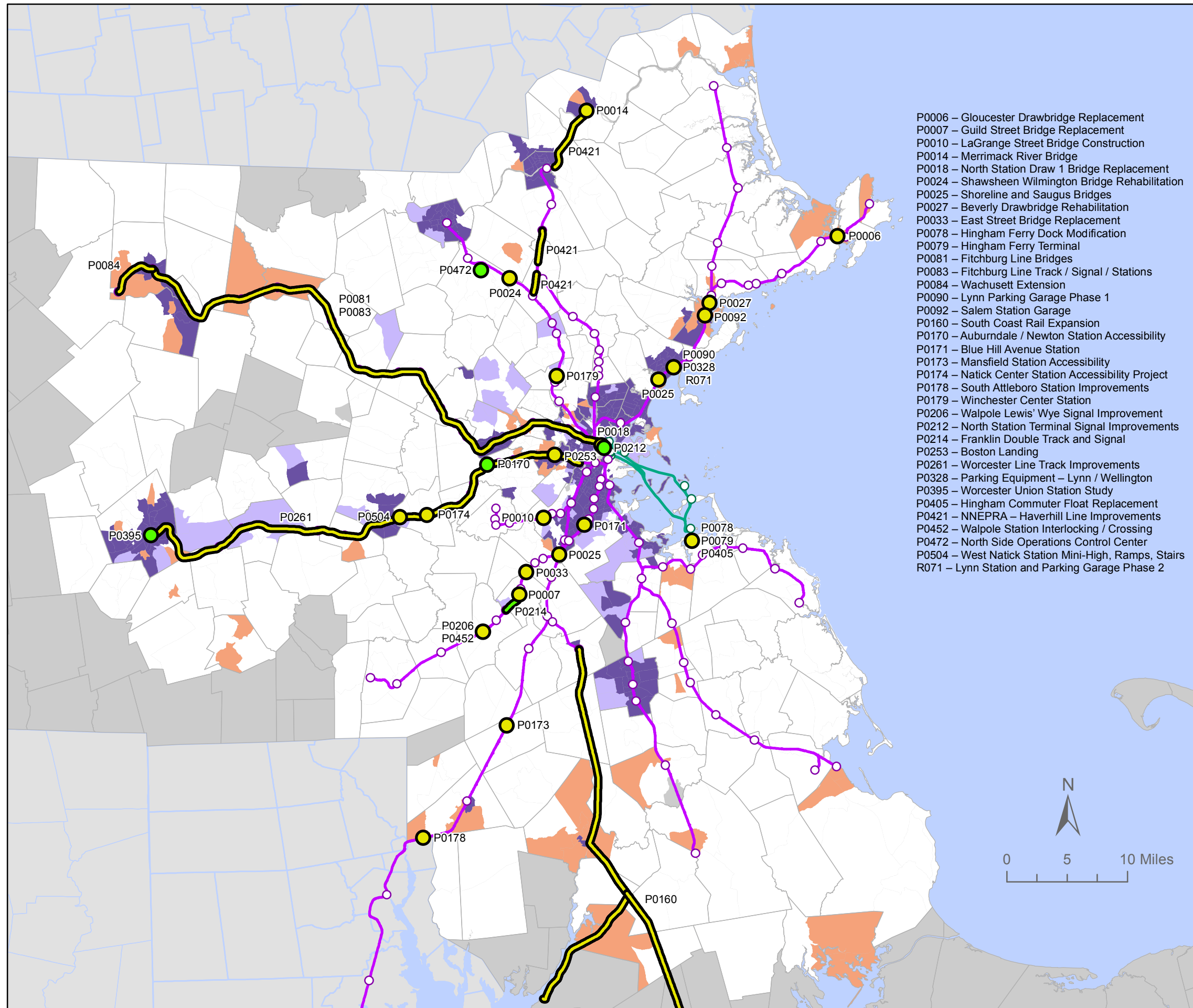
Facility	Percentage of Minority Tracts Served by Imps.	Percentage of Nonminority Tracts Served by Imps.	Percentage of Low-Income Tracts Served by Imps.	Percentage of Non-Low-Income Tracts Served by Imps.
Line	4%	<1%	2%	<1%
Station or facility	7%	2%	4%	2%

Imps. = improvements

Note: For tracts in the MBTA core service area. The number of line improvements was counted at the station level, as stations that benefited from the segment of line that was improved.

FIGURE 3-5a
MBTA 2017 Title VI Report

**MBTA Improvements:
 Commuter Rail Service
 Area**



In the 175 municipalities of the MBTA commuter rail service area, 26.2% of the residents were members of minority groups in 2010. A minority census tract is defined as one in which the minority percentage exceeds 26.2%.

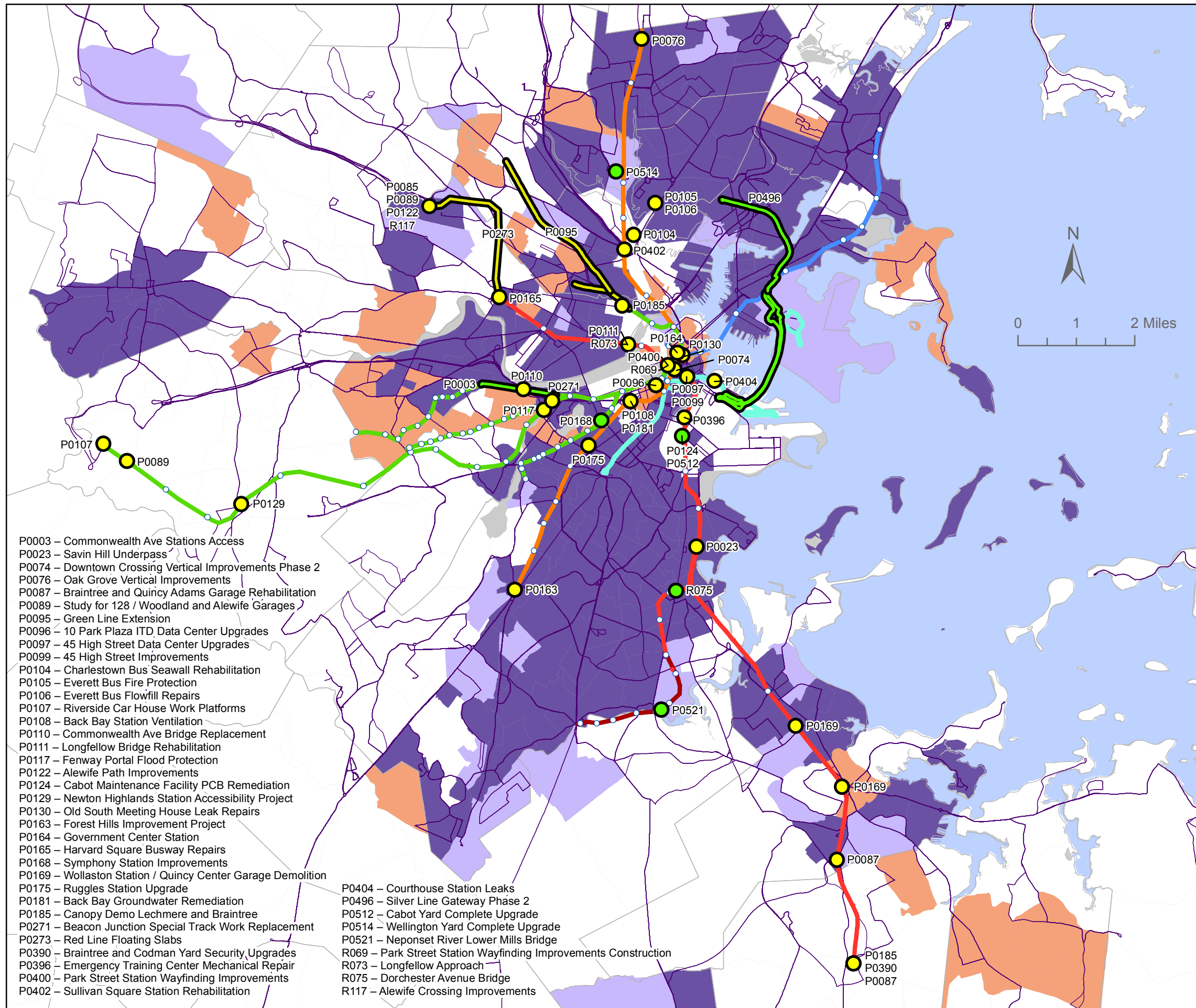
In the 175 municipalities of the MBTA commuter rail service area, 23.3% of the residents lived in households with incomes below two times the federal poverty level in 2014. A low-income census tract is defined as one in which the percentage of residents living in households with incomes below two times the federal poverty level exceeds 23.3%.



THIS PAGE INTENTIONALLY BLANK

FIGURE 3-5b
MBTA 2017 Title VI Report

**MBTA Improvements:
 Core Service Area**



- P0003 – Commonwealth Ave Stations Access
- P0023 – Savin Hill Underpass
- P0074 – Downtown Crossing Vertical Improvements Phase 2
- P0076 – Oak Grove Vertical Improvements
- P0087 – Braintree and Quincy Adams Garage Rehabilitation
- P0089 – Study for 128 / Woodland and Alewife Garages
- P0095 – Green Line Extension
- P0096 – 10 Park Plaza ITD Data Center Upgrades
- P0097 – 45 High Street Data Center Upgrades
- P0099 – 45 High Street Improvements
- P0104 – Charlestown Bus Seawall Rehabilitation
- P0105 – Everett Bus Fire Protection
- P0106 – Everett Bus Flowfill Repairs
- P0107 – Riverside Car House Work Platforms
- P0108 – Back Bay Station Ventilation
- P0110 – Commonwealth Ave Bridge Replacement
- P0111 – Longfellow Bridge Rehabilitation
- P0117 – Fenway Portal Flood Protection
- P0122 – Alewife Path Improvements
- P0124 – Cabot Maintenance Facility PCB Remediation
- P0129 – Newton Highlands Station Accessibility Project
- P0130 – Old South Meeting House Leak Repairs
- P0163 – Forest Hills Improvement Project
- P0164 – Government Center Station
- P0165 – Harvard Square Busway Repairs
- P0168 – Symphony Station Improvements
- P0169 – Wollaston Station / Quincy Center Garage Demolition
- P0175 – Ruggles Station Upgrade
- P0181 – Back Bay Groundwater Remediation
- P0185 – Canopy Demo Lechmere and Braintree
- P0271 – Beacon Junction Special Track Work Replacement
- P0273 – Red Line Floating Slabs
- P0390 – Braintree and Codman Yard Security Upgrades
- P0396 – Emergency Training Center Mechanical Repair
- P0400 – Park Street Station Wayfinding Improvements
- P0402 – Sullivan Square Station Rehabilitation

- P0404 – Courthouse Station Leaks
- P0496 – Silver Line Gateway Phase 2
- P0512 – Cabot Yard Complete Upgrade
- P0514 – Wellington Yard Complete Upgrade
- P0521 – Neponset River Lower Mills Bridge
- R069 – Park Street Station Wayfinding Improvements Construction
- R073 – Longfellow Approach
- R075 – Dorchester Avenue Bridge
- R117 – Alewife Crossing Improvements

Improvement Type

- Ongoing improvement
- Future improvement

MBTA Transit

- Rapid transit station
- Bus route
- Blue Line
- Green Line
- Orange Line
- Red Line
- Mattapan Line
- Silver Line

Minority and Low-Income Classification

- Minority and low-income tract
- Minority tract
- Low-income tract
- Nonminority, non-low-income tract
- Outside MBTA core service area

In the 65 municipalities of the MBTA core service area, 31.3% of the residents were members of minority groups in 2010. A minority census tract is defined as one in which the minority percentage exceeds 31.3%.

In the 65 municipalities of the MBTA core service area, 24.7% of the residents lived in households with incomes below two times the federal poverty level in 2014. A low-income census tract is defined as one in which the percentage of residents living in households with incomes below two times the federal poverty level exceeds 24.7%.



THIS PAGE INTENTIONALLY BLANK



Chapter 4: Demographic Ridership and Travel Patterns

The Federal Transit Administration’s (FTA) Title VI Circular 4702.1B requires the MBTA to create demographic profiles, based on customer surveys, that compare minority and nonminority riders’ trips and fare usage by fare type. The circular also requires a profile of fare use by fare type for low-income riders. The MBTA Systemwide Passenger Survey conducted between October 2015 and May 2017 was used to create the profiles in this chapter, which are presented by mode.¹ While the circular only requires presentation of the analysis of these data in tabular format, the MBTA has elected to include some graphical representations of the data.

The systemwide survey elicited responses from riders on all five of the MBTA’s public transit modes: bus; rail rapid transit (including subway and light rail); commuter rail; bus rapid transit (Silver Line); and commuter ferry. However, because there was a low response rate on commuter ferry services, including no minority responses on one of the routes, survey results for this mode are not presented in this analysis.

¹ The MBTA systemwide surveys were distributed on all modes and asked about each respondent’s most recent one-way MBTA trip. The results were tabulated for each mode used in each reported trip.

This chapter includes analyses comparing the following characteristics of minority and nonminority riders:

- Modal use
- Fare usage by fare type
- Frequency of use
- Transfer rates
- Estimation of transit dependency as represented by possession of a driver's license and household vehicle ownership

This chapter also includes an analysis of fare usage by fare type for low-income and non-low-income riders, as required by the circular for fare equity analyses. The chapter concludes with an analysis of the languages in which the survey was taken and the languages in which survey respondents prefer to receive information about the MBTA.

MODAL USE

An analysis of the survey data shows that the proportion of minority riders varied by mode. The percentage of nonminority survey respondents was greater than the percentage of minority respondents for all modes. The highest proportion of minority respondents was on bus and the Silver Line followed by subway or light rail, and then commuter rail. Figure 4-1 and Table 4-1 show the use of each mode by minority status.

Figure 4-1
 Modal Use by Minority Status

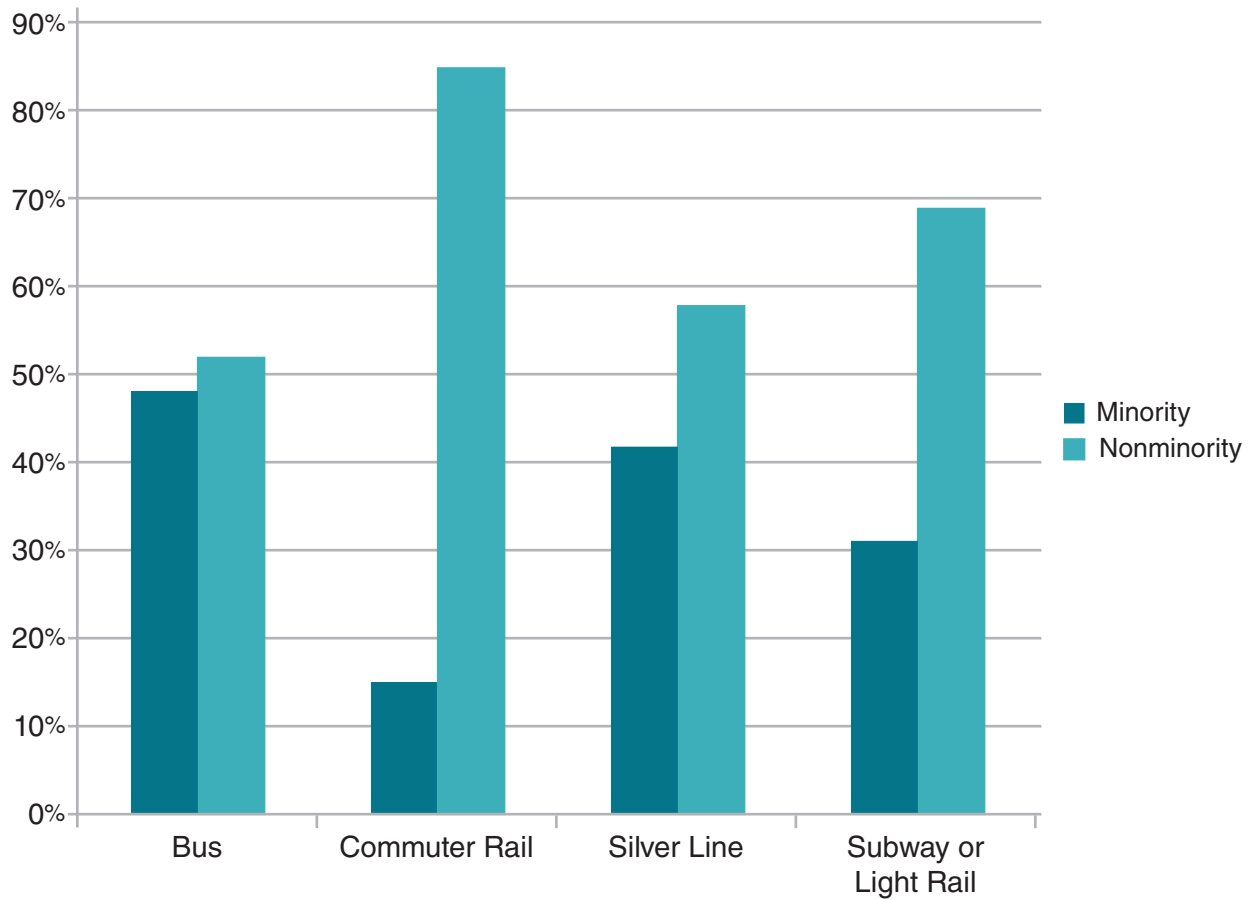


Table 4-1
 Modal Use by Minority Status

Mode	Minority	Nonminority
Bus	48%	52%
Commuter Rail	15%	85%
Silver Line	42%	58%
Subway or Light Rail	31%	69%

FARE TYPE USAGE

Figure 4-2 and Table 4-2 show the results of the analysis of fare usage by fare type and mode for minority and nonminority riders. Figure 4-3 and Table 4 3 show the results of the analysis of fare usage by fare type and mode for low-income and non-low-income riders. For all riders on the four modes analyzed, monthly pass usage accounted for the majority of fare product use.

As shown in Figure 4-2 and Table 4-2, minority riders were more likely than nonminority riders to use reduced-fare monthly passes or 7-Day Passes on all modes on which they are valid. Minority riders were less likely than nonminority riders to use adult monthly passes on bus and subway, but more likely to use them on commuter rail and the Silver Line.

Figure 4-2
Fare Type by Mode and Minority Status

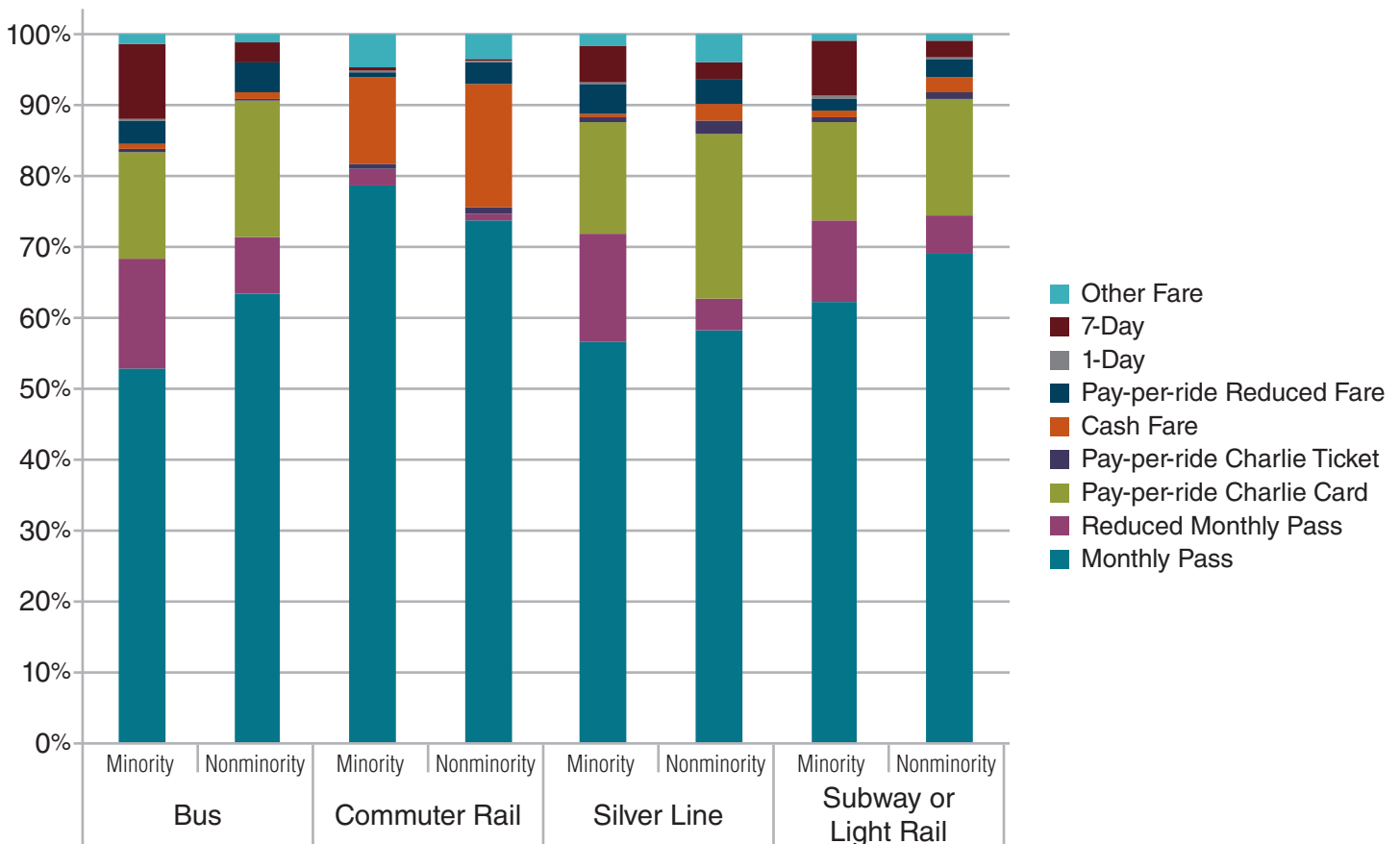


Table 4-2
Fare Type by Mode and Minority Status

Mode and Income Status	Monthly Pass	Reduced Monthly Pass	Pay-per-ride CharlieCard	Pay-per-ride CharlieTicket	Cash Fare	Pay-per-ride Reduced Fare	1-Day	7-Day	Other Fare
Bus - Minority	53%	16%	15%	0%	1%	3%	0%	11%	1%
Bus - Nonminority	63%	8%	19%	0%	1%	4%	0%	3%	1%
Commuter Rail - Minority	79%	2%	0%	1%	12%	1%	0%	0%	5%
Commuter Rail - Nonminority	74%	1%	0%	1%	17%	3%	0%	0%	3%
Silver Line - Minority	57%	15%	16%	1%	0%	4%	0%	5%	2%
Silver Line - Nonminority	58%	5%	23%	2%	2%	4%	0%	2%	4%
Subway or Light Rail - Minority	62%	12%	14%	1%	1%	2%	0%	8%	1%
Subway or Light Rail - Nonminority	69%	5%	16%	1%	2%	3%	0%	2%	1%

For low-income riders, fare product usage patterns differ significantly from those of non-low-income riders. On all modes, low-income riders are much less likely than non-low-income riders to use adult monthly passes, but are more likely to use reduced-fare passes or 7-Day Passes. Low-income riders are also less likely than minority riders to use monthly passes on all modes.

Figure 4-3
Fare Type by Mode and Low-Income Status

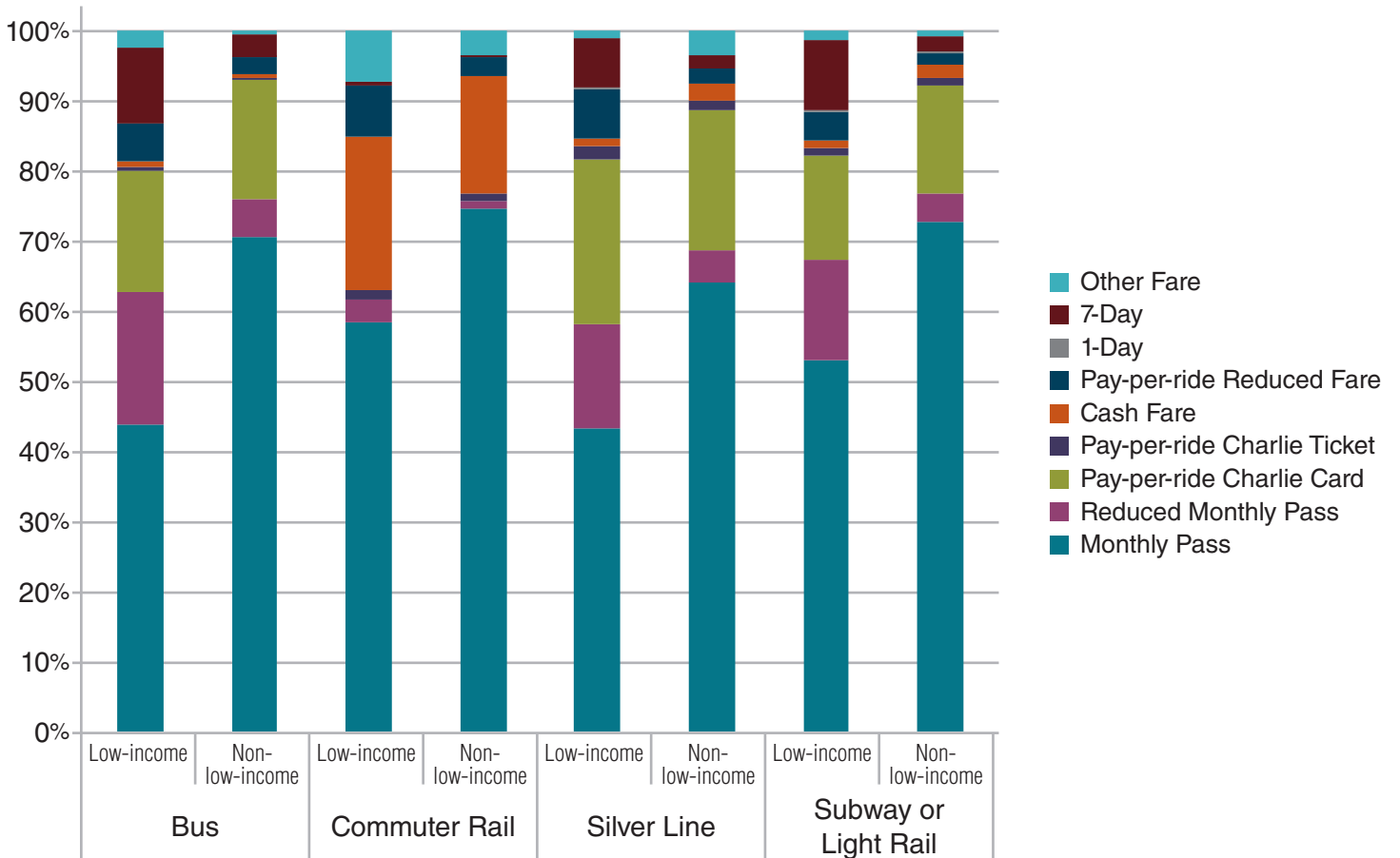


Table 4-3
Fare Type by Mode and Low-Income Status

Mode and Minority Status	Monthly Pass	Reduced Monthly Pass	Pay-per-ride CharlieCard	Pay-per-ride CharlieTicket	Cash Fare	Pay-per-ride Reduced Fare	1-Day	7-Day	Other Fare
Bus - Low-income	44%	19%	17%	1%	1%	5%	0%	11%	2%
Bus - Non-low-income	71%	5%	17%	0%	1%	2%	0%	3%	0%
Commuter Rail - Low-income	58%	3%	0%	1%	22%	7%	0%	1%	7%
Commuter Rail - Non-low-income	75%	1%	0%	1%	17%	3%	0%	0%	3%
Silver Line - Low-income	43%	15%	24%	2%	1%	7%	0%	7%	1%
Silver Line - Non-low-income	64%	5%	20%	1%	2%	2%	0%	2%	3%
Subway or Light Rail - Low-income	53%	14%	15%	1%	1%	4%	0%	10%	1%
Subway or Light Rail - Non-low-income	73%	4%	15%	1%	2%	2%	0%	2%	1%

FREQUENCY OF USE

Overall, most riders made their reported trip using the MBTA at least five days per week regardless of minority status. The most “traditional” commuter use occurs on the commuter rail; approximately 70 percent of commuter rail riders report that they use the MBTA five days per week.

A higher percentage of minority riders than of nonminority riders report using the MBTA six or seven days per week, across all modes. In addition, more minority riders than nonminority riders report using the MBTA more than four days per week.

Figure 4-4
Frequency of Use by Mode and Minority Status

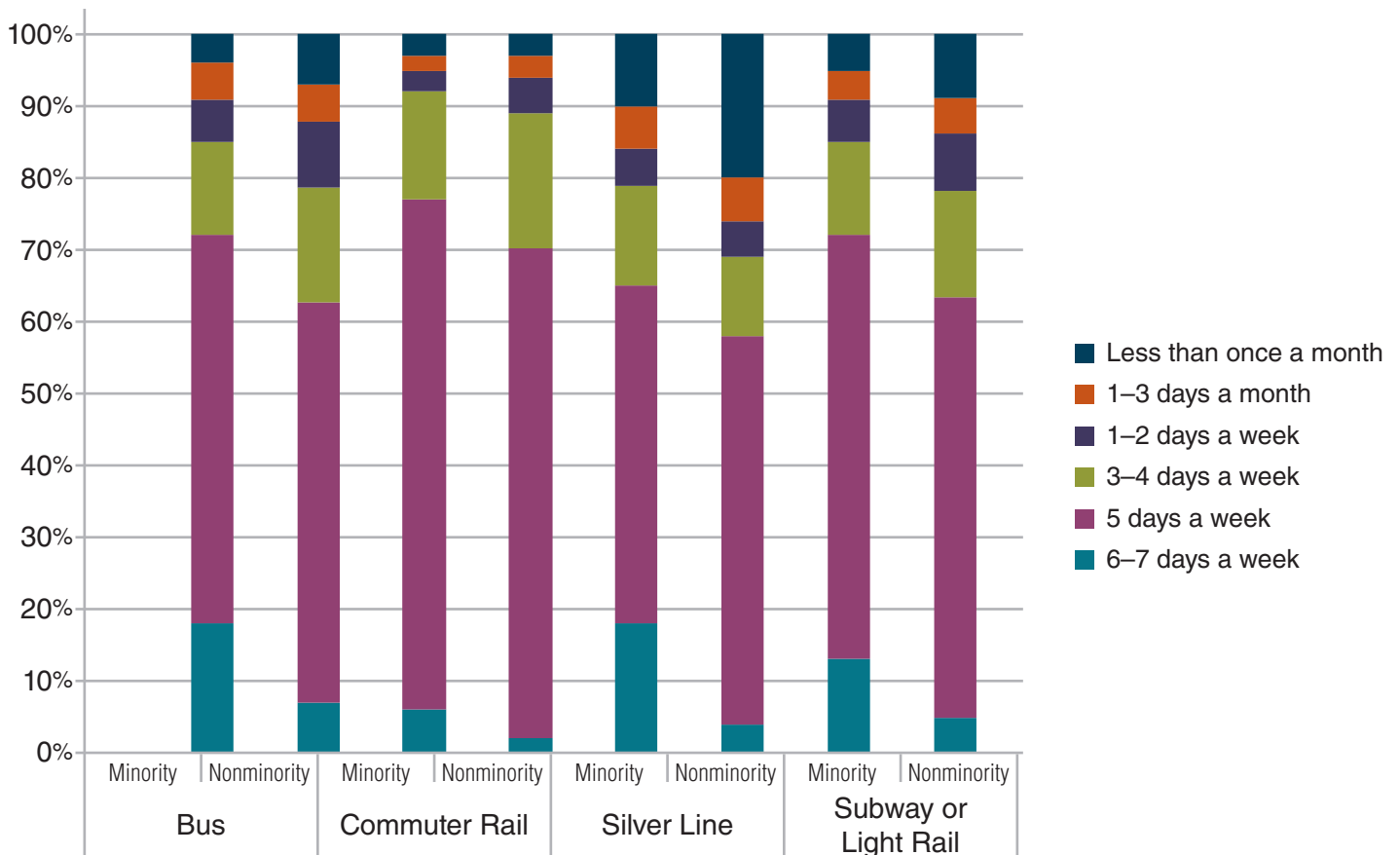


Table 4-4
Frequency of Use by Mode and Minority Status

Mode and Minority Status	6-7 days a week	5 days a week	3-4 days a week	1-2 days a week	1-3 days a month	Less than once a month
Bus - Minority	18%	54%	13%	6%	5%	4%
Bus - Nonminority	7%	55%	16%	9%	5%	7%
Commuter Rail - Minority	6%	71%	15%	3%	2%	3%
Commuter Rail - Nonminority	2%	69%	19%	5%	3%	3%
Silver Line - Minority	18%	47%	14%	5%	6%	10%
Silver Line - Nonminority	4%	54%	11%	5%	6%	20%
Subway or Light Rail - Minority	13%	59%	13%	6%	4%	5%
Subway or Light Rail - Nonminority	5%	59%	15%	8%	5%	9%

TRANSFER RATES

Transfer rate refers to the percentage of riders who must transfer between MBTA services to complete a one-way trip. The survey showed a significant difference between minority and nonminority riders in this measure. Overall, 47 percent of riders made at least one transfer. For minorities the rate was 59 percent, compared with 42 percent for nonminorities. This finding is partly a reflection of the high percentage of minority trips that begin or end on local bus routes and that require the rider to transfer to a subway line to reach downtown Boston.

TRANSIT DEPENDENCY

Transit dependency is an important factor to consider in analyses for fare and service changes. The responses to two questions on the MBTA Systemwide Passenger Survey were used to compare the estimated level of transit dependency of minority and nonminority riders: the survey asked whether the respondent has a valid driver's license, and the number of usable vehicles in the respondent's household.

The majority of all survey respondents, regardless of mode used and minority status, reported that they possess a driver's license. However, across all modes, minority riders are less likely to possess a driver's license than are nonminority riders. Further, bus, Silver Line, and rail rapid transit riders are less likely to possess a driver's license than are commuter rail riders, who are predominantly nonminority.

Similar patterns were noted for household vehicle ownership; minority riders have fewer vehicles per household than nonminority riders, and bus, Silver Line, and rail rapid transit riders have fewer vehicles per household than commuter rail riders. Figure 4-5 and Table 4-5 show the percentage of riders who possess a valid driver's license by mode and minority status. Figure 4-6 and Table 4-6 show the percentage of riders by mode and minority status who have zero, one, two, or "three or more" vehicles in their households.

Figure 4-5
Riders Possessing a Driver's License by Mode and Minority Status

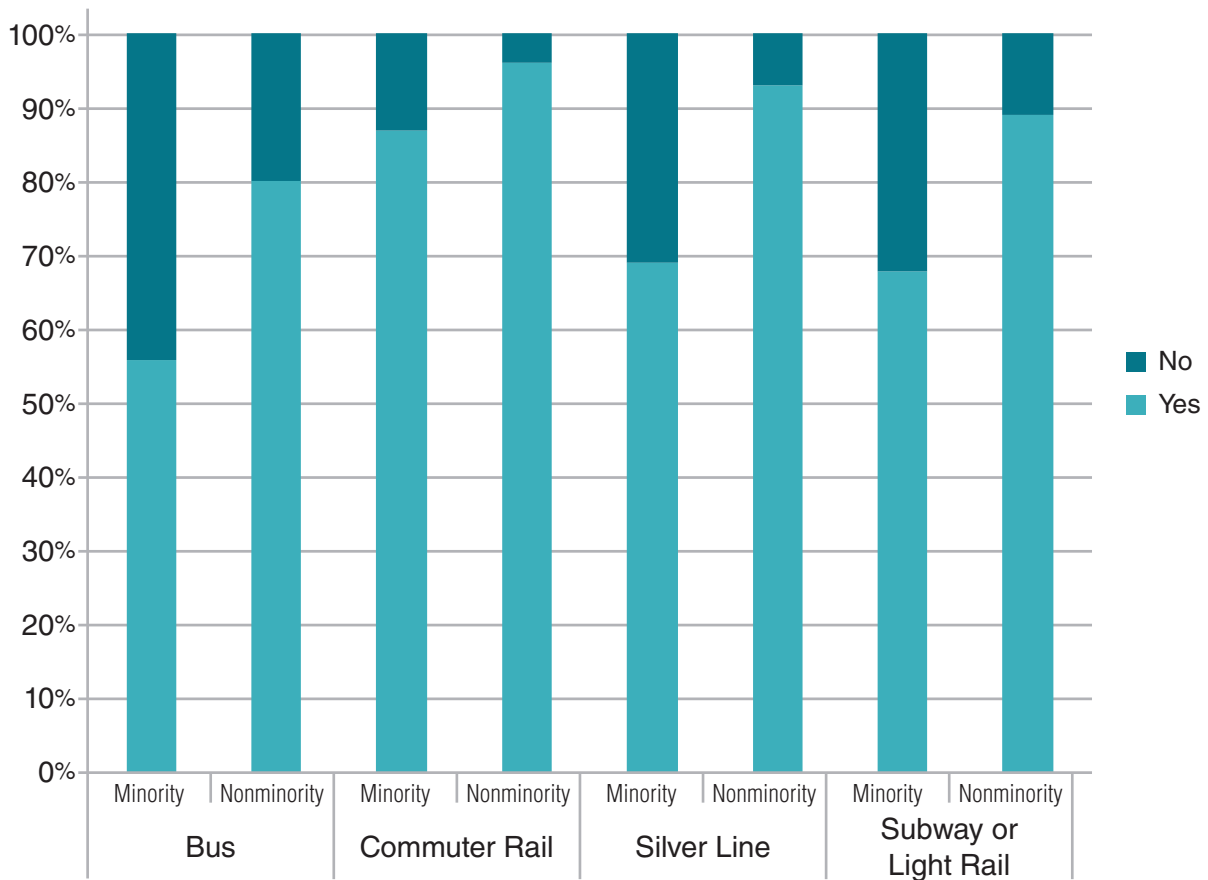


Table 4-5
Riders Possessing a Driver's License by Mode and Minority Status

Mode and Minority Status	Yes	No
Bus - Minority	56%	44%
Bus - Nonminority	80%	20%
Commuter Rail - Minority	87%	13%
Commuter Rail - Nonminority	96%	4%
Silver Line - Minority	69%	31%

(Table 4-5 Cont.)

Mode and Minority Status	Yes	No
Silver Line - Nonminority	93%	7%
Subway or Light Rail - Minority	68%	32%
Subway or Light Rail - Nonminority	89%	11%

Figure 4-6
Vehicles per Household by Mode and Minority Status

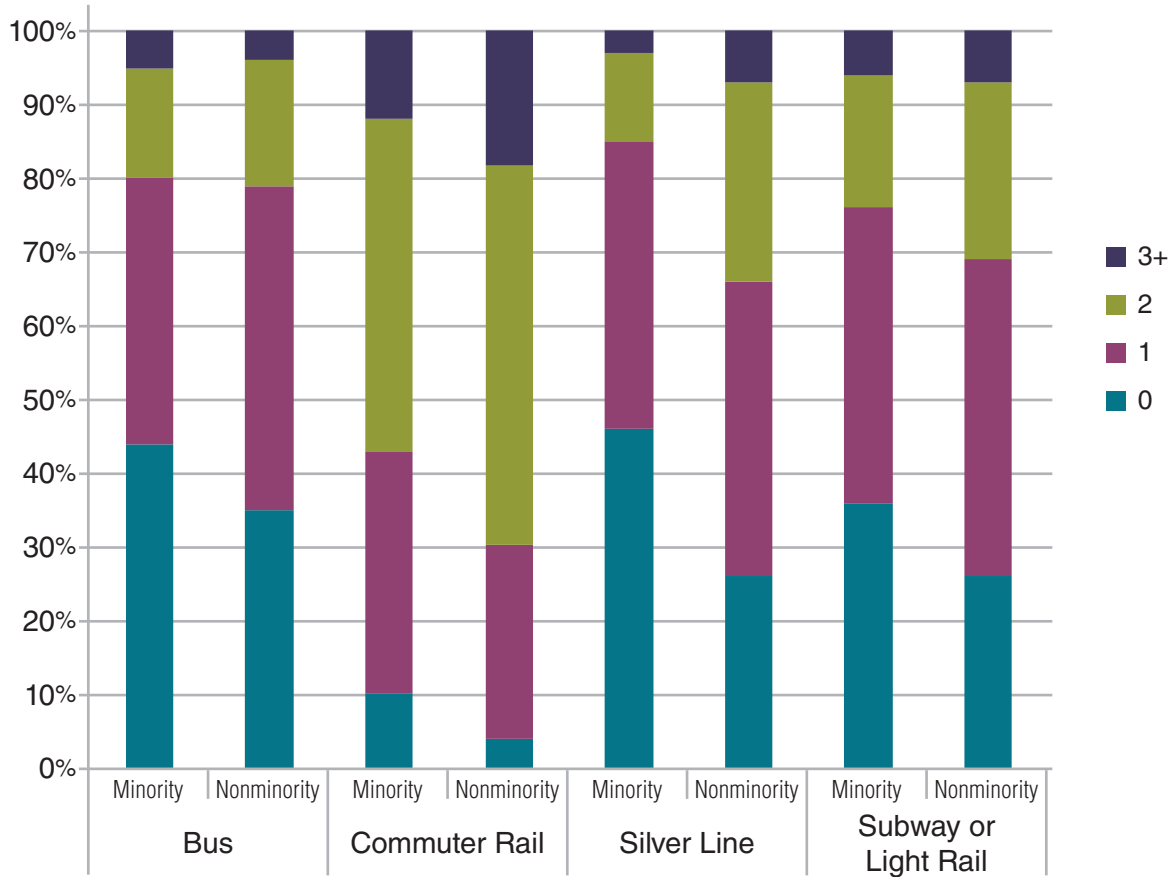


Table 4-6
Vehicles per Household by Mode and Minority Status

Mode and Minority Status	0	1	2	3+
Bus - Minority	44%	36%	15%	5%
Bus - Nonminority	35%	44%	17%	4%
Commuter Rail - Minority	10%	33%	45%	12%
Commuter Rail - Nonminority	4%	26%	51%	18%
Silver Line - Minority	46%	39%	12%	3%
Silver Line - Nonminority	26%	40%	27%	7%
Subway or Light Rail - Minority	36%	40%	18%	6%
Subway or Light Rail - Nonminority	26%	43%	24%	7%

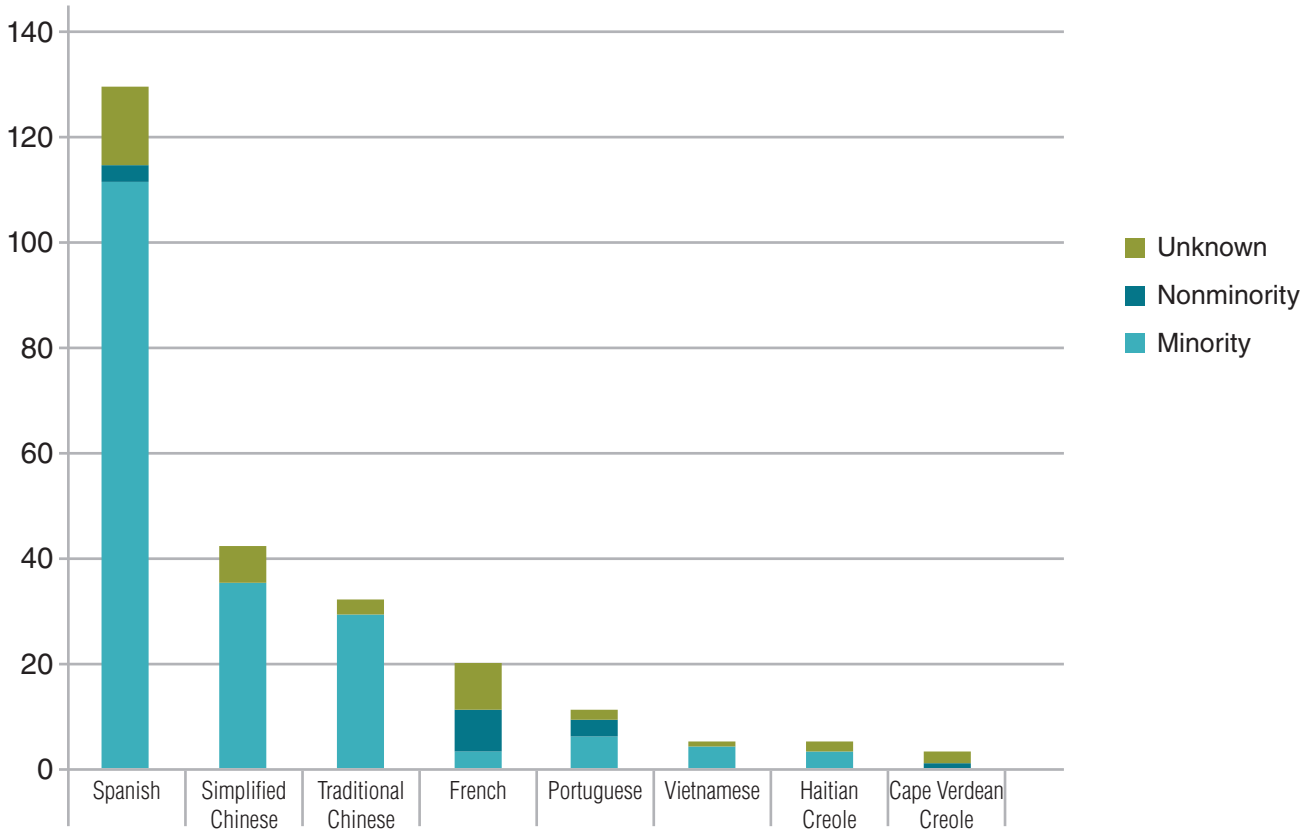
SURVEY LANGAUGES AND PREFERRED LANGAUGES FOR INFORMATION

The survey form was available in eight languages in addition to English.² The majority of returned surveys (99.3 percent) used the English version. The Spanish version accounted for 0.37 percent, and the Simplified Chinese version for 0.12 percent. The Traditional Chinese, French, Portuguese, Vietnamese, Haitian Creole, and Cape Verdean Creole versions each accounted for less than 0.1 percent.

Figure 4-7 shows the number of surveys returned in languages other than English by minority status. As shown in the figure, most of the non-English surveys were completed by minority riders.

² Haitian Creole was only available online because most adult Haitians read French (French was the language of instruction in schools until 1978, when Haitian Creole was introduced as the language of instruction in the first four grades) but speak Haitian Creole, and the online version accommodated screenreaders.

Figure 4-7
 Number of Surveys Returned in Languages Other Than English by Minority Status



All versions of the survey form asked respondents whether they preferred to receive information about riding the MBTA in English or in another language and, if the latter, to specify which language they prefer. The percent of respondents who expressed a preference for English (98.6 percent) was slightly lower than the percent who used the English form (99.3 percent). The most preferred other languages were Spanish (0.7 percent) and Chinese (0.2 percent). Of 38 other languages specified, only seven were identified as preferable by five or more respondents: French, Portuguese, Haitian Creole, Russian, Arabic, Vietnamese, and German.



Chapter 5: Service Standards and Policies

To guard against discrimination resulting from service design or operation, the Federal Transit Administration (FTA) requires that the MBTA adopt systemwide service standards and policies for each fixed-route mode of service.

SYSTEMWIDE SERVICE STANDARDS (FTA C 4702.1B, IV.4.A)

FTA Title VI Circular 4702.1B describes the requirement for transit providers that operate fixed-route service to set quantitative systemwide service standards for vehicle load, vehicle headway, on-time performance, and service availability. Standards for these four performance indicators are found in the MBTA's Service Delivery Policy (see Appendix 2-F). This policy, first adopted in 1996, sets how the MBTA evaluates service quality and allocates transit service to meet the needs of the Massachusetts Bay region. It is consistent with the MBTA's enabling legislation and other external mandates, such as Title VI of the Civil Rights Act of 1964 and the Americans with Disabilities Act of 1990 (ADA). Since 1996, the Service Delivery Policy has been revised six times: in 2002, 2004, 2006, 2008, 2010, and most recently in 2017. The 2017 Service Delivery Policy

- establishes the aspects that define service availability and sets parameters for levels of provided service;
- establishes objectives that define the key performance characteristics of quality transit services;

- identifies quantifiable standards that are used to measure whether the MBTA's transit services achieve their objectives, within the context of federal, state, and local regulations;
- outlines a service planning process that applies the service standards in an objective, uniform, and accountable manner;
- sets the priorities for the service planning process by setting minimum levels and targets for the service standards; and
- involves the public in the service planning process in a consistent, fair, and thorough manner.

The 2017 Service Delivery Policy takes advantage of the capabilities offered by new technologies to collect and analyze data and to take the first steps towards creating standards from a passenger perspective. To this end, the MBTA worked with two committees to produce the document: 1) a policy advisory committee tasked with developing the service objectives, and 2) a technical advisory committee tasked with establishing standards, metrics, and thresholds designed to address the service objectives. These committees included staff from the MBTA, the Massachusetts Department of Transportation (MassDOT), and the Central Transportation Planning Staff (CTPS), along with members of academia, and various planning and advocacy groups. In addition, the MBTA engaged members of the public through a series of workshops held throughout the region, an online survey, and public meetings.

The Service Delivery Policy is intended to be updated regularly as the MBTA expands its ability to collect and analyze data, build out metrics, and define service parameters and targets. In addition, as priorities for service change, the policy can be updated to reflect new priorities. Future updates will have a public input component and must be adopted by the MBTA governing board.

Chapter 3 of the 2017 Service Delivery Policy sets the quantifiable standards used to measure the MBTA's service objectives, including the four FTA-required standards for vehicle load, vehicle headway, on-time performance, and service availability; and four additional standards for span of service, platform accessibility, vehicle accessibility, and service operated. The standards are divided into two categories: *service planning standards* used in the service planning process to evaluate and allocate service, and *accessibility standards* that fall outside the service planning process. The service planning standards are evaluated in the Service Monitoring portion of the MBTA's Title VI Program.

Each standard has a number of components. The definition of each standard describes what conditions are considered passing for that standard. Within a single standard, the definition changes depending on the type of service or time period. The pass/fail condition is measured at different levels of aggregation depending on the standard. For example, on-time performance of a bus is measured at each time point on the route.

All standards are designed such that 100 percent is considered perfect performance. Improvement is always measured by an increase in the percentage. Depending on the standard, performance can be measured at the route, mode, or network level.

Vehicle Load (FTA C 4702.1B, IV.4.a.1)

The MBTA assesses vehicle load using a set of passenger comfort standards. Passenger comfort is influenced by the number of people on the vehicle and whether or not a seat is available to each rider for all or most of the trip. The passenger comfort standards, which vary by mode and time of day, establish the maximum number of passengers that can be on a vehicle so that the ride is safe and comfortable. The following provides a summary of the MBTA's passenger comfort standards that are detailed in the 2017 Service Delivery Policy (p. 25-28).

Bus

The MBTA will measure the passenger hours of travel experienced by comfortable bus passengers during each time period. The maximum comfortable load is expressed as a ratio of the number of passengers on the vehicle to the number of seats on the vehicle. The maximum comfortable loads are set based on Department of Public Utility (DPU) Regulation 220 CMR 155.02 (26), which states "passengers in excess of 40 percent above the seating capacity of a motor bus shall not habitually be carried."

High-Volume Time Periods

The maximum comfortable passenger-to-seat ratio for high-volume travel periods is 140 percent. All passengers are considered comfortable on buses with loads up to 140 percent of seated capacity. No passengers are considered comfortable when the vehicle load exceeds 140 percent of seated capacity.

Low-Volume Time Periods

The maximum comfortable passenger-to-seat ratio for low-volume travel periods is 125 percent. All passengers are considered comfortable on buses with loads up to 125 percent of seated capacity. Seated passengers are considered comfortable when loads are between 125 percent and 140 percent of seated capacity. No passengers are considered comfortable when the vehicle load exceeds 140 percent of seated capacity.

Heavy and Light Rail

The MBTA currently lacks the data to accurately measure passenger loads on heavy and light rail vehicles. Since 2016, the MBTA has been working to procure heavy and light rail vehicles that have Automatic Passenger Counters (APCs) installed. The MBTA will set standards for heavy and light rail vehicle loads in future versions of the Service Delivery Policy when the vehicles are equipped with APCs and the MBTA has the ability to measure the amount of time passengers travel in crowded conditions.

Commuter Rail

The MBTA currently lacks the data to accurately measure the passenger loads on individual commuter rail coaches. The MBTA and its commuter rail operator are working to collect this type of data to allow for better planning. In the meantime, the MBTA's contract with its commuter rail operator sets expectations on the number of seats the operator should provide based on expected loads.

Commuter Boat

Federal laws prohibit boats from carrying more than their certified capacity. Since boarding limits are enforced, the MBTA does not have crowding-based comfort standards for its boat services. However, the MBTA monitors if passengers are regularly left behind to determine if additional capacity is necessary.

Vehicle Headway (FTA C 4702.1B, IV.4.a.2)

To ensure that customers have reasonable waiting times when accessing the transportation network, the MBTA establishes expected frequency of service levels for each mode, by time of day. The following provides a summary of the MBTA's frequency-of-service standards that are detailed in the 2017 Service Delivery Policy (p. 13-15).

The MBTA’s frequency-of-service standards are measured using either headway (minutes between trips) or frequency (trips per time period), as summarized in Table 5-1. If Table 5-1 does not specify an expected frequency for a mode or time period, then there is no respective standard, and frequencies for these services are set based on demand.

Table 5-1
Service Frequency

Mode	Weekday Time Periods	Expected Frequency or Headway
Bus – Local and Community	AM and PM Peak	Every 30 minutes
	All other periods	Every 60 minutes
	Saturday and Sunday	Every 60 minutes
Bus – Commuter	AM Peak	3 trips in the peak direction
	PM Peak	3 trips in the peak direction
Bus – Key Bus Routes	AM and PM Peak	Every 10 minutes
	Early AM and Midday Base/School	Every 15 minutes
	Evening and Late Evening	Every 20 minutes
	Saturday and Sunday	Every 20 minutes
Rapid Transit	AM and PM Peak	Every 10 minutes
	All other periods	Every 15 minutes
	Saturday and Sunday	Every 15 minutes
Commuter Rail	AM Peak	3 trips in the peak direction
	PM Peak	4 trips in peak direction

(Table 5-1 Cont.)

Mode	Weekday Time Periods	Expected Frequency or Headway
Commuter Rail	All other periods	Every 3 hours in each direction
	Saturday	Every 3 hours in each direction
Boat	AM and PM Peak	3 trips in the peak direction
	Off-peak periods	Every 3 hours

Note: There is no frequency standard during the Sunrise or Night times or for supplemental bus service. AM Peak and PM Peak are defined differently for commuter rail service.

Source: Table 5 in the 2017 Service Delivery Policy.

The MBTA counts passenger trips taken on services that operate at least at the expected frequency as “passing” and trips taken on services that operate at less than the expected frequency as “failing.” This measure is weighted by ridership in each time period, which prioritizes meeting the expected frequency at peak periods and on routes and services with high ridership.

On-Time Performance (FTA C 4702.1B, IV.4.a.3)

Reliability standards vary by mode and provide tools to evaluate the on-time performance of individual MBTA lines and routes. Reliability standards also vary based on frequency of service; passengers using high-frequency services generally are more interested in regular vehicle arrivals than in strict adherence to published timetables, whereas passengers who use less-frequent services expect arrivals and departures to occur as published. The following provides a summary of the MBTA’s reliability service standards that are detailed in the 2017 Service Delivery Policy (p. 20-25).

Bus

To determine whether a bus is on time at an individual timepoint, such as the beginning of a route, end of a route, or a scheduled point in between, the MBTA uses two different tests based on the scheduled frequency of the service:

- **Scheduled-Departure Service:** A trip is considered to provide scheduled-departure service when it operates with a headway longer than 15 minutes. For scheduled-departure services, passengers generally time

their arrivals at bus stops to correspond with the specific published departure times.

- **Frequent Service:** A trip is considered to provide frequent service when it operates with a headway of 15 minutes or less. For frequent service, passengers can arrive at a stop without looking at a schedule and expect a reasonably short wait. Key Bus Routes, whose passengers use the services as if they were frequent services despite occasional longer than 15 minute headways, are always evaluated using the frequent service definition even when their headways exceed 15 minutes.

Routes other than Key Bus Routes might operate entirely with frequent service, entirely with scheduled-departure service, or with a combination of both throughout the day. Because any given route may have both types of service, each trip is considered individually to determine whether it represents scheduled-departure service or frequent service, and each timepoint crossed on that trip is measured accordingly.

On-Time Test for Scheduled-Departure Timepoints

To be considered on time at a timepoint, any trip evaluated using the scheduled-departure standard must meet the applicable condition cited below.

- **Origin timepoint:** The trip must depart its origin timepoint between zero minutes before and three minutes after its scheduled departure time.
- **Mid-route timepoint:** The trip must leave the mid-route timepoint(s) between one minute before and six minutes after its scheduled departure time.
- **Destination timepoint:** The trip must arrive at its destination timepoint no later than five minutes after its scheduled arrival time.

On-Time Test for Timepoints on Frequent Services

To be considered on time at a timepoint, any trip evaluated using the frequent service standard must meet the applicable condition cited below.

- **Origin or mid-route timepoint:** A trip must leave its origin timepoint or mid-route timepoint no later than the scheduled headway plus three minutes after the previous trip departed that timepoint.

- **Destination timepoint:** The actual run time from the origin timepoint to the destination timepoint must be no more than 120 percent of the scheduled run time for the trip to be considered on time at the destination timepoint.

Bus Route Test

Bus reliability for a specific route is calculated as the percentage of the route that passes the on-time tests at timepoints.

Heavy and Light Rail

As with frequent bus services, passengers on light rail and heavy rail do not rely on printed schedules; rather, they expect trains to arrive at consistent headways. Therefore, schedule adherence for light rail and heavy rail is measured as the proportion of a line's passengers who wait the amount of time of the scheduled headway, or less, for a train to arrive. For passengers boarding on the trunk section of the Green Line, the headway is defined as three minutes.

Commuter Rail

Commuter rail passengers expect to arrive at their destination station at the time posted in the schedule. Therefore, schedule adherence for commuter rail is measured as the number of trains that arrive at the destination terminal no later than five minutes after the time published in the schedule.

Commuter Boat

Commuter boat passengers expect to arrive at their destination dock at the time posted in the schedule. Therefore, schedule adherence for commuter boat is measured as the number of boats that arrive at the destination terminal no later than five minutes after the time published in the schedule.

Service Availability (FTA C 4702.1B, IV.4.a.4)

An important aspect of providing the region with adequate access to transit services is the system's geographic coverage. The following provides a summary of the MBTA's coverage standards that are detailed in the 2017 Service Delivery Policy (p. 15-28).

The MBTA recognizes that coverage means different things to different markets. To address these different groups, the MBTA measures coverage in three ways:

- Base coverage
- Frequent service in dense areas coverage
- Low-income household coverage

The MBTA prioritizes high-frequency service in high-density areas and service to areas with high proportions of low-income households, while maintaining an acceptable level of base coverage. While the MBTA monitors the effect of proposed service modifications on all three components of the coverage standard as part of its service planning process, only the base-coverage standard is evaluated for Title VI service monitoring.

To monitor its base level of coverage, the MBTA measures the percentage of the population that lives no more than 0.5 miles from a bus stop, rapid transit station, commuter rail station, or boat dock in the municipalities in the MBTA's service area, excluding municipalities that are members of another regional transit authority.

Span of Service

Span of service refers to the hours during which service is available. The MBTA has established span-of-service standards that define the expected hours that any given service will operate. The following provides a summary of the MBTA's span-of-service standards that are detailed in the 2017 Service Delivery Policy (p. 11-13).

The span-of-service standards, summarized in Table 5-2, vary by mode and by day of the week, reflecting the predominant travel flows in the region. The standards require that the first trip in the morning in the peak direction of travel must arrive in downtown Boston, or the route terminal if the route does not serve downtown Boston, at or before the beginning span-of-service time. At the end of the service day, the last trip in the evening in the peak direction of travel must depart downtown Boston, or the route terminal if the route does not serve downtown Boston, at or after the ending span-of-service time. If Table 5-2 does not specify an expected span of service for a mode or time period, then there is no respective standard and service hours are set based on demand.

Table 5-2
Span of Service

Mode	Day	Expected Span of Service
Bus – Local	Weekday	7:00 AM – 7:00 PM
	Saturday ¹	8:00 AM – 6:30 PM
	Sunday ¹	10:00 AM – 6:30 PM
Bus – Community	Weekday	10:00 AM – 4:00 PM
	Weekday	7:00 AM – 9:00 AM
	Weekday	4:00 PM – 6:30 PM
Bus – Supplemental	Weekday	No minimum span
Bus – Key Bus Routes	Weekday	6:00 AM – midnight
	Saturday	6:00 AM – midnight
	Sunday	7:00 AM – midnight
Heavy Rail	Weekday	6:00 AM – midnight
	Saturday	6:00 AM – midnight
	Sunday	7:00 AM – midnight
Light Rail	Weekday	6:00 AM – midnight
	Saturday	6:00 AM – midnight
	Sunday	7:00 AM – midnight
Commuter Rail	Weekday	7:00 AM – 10:00 PM
	Saturday	8:00 AM – 6:30 PM
Boat	Weekday	7:00 AM – 6:30 PM
	Saturday ²	8:00 AM – 6:30 PM

¹ This is a standard for high-density areas. There is no span-of-service standard for low-density areas on weekends.

² Memorial Day–Columbus Day

Note: The RIDE generally operates from 5:00 AM to 1:00 AM. The MBTA provides extended hours for trips starting and ending within 0.75 miles of a fixed-route service that operates outside of these hours.

Source: MBTA.

The MBTA counts passenger trips taken on services that operate at least during the expected span as “passing” and trips taken on services that operate less than the expected span as “failing.” This measure is weighted by ridership to prioritize the objective of meeting the expected span of service on routes and services with high ridership.

Platform Accessibility

If elevators are not available to people who need to use them, they may not be able to gain access to MBTA services. The following provides a summary of the MBTA’s platform accessibility standard that is detailed in the 2017 Service Delivery Policy (p. 18-19).

The MBTA’s goal is for people to be able to access the platforms in each station at all times service is offered. To this end, the MBTA measures the amount of time that platforms are accessible during service hours, i.e., the percentage of total platform-hours that are accessible. The percentage of total platform-hours that are accessible is measured separately for rapid transit stations, commuter rail stations, and commuter boat docks. Rapid transit stations include gated Silver Line Waterfront stations, but exclude surface-level stops on the Green Line and Silver Line.

Vehicle Accessibility

The following provides a summary of the MBTA’s vehicle accessibility standard that is detailed in the 2017 Service Delivery Policy (p.19).

The MBTA should provide at least one ADA-compliant vehicle on each trip it operates. To this end, the MBTA measures the percentage of trips that are provided with at least one ADA-compliant vehicle.

A trip on the commuter rail is considered compliant if at least one ADA-compliant coach in the trainset can align at each high-level platform at stations served by the trip to load and unload passengers. ADA-compliant commuter rail coaches must include ADA-compliant restrooms. Trips on the Green Line are considered noncompliant if none of the vehicles in a train set is ADA-compliant. Bus trips are not measured since ramps can be deployed manually. Heavy rail and commuter boat trips are covered in the platform accessibility standard.

Service Operated

The following provides a summary of the MBTA's service operated standard that is detailed in the 2017 Service Delivery Policy (p. 24-25).

The MBTA intends to operate all of the service it schedules. A multitude of factors—including equipment failure, lack of personnel, and unforeseen delays, such as medical and police emergencies—can sometimes prevent the MBTA from operating scheduled service. To this end, the MBTA measures the percentage of scheduled service that is actually provided for each bus route, light rail line, heavy rail line, commuter rail line, and commuter boat route. Planned heavy, light, and commuter rail outages where the MBTA offers substitute service do not count against this standard.

SYSTEMWIDE SERVICE POLICIES (FTA C 4702.1B, IV.4.B)

FTA guidance requires that the MBTA adopt systemwide service policies for the distribution of transit amenities and vehicle assignment for each mode to ensure service design and operations practices do not result in discrimination on the basis of race, color, or national origin. Service policies differ from service standards in that they are not necessarily based on a quantitative threshold.

Distribution of Transit Amenities (FTA C 4702.1B, IV.4.b.1)

The FTA circular defines transit amenities as items of comfort, convenience, and safety that are available to the general riding public. FTA guidance requires the MBTA to set policy to ensure equitable distribution of transit amenities across the system. The following policies address how amenities are distributed within the MBTA's transit system.

Bus Stop Amenities

The following provides a summary of the MBTA's policy on bus stop amenities detailed in Chapter 6 of the MBTA's Bus Stop Design Guidelines (p. 37-45).

The bus stop represents one of the MBTA's best marketing opportunities. A well designed and equipped bus stop improves operations, ridership, and transit's value to the community. Certain customer amenities can also play a significant role in attracting and retaining customers. Customer amenities are intended to improve customer comfort, as well as provide a sense of safety and security. These attributes can affect an individual's decision on whether or not to use transit.

The following types of amenities can be provided at bus stops, depending on level of usage and/or type of service:

- **Customer shelters** provide comfort and protection from the elements.
- **Benches** provide a level of comfort for customers.
- **Trash and recycling receptacles** help to keep the bus stop area free of litter.
- **Signs, schedules, and maps** provide customer information.
- **Next bus arrival information** provides expected wait time for the next arriving bus.
- **Bicycle parking facilities** help to facilitate multimodal connections.

The decision to install amenities at a particular stop takes into account a number of factors, including the following:

- **Customer Utilization:** The level and type of customer usage plays a primary role in determining where amenities are warranted. Bus stop consolidation often results in customers having to walk further distances to access transit. In these cases, provision of certain amenities is desirable to offset the inconvenience.
- **Customer Transfer Activity:** High transfer activity generally means that customers may have to wait longer periods of time to make transit connections. Depending on the characteristics of the connection, additional amenities should be considered.
- **Transit Corridor Marketing Efforts:** Bus rapid transit (BRT) and Key Bus Route improvements both benefit from enhanced marketing and branding, which is often provided through the provision of amenities.
- **Title VI, Environmental Justice, and Community Equity:** Amenities need to be evenly and fairly distributed among bus stops in both minority and low-income communities to meet the requirements of Title VI of the 1964 Civil Rights Act, as defined in the FTA Circular C 4702.1. Title VI and environmental justice principles mandate that MBTA services—including shelters and amenities—are distributed in such a manner that minority and low-income communities receive benefits in the same proportion as the total service area.

- **Proximity to Existing Sheltered Areas:** New amenities may not be needed if customers are able to take advantage of existing facilities located at the bus stop. For example, an existing storefront canopy or awning could provide shelter for waiting customers and preclude the need for a new freestanding shelter.
- **Customer and Community Requests:** Communities and individuals often make requests for amenities at specific stops. Often these requests reflect specific needs related to the proximity to elderly housing or medical facilities.
- **Installation and Maintenance Costs:** The benefits offered by each type of amenity must be weighed against the cost of installation and maintenance. Although the MBTA may carry the cost of purchasing and installing amenities, often a municipality or a third party will be asked to take on the responsibility for maintenance. Adopt-a-Stop programs can often be established to cover installation and/or maintenance costs.
- **Bus Stop Environment/Adjacent Land Use:** The characteristics of the surrounding neighborhood may influence the type or design of bus stop amenities. For example, neighborhoods may require street furniture that is consistent with the overall design of the streetscape. Design should consider the needs of the local environment and incorporate community input.

Bus Shelter Placement

The following provides a summary of the MBTA's bus shelter policy that is detailed in Chapter 7 of the MBTA's Bus Stop Design Guidelines (p. 46-55).

Given fiscal constraints and right-of-way constraints, the MBTA is not able to provide bus shelters at most of its 8,100 stops. To fairly distribute shelters systemwide, the following MBTA Shelter Policy provides guidance for the placement of bus shelters and establishes a procedure for evaluating shelter requests. This policy in no way establishes a requirement for placement, since all placements will be dependent on available resources. In areas or locations where the MBTA, or its contractors, are the primary suppliers of shelters at bus stops, placements must

1. conform with shelter eligibility standards;
2. pass a site suitability test;
3. meet the requirements of Title VI; and
4. comply fully with accessibility regulations.

Shelter Eligibility Standards

Customer utilization is the primary consideration when determining if a bus stop is eligible for a shelter. All bus stops that meet the required number of boardings are eligible. Table 5-3 lists all criteria to be factored into an assessment of eligibility for each bus stop and the value associated with each criterion. A site must receive a total of 70 points to be considered eligible under this policy. The following criteria are considered:

- **Customer Utilization:** The number of customers boarding at a stop on an average weekday. Any bus stop that has more than 70 boardings is automatically eligible for a shelter. For bus stops with fewer boardings, a combination of the factors listed below are considered in determining eligibility. Stops that have fewer than 25 boardings are not eligible for a shelter.
- **MBTA Initiatives to Strengthen Identity of Route or Bus Stop:** The bus stop is located on a designated Key Bus Route or it serves a potentially highly transit dependent development.
- **Demographics:** The bus stop is in close proximity to medical facilities or senior housing, and/or is used by significant numbers of elderly persons and/or persons with disabilities.
- **Minority and/or Low-Income Areas:** The bus stop is in a Title VI or environmental justice community.
- **Connectivity:** The bus stop serves as a major transfer point to another transit or bus route.
- **Frequency of Service:** Bus stops on routes with less frequent service are more likely to qualify for a shelter, due to the longer time that customers may have to wait for a bus.
- **Site Conditions:** Bus stops that have an unusually high exposure to adverse weather elements.

Table 5-3
Bus Shelter Eligibility

Eligibility Criteria	Points
70 or more average weekday boardings	70
25-69 average weekday boardings	50
MBTA initiative to strengthen route or stop identity	20
Facilities for seniors, disabled, medical or social services nearby	20
Minority and/or low-income area	15
Bus route transfer/connection point	5
Infrequent bus service	10
Poor site conditions at bus stop	10

Source: Table 7.1 in the MBTA Bus Stop Design Guidelines.

For shelters that are procured, installed, and maintained by others, it's not necessary for the shelter to meet these eligibility standards, however it is strongly recommended for transit equity purposes.

Site Suitability Test

The following physical and practical requirements must be met before a bus stop can be considered for a shelter:

- **Site ownership:** Permission to install a shelter must be granted by the land owner. In most cases, the land owner is the municipality that owns the sidewalk. In some cases, property easements, license agreements, and/or land takings may be required if the sidewalk width is inadequate and the shelter must encroach on adjacent property.
- **Abutter approval:** Depending on the site ownership and proposed setback of the shelter, it may be necessary to notify the abutter and/or obtain their approval.
- **Adequate physical space and clearances:** This typically pertains to sidewalk widths and potential obstacles to an accessible and safe path of travel. There must be sufficient space for the shelter, as well as an

accessible path of travel around the shelter and between other street furniture. The busier the sidewalk, the more space is required. In addition, shelters must be sufficiently set back from the curb to avoid being struck by vehicles. Where sidewalks are not sufficiently wide, options may include sidewalk widening or installation of a narrow shelter, curb extension, or bulb out.

- **Proximity to the bus stop:** The shelter should generally be located within the limits of the bus stop zone or no greater than 50 feet from the designated bus boarding area.
- **Community and municipal approval:** For advertising shelters, a license agreement between the municipality and the shelter company is generally required. A permit may also be required from the State Office of Outdoor Advertising (OOA).

Title VI Requirements

Title VI of the 1964 Civil Rights Act is defined in FTA Circular 4702.1. Title VI and environmental justice principles mandate that MBTA services—including shelters and amenities—are distributed in such a manner that minority and low-income communities receive benefits in the same proportion as the total service area. The MBTA and CTPS periodically conduct a Title VI analysis to ensure compliance. At times there may be a disparity that needs to be addressed.

Accessibility Requirements

Installation of a bus shelter may trigger specific accessibility requirements, including lengthening of the bus stop, building an accessible bus landing pad, and providing an accessible path of travel between the landing pad, the sidewalk, and the shelter.

Benches at Bus Stops

The following provides a summary of the MBTA's policy on benches at bus stops, as detailed in Chapter 6 of the MBTA's Bus Stop Design Guidelines (p. 40-41).

Benches are the most common bus stop amenity and are generally the simplest and most desirable to provide, given their nominal cost and space requirements. Benches should be provided when any of the following conditions exist:

- The bus stop has at least 50 daily boardings.
- A shelter is warranted but unable to be installed.
- The stop serves a significant number of seniors or persons with disabilities.

Benches may also be warranted in the following situations:

- There is evidence of customers sitting on steps, walls, or other structures located on abutting private property.
- The stop is located on a low frequency bus route.

Provision of Information

Variable Message Signs

The MBTA currently uses four different types of electronic message signs on the bus, rapid transit, and commuter rail systems. These include the following:

- Countdown and public address signs at stations that count down the number of minutes until the next vehicle arrives at or departs from the station. They also display public-service announcements. These signs are present at all subway stations, most commuter rail stations, most bus rapid transit stations, and some above-ground light rail stations.
- Departure boards at stations that list upcoming departures. These boards are present at three major commuter rail stations.
- In-vehicle message and public-address signs that display the next stop. These signs are present on all buses, all Blue and Green Line trains, one-third of Red Line trains, and one-third of commuter rail coaches. The Orange Line, Mattapan Line, and ferries do not currently have in-vehicle message signs. The MBTA is presently procuring two ferries that will have in-vehicle public address signs.
- Digital Advertising screens that also show real-time information and service alerts. These displays are present at 10 subway stations and are being installed at almost all others.

Countdown and Public Address Signs

Subway

The MBTA has installed variable message signs (VMS) at rapid transit stations throughout the system. In accordance with the 2006 agreement between the MBTA and the Boston Center for Independent Living (BCIL), signs are located at each set of fare gates and on inbound and outbound platforms. The exact locations and quantities of signs were determined through field observations of existing conditions and needs at each station.

All Red, Orange, and Blue Line stations are being equipped with electronic message signs that display the number of minutes until the next two trains arrive, as well as a train arrival announcement. The information displayed on these signs is triggered by the train's signal system. This system also shows and audibly plays public service announcements.

Light Rail

As part of the Authority's settlement agreement with BCIL, VMS signs were also installed on the Green Line D Branch from Riverside to Kenmore stations, the Green Line central subway from Symphony to Lechmere stations, and the Mattapan Line. At most stations, with the exception of stations where trains originate, these signs display and announce the time until the next two departures. Because the Green Line trains do not have a fixed schedule like the other lines, it is difficult to predict the actual departure time from their origins. This system also shows and audibly plays public service announcements.

Bus

The same VMS signs that are installed at subway and light rail stations are also present at some bus-rail and bus-bus transfer points: Dudley, Lechmere, Harvard, and Mattapan stations. Underground bus rapid transit (BRT) stations World Trade Center and Courthouse also have these signs. These signs show and announce the next departure for each route serving that stop and play public address messages.

VMS that count down the minutes until the arrival of the next BRT route are placed at 19 of the 23 stops on the Silver Line Washington Street route. The four stops without bus stop VMS boards are Tufts Medical Center (both directions), Chinatown, and Boylston. These signs display delay information for the Silver Line Washington Street route only. They do not audibly announce information or play public address messages.

Commuter Rail

In 1997, in conjunction with the opening of the Old Colony's Middleborough/Lakeville and Kingston/Plymouth Lines, "PENTA" light-emitting diode (LED) message boards were installed at all stations on those lines. Although these signs used the current technology of that period, they have limited display capability—only one message at a time can be shown, with no more than 99 characters per message. PENTA signs were also installed at the new stations on the Framingham/Worcester Line west of Framingham, and on the Newburyport/Rockport Line at the new stations in Ipswich, Rowley, and Newburyport.

A project to install new passenger information signs at all commuter rail stations (with the exception of Silver Hill, Plimptonville, and Foxborough) was initiated in 2000; at least one sign was added on each inbound platform, and an additional sign was added at stations with mini-high platforms. The PENTA signs were not replaced. The new signs can display multiple messages and have a capacity of as many as 1,600 characters. All signs are installed on the inbound platforms in order to serve the greatest number of customers, as they travel inbound during the morning peak period.

The MBTA has implemented a Passenger Train Information System (PTIS), also known as the "Next Train" system, at all commuter rail stations except those that offer staffed information booths (South Station, North Station, and Back Bay Station). The PTIS uses state-of-the-art global-positioning-system (GPS) technology on trains moving along the line to generate automated messages regarding the arrival of the next train on LED signs located on the station platforms. If service is disrupted, the location information is supplemented by a "console operator," who monitors the movement of the trains to send ad hoc messages manually to the signs as required. The system also generates automatic station announcements on board the train.

Departure Screens

Bus

At major bus stations, the MBTA has installed bus departure boards that notify riders when the next bus on each route is expected to depart. These boards are present at Ashmont, Central Square, Dudley, Forest Hills, Harvard, Haymarket, Maverick, Ruggles, Sullivan, and Wonderland stations. The boards utilize real-time bus tracking data and feature both visual and audio messages. They also display service alerts and elevator and escalator outages. A push-button activated sound system allows individuals with visual impairments to access the information on the board.

Commuter Rail

North Station, South Station, and Back Bay Station on the commuter rail have departure screens that display and audibly announce upcoming scheduled departures, the status (on time, number of minutes late, or canceled), and the track on which the train will arrive/depart. These signs display the scheduled departure time until manually changed by a dispatcher.

In-Vehicle Signs

Subway and Light Rail

Public Address (PA) systems on the Blue Line, Green Line, and about half of the Red Line vehicles have VMS displays. They show and announce the current stop, next stop, and indicate on which side of the train the doors will open. They can also display other pre-programmed PA messages. These systems use radio frequency identification (RFID) tags on the tracks to trigger the announcements on the train. There are currently no VMS on Orange Line or Mattapan Line vehicles. New vehicles are being purchased to replace the entire Red and Orange Line vehicle fleets. The new vehicles will be equipped with the same audio-visual announcement system as the vehicles on the Blue, Green, and Red Lines. The Mattapan Line runs historic streetcars and currently there are no plans to replace or retrofit these vehicles.

Bus

All MBTA buses are equipped with a PA system that includes speakers, an overhead LED display in the bus, and front, right side, and rear signs on the outside of the vehicles, which are all part of the TransitMaster Computer-aided Dispatch/Automatic Vehicle Location (CAD/AVL) system. The system announces the next stop and displays it on the interior LED sign. The exterior signs display the route and destination, which are also announced when the bus's doors open. The interior signs and speakers also make general announcements that are programmed centrally by operations staff.

Commuter Rail

All commuter rail coaches are equipped with automated stop announcements that are driven by PTIS, the same system that drives the station LED signs. The system makes audio announcements when the train is approaching each stop. Approximately 30 percent of the coaches have interior LED signs that also display this information to passengers. All new coach purchases are planned to include these interior LED signs. The system can also make general PA announcements.

Ferry

Neither of the MBTA's two ferry boats is equipped with VMS signs, nor are the ferry terminals. The MBTA is purchasing two new ferry boats that will supplement the existing fleet. These vehicles will be equipped with an automated announcement system that includes LED signs on the exterior of the boat and LCD monitors on the interior of the boat that will display the destination of the boat, the next stop, and any other public address messages. These messages will also audibly be announced over the boat's speakers.

Digital Advertising Screens

The MBTA is in the process of installing 700 digital advertising screens at most of its rapid transit stations. These primarily display advertising content, but can also display public service announcements from the MBTA in the normal advertising rotation. In the event of an emergency or severe service disruption, the screens can also be "taken over" by the MBTA to display solely a service alert message. The MBTA is working to add real-time information to these screens in the normal advertising rotation, displaying to customers upcoming train arrivals and any pertinent service alerts, which would complement existing information already provided by the countdown and PA signs. These signs cannot currently make audio announcements, but the MBTA's advertising partner is actively working to be able to announce critical service information in addition to displaying it.

Neighborhood Maps in Rapid Transit Stations

The Neighborhood Map Program involves the placement of two types of maps at rapid transit stations that have bus connections: 1) neighborhood maps, showing major landmarks, bus routes, the street network, the one-half-mile walking radius around the station, green space, pathways, and accessible station entrances; and 2) more detailed maps that show all bus routes that serve a particular station, along with service frequency information.

The objectives that the program hopes to accomplish at each station include 1) providing route and schedule information for bus routes serving that station, 2) placing the transit station in the context of the surrounding neighborhood, and 3) highlighting the areas around the station that are within easy walking distance.

Where space allows, one or both maps are placed at stations with bus connections. The maps are also generally installed at new or renovated stations, regardless of whether or not a station has bus service. Due to space constraints, maps are not located at many surface Green Line stops.

Escalators

Escalators provide vital access to the system, particularly for persons with disabilities. In 2006, the MBTA formalized a partnership with the BCIL through a consent agreement that sets operational protocols and standards as well as a proactive agenda for making the transit system more accessible. The MBTA uses the operability standard defined in Title 49 of the Code of Federal Regulations, § 37.161, *Maintenance of accessible feature: General*:

- a) *“Public and private entities providing transportation services shall maintain in operative condition those features of facilities and vehicles that are required to make the vehicles and facilities readily accessible to and usable by individuals with disabilities. These features include, but are not limited to, lifts and other means of access to vehicles, securement devices, elevators, signage and systems to facilitate communications with persons with impaired vision or hearing.*
- b) *Accessibility features shall be repaired promptly if they are damaged or out of order. When an accessibility feature is out of order, the entity shall take reasonable steps to accommodate individuals with disabilities who would otherwise use the feature.*
- c) *This section does not prohibit isolated or temporary interruptions in service or access due to maintenance or repairs.”*

The MBTA contracts for the complete maintenance, service testing, and inspection of all transit system and facility escalators. The MBTA's contract imposes penalties if the contractor fails to comply with the ADA requirements. The MBTA has implemented a proactive maintenance program to keep equipment safe and operational. Maintenance specifications are defined to cover all equipment components. The MBTA's Maintenance Control Center (MCC) tracks all escalator service requests, which are transmitted to the MCC via MBTA personnel and field inspectors. The MCC transmits the service-request information to the escalator maintenance contractor via a computer terminal, and the contractor then dispatches maintenance personnel to perform repairs. The causes of equipment failures vary, as well as the length of time required to repair them.

Vehicle Assignment (FTA C 4702.1B, IV.4.b.2)

Vehicle assignment refers to the process by which vehicles are placed in garages and assigned to routes throughout the system. The policies used for vehicle assignment vary by mode and are governed by various operational characteristics and constraints.

Bus Vehicle Assignment

The MBTA's bus fleet consists of 28 electric trackless trolleys; 360 compressed-natural-gas (CNG) vehicles; 502 emission-control-diesel (ECD) vehicles; 37 older diesel buses; 32 dual-mode vehicles; and 25 hybrid vehicles. The MBTA has acquired more than 500 clean-fuel vehicles to provide service on the Silver Line Washington Street BRT route and to replace the oldest diesel vehicles in the fleet. In accordance with the September 1, 2000, Administrative Consent Order, Number ACO-BO-00-7001, issued by the Commonwealth of Massachusetts, the Department of Environmental Protection (DEP), under the Executive Office of Environmental Affairs (now the Executive Office of Energy and Environmental Affairs), the MBTA "insofar as possible, operates the lowest emission buses in the fleet in transit dependent, urban areas with highest usage and ridership as the buses enter the MBTA bus fleet." Table 5-4 provides additional information on the vehicles in the bus fleet.

Table 5-4
Bus Fleet Roster

Propulsion	Active Vehicles	Year Built	Accessible	Overhaul	Length	Width	Seats
Straight Electric	28	2003-04	Ramp	None	40'	102"	31
Diesel Series 60 500 HP (dual-mode)	24	2004-05	Ramp	None	60'	102"	47
	8	2005	Ramp	None	60'	102"	38
CNG Cummins C8.3	175	2004	Ramp	2010-13	40'	102"	39
	124	2003	Ramp	2009-11	40'	102"	39
CNG Series 60 400HP	44	2003	Ramp	None	60'	102"	57
CNG Series 50G	15	2001	Ramp	None	40'	102"	39
	2	1999	Ramp	None	40'	102"	39
Diesel Caterpillar C9	192	2004-05	Ramp	In progress	40'	102"	38
Diesel Series 50	37	1994-95	Lift	2004-05	40'	102"	40
Diesel Cummins ISL	155	2006-07	Ramp	None	40'	102"	39
	155	2008	Ramp	None	40'	102"	39
Hybrid	25	2010	Ramp	None	60'	102"	57

Note: Between late 2016 and fall 2017, 325 new 40-foot buses and 44 new articulated buses will replace the CNG buses acquired between 1999 and 2004.

The MBTA's policy is to maintain an average age of eight years or less for the bus fleet. In general, each bus is assigned to one of nine MBTA bus storage and maintenance facilities and operates only on routes emanating from the garage to which it is assigned. Individual vehicles within each garage are not assigned to specific routes, but circulate among routes based on a number of operating constraints and equipment criteria. The following summarizes the guidelines used by inspectors when assigning vehicles in the current bus fleet to routes:

- **28 Trackless Trolleys:** The trackless trolley fleet currently consists of 28 vehicles. These vehicles are limited to use on three routes—in Belmont, Cambridge, and Watertown—where overhead catenary lines provide electric power.
- **360 Compressed-Natural-Gas (CNG) Buses:** The CNG bus fleet is composed of 316 40-foot nonarticulated vehicles and 44 60-foot articulated vehicles. Service is currently provided on Route 39 and Silver Line Washington Street by the 60-foot vehicles, all of which are housed at the Southampton facility; 17 of the 60-foot vehicles are dedicated to the Silver Line. All of the 40-foot buses are housed at the Arborway and Cabot garages; they provide service on many routes in the urban core. With the exception of the vehicles at Southampton, which currently serve only three routes, inspectors assign these buses daily, on a random basis, within each garage. This fleet is being replaced between fall 2016 and fall 2017 with 175 new 40-foot CNG buses, 150 new 40-foot hybrid buses, and 44 new articulated-hybrid buses.
- **539 Diesel Buses:** The diesel buses are assigned to the suburban garages, as well as to the Albany Street and Charlestown garages. Of the 502 ECDs in the fleet, 310 are New Flyer vehicles and 192 are Neoplan vehicles. These ECDs are garaged at the following facilities: Charlestown (134), Lynn (90), Quincy (86), Fellsway (76), and Albany (116). The 37 1994/1995 vintage Nova vehicles remain at the Charlestown garage.
- **32 Diesel-Electric (Dual-Mode) Buses:** All of the 60-foot, articulated dual-mode vehicles are designed for operation on the Waterfront portion of the new Silver Line BRT service between South Station, various locations in South Boston, and Logan Airport.
- **25 Hybrid Buses:** The 2010 vintage 60-foot, articulated hybrid vehicles operate on the following routes: 28, which operates between Mattapan Station and Ruggles Station via Dudley Station; 39, between Forest Hills Station and Back Bay Station; Silver Line 4 (SL4), between Dudley Station and South Station; and Silver Line 5 (SL5), between Dudley Station and Downtown Crossing. There are 150 40-foot and 44 60-foot hybrid vehicles on order to replace a portion of the CNG fleet between fall 2016 and fall 2017.

Light Rail Vehicle Assignment

The MBTA operates light rail vehicles on the Ashmont-Mattapan extension of the Red Line—the Mattapan High-Speed Line—and on all four branches of the Green Line: B–Boston College, C–Cleveland Circle, D–Riverside, and E–Heath Street. Type 7 and Type 8 Green Line vehicles can be operated on any Green Line branch.

There are 24 new Type 9 Green Line vehicles on order for delivery between 2017 and 2019. These will accommodate expanded Green Line service associated with the Commonwealth’s commitment to extend the Green Line to Somerville and Medford.

The Mattapan High-Speed Line has weight, curve, and power limitations that prevent the use of current Green Line light rail vehicles. Instead, President’s Conference Committee (PCC) cars are used for that line. All of the PCC cars have undergone extensive rehabilitation, including the replacement of major structural components. These cars were equipped in 2008, for the first time, with air conditioners. Table 5-5 lists the vehicles in the light rail fleet.

Table 5-5
Light Rail Fleet Roster

Type/Class of Vehicle	Fleet Size	Year Built	Builder	Length	Width	Seats
Green Line - Type 7 (1)	91	1986-88	Kinki-Sharyo (Japan)	74'	104"	46
Green Line - Type 7 (2)	20	1997	Kinki-Sharyo (Japan)	74'	104"	46
Green Line - Type 8	94	1998-2007	Breda (Italy)	74'	104"	44
Mattapan Line - "Wartime" PCC	10	1945-46	Pullman Standard (USA)	46'	100"	40

Heavy Rail Vehicle Assignment

Heavy rail vehicles are operated on the three subway lines: the Red, Orange, and Blue Lines. The specific operating environment of each line prevents one line's cars from operating on another line; therefore, each line has its own dedicated fleet.

Because there are no branches on the Orange Line or the Blue Line, and there is only one type of Orange Line car and one type of Blue Line car, no distribution guidelines are necessary for either of these lines. The Blue Line introduced a new replacement fleet in 2009.

The Red Line has two branches and operates using three types of cars. There are no set distribution policies for the assignment of Types 1, 2, and 3 cars to the two Red Line branches (Ashmont and Braintree). All three types are put into service on both branches as available.

A new fleet of vehicles for the Red and Orange Lines is under construction, with deliveries anticipated to take place between 2018 and 2023. All of the present fleet will be replaced.

Table 5-6 lists the vehicles that are currently in the heavy rail fleet.

Table 5-6
Heavy Rail Fleet Roster

Type/Class of Vehicle	Fleet Size	Year Built	Builder	Length	Width	Seats
Blue Line - No. 5	94	2007-08	Siemens	48' 10"	111"	42
Orange Line - No. 12	120	1979-81	Hawker-Siddeley (Canada)	65' 4"	111"	58
Red Line - No. 1	74	1969-70	Pullman Standard (USA)	69' 9 ^{3/4} "	120"	63
Red line - No. 2	58	1987-89	UTDC (Canada)	69' 9 ^{3/4} "	120"	62
Red Line - No. 3	86	1993-94	Bombardier (USA)	69' 9 ^{3/4} "	120"	52

Commuter Rail Vehicle Assignment

Vehicle assignments are developed based on specific standards of commuter rail service. These standards include providing a minimum number of seats for each scheduled trip, providing one functioning toilet in each trainset, maintaining the correct train length to accommodate infrastructure constraints, and providing modified vehicles, when necessary, for a specific operating environment. The MBTA strives to assign its vehicles as equitably as possible within the equipment and operational constraints of the system.

The MBTA's Railroad Operations runs a 377-route-mile regional rail system in the Boston metropolitan area composed of 14 lines that serve 125 stations. The existing system consists of two separate rail networks: a five-route northern system, which operates north and east from North Station to terminals at Rockport, Newburyport, Haverhill, Lowell, and Fitchburg; and an eight-route southern system, which operates south and west from South Station to terminals at Worcester, Needham, Franklin, Wickford Junction, Providence, Stoughton, Readville, Greenbush, Middleborough, Kingston, and Plymouth. Trains operate in a push-pull mode, with the locomotive leading (pull mode) when departing Boston and the control car leading (push mode) when arriving in Boston.

The commuter rail coach fleet is composed of five types of coaches and three types of locomotives, which are assigned to the 14 commuter rail routes. Both coaches and locomotives have a service life of 25 years. Table 5-7 lists the vehicles in the current and near-future fleet.

Table 5-7 lists the vehicles that are currently in the commuter rail fleet.

Table 5-7
Commuter Rail Fleet Roster

Manufacturer	Fleet Size	Date	Classification	Rebuilt	Seats
Pullman	57	1978-79	BTC-1C	1995-96	114
MBB	32	1987-88	BTC-3	-	94
MBB	32	1987-88	CTC-3	-	96
Bombardier A	40	1987	BTC-1A	-	127
Bombardier B	53	1989-90	BTC-1B	-	122
Bombardier C	52	1989-90	CTC-1B	-	122
Kawasaki	50	1990-91	BTC-4	-	185
Kawasaki	24	1990-91	CTC-4	-	175
Kawasaki	17	1997	BTC-4	-	182
Kawasaki	15	2001-02	BTC-4	-	182
Kawasaki	33	2005-07	BTC-4C	-	180
Rotem	28	2013-14	CTC-5	-	173
Rotem	47	2013-14	BTC-4D	-	175

BTC = Blind Trailer Coach; CTC = Controller Trailer Coach

Train consists are assembled as required based on minimum seating capacity to meet the morning and evening peak-period requirements. Presently, the MBTA commuter rail contract operator is contractually required to have 133 coaches in 24 North Side trains and 234 coaches in 39 South Side trains. Most train consists generally are not dedicated to a specific line, but are cycled throughout the system (either North or South). Every train consist must have a control coach. The following vehicle characteristics must also be considered when assigning vehicles:

- **Kawasaki Coaches (bi-level):** There is no specific policy restricting the use of bi-level Kawasaki coaches in the commuter rail system. Currently they are used primarily in the South Side commuter rail system, since

it carries approximately 65 percent of the total boardings of the system. The bi-level coaches offer substantially more seating than the single-level coaches. This allows Railroad Operations to maintain seating capacity while minimizing the impacts of platform and layover facility constraints. The MBTA intends to purchase only bi-level coaches in future procurements in order to accommodate increasing ridership demands and to allow for greater flexibility when scheduling vehicle assignments.

- **Rotem Coaches (bi-level):** The delivery and operation of bi-level Rotem coaches began in 2013 and was completed in 2014. There are 75 cars of which 47 are equipped with toilet facilities.
- **Messerschmitt-Bolkow-Blohm (MBB) Coaches:** The MBB fleet is slated to be reduced as the Rotem fleet enters service. Portions of the MBB fleet are in storage.
- **Old Colony Line Coaches:** The coaches used for service on the Old Colony lines (Middleborough/Lakeville, Kingston/Plymouth, and Greenbush) are equipped with power doors, as all of the stations on these lines have high-level platforms. This enables a crew member to control the operation of the doors in the consist from any coach via the door control panel. Portions of the Kawasaki, Pullman, and MBB coach fleets have had the power doors activated to meet this requirement. All new Rotem coaches are equipped with power doors.
- **Advanced Civil Speed Enforcement System (ACSES):** All control coaches and locomotives operating on the Providence Line must be equipped with a functioning ACSES system. The Federal Railroad Administration (FRA) mandates the use of ACSES on Amtrak high-speed rail service, which shares the Providence Line corridor with the MBTA. All locomotives have ACSES installed and functioning. The Bombardier control coaches do not yet have ACSES installed; therefore, these coaches are limited to North Side service. There are more locomotives and control coaches equipped with ACSES than are required to meet the daily Providence scheduled trips. This provides for greater flexibility in vehicle assignments.

All coaches in the commuter rail fleet are equipped with similar amenities, the exception being the coaches equipped with toilets; therefore, the primary variation among coaches is age. For the purpose of periodic monitoring, an assessment of compliance for vehicle assignment is completed each year based on the average age of a trainset for a specified time period.



THIS PAGE INTENTIONALLY BLANK



Chapter 6: Service Monitoring

Federal Transit Administration (FTA) Title VI Circular 4702.1B, Chapter IV.6, requires that, to comply with Title VI, “providers of public transportation that operate 50 or more fixed-route vehicles in peak service and are located in an urbanized area (UZA) of 200,000 or more in population” must “monitor the performance of their transit system relative to their system-wide service standards and service policies (i.e., vehicle load, vehicle assignment, transit amenities, etc.) not less than every three years.” It also requires that “transit providers shall develop a policy or procedure to determine whether disparate impacts exist on the basis of race, color, or national origin, and apply that policy or procedure to the results of the monitoring activities.” Although the FTA requires monitoring not less than every three years, the MBTA monitors its system every year in order to ensure that potential problems are found and rectified in a timely fashion.

The framework for the MBTA’s Title VI service monitoring schedule is provided in Table 6-1. The subsequent text reports the findings of the most recent Title VI service monitoring analyses (state fiscal year 2016 unless otherwise noted). A summary of the service monitoring results is provided in Appendix 6-A.

Table 6-1
MBTA Title VI Service Monitoring Schedule

Service Indicator	Department(s) Responsible for Providing Data	Planned Frequency of Compliance Assessment
Vehicle load	Office of Performance Management and Innovation	Annually
Vehicle headway	Central Transportation Planning Staff	Annually
On-time performance	Office of Performance Management and Innovation	Annually
Service availability	Central Transportation Planning Staff	Annually
Span of service	Central Transportation Planning Staff	Annually
Platform accessibility	Engineering and Maintenance, Office of Performance Management and Innovation	Annually
Vehicle accessibility	Office of Performance Management and Innovation	Annually
Service operated	Service Planning	Annually
Bus shelter and bench placement	Operations and Service Development	Biennially - odd years
Bus shelter amenities and conditions	Central Transportation Planning Staff	Biennially - odd years
Rapid transit station amenities and conditions	Central Transportation Planning Staff	Biennially - even years
Commuter rail station amenities and conditions	Central Transportation Planning Staff	Biennially - even years
Faregate and fare-vending machine operability	Automated Fare Collection	Annually

(Table 6-1 Cont.)

Service Indicator	Department(s) Responsible	Planned Frequency of Compliance Assessment
Location of CharlieCard retail sales terminals	Automated Fare Collection	Annually
Neighborhood maps and bus transfer maps	Operations and Service Development	Biennially - even years
Variable-message sign operability	Central Transportation Planning Staff	Biennially - even years
Variable-message sign distribution	Real-time Applications	Biennially - even years
Escalator operability	Engineering and Maintenance	Annually
Vehicle assignment	Bus, Subway, and Railroad Operations	Annually

MINORITY CLASSIFICATION

In order to compare the level of service provided to areas with predominantly minority riders with the level of service provided to areas with predominantly nonminority riders, the MBTA utilized two data sources to classify its services:

- **Ridership data:** from the recent MBTA 2015–16 Systemwide Passenger Survey, used to classify MBTA bus routes, rapid transit lines and stations, commuter rail lines and stations, and commuter boat lines and stations.
- **Population data:** from the 2010 US Census, used to classify MBTA bus stops.

Classifications Based on Ridership Data

Minority classifications for all MBTA bus routes, rapid transit lines and stations, commuter rail lines and stations, and commuter boat lines and stations were developed from responses to the 2015–17 MBTA systemwide passenger survey.

The 2015–17 MBTA passenger survey was designed to obtain the highest levels of statistical reliability that were feasible given the constraints on the amount of resources available to the MBTA. After examining the costs for various degrees of survey distribution, the MBTA in consultation with the Central Transportation Planning Staff (CTPS) set goals of obtaining enough valid survey responses to provide a confidence level of 90 percent with a confidence interval of 10 percent (90/10 standards). This typically called for approximately 65 responses per route or station. CTPS determined that the cost to obtain the 90/10 standards for bus stops was prohibitive for most stops.

MBTA passengers were given the option of completing a paper survey or filling out an equivalent online form. The MBTA and CTPS engaged in extensive efforts to publicize the availability of the online form, which preceded distribution of the paper survey from late October through December 2015. The online form continued to be available throughout the entire paper survey distribution period from January 2016 to May 2017. Online surveys accounted for almost half (49 percent) of the usable surveys that were collected.

The survey called for respondents to report each link in their most recent MBTA trip. The information on each route or station used during the trip was included in the summarized results for that mode. For example, a trip on which a passenger started on a bus, transferred from the bus to a rapid transit vehicle, and then transferred from the rapid transit vehicle to a commuter rail train was counted in the results for the bus route, the rapid transit boarding and alighting stations, and the commuter rail boarding and alighting stations.

Minority classification of each MBTA service was based on the percentage of respondents using that service who reported as a minority relative to the systemwide average for all services. To account for differences in survey response rates among routes and stations, it was necessary to apply weight factors to the records.

For the MBTA bus system, control totals were derived from counts taken from on-board automatic passenger counters (APCs) during the fall of 2016, with the exception of the trackless trolley routes, which do not have APC-equipped vehicles. Control totals for trackless trolley routes were based on CTPS manual counts conducted in winter 2016.

For gated rapid transit stations, control totals were based on the average of three weekdays in April 2017 from records produced by the MBTA's automated fare collection (AFC) system. For surface Green Line branches, control totals were also based on AFC records, but noninteraction factors were applied to account

for passengers who display monthly or weekly passes but do not register them at the farebox when boarding. Control totals for exit alightings were based on a CTPS model that infers exit locations for each trip from the sequential use of individual farecards in the AFC records. Transfer control totals were calculated from trips having entries and inferred exits on different lines. If more than one reasonable location existed for a specific line-to-line transfer combination, a location was inferred based on past manual counts.

For the MBTA commuter rail system, control totals by line were provided by Keolis Commuter Services, the contract operator of the system. Keolis conducted counts at the Boston terminal stations and Fare Zone 1A stations with rapid transit connections in 2016, and estimated total additional ridership that did not transfer to or from these stations using factors from manual station counts conducted by CTPS in 2012. To determine control totals for individual commuter rail stations, the manual station counts conducted by CTPS in 2012 were factored by the changes in corresponding line ridership from 2012 to 2016. The control totals used for the commuter boat system were based on weekday average boarding counts by line in 2015 provided by Boston Harbor Cruises, the contract operator of the system.

After combining the survey responses with their associated weight factors it was determined that the MBTA systemwide minority percentage was 36.7 percent. Therefore, any MBTA bus route, rapid transit line or station, commuter rail line or station, or commuter boat line or station found to have a minority percentage greater than 36.7 percent was classified as minority; otherwise it was classified as nonminority. The classifications of all MBTA bus routes, rapid transit lines and stations, commuter rail lines and stations, and commuter boat lines and stations are provided in Appendix 6-B.

Classifications Based on Population Data

Minority classifications for all MBTA bus stops were determined based on the classification of the census tract in which the stop was located. The classification of each census tract was determined based on a threshold developed using the population of the MBTA core service area, which is comprised of the 65 municipalities that have access to MBTA bus and rapid transit services. Based on data from the 2010 US Census, 31.3 percent of the population in the core service area was a member of a minority group. A minority census tract was defined as one in which the minority percentage of the population exceeded 31.3 percent. Therefore, a bus stop located in a census tract that had a minority percentage of the population greater than 31.3 percent was classified as minority; otherwise it was classified as nonminority.

DISPARATE IMPACT THRESHOLD FOR SERVICE MONITORING

The MBTA has used a 20-percent threshold for identifying potential disparate impacts for service monitoring since the FTA established the most recent version of its Title VI Circular in 2012. The MBTA chose to adopt a 20-percent threshold based on FTA recommendations provided in the early drafts of the 2012 Title VI Circular and an assessment of the characteristics of its service area and riders. Although the MBTA did not include a statement about its threshold for service monitoring in its revised 2016 Disparate Impact and Disproportionate Burden Policy, the MBTA confirmed internally that a 20-percent threshold would continue to be used. This threshold is consistent with the MBTA's threshold for major service changes.

SYSTEMWIDE SERVICE STANDARDS (FTA C 4702.1B, IV.4.A)

The following compares how minority and nonminority services for each mode adhere to the MBTA's systemwide service standards. An assessment of commuter boat services is not provided because all MBTA commuter boat services are classified as nonminority.

Vehicle Load (FTA C 4702.1B, IV.4.a.1)

Bus

To assess bus vehicle load adherence between minority-classified routes and nonminority-classified routes, the MBTA compared the performance of each route to the overall performance of the system. On weekdays, the systemwide percentage of passenger hours of travel experienced by comfortable bus passengers, as defined by the MBTA's bus vehicle load standard, was 94.1 percent. Table 6-2 shows that 78 of the 93 bus routes (83.9 percent) that are classified minority performed at or above the systemwide average, and 49 of the 61 bus routes (80.3 percent) that are classified nonminority performed at or above the systemwide average. The ratio of the percentage of minority-classified routes performing at or above the systemwide average to the percentage of nonminority-classified routes performing at or above the systemwide average, 1.04, is above the MBTA's disparate impact threshold of 0.80 and no disparate impact is found.

Table 6-2
Bus Vehicle Load - Weekday

Route Classification	Number of Routes	Number of Routes Performing at or Above Systemwide Average	Percentage of Routes Performing at or Above Systemwide Average
Minority	93	78	83.9%
Nonminority	61	49	80.3%
Ratio of minority to nonminority			1.04
Disparate impact threshold			0.80
Result of disparate impact analysis			No Disparate Impact

Note: Data for weekdays from September 1, 2015, through December 14, 2015.

On Saturdays, the systemwide percentage of passenger hours of travel experienced by comfortable bus passengers was 97.3 percent. Table 6-3 shows that 65 of the 74 bus routes (87.8 percent) that are classified minority performed at or above the systemwide average, and 33 of the 35 bus routes (94.3 percent) that are classified nonminority performed at or above the systemwide average. The ratio of the percentage of minority-classified routes performing at or above the systemwide average to the percentage of nonminority-classified routes performing at or above the systemwide average, 0.93, is above the MBTA's disparate impact threshold of 0.80 and no disparate impact is found.

Table 6-3
Bus Vehicle Load - Saturday

Route Classification	Number of Routes	Number of Routes Performing at or Above Systemwide Average	Percentage of Routes Performing at or Above Systemwide Average
Minority	74	65	87.8%
Nonminority	35	33	94.3%
Ratio of minority to nonminority			0.93
Disparate impact threshold			0.80
Result of disparate impact analysis			No Disparate Impact

Note: Data for Saturdays from September 1, 2015, through December 14, 2015.

On Sundays, the systemwide percentage of passenger hours of travel experienced by comfortable bus passengers was 97.2 percent. Table 6-4 shows that 52 of the 60 bus routes (86.7 percent) that are classified minority performed at or above the systemwide average, and 23 of the 25 bus routes (92.0 percent) that are classified nonminority performed at or above the systemwide average. The ratio of the percentage of minority-classified routes performing at or above the systemwide average to the percentage of nonminority-classified routes performing at or above the systemwide average, 0.94, is above the MBTA's disparate impact threshold of 0.80 and no disparate impact is found.

Table 6-4
Bus Vehicle Load - Sunday

Route Classification	Number of Routes	Number of Routes Performing at or Above Systemwide Average	Percentage of Routes Performing at or Above Systemwide Average
Minority	60	52	86.7%
Nonminority	25	23	92.0%
Ratio of minority to nonminority			0.94
Disparate impact threshold			0.80
Result of disparate impact analysis			No Disparate Impact

Note: Data for Sundays from September 1, 2015, through December 14, 2015.

Heavy and Light Rail

At this time, the MBTA is unable to assess passenger comfort adherence between minority-classified heavy and light rail lines and nonminority-classified heavy and light rail lines. The MBTA is limited in its ability to estimate passenger loads on board heavy and light rail vehicles because none of the vehicles are currently equipped with APCs. In the short term, research is ongoing to develop a method for estimating the number of passengers at each platform who are unable to board as a result of crowding using AFC data and automatic vehicle location (AVL) data. In the long term, the MBTA will seek to procure new heavy and light rail rolling stock that comes equipped with APC devices.

Commuter Rail

At this time, the MBTA is unable to assess directly passenger comfort adherence between minority-classified commuter rail lines and nonminority-classified commuter rail lines because not all commuter rail vehicles are equipped with APCs. While the MBTA works to get more commuter rail coaches equipped with APCs, the MBTA conducted a supplemental assessment of vehicle load based on the percentage of trainsets on each line that had the required number of seats based on expected loads, as mandated by the MBTA's contract with its commuter

rail operator. To assess adherence to the contract between minority-classified lines and nonminority-classified lines, the MBTA compared the performance of each line to the overall performance of the system.

On weekdays, the systemwide percentage of trainsets with the required number of seats was 98.1 percent. Table 6-5 shows that the single commuter rail line that is classified minority performed at or above the systemwide average, and six of the 11 commuter rail lines (54.5 percent) that are classified nonminority performed at or above the systemwide average. The ratio of the percentage of minority-classified lines performing at or above the systemwide average to the percentage of nonminority-classified lines performing at or above the systemwide average, 1.83, is above the MBTA’s disparate impact threshold of 0.80 and no disparate impact is found.

Table 6-5
Commuter Rail Vehicle Load - Weekday

Line Classification	Number of Lines	Number of Lines Performing at or Above Systemwide Average	Percentage of Lines Performing at or Above Systemwide Average
Minority	1	1	100%
Nonminority	11	6	54.5%
Ratio of minority to nonminority			1.83
Disparate impact threshold			0.80
Result of disparate impact analysis			No Disparate Impact

Note: Data for weekdays from July 1, 2015, through June 30, 2016.

On Saturdays, the systemwide percentage of trainsets with the required number of seats was 100 percent. Table 6-6 shows that the single commuter rail line that is classified minority performed at or above the systemwide average, and 11 of the 11 commuter rail lines (100 percent) that are classified nonminority performed at or above the systemwide average. The ratio of the percentage of minority-classified lines performing at or above the systemwide average to the percentage of nonminority-classified lines performing at or above the systemwide average, 1.00, is above the MBTA's disparate impact threshold of 0.80 and no disparate impact is found.

Table 6-6
Commuter Rail Vehicle Load - Saturday

Line Classification	Number of Lines	Number of Lines Performing at or Above Systemwide Average	Percentage of Lines Performing at or Above Systemwide Average
Minority	1	1	100%
Nonminority	11	11	100%
Ratio of minority to nonminority			1.00
Disparate impact threshold			0.80
Result of disparate impact analysis			No Disparate Impact

Note: Data for Saturdays from July 1, 2015, through June 30, 2016.

On Sundays, the systemwide percentage of trainsets with the required number of seats was 100 percent. Table 6-7 shows that the single commuter rail line that is classified minority performed at or above the systemwide average, and 11 of the 11 commuter rail lines (100 percent) that are classified nonminority performed at or above the systemwide average. The ratio of the percentage of minority-classified lines performing at or above the systemwide average to the percentage of nonminority-classified lines performing at or above systemwide average, 1.00, is above the MBTA's disparate impact threshold of 0.80 and no disparate impact is found.

Table 6-7
Commuter Rail Vehicle Load - Sunday

Line Classification	Number of Lines	Number of Lines Performing at or Above Systemwide Average	Percentage of Lines Performing at or Above Systemwide Average
Minority	1	1	100%
Nonminority	10	10	100%
Ratio of minority to nonminority			1.00
Disparate impact threshold			0.80
Result of disparate impact analysis			No Disparate Impact

Note: Data for Sundays from July 1, 2015, through June 30, 2016.

Vehicle Headway (FTA C 4702.1B, IV.4.a.2)

Bus

To assess bus vehicle headway adherence between minority-classified routes and nonminority-classified routes, the MBTA compared the performance of each route to the overall performance of the system. On weekdays, the systemwide percentage of passengers on bus services that operated at least the expected frequency stated in the MBTA's bus service frequency standard was 94.2 percent. Table 6-8 shows that 55 of the 93 bus routes (59.1 percent) that are classified minority performed at or above the systemwide average, and 50 of the 67 bus routes (74.6 percent) that are classified nonminority performed at or above the systemwide average. The ratio of the percentage of minority-classified routes performing at or above the systemwide average to the percentage of nonminority-classified routes performing at or above the systemwide average, 0.79, falls slightly below the MBTA's disparate impact threshold of 0.80 and a potential disparate impact is found.

Table 6-8
Bus Vehicle Headway - Weekday

Route Classification	Number of Routes	Number of Routes Performing at or Above Systemwide Average	Percentage of Routes Performing at or Above Systemwide Average
Minority	93	55	59.1%
Nonminority	67	50	74.6%
Ratio of minority to nonminority			0.79
Disparate impact threshold			0.80
Result of disparate impact analysis			Potential Disparate Impact

Note: For the MBTA's weekday transit schedule from March 19, 2016, through June 24, 2016.

On Saturdays, the systemwide percentage of passengers on bus services that operated at least the expected frequency was 95.0 percent. Table 6-9 shows that 62 of the 74 bus routes (83.8 percent) that are classified minority performed at or above the systemwide average, and 35 of the 43 bus routes (81.4 percent) that are classified nonminority performed at or above the systemwide average. The ratio of the percentage of minority-classified routes performing at or above the systemwide average to the percentage of nonminority-classified routes performing at or above the systemwide average, 1.03, is above the MBTA's disparate impact threshold of 0.80 and no disparate impact is found.

Table 6-9
Bus Vehicle Headway - Saturday

Route Classification	Number of Routes	Number of Routes Performing at or Above Systemwide Average	Percentage of Routes Performing at or Above Systemwide Average
Minority	74	62	83.8%
Nonminority	43	35	81.4%
Ratio of minority to nonminority			1.03
Disparate impact threshold			0.80
Result of disparate impact analysis			No Disparate Impact

Note: For the MBTA's Saturday transit schedule from March 19, 2016, through June 24, 2016.

On Sundays, the systemwide percentage of passengers on bus services that operated at least the expected frequency was 92.3 percent. Table 6-10 shows that 50 of the 63 bus routes (79.4 percent) that are classified minority performed at or above the systemwide average, and 22 of the 31 bus routes (71.0 percent) that are classified nonminority performed at or above the systemwide average. The ratio of the percentage of minority-classified routes performing at or above the systemwide average to the percentage of nonminority-classified routes performing at or above the systemwide average, 1.12, is above the MBTA's disparate impact threshold of 0.80 and no disparate impact is found.

Table 6-10
Bus Vehicle Headway - Sunday

Route Classification	Number of Routes	Number of Routes Performing at or Above Systemwide Average	Percentage of Routes Performing at or Above Systemwide Average
Minority	63	50	79.4%
Nonminority	31	22	71.0%
Ratio of minority to nonminority			1.12
Disparate impact threshold			0.80
Result of disparate impact analysis			No Disparate Impact

Note: For the MBTA's Sunday transit schedule from March 19, 2016, through June 24, 2016.

Although a potential disparate impact is found for the weekday assessment using FTA's required method of comparing service on a route-by-route basis, a supplemental analysis comparing the overall percentage of passengers on minority routes that pass the service frequency standard (76.0 percent) to the overall percentage of passengers on nonminority routes that pass the frequency standard (89.2 percent) results in a ratio of 0.85, which leads to a finding of no disparate impact. An analysis conducted using this method is more reflective of the overall passenger experience, which is the philosophy under which the service standards in the MBTA's 2017 Service Delivery Policy were developed.

Furthermore, in April 2017 the MBTA started the process for a new bus service plan. Through this process the MBTA will be performing a comprehensive review of all bus routes and their adherence to the service standards. The process will identify gaps in performance for all routes, while giving specific attention towards improving performance on routes that have predominantly minority and low-income passengers.

Heavy and Light Rail

To assess heavy and light rail vehicle headway adherence between minority-classified lines and nonminority-classified lines, the MBTA compared the percentage of minority and nonminority-classified lines that adhered to the MBTA's heavy and light rail service frequency standard. Table 6-11 shows that on weekdays four of the four heavy and light rail lines (100 percent) that are classified minority met the standard, and seven of the seven heavy and light rail lines (100 percent) that are classified nonminority met the standard. The ratio of the percentage of minority-classified lines meeting the standard to the percentage of nonminority-classified lines meeting the standard, 1.00, is above the MBTA's disparate impact threshold of 0.80 and no disparate impact is found.

Table 6-11
Heavy and Light Rail Vehicle Headway - Weekday

Line Classification	Number of Lines	Number of Lines Meeting the Standard	Percentage of Lines Meeting the Standard
Minority	4	4	100%
Nonminority	7	7	100%
Ratio of minority to nonminority			1.00
Disparate impact threshold			0.80
Result of disparate impact analysis	No Disparate Impact		

Note: For the MBTA's weekday transit schedule from March 19, 2016, through June 24, 2016.

Table 6-12 shows that on Saturdays four of the four heavy and light rail lines (100 percent) that are classified minority met the standard, and seven of the seven heavy and light rail lines (100 percent) that are classified nonminority met the standard. The ratio of the percentage of minority-classified lines meeting the standard to the percentage of nonminority-classified lines meeting the standard, 1.00, is above the MBTA's disparate impact threshold of 0.80 and no disparate impact is found.

Table 6-12
Heavy and Light Rail Vehicle Headway - Saturday

Line Classification	Number of Lines	Number of Lines Meeting the Standard	Percentage of Lines Meeting the Standard
Minority	4	4	100%
Nonminority	7	7	100%
Ratio of minority to nonminority			1.00
Disparate impact threshold			0.80
Result of disparate impact analysis			No Disparate Impact

Note: For the MBTA's Saturday transit schedule from March 19, 2016, through June 24, 2016.

Table 6-13 shows that on Sundays four of the four heavy and light rail lines (100 percent) that are classified minority met the standard, and seven of the seven heavy and light rail lines (100 percent) that are classified nonminority met the standard. The ratio of the percentage of minority-classified lines meeting the standard to the percentage of nonminority-classified lines meeting the standard, 1.00, is above the MBTA's disparate impact threshold of 0.80 and no disparate impact is found.

Table 6-13
Heavy and Light Rail Vehicle Headway - Sunday

Line Classification	Number of Lines	Number of Lines Meeting the Standard	Percentage of Lines Meeting the Standard
Minority	4	4	100%
Nonminority	7	7	100%
Ratio of minority to nonminority			1.00
Disparate impact threshold			0.80
Result of disparate impact analysis			No Disparate Impact

Note: For the MBTA's Sunday transit schedule from March 19, 2016, through June 24, 2016.

Commuter Rail

To assess commuter rail vehicle headway adherence between minority-classified lines and nonminority-classified lines, the MBTA compared the percentage of minority and nonminority-classified lines that adhered to the MBTA's commuter rail service frequency standard. Table 6-14 shows that on weekdays the single commuter rail line that is classified minority met the standard, and 10 of the 11 commuter rail lines (90.9 percent) that are classified nonminority met the standard. The ratio of the percentage of minority-classified lines meeting the standard to the percentage of nonminority-classified lines meeting the standard, 1.10, is above the MBTA's disparate impact threshold of 0.80 and no disparate impact is found.

Table 6-14
Commuter Rail Vehicle Headway - Weekday

Line Classification	Number of Lines	Number of Lines Meeting the Standard	Percentage of Lines Meeting the Standard
Minority	1	1	100%
Nonminority	11	10	90.9%
Ratio of minority to nonminority			1.10
Disparate impact threshold			0.80
Result of disparate impact analysis			No Disparate Impact

Note: For the MBTA's weekday transit schedule from March 19, 2016, through June 24, 2016.

Table 6-15 shows that on Saturdays the single commuter rail line that is classified minority met the standard, and 11 of the 11 commuter rail lines (100 percent) that are classified nonminority met the standard. The ratio of the percentage of minority-classified lines meeting the standard to the percentage of nonminority-classified lines meeting the standard, 1.00, is above the MBTA's disparate impact threshold of 0.80 and no disparate impact is found.

Table 6-15
Commuter Rail Vehicle Headway - Saturday

Line Classification	Number of Lines	Number of Lines Meeting the Standard	Percentage of Lines Meeting the Standard
Minority	1	1	100%
Nonminority	11	11	100%
Ratio of minority to nonminority			1.00
Disparate impact threshold			0.80
Result of disparate impact analysis	No Disparate Impact		

Note: For the MBTA's Saturday transit schedule from March 19, 2016, through June 24, 2016.

The MBTA has no service frequency standard for commuter rail on Sundays.

On-Time Performance (FTA C 4702.1B, IV.4.a.3)

Bus

To assess bus on-time performance of minority-classified routes and nonminority-classified routes, the MBTA compared the performance of each route to the overall performance of the system. On weekdays, the systemwide percentage of timepoints where buses were registered as on time according to the MBTA's bus on-time performance standard was 67.5 percent. Table 6-16 shows that 32 of the 95 bus routes (33.7 percent) that are classified minority performed at or above the systemwide average, and 24 of the 68 bus routes (35.3 percent) that are classified nonminority performed at or above the systemwide average. The ratio of the percentage of minority-classified routes performing at or above the systemwide average to the percentage of nonminority-classified routes performing at or above the systemwide average, 0.95, is above the MBTA's disparate impact threshold of 0.80 and no disparate impact is found.

It is important to note that the vast majority of MBTA buses operate on roadways owned and operated by entities other than the MBTA (i.e. municipalities). Municipal traffic signals, pavement markings, and conditions dictate, to a large extent, bus on-time performance. The MBTA is working on strengthening partnerships with municipalities to improve bus service for all passengers, via improvements to municipal roadways and signals. As the MBTA does not govern the environment in which its buses operate, it is only through such partnerships that potential benefits can be realized.

Table 6-16
Bus On-Time Performance - Weekday

Route Classification	Number of Routes	Number of Routes Performing at or Above Systemwide Average	Percentage of Routes Performing at or Above Systemwide Average
Minority	95	32	33.7%
Nonminority	68	24	35.3%
Ratio of minority to nonminority			0.95
Disparate impact threshold			0.80
Result of disparate impact analysis	No Disparate Impact		

Note: Data for weekdays from July 1, 2015, through June 30, 2016.

On Saturdays, the systemwide percentage of timepoints where buses were registered as on time was 70.5 percent. Table 6-17 shows that 29 of the 76 bus routes (38.2 percent) that are classified minority performed at or above the systemwide average, and 18 of the 43 bus routes (41.9 percent) that are classified nonminority performed at or above the systemwide average. The ratio of the percentage of minority-classified routes performing at or above the systemwide average to the percentage of nonminority-classified routes performing at or above the systemwide average, 0.91, is above the MBTA's disparate impact threshold of 0.80 and no disparate impact is found.

Table 6-17
Bus On-Time Performance - Saturday

Route Classification	Number of Routes	Number of Routes Performing at or Above Systemwide Average	Percentage of Routes Performing at or Above Systemwide Average
Minority	76	29	38.2%
Nonminority	43	18	41.9%
Ratio of minority to nonminority			0.91
Disparate impact threshold			0.80
Result of disparate impact analysis			No Disparate Impact

Note: Data for Saturdays from July 1, 2015, through June 30, 2016.

On Sundays, the systemwide percentage of timepoints where buses were registered as on time was 71.3 percent. Table 6-18 shows that 31 of the 65 bus routes (47.7 percent) that are classified minority performed at or above the systemwide average, and 13 of the 31 bus routes (41.9 percent) that are classified nonminority performed at or above the systemwide average. The ratio of the percentage of minority-classified routes performing at or above the systemwide average to the percentage of nonminority-classified routes performing at or above the systemwide average, 1.14, is above the MBTA's disparate impact threshold of 0.80 and no disparate impact is found.

Table 6-18
Bus On-Time Performance - Sunday

Route Classification	Number of Routes	Number of Routes Performing at or Above Systemwide Average	Percentage of Routes Performing at or Above Systemwide Average
Minority	65	31	47.7%
Nonminority	31	13	41.9%
Ratio of minority to nonminority			1.14
Disparate impact threshold			0.80
Result of disparate impact analysis			No Disparate Impact

Note: Data for Sundays from July 1, 2015, through June 30, 2016.

Heavy and Light Rail

To assess heavy and light rail on-time performance between minority-classified lines and nonminority-classified lines, the MBTA compared the performance of each line to the overall performance of the system. On weekdays, the systemwide percentage of heavy and light rail passengers who waited the amount of time of the scheduled headway, or less, for a train to arrive was 87.5 percent. Table 6-19 shows that three of the three heavy and light rail lines (100 percent) that are classified minority performed at or above the systemwide average, and two of the seven heavy and light rail lines (28.6 percent) that are classified nonminority performed at or above the systemwide average. The ratio of the percentage of minority-classified lines performing at or above the systemwide average to the percentage of nonminority-classified lines performing at or above the systemwide average, 3.50, is above the MBTA's disparate impact threshold of 0.80 and no disparate impact is found.

Table 6-19
Heavy and Light Rail On-Time Performance - Weekday

Route Classification	Number of Lines	Number of Lines Performing at or Above Systemwide Average	Percentage of Lines Performing at or Above Systemwide Average
Minority	3	3	100%
Nonminority	7	2	28.6%
Ratio of minority to nonminority			3.50
Disparate impact threshold			0.80
Result of disparate impact analysis			No Disparate Impact

Note: Data for the Red, Orange, and Blue lines are for weekdays from July 1, 2015, through June 30, 2016. Data for the Green Line are for weekdays from March 1, 2016, through June 30, 2016.

On Saturdays, the systemwide percentage of heavy and light rail passengers who waited the amount of time of the scheduled headway, or less, for a train to arrive was 86.3 percent. Table 6-20 shows that three of the three heavy and light rail lines (100 percent) that are classified minority performed at or above the systemwide average, and two of the seven heavy and light rail lines (28.6 percent) that are classified nonminority performed at or above the systemwide average. The ratio of the percentage of minority-classified lines performing at or above the systemwide average to the percentage of nonminority-classified lines performing at or above the systemwide average, 3.50, is above the MBTA's disparate impact threshold of 0.80 and no disparate impact is found.

Table 6-20
Heavy and Light Rail On-Time Performance - Saturday

Route Classification	Number of Lines	Number of Lines Performing at or Above Systemwide Average	Percentage of Lines Performing at or Above Systemwide Average
Minority	3	3	100%
Nonminority	7	2	28.6%
Ratio of minority to nonminority			3.50
Disparate impact threshold			0.80
Result of disparate impact analysis			No Disparate Impact

Note: Data for the Red, Orange, and Blue lines are for Saturdays from July 1, 2015, through June 30, 2016. Data for the Green Line are for Saturdays from March 1, 2016, through June 30, 2016.

On Sundays, the systemwide percentage of heavy and light rail passengers who waited the amount of time of the scheduled headway, or less, for a train to arrive was 86.3 percent. Table 6-21 shows that three of the three heavy and light rail lines (100 percent) that are classified minority performed at or above the systemwide average, and two of the seven heavy and light rail lines (28.6 percent) that are classified nonminority performed at or above the systemwide average. The ratio of the percentage of minority-classified lines performing at or above the systemwide average to the percentage of nonminority-classified lines performing at or above the systemwide average, 3.50, is above the MBTA's disparate impact threshold of 0.80 and no disparate impact is found.

Table 6-21
Heavy and Light Rail On-Time Performance - Sunday

Route Classification	Number of Lines	Number of Lines Performing at or Above Systemwide Average	Percentage of Lines Performing at or Above Systemwide Average
Minority	3	3	100%
Nonminority	7	2	28.6%
Ratio of minority to nonminority			7.00
Disparate impact threshold			0.80
Result of disparate impact analysis			No Disparate Impact

Note: Data for the Red, Orange, and Blue lines are for Sundays from July 1, 2015, through June 30, 2016. Data for the Green Line are for Sundays from March 1, 2016, through June 30, 2016.

This iteration of the heavy and light rail on-time performance analysis did not include the Mattapan Line (a minority-classified line). Mattapan Line timepoint adherence data was not available for this analysis because vehicle tracking hardware and software was installed after the time of this reporting period. Future analysis will include the on-time performance of the Mattapan Line.

Commuter Rail

To assess commuter rail on-time performance between minority-classified lines and nonminority-classified lines, the MBTA compared the performance of each line to the overall performance of the system. On weekdays, the systemwide percentage of commuter rail trains that arrived at their destination terminal no later than five minutes after the time published in the schedule was 90.1 percent. Table 6-22 shows that the single commuter rail line that is classified minority performed at or above the systemwide average, and eight of the 11 commuter rail lines (72.7 percent) that are classified nonminority performed at or above the systemwide average. The ratio of the percentage of minority-classified lines performing at or above the systemwide average to the percentage of nonminority-classified lines performing at or above the systemwide average, 1.38, is above the MBTA's disparate impact threshold of 0.80 and no disparate impact is found.

Table 6-22
Commuter Rail On-Time Performance - Weekday

Line Classification	Number of Lines	Number of Lines Performing at or Above Systemwide Average	Percentage of Lines Performing at or Above Systemwide Average
Minority	1	1	100%
Nonminority	11	8	72.7%
Ratio of minority to nonminority			1.38
Disparate impact threshold			0.80
Result of disparate impact analysis			No Disparate Impact

Note: Data for weekdays from July 1, 2015, through June 30, 2016.

On Saturdays, the systemwide percentage of commuter rail trains that arrived at their destination terminal no later than five minutes after the time published in the schedule was 90.2 percent. Table 6-23 shows that the single commuter rail line that is classified minority performed at or above the systemwide average, and six of the 11 commuter rail lines (54.5 percent) that are classified nonminority performed at or above the systemwide average. The ratio of the percentage of minority-classified lines performing at or above the systemwide average to the percentage of nonminority-classified lines performing at or above the systemwide average, 1.83, is above the MBTA's disparate impact threshold of 0.80 and no disparate impact is found.

Table 6-23
Commuter Rail On-Time Performance - Saturday

Line Classification	Number of Lines	Number of Lines Performing at or Above Systemwide Average	Percentage of Lines Performing at or Above Systemwide Average
Minority	1	1	100%
Nonminority	11	6	54.5%
Ratio of minority to nonminority			1.83
Disparate impact threshold			0.80
Result of disparate impact analysis			No Disparate Impact

Note: Data for Saturdays from July 1, 2015, through June 30, 2016.

On Sundays, the systemwide percentage of commuter rail trains that arrived at their destination terminal no later than five minutes after the time published in the schedule was 91.2 percent. Table 6-24 shows that the single commuter rail line that is classified minority performed at or above the systemwide average, and eight of the 11 commuter rail lines (72.7 percent) that are classified nonminority performed at or above the systemwide average. The ratio of the percentage of minority-classified lines performing at or above the systemwide average to the percentage of nonminority-classified lines performing at or above the systemwide average, 1.38, is above the MBTA's disparate impact threshold of 0.80 and no disparate impact is found.

Table 6-24
Commuter Rail On-Time Performance - Sunday

Line Classification	Number of Lines	Number of Lines Performing at or Above Systemwide Average	Percentage of Lines Performing at or Above Systemwide Average
Minority	1	1	100%
Nonminority	10	7	70%
Ratio of minority to nonminority			1.38
Disparate impact threshold			0.80
Result of disparate impact analysis	No Disparate Impact		

Note: Data for Sundays from July 1, 2015, through June 30, 2016.

Service Availability (FTA C 4702.1B, IV.4.a.4)

To monitor its base level of transit coverage, the MBTA measures the percentage of the population that lives no more than 0.5 miles from a bus stop, rapid transit station, commuter rail station, or boat dock in the municipalities of the MBTA's core service area, excluding municipalities that are members of another regional transit authority.

Table 6-25 shows that on weekdays 94.4 percent of the minority population has access to transit while 77.6 percent of the nonminority population has access to transit, as defined by the MBTA's base level of transit coverage standard. The ratio of the percentage of the minority population with access to transit to the percentage of the nonminority population with access to transit, 1.22, is above the MBTA's disparate impact threshold of 0.80 and no disparate impact is found.

Table 6-25
Service Availability - Weekday

Population	Total Population	Population with Access to MBTA Transit	Percentage of Population with Access to MBTA Transit
Minority	471,945	445,439	94.4%
Nonminority	716,022	555,831	77.6%
Ratio of minority to nonminority			1.22
Disparate impact threshold			0.80
Result of disparate impact analysis			No Disparate Impact

Note: Data for Sundays from July 1, 2015, through June 30, 2016.

Table 6-26 shows that on Saturdays 93.6 percent of the minority population has access to transit while 75.2 percent of the nonminority population has access to transit, as defined by the MBTA's base level of transit coverage standard. The ratio of the percentage of the minority population with access to transit to the percentage of the nonminority population with access to transit, 1.25, is above the MBTA's disparate impact threshold of 0.80 and no disparate impact is found.

Table 6-26
Service Availability - Saturday

Population	Total Population	Population with Access to MBTA Transit	Percentage of Population with Access to MBTA Transit
Minority	471,945	441,965	93.6%
Nonminority	716,022	538,248	75.2%
Ratio of minority to nonminority			1.25
Disparate impact threshold			0.80
Result of disparate impact analysis			No Disparate Impact

Note: For the MBTA's Saturday transit schedule from March 19, 2016, through June 24, 2016.

Table 6-27 shows that on Sundays 92.5 percent of the minority population has access to transit while 71.5 percent of the nonminority population has access to transit, as defined by the MBTA's base level of transit coverage standard. The ratio of the percentage of the minority population with access to transit to the percentage of the nonminority population with access to transit, 1.29, is above the MBTA's disparate impact threshold of 0.80 and no disparate impact is found.

Table 6-27
Service Availability - Sunday

Population	Total Population	Population with Access to MBTA Transit	Percentage of Population with Access to MBTA Transit
Minority	471,945	436,551	92.5%
Nonminority	716,022	511,949	71.5%
Ratio of minority to nonminority			1.29
Disparate impact threshold			0.80
Result of disparate impact analysis			No Disparate Impact

Note: For the MBTA's Sunday transit schedule from March 19, 2016, through June 24, 2016.

Span of Service

Bus

To assess bus span-of-service adherence between minority-classified routes and nonminority-classified routes the MBTA compared the percentage of minority and nonminority-classified routes that adhered to the MBTA's bus span-of-service standard. Table 6-28 shows that on weekdays 74 of the 93 bus routes (79.6 percent) that are classified minority met the standard and 52 of the 67 bus routes (77.6 percent) that are classified nonminority met the standard. The ratio of the percentage of minority-classified routes meeting the standard to the percentage of nonminority-classified routes meeting the standard, 1.03, is above the MBTA's disparate impact threshold of 0.80 and no disparate impact is found.

Table 6-28
Bus Span of Service - Weekday

Route Classification	Number of Routes	Number of Routes Meeting the Standard	Percentage of Routes Meeting the Standard
Minority	93	74	79.6%
Nonminority	67	52	77.6%
Ratio of minority to nonminority			1.03
Disparate impact threshold			0.80
Result of disparate impact analysis			No Disparate Impact

Note: For the MBTA's weekday transit schedule from March 19, 2016, through June 24, 2016.

Table 6-29 shows that on Saturdays 58 of the 77 bus routes (75.3 percent) that are classified minority met the standard and 34 of the 42 bus routes (81.0 percent) that are classified nonminority met the standard. The ratio of the percentage of minority-classified routes meeting the standard to the percentage of nonminority-classified routes meeting the standard, 0.93, is above the MBTA's disparate impact threshold of 0.80 and no disparate impact is found.

Table 6-29
Bus Span of Service - Saturday

Route Classification	Number of Routes	Number of Routes Meeting the Standard	Percentage of Routes Meeting the Standard
Minority	77	58	75.3%
Nonminority	42	34	81.0%
Ratio of minority to nonminority			0.93
Disparate impact threshold			0.80
Result of disparate impact analysis			No Disparate Impact

Note: For the MBTA's Saturday transit schedule from March 19, 2016, through June 24, 2016.

Table 6-30 shows that on Sundays 52 of the 63 bus routes (82.5 percent) that are classified minority met the standard and 27 of the 31 bus routes (87.1 percent) that are classified nonminority met the standard. The ratio of the percentage of minority-classified routes meeting the standard to the percentage of nonminority-classified routes meeting the standard, 0.95, is above the MBTA's disparate impact threshold of 0.80 and no disparate impact is found.

Table 6-30
Bus Span of Service - Sunday

Route Classification	Number of Routes	Number of Routes Meeting the Standard	Percentage of Routes Meeting the Standard
Minority	63	52	82.5%
Nonminority	31	27	87.1%
Ratio of minority to nonminority			0.95
Disparate impact threshold			0.80
Result of disparate impact analysis			No Disparate Impact

Note: For the MBTA's Sunday transit schedule from March 19, 2016, through June 24, 2016.

Heavy and Light Rail

To assess heavy and light rail span-of-service adherence between minority-classified lines and nonminority-classified lines the MBTA compared the percentage of minority and nonminority-classified lines that adhered to the MBTA's heavy and light rail span-of-service standard. Table 6-31 shows that on weekdays four of the four heavy and light rail lines (100 percent) that are classified minority met the standard, and seven of the seven heavy and light rail lines (100 percent) that are classified nonminority met the standard. The ratio of the percentage of minority-classified lines meeting the standard to the percentage of nonminority-classified lines meeting the standard, 1.00, is above the MBTA's disparate impact threshold of 0.80 and no disparate impact is found.

Table 6-31
Heavy and Light Rail Span of Service - Weekday

Line Classification	Number of Lines	Number of Lines Meeting the Standard	Percentage of Lines Meeting the Standard
Minority	4	4	100%
Nonminority	7	7	100%
Ratio of minority to nonminority			1.00
Disparate impact threshold			0.80
Result of disparate impact analysis			No Disparate Impact

Note: For the MBTA's weekday transit schedule from March 19, 2016, through June 24, 2016.

Table 6-32 shows that on Saturdays four of the four heavy and light rail lines (100 percent) that are classified minority met the standard, and seven of the seven heavy and light rail lines (100 percent) that are classified nonminority met the standard. The ratio of the percentage of minority-classified lines meeting the standard to the percentage of nonminority-classified lines meeting the standard, 1.00, is above the MBTA's disparate impact threshold of 0.80 and no disparate impact is found.

Table 6-32
Heavy and Light Rail Span of Service - Saturday

Line Classification	Number of Lines	Number of Lines Meeting the Standard	Percentage of Lines Meeting the Standard
Minority	4	4	100%
Nonminority	7	7	100%
Ratio of minority to nonminority			1.00
Disparate impact threshold			0.80
Result of disparate impact analysis			No Disparate Impact

Note: For the MBTA's Saturday transit schedule from March 19, 2016, through June 24, 2016.

Table 6-33 shows that on Sundays four of the four heavy and light rail lines (100 percent) that are classified minority met the standard, and seven of the seven heavy and light rail lines (100 percent) that are classified nonminority met the standard. The ratio of the percentage of minority-classified lines meeting the standard to the percentage of nonminority-classified lines meeting the standard, 1.00, is above the MBTA's disparate impact threshold of 0.80 and no disparate impact is found.

Table 6-33
Heavy and Light Rail Span of Service - Sunday

Line Classification	Number of Lines	Number of Lines Meeting the Standard	Percentage of Lines Meeting the Standard
Minority	4	4	100%
Nonminority	7	7	100%
Ratio of minority to nonminority			1.00
Disparate impact threshold			0.80
Result of disparate impact analysis			No Disparate Impact

Note: For the MBTA's Sunday transit schedule from March 19, 2016, through June 24, 2016.

Commuter Rail

To assess commuter rail span-of-service adherence between minority-classified lines and nonminority-classified lines the MBTA compared the percentage of minority and nonminority-classified lines that adhered to the MBTA's commuter rail span-of-service standard. Table 6-34 shows that on weekdays the single commuter rail line that is classified minority met the standard, and 11 of the 11 commuter rail lines (100 percent) that are classified nonminority met the standard. The ratio of the percentage of minority-classified lines meeting the standard to the percentage of nonminority-classified lines meeting the standard, 1.00, is above the MBTA's disparate impact threshold of 0.80 and no disparate impact is found.

Table 6-34
Commuter Rail Span of Service - Weekday

Line Classification	Number of Lines	Number of Lines Meeting the Standard	Percentage of Lines Meeting the Standard
Minority	1	1	100%
Nonminority	11	11	100%
Ratio of minority to nonminority			1.00
Disparate impact threshold			0.80
Result of disparate impact analysis			No Disparate Impact

Note: For the MBTA's weekday transit schedule from March 19, 2016, through June 24, 2016.

Table 6-35 shows that on Saturdays the single commuter rail line that is classified minority met the standard, and six of the 11 commuter rail lines (54.5 percent) that are classified nonminority met the standard. The ratio of the percentage of minority-classified lines meeting the standard to the percentage of nonminority-classified lines meeting the standard, 1.83, is above the MBTA's disparate impact threshold of 0.80 and no disparate impact is found.

Table 6-35
Commuter Rail Span of Service - Saturday

Line Classification	Number of Lines	Number of Lines Meeting the Standard	Percentage of Lines Meeting the Standard
Minority	1	1	100%
Nonminority	11	6	54.5%
Ratio of minority to nonminority			1.83
Disparate impact threshold			0.80
Result of disparate impact analysis			No Disparate Impact

Note: For the MBTA's Saturday transit schedule from March 19, 2016, through June 24, 2016.

Platform Accessibility

Gated Rapid Transit Stations

The MBTA measures the amount of time that platforms are accessible for all gated heavy rail, light rail, and Silver Line Waterfront stations. Assessing only stations that have platforms accessible by elevators, the systemwide percentage of platform hours that were accessible was 99.5 percent. Table 6-36 shows that 14 of the 22 stations (63.6 percent) that are classified minority performed at or above the systemwide average, and 23 of the 33 stations (69.7 percent) that are classified nonminority performed at or above the systemwide average. The ratio of the percentage of minority-classified stations performing at or above the systemwide average to the percentage of nonminority-classified stations performing at or above the systemwide average, 0.91, is above the MBTA's disparate impact threshold of 0.80 and no disparate impact is found.

Table 6-36
Platform Accessibility - Gated Rapid Transit Stations with Elevators

Station Classification	Number of Stations	Number of Stations Performing at or Above Systemwide Average	Percentage of Stations Performing at or Above Systemwide Average
Minority	22	14	63.6%
Nonminority	33	23	69.7%
Ratio of minority to nonminority			0.91
Disparate impact threshold			0.80
Result of disparate impact analysis			No Disparate Impact

Note: Data from April 1, 2015, through March 31, 2016.

Including stations that do not have elevators along with those that do—and which therefore have platforms that are either accessible at all times or never accessible—the systemwide percentage of platform hours that were accessible was 92.3 percent. Table 6-37 shows that 22 of the 22 stations (100 percent) that are classified minority performed at or above the systemwide average, and 35 of the 40 stations (87.5 percent) that are classified nonminority performed at or above the systemwide average. The ratio of the percentage of minority-classified stations performing at or above the systemwide average to the percentage of nonminority-classified stations performing at or above the systemwide average, 1.14, is above the MBTA’s disparate impact threshold of 0.80 and no disparate impact is found.

Table 6-37

Platform Accessibility - Gated Rapid Transit Stations, Including those without Elevators

Station Classification	Number of Stations	Number of Stations Performing at or Above Systemwide Average	Percentage of Stations Performing at or Above Systemwide Average
Minority	22	22	100%
Nonminority	40	35	87.5%
Ratio of minority to nonminority			1.14
Disparate impact threshold			0.80
Result of disparate impact analysis	No Disparate Impact		

Note: Data from April 1, 2015, through March 31, 2016.

Commuter Rail Stations

Because most MBTA commuter rail stations are located at surface level and very few have elevators, the MBTA compares platform accessibility between minority and nonminority commuter rail stations by comparing the percentage of minority stations that are built to be accessible to the percentage of nonminority stations that are built to be accessible. Table 6-38 shows that seven of the eight commuter rail stations (87.5 percent) that are classified minority are built to be accessible, and 95 of the 127 commuter rail stations (74.8 percent) that are classified nonminority are built to be accessible. The ratio of the percentage of minority-classified stations built to be accessible to the percentage of nonminority-classified stations built to be accessible, 1.17, is above the MBTA's disparate impact threshold of 0.80 and no disparate impact is found.

Table 6-38
Platform Accessibility – Commuter Rail Stations

Station Classification	Number of Stations	Number of Stations Built to be Accessible	Percentage of Stations Built to be Accessible
Minority	8	7	87.5%
Nonminority	127	95	74.8%
Ratio of minority to nonminority			1.17
Disparate impact threshold			0.80
Result of disparate impact analysis			No Disparate Impact

Note: Commuter rail station accessibility as of August 2017.

Vehicle Accessibility

Bus

Because all MBTA buses are fully accessible, there is no need to evaluate bus accessibility, and therefore there is no standard for this measure in the MBTA’s Service Delivery Policy. As part of operator inspections each day, ramps are cycled on each bus to ensure they are functional before leaving the garage.

Heavy and Light Rail

A comparison of vehicle accessibility between minority and nonminority-classified heavy and light rail lines is not applicable. Each of the three heavy rail lines (Red Line, Blue Line, and Orange Line) operates with dedicated equipment, meaning that the equipment on one line is not interchangeable with equipment on any of the other lines. The Mattapan Line operates as a short, stand-alone, light-rail extension of the Red Line’s Ashmont Branch, and also operates with a dedicated fleet. While the Green Line is an extensive light rail system with four surface branches and a central subway portion, each of them is classified as nonminority. Therefore, there are no comparisons to be made between minority and nonminority-classified lines for vehicle accessibility.

Commuter Rail

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). The MBTA is currently working to develop tools to accurately collect this data and will have the means to conduct an analysis during the next reporting period.

Service Operated

Bus

To assess the amount of scheduled bus service operated between minority-classified routes and nonminority-classified routes, the MBTA compared the performance of each route to the overall performance of the system. On weekdays, the systemwide percentage of scheduled bus service operated was 98.4 percent. Table 6-39 shows that 79 of the 94 bus routes (84.0 percent) that are classified minority performed at or above the systemwide average, and 56 of the 67 bus routes (83.6 percent) that are classified nonminority performed at or above the systemwide average. The ratio of the percentage of minority-classified routes performing at or above the systemwide average to the percentage of nonminority-classified routes performing at or above the systemwide average, 1.01, is above the MBTA's disparate impact threshold of 0.80 and no disparate impact is found.

Table 6-39
Bus Service Operated - Weekday

Route Classification	Number of Routes	Number of Routes Performing at or Above Systemwide Average	Percentage of Routes Performing at or Above Systemwide Average
Minority	94	79	84.0%
Nonminority	67	56	83.6%
Ratio of minority to nonminority			1.01
Disparate impact threshold			0.80
Result of disparate impact analysis			No Disparate Impact

Note: Data for weekdays from July 1, 2015, through June 30, 2016.

On Saturdays, the systemwide percentage of scheduled bus service operated was 98.6 percent. Table 6-40 shows that 60 of the 75 bus routes (80.0 percent) that are classified minority performed at or above the systemwide average, and 38 of the 43 bus routes (88.4 percent) that are classified nonminority performed at or above the systemwide average. The ratio of the percentage of minority-classified routes performing at or above the systemwide average to the percentage of nonminority-classified routes performing at or above the systemwide average, 0.91, is above the MBTA's disparate impact threshold of 0.80 and no disparate impact is found.

Table 6-40
Bus Service Operated - Saturday

Route Classification	Number of Routes	Number of Routes Performing at or Above Systemwide Average	Percentage of Routes Performing at or Above Systemwide Average
Minority	75	60	80.0%
Nonminority	43	38	88.4%
Ratio of minority to nonminority			0.91
Disparate impact threshold			0.80
Result of disparate impact analysis			No Disparate Impact

Note: Data for Saturdays from July 1, 2015, through June 30, 2016.

On Sundays, the systemwide percentage of scheduled bus service operated was 99.0 percent. Table 6-41 shows that 53 of the 64 bus routes (82.8 percent) that are classified minority performed at or above the systemwide average, and 28 of the 31 bus routes (90.3 percent) that are classified nonminority performed at or above the systemwide average. The ratio of the percentage of minority-classified routes performing at or above the systemwide average to the percentage of nonminority-classified routes performing at or above the systemwide average, 0.92, is above the MBTA's disparate impact threshold of 0.80 and no disparate impact is found.

Table 6-41
Bus Service Operated - Sunday

Route Classification	Number of Routes	Number of Routes Performing at or Above Systemwide Average	Percentage of Routes Performing at or Above Systemwide Average
Minority	64	53	82.8%
Nonminority	31	28	90.3%
Ratio of minority to nonminority			0.92
Disparate impact threshold			0.80
Result of disparate impact analysis			No Disparate Impact

Note: Data for Sundays from July 1, 2015, through June 30, 2016.

Heavy and Light Rail

To assess the amount of scheduled heavy rail and light rail service operated between minority-classified lines and nonminority-classified lines, the MBTA compared the performance of each line to the overall performance of the system. The MBTA conducted this assessment using a one-month sample of data from September 2016. For the month of data assessed, the systemwide percentage of scheduled heavy rail and light rail service operated was 98.9 percent. Table 6-42 shows that two of the three heavy rail and light rail lines (66.7 percent) that are classified minority performed at or above the systemwide average, and one of the six heavy rail and light rail lines (16.7 percent) that are classified nonminority performed at or above the systemwide average. The ratio of the percentage of minority-classified heavy rail and light rail lines performing at or above the systemwide average to the percentage of nonminority-classified heavy rail and light rail lines performing at or above the systemwide average, 4.00, is above the MBTA's disparate impact threshold of 0.80 and no disparate impact is found.

Table 6-42
Heavy Rail and Light Rail Service Operated

Line Classification	Number of Lines	Number of Lines Performing at or Above Systemwide Average	Percentage of Lines Performing at or Above Systemwide Average
Minority	3	2	66.7%
Nonminority	6	1	16.7%
Ratio of minority to nonminority			4.00
Disparate impact threshold			0.80
Result of disparate impact analysis			No Disparate Impact

Note: Data for the Red, Orange, and Blue lines are from September 2015. Data for the Green Line are from September 2016.

Commuter Rail

To assess the amount of scheduled commuter rail service operated between minority-classified lines and nonminority-classified lines, the MBTA compared the performance of each line to the overall performance of the system using state fiscal year (SFY) 2016 data. On weekdays, the systemwide percentage of scheduled commuter rail trains that were operated was 99.8 percent. Table 6-43 shows that the single commuter rail line that is classified minority did not perform at or above the systemwide average, and eight of the 11 commuter rail lines (72.7 percent) that are classified nonminority performed at or above the systemwide average. The ratio of the percentage of minority-classified lines performing at or above the systemwide average to the percentage of nonminority-classified lines performing at or above the systemwide average, 0.00, falls below the MBTA's disparate impact threshold of 0.80 and a potential disparate impact is found.

Table 6-43
Commuter Rail Service Operated - Weekday

Route Classification	Number of Lines	Number of Lines Performing at or Above Systemwide Average	Percentage of Lines Performing at or Above Systemwide Average
Minority	1	0	0.00%
Nonminority	11	8	72.7%
Ratio of minority to nonminority			0.00
Disparate impact threshold			0.80
Result of disparate impact analysis			Potential Disparate Impact

Note: Data for weekdays from July 1, 2015, through June 30, 2016.

On Saturdays, the systemwide percentage of scheduled commuter rail trains that were operated was 99.9 percent. Table 6-44 shows that the single commuter rail line that is classified minority did not perform at or above the systemwide average, and eight of the 11 commuter rail lines (72.7 percent) that are classified nonminority performed at or above the systemwide average. The ratio of the percentage of minority-classified lines performing at or above the systemwide average to the percentage of nonminority-classified lines performing at or above the systemwide average, 0.00, falls below the MBTA's disparate impact threshold of 0.80 and a potential disparate impact is found.

Table 6-44
Commuter Rail Service Operated - Saturday

Route Classification	Number of Lines	Number of Lines Performing at or Above Systemwide Average	Percentage of Lines Performing at or Above Systemwide Average
Minority	1	0	0.00%
Nonminority	11	8	72.7%
Ratio of minority to nonminority			0.00
Disparate impact threshold			0.80
Result of disparate impact analysis			Potential Disparate Impact

Note: Data for Saturdays from July 1, 2015, through June 30, 2016.

On Sundays, the systemwide percentage of scheduled commuter rail trains that were operated was 99.6 percent. Table 6-45 shows that the single commuter rail line that is classified minority did not perform at or above the systemwide average, and seven of the 10 commuter rail lines (70.0 percent) that are classified nonminority performed at or above the systemwide average. The ratio of the percentage of minority-classified lines performing at or above the systemwide average to the percentage of nonminority-classified lines performing at or above the systemwide average, 0.00, falls below the MBTA's disparate impact threshold of 0.80 and a potential disparate impact is found.

Table 6-45
Commuter Rail Service Operated - Sunday

Route Classification	Number of Lines	Number of Lines Performing at or Above Systemwide Average	Percentage of Lines Performing at or Above Systemwide Average
Minority	1	0	0.00%
Nonminority	10	7	70.0%
Ratio of minority to nonminority			0.00
Disparate impact threshold			0.80
Result of disparate impact analysis			Potential Disparate Impact

Note: Data for Sundays from July 1, 2015, through June 30, 2016.

After identifying this set of potential disparate impacts that resulted from a disproportionate number of trains being cancelled in October 2016 on the MBTA's minority-classified line, the MBTA worked with Keolis to institute a new protocol for advance-notice train cancellations; decisions regarding cancellations will be reviewed by the General Manager or his senior designee to ensure the prevention of any undue burden or impact to riders on any individual line. The revised decision-making protocol takes into account a variety of operational factors coupled with line demographic classifications and recent cancellation history. An assessment of dropped trips from November 2016 through June 2017 shows that the percentage of scheduled service runs on the MBTA's minority-classified line is now well above the systemwide average for all time periods.

SYSTEMWIDE SERVICE POLICIES (FTA C 4702.1B, IV.4.B)

The following compares how minority and nonminority services for each mode adhere to the MBTA's systemwide service policies. An assessment of commuter boat services is not provided because all MBTA commuter boat services are classified as nonminority.

Distribution of Transit Amenities (FTA C 4702.1B, IV.4.b.1)

It is important to note that the equity assessments of the distribution of transit amenities and conditions are based on one-time visual observations for purposes of service monitoring only, and should not be considered engineering-based assessments or evaluations of structural conditions, as would be determined by a professional engineer. The assessments in this review are subjective and based solely on the observations of trained CTPS field staff. In the advent of MBTA establishing online tools and maintenance accountability initiatives, the MBTA's Engineering and Maintenance Department will coordinate this assessment process with CTPS and the MBTA's Office of Disability and Civil Rights for future studies.

Furthermore, the MBTA notes that the assessment of any condition or amenity is based on a single observation and is not indicative of any persistent situation, but serves to provide a minority versus non-minority comparator that is considered in the aggregate to determine the possibility of a disparity with regard to cleanliness, condition, and/or distribution of amenities. Nor does the observation consider the era of station or amenity construction relative to today. The MBTA has made innovations in its oversight of station and lobby conditions and confirms cleanliness by performing assessments of dirt, grime, graffiti, and other measurable deficiencies. MBTA inspections have resulted in a consistent cleanliness standard, however depending on the time of day when CTPS staff may have inspected the cleanliness of the station, there may have been localized discrepancies. Reports on the condition of structural elements are based on subjective observations only; the reports do not reflect evaluations to an engineering or regulatory standard, nor are they intended to indicate safety problems or hazardous conditions.

The MBTA's Engineering and Maintenance Department will review all reported deficient conditions and evaluate the reported deficiencies. As necessary, the department will prepare the scopes of work to address the deficiencies either through maintenance or capital investment.

Bus Shelter and Bench Placement

It is important to note that although the MBTA provides service to bus stops in municipalities, in the majority of cases, bus shelters, benches, and other amenities in the dropoff/pickup location are owned and maintained by the municipalities. The MBTA strives to work with municipalities and property owners to place benches where practical and where such placement meets requirements for other applicable policies and codes such as ADA clearance, pedestrian flow, and fire codes. The safety of MBTA customers and the public is the MBTA's primary concern.

Shelter Placement

Under the MBTA's Bus Stop Design Guidelines¹, any bus stop that has more than 70 average daily boardings is eligible for the consideration of a shelter, and stops that have fewer than 25 average daily boardings are not eligible for a shelter, pending further review of site conditions. Although this policy is typically applied only to the 15 MBTA Key Bus Routes, the MBTA used this policy to assess the placement of all shelters in minority areas as compared to the placement of shelters in nonminority areas. The MBTA conducted two analyses based on the two thresholds that are provided in the policy. It is important to note that in the majority of cases, the MBTA does not own the sidewalks where shelters, benches, or other amenities could be placed. Instead, these properties are usually owned by municipalities. The MBTA strives to work with property owners to site shelters, benches, and other amenities where practical, and where such placement meets requirements for other applicable policies and codes such as ADA clearance, pedestrian flow, and fire codes.

The first analysis compared the percentage of minority-classified bus stops with more than 70 average daily boardings that have shelters to the percentage of nonminority-classified bus stops with more than 70 average daily boardings that have shelters. Table 6-46 shows that 319 of the 691 bus stops (46.2 percent) that have more than 70 average daily boardings and are classified minority had shelters, and 108 of the 298 bus stops (36.2 percent) that have more than 70 average daily boardings and are classified nonminority had shelters. The ratio of the percentage of minority bus stops with more than 70 average daily boardings that have a shelter to the percentage of nonminority bus stops with more than 70 average daily boardings that have a shelter, 1.27, is above the MBTA's disparate impact threshold of 0.80 and no disparate impact is found.

¹ Given fiscal and right-of-way constraints, the MBTA is not able to provide bus shelters at most of its 8,100 stops. To fairly distribute shelters systemwide, the MBTA Shelter Policy provides guidance for the placement of bus shelters and establishes a procedure for evaluating shelter requests. This policy in no way establishes a requirement for placement, since all placements will be dependent on available resources.

Table 6-46
Shelter Placement – Bus Stops with more than 70 Average Daily Boardings

Stop Classification	Number of Stops	Number of Stops with Shelters	Percentage of Stops with Shelters
Minority	691	319	46.2%
Nonminority	298	108	36.2%
Ratio of minority to nonminority			1.27
Disparate impact threshold			0.80
Result of disparate impact analysis			No Disparate Impact

Note: Bus stop shelter locations as of August 2017.

The second analysis compared the percentage of minority-classified bus stops with more than 25 average daily boardings that have shelters to the percentage of nonminority-classified bus stops with more than 25 average daily boardings that have shelters. Table 6-47 shows that 419 of the 1,329 bus stops (31.5 percent) that have more than 25 average daily boardings and are classified minority had shelters, and 168 of the 695 bus stops (24.2 percent) that have more than 25 average daily boardings and are classified nonminority had shelters. The ratio of the percentage of minority-classified bus stops with more than 25 average daily boardings that have a shelter to the percentage of nonminority-classified bus stops with more than 25 average daily boardings that have a shelter, 1.30, is above the MBTA's disparate impact threshold of 0.80 and no disparate impact is found.

Table 6-47
Shelter Placement – Bus Stops with more than 25 Average Daily Boardings

Stop Classification	Number of Stops	Number of Stops with Shelters	Percentage of Stops with Shelters
Minority	1,329	419	31.5%
Nonminority	695	168	24.2%
Ratio of minority to nonminority			1.30
Disparate impact threshold			0.80
Result of disparate impact analysis			No Disparate Impact

Note: Bus stop shelter locations as of August 2017.

Bench Placement

Under the MBTA’s Bus Stop Design Guidelines, any bus stop that has more than 50 average daily boardings and does not have a shelter is eligible for consideration for a bench, pending further review of site conditions. Although this policy is typically applied only to the 15 MBTA Key Bus Routes, the MBTA used this policy to assess the placement of all benches in minority areas compared to nonminority areas. The MBTA conducted two analyses, one for stops with more than 50 average daily boardings and no shelter, and one for all bus stops with no shelter. It is important to note that in the majority of cases, the MBTA does not own the sidewalks where shelters, benches or other amenities could be placed. Instead, these properties are usually owned by municipalities, whose permission is required for any such placement. The MBTA strives to work with property owners to place benches where practical, and where such placement meets requirements for other applicable policies and codes such as ADA clearance, pedestrian flow, and fire codes.

The first analysis compared the percentage of minority-classified bus stops without a shelter and more than 50 average daily boardings that have benches to the percentage of nonminority-classified bus stops without a shelter and more than 50 average daily boardings that have benches. Table 6-48 shows that 140 of the 518 bus stops (27.0 percent) without a shelter and more than 50 average daily boardings that are classified minority had benches, and 91 of the 284 bus stops (32.0 percent) without a shelter and more than 50 average daily boardings that are classified nonminority had benches. The ratio of the percentage of minority-classified bus stops without a shelter and more than 50 average daily boardings that have a bench to the percentage of nonminority-classified bus stops without a shelter and more than 50 average daily boardings that have a bench, 0.84, is above the MBTA’s disparate impact threshold of 0.80 and no disparate impact is found.

Table 6-48
Bench Placement – Bus Stops without a Shelter
and more than 50 Average Daily Boardings

Stop Classification	Number of Stops	Number of Stops with Benches	Percentage of Stops with Benches
Minority	518	140	27.0%
Nonminority	284	91	32.0%
Ratio of minority to nonminority			0.84
Disparate impact threshold			0.80
Result of disparate impact analysis			No Disparate Impact

Note: Bus stop bench locations as of May 2017.

The second analysis compared the percentage of all minority-classified bus stops without a shelter that have benches to the percentage of all nonminority-classified bus stops without a shelter that have benches. Table 6-49 shows that 220 of the 2,809 bus stops (7.8 percent) without a shelter that are classified minority had benches, and 243 of the 4,242 bus stops (5.7 percent) without a shelter that are classified nonminority had benches. The ratio of the percentage of minority-classified bus stops without a shelter that have a bench to the percentage of nonminority-classified bus stops without a shelter that have a bench, 1.37, is above the MBTA’s disparate impact threshold of 0.80 and no disparate impact is found.

Table 6-49
Bench Placement – All Bus Stops without a Shelter

Stop Classification	Number of Stops	Number of Stops with Benches	Percentage of Stops with Benches
Minority	2,809	220	7.8%
Nonminority	4,242	243	5.7%
Ratio of minority to nonminority			1.37
Disparate impact threshold			0.80
Result of disparate impact analysis	No Disparate Impact		

Note: Bus stop bench locations as of May 2017.

Bus Shelter Amenities

As stated in the MBTA's Bus Stop Design Guidelines, seating for at least three people shall be located within a bus shelter. To monitor the presence of seating fixtures in bus shelters, the MBTA relies on CTPS to assess every bus shelter in the system. CTPS field staff visited each bus shelter from July 2017 through August 2017 and recorded the presence of seating fixtures. Table 6-50 shows that 437 of the 467 bus stops (93.6 percent) with a shelter that are classified minority had seating fixtures, and 218 of the 238 bus stops (91.6 percent) with a shelter that are classified nonminority had seating fixtures. The ratio of the percentage of minority-classified bus stops with a shelter that have seating fixtures to the percentage of nonminority-classified bus stops with a shelter that have seating fixtures, 1.02, is above the MBTA's disparate impact threshold of 0.80 and no disparate impact is found.

Table 6-50
Seating Fixtures at Bus Stops

Stop Classification	Number of Stops with Shelters	Number of Stops with Shelters Equipped with Seating Fixtures	Percentage of Stops with Shelters Equipped with Seating Fixtures
Minority	467	437	93.6%
Nonminority	238	218	91.6%
Ratio of minority to nonminority			1.02
Disparate impact threshold			0.80
Result of disparate impact analysis	No Disparate Impact		

Note: Each bus shelter was inspected once between July 10, 2017, and August 15, 2017. All amenity assessments were performed by visual inspection by several experienced CTPS field staff who received training on the criteria used in these assessments.

Bus Shelter Conditions

To monitor the conditions of bus shelters, the MBTA relies on CTPS field staff to perform observations. CTPS field staff visited each bus stop in the system from July 2017 through August 2017 and recorded the structural condition of the shelter, the presence of vandalism, and degree of cleanliness. Table 6-51 shows that the ratios of the percentage of minority-classified bus shelters to the percentage of nonminority-classified bus shelters with acceptable conditions of each component are all above the MBTA's disparate impact threshold of 0.80 and no disparate impacts are found.

Table 6-51
Bus Shelter Conditions

Stop Classification	Percentage with Structure Visually Acceptable	Percentage with Vandalism Acceptable	Percentage with Cleanliness Acceptable
Minority	77.1%	89.5%	79.9%
Nonminority	82.4%	93.7%	87.4%
Ratio of minority to nonminority	0.94	0.96	0.91
Disparate impact threshold	0.80	0.80	0.80
Result of disparate impact analysis	NDI	NDI	NDI

NDI = No disparate impact.

Note: Each bus shelter was inspected once between July 10, 2017, and August 15, 2017. All condition assessments were performed by visual inspection by several experienced CTPS field staff who received training on the criteria used in these assessments.

Subway Rapid Transit Station Amenities

To monitor the distribution of subway rapid transit station amenities, the MBTA relies on CTPS to record the presence of each amenity. CTPS field staff visited each subway rapid transit station from February 2016 through March 2016 and recorded the presence of each amenity. Observations at the stations were recorded separately for three areas of each station, the exterior lobby (as applicable), the interior lobby, and the platform. The results are presented below, for each station area.

Subway Rapid Transit Lobby Amenities

In subway rapid transit lobbies, the MBTA monitors the presence of trash receptacles, recycling receptacles, seating fixtures, and up-to-date system maps. Table 6-52 shows that the ratios of the percentage of minority-classified subway rapid transit lobbies to the percentage of nonminority-classified subway rapid transit lobbies with each amenity are all above the MBTA's disparate impact threshold of 0.80 and no disparate impacts are found.

Table 6-52
Subway Rapid Transit Lobby Amenities

Station Classification	Percentage with Trash Receptacles	Percentage with Recycling Receptacles	Percentage with Seating Fixtures	Percentage with System Map
Minority	77.3%	59.1%	54.5%	86.4%
Nonminority	77.5%	45.0%	25.0%	97.5%
Ratio of minority to nonminority	1.00	1.31	2.18	0.89
Disparate impact threshold	0.80	0.80	0.80	0.80
Result of disparate impact analysis	NDI	NDI	NDI	NDI

NDI = No disparate impact.

Note: Each subway rapid transit station was inspected once between February 23, 2016, and March 21, 2016. All amenity assessments were performed by visual inspection by several experienced CTPS field staff who received training on the criteria used in these assessments.

Subway Rapid Transit Platform Amenities

On subway rapid transit platforms, the MBTA monitors the presence of trash receptacles, recycling receptacles, seating fixtures, and up-to-date system maps and line maps. Table 6-53 shows that the ratios of the percentage of minority-classified subway rapid transit platforms to the percentage of nonminority-classified subway rapid transit platforms with each amenity are all above the MBTA's disparate impact threshold of 0.80 and no disparate impacts are found.

Table 6-53
Subway Rapid Transit Platform Amenities

Station Classification	Percentage with Trash Receptacles	Percentage with Recycling Receptacles	Percentage with Seating Fixtures	Percentage with System Map	Percentage with Line Map
Minority	100%	91.3%	100%	95.7%	95.7%
Nonminority	92.5%	80.0%	97.5%	92.5%	87.5%
Ratio of minority to nonminority	1.08	1.14	1.03	1.03	1.09
Disparate impact threshold	0.80	0.80	0.80	0.80	0.80
Result of disparate impact analysis	NDI	NDI	NDI	NDI	NDI

NDI = No disparate impact.

Note: Each subway rapid transit station was inspected once between February 23, 2016, and March 21, 2016. All amenity assessments were performed by visual inspection by several experienced CTPS field staff who received training on the criteria used in these assessments.

Subway Rapid Transit Station Conditions

To monitor the conditions of subway rapid transit stations, the MBTA relies on CTPS field staff to perform observations. CTPS field staff visited each subway rapid transit station from February 2016 through March 2016 and recorded the condition of each item described in Table 6-54.

Table 6-54
Components of Subway Rapid Transit Station Condition Monitoring

Component	Areas Monitored	Subcomponent
Condition of structure	Exterior	Walls
	Lobby	Windows
	Platform	Doors
		Roof
Condition of floor surface	Lobby	State of repair
	Platform	Evenness
		Water present
Stairwell	Lobby	Surface condition
	Platform	Handrail condition
		Visibility
Vandalism	Exterior	Graffiti/stickers
	Lobby	Vandalism
	Platform	
Cleanliness	Exterior	Litter
	Lobby	Odor
	Platform	Trash cans emptied
Station name signage	Exterior	Present
	Platform	Visible
		Condition
Station way-finding signage	Lobby	Present
	Platform	Visible
		Condition
Lighting	Lobby	Lightbulbs: present/ functioning
	Platform	Visibility
Tactile strips	Platform	Present Condition

Subway Rapid Transit Exterior Station Conditions

For the exterior of subway rapid transit stations, the MBTA monitors the condition of the structure, station name signage, vandalism, and cleanliness. Table 6-55 shows that the ratios of the percentage of minority-classified subway rapid stations to the percentage of nonminority-classified subway rapid stations with acceptable exterior structure, station name signage, and vandalism conditions are above the MBTA's disparate impact threshold of 0.80 and no disparate impacts are found for these items.

However, the ratio of the percentage of minority-classified subway rapid stations to the percentage of nonminority-classified subway rapid stations with acceptable cleanliness conditions is below the MBTA's disparate impact threshold of 0.80 and a potential disparate impact is found for this item.

In September 2016, after CTPS inspected the cleanliness of subway rapid transit stations, the MBTA entered into a new performance-based janitorial contract. Under the contract, frontline staff is trained in accordance with the Station and Bus Stop Inspection Training Manual and actively monitor station cleanliness by conducting daily inspections on a rotating basis and reporting cleanliness performance with the use of a mobile web application. Frontline staff can also communicate in real time with the MBTA Maintenance Control Center and cleaning contractors to report incidents and deficiencies.

The real-time contract-monitoring process ensures that vendors regularly meet cleanliness standards and demonstrates the MBTA's commitment to greater accountability and responsiveness concerning the cleanliness and conditions of its stations. The MBTA will utilize the real-time inspection information to ensure that cleaning services are being conducted in an equitable manner.

Table 6-55
Subway Rapid Transit Exterior Station Conditions

Station Classification	Percentage with Structure Visually Acceptable	Percentage with Station Name Signage Acceptable	Percentage with Vandalism Acceptable	Percentage with Cleanliness Acceptable
Minority	77.3%	95.5%	100%	31.8%
Nonminority	72.5%	90.0%	100%	62.5%
Ratio of minority to nonminority	1.07	1.06	1.00	0.51
Disparate impact threshold	0.80	0.80	0.80	0.80
Result of disparate impact analysis	NDI	NDI	NDI	PDI

NDI = No disparate impact. PDI = Potential disparate impact.

Note: Each subway rapid transit station was inspected once between February 23, 2016, and March 21, 2016. All condition assessments were performed by visual inspection by several experienced CTPS field staff who received training on the criteria used in these assessments.

Subway Rapid Transit Lobby Conditions

For subway rapid transit lobbies, the MBTA monitors the condition of the structure, floor surface, stairwell, lighting, wayfinding signage, vandalism, and cleanliness. Table 6-56 shows that the ratios of the percentage of minority-classified subway rapid stations to the percentage of nonminority-classified subway rapid stations with acceptable lobby structure, floor surface, lighting, wayfinding signage, and vandalism conditions are above the MBTA's disparate impact threshold of 0.80 and no disparate impacts are found for these items.

However, the ratios of the percentage of minority-classified subway rapid stations to the percentage of nonminority-classified subway rapid stations with acceptable lobby stairwell and cleanliness conditions are below the MBTA's disparate impact threshold of 0.80 and potential disparate impacts are found for these items.

As stated previously, the MBTA is utilizing its real-time inspection mobile tool to ensure that cleaning services are being conducted in an equitable manner. The MBTA's Engineering and Maintenance Department will review all reported deficient conditions, and evaluate the reported deficiency and the scope of work to be prioritized for maintenance or programmed for capital investment.

Table 6-56
Subway Rapid Transit Lobby Conditions

Station Classification	Percentage with Structure Visually Acceptable	Percentage with Floor Surface Visually Acceptable	Percentage with Stairwell Visually Acceptable	Percentage with Lighting Visually Acceptable	Percentage with Wayfinding Signage Visually Acceptable	Percentage with Vandalism Acceptable	Percentage with Cleanliness Acceptable
Minority	86.4%	68.2%	36.4%	81.8%	100%	100%	27.3%
Nonminority	70.0%	67.5%	50.0%	82.5%	100%	97.5%	65.0%
Ratio of minority to nonminority	1.23	1.01	0.73	0.99	1.00	1.03	0.42
Disparate impact threshold	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Result of disparate impact analysis	NDI	NDI	PDI	NDI	NDI	NDI	PDI

NDI = No disparate impact. PDI = Potential disparate impact.

Note: Each subway rapid transit station was inspected once between February 23, 2016, and March 21, 2016. All condition assessments were performed by visual inspection by several experienced CTPS field staff who received training on the criteria used in these assessments.

Subway Rapid Transit Platform Conditions

For subway rapid transit platforms, the MBTA monitors the condition of the structure, platform surface, tactile strips, stairwell, lighting, station name signage, wayfinding signage, vandalism, and cleanliness, as compared to the built condition. Table 6-57 shows that the ratios of the percentage of minority-classified subway rapid stations to the percentage of nonminority-classified subway rapid stations with acceptable platform structure, tactile strips, lighting, station name signage, wayfinding signage, and vandalism conditions are above the MBTA's disparate impact threshold of 0.80 and no disparate impacts are found for these items.

However, the ratios of the percentage of minority-classified subway rapid stations to the percentage of nonminority-classified subway rapid stations with acceptable platform surface, stairwell and cleanliness conditions are below the MBTA's disparate impact threshold of 0.80 and potential disparate impacts are found for these items.

The MBTA's Engineering and Maintenance Department will review all reported deficient conditions and evaluate the deficiencies. As necessary, the department will prepare the scopes of work to address the deficiencies either through maintenance or capital investment.

Table 6-57
Subway Rapid Transit Platform Conditions

Station Classification	Percentage with Structure Visually Acceptable	Percentage with Platform Surface Visually Acceptable	Percentage with Tactile Strips Visually Acceptable	Percentage with Stairwell Visually Acceptable	Percentage with Lighting Visually Acceptable	Percentage with Station Name Visually Signage Acceptable	Percentage with Wayfinding Signage Visually Acceptable	Percentage with Vandalism Acceptable	Percentage with Cleanliness Acceptable
Minority	52.2%	43.5%	78.3%	26.1%	65.2%	100%	95.7%	100%	21.7%
Nonminority	50.0%	55.0%	90.0%	57.5%	77.5%	97.5%	100%	100%	57.5%
Ratio of minority to nonminority	1.04	0.79	0.87	0.45	0.84	1.03	0.96	1.00	0.38
Disparate impact threshold	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Result of disparate impact analysis	NDI	PDI	NDI	PDI	NDI	NDI	NDI	NDI	PDI

NDI = No disparate impact. PDI = Potential disparate impact.

Note: Each subway rapid transit station was inspected once between February 23, 2016, and March 21, 2016. All condition assessments were performed by visual inspection by several experienced CTPS field staff who received training on the criteria used in these assessments.

Surface Rapid Transit Station Amenities

To monitor the distribution of surface rapid transit station amenities, the MBTA relies on CTPS to record the presence of each amenity. CTPS field staff visited each surface rapid transit station from February 2016 through June 2016 and recorded the presence of each amenity.

For surface rapid transit stations, the MBTA monitors the presence of trash receptacles, recycling receptacles, seating fixtures, and up-to-date system maps and line maps. Table 6-58 shows that the ratios of the percentage of minority-classified surface rapid transit stations to the percentage of nonminority-classified surface rapid transit stations with seating fixtures and up-to-date system maps and line maps are all above the MBTA's disparate impact threshold of 0.80 and no disparate impacts are found for these items.

However, the ratios of the percentage of minority-classified surface rapid transit stations to the percentage of nonminority-classified surface rapid transit stations with trash receptacles and recycling receptacles are below the MBTA's disparate impact threshold of 0.80 and potential disparate impacts are found for these items.

The MBTA's Engineering and Maintenance Department will review and evaluate the reported distribution of trash and recycling receptacles. As necessary, the department will prepare the scopes of work to address the deficiencies either through maintenance or capital investment.

Table 6-58
Surface Rapid Transit Station Amenities

Station Classification	Percentage with Trash Receptacles	Percentage with Recycling Receptacles	Percentage with Seating Fixtures	Percentage with System Map	Percentage with Line Map
Minority	47.6%	19.0%	66.7%	61.9%	57.1%
Nonminority	73.5%	26.5%	73.5%	44.9%	24.5%
Ratio of minority to nonminority	0.65	0.72	0.91	1.38	2.33
Disparate impact threshold	0.80	0.80	0.80	0.80	0.80
Result of disparate impact analysis	PDI	PDI	NDI	NDI	NDI

NDI = No disparate impact. PDI = Potential disparate impact.

Note: Each surface rapid transit station was inspected once between February 25, 2016, and June 18, 2016. All amenity assessments were performed by visual inspection by several experienced CTPS field staff who received training on the criteria used in these assessments.

Surface Rapid Transit Station Conditions

To monitor the conditions of surface rapid transit stations the MBTA relies on CTPS field staff to perform observations. CTPS field staff visited each surface rapid transit station from February 2016 through June 2016 and recorded the condition of each item described in Table 6-59.

Table 6-59
Components of Surface Rapid Transit Station Condition Monitoring

Component	Area Monitored	Subcomponent
Condition of walkway to stop	Pedestrian access area	Condition Evenness Visibility
Pedestrian Control	Pedestrian access area	Crosswalk Condition
Condition of structure	Shelter	Walls Windows Roof Present
Vandalism	Shelter	Graffiti/Stickers Vandalism
Cleanliness	Shelter	Litter Odor Trash cans emptied
Condition of platform surface	Platform	Condition Evenness
Station name signage	Platform	Present Visibility Condition
Tactile strips (surface rapid transit only)	Platform	Present Condition

Surface Rapid Transit Shelter Conditions

For surface rapid transit shelters, the MBTA monitors the condition of the structure, vandalism, and cleanliness. Table 6-60 shows that the ratios of the percentage of minority-classified surface rapid stations to the percentage of nonminority-classified surface rapid stations with acceptable conditions of each shelter component are all above the MBTA's disparate impact threshold of 0.80 and no disparate impacts are found.

It is also important to note the many different types of rapid transit surface stops within the MBTA system. Some stops serve lines on dedicated rights of way, while others are located on municipal streets with minimal clearance for trains, passengers, and amenities. The MBTA strives to maintain a consistent level of amenities throughout its system while also keeping consistent with other applicable policies and codes such as ADA-clearance levels, fire code clearance levels, and other applicable municipal ordinances. The safety of our passengers and the general public is the MBTA's primary concern.

Table 6-60
Surface Rapid Transit Shelter Conditions

Station Classification	Percentage with Structure Visually Acceptable	Percentage with Vandalism Acceptable	Percentage with Cleanliness Acceptable
Minority	100%	85.7%	95.2%
Nonminority	97.6%	97.6%	73.2%
Ratio of minority to nonminority	1.03	0.88	1.30
Disparate impact threshold	0.80	0.80	0.80
Result of disparate impact analysis	NDI	NDI	NDI

NDI = No disparate impact.

Note: Each surface rapid transit station was inspected once between February 25, 2016, and June 18, 2016. All condition assessments were performed by visual inspection by several trained experienced CTPS field staff who received training on the criteria used in these assessments.

Surface Rapid Transit Platform Conditions

For surface rapid transit platforms, the MBTA monitors the condition of the walkway, pedestrian control, platform surface, station name signage, and tactile strips. Table 6-61 shows that the ratios of the percentage of minority-classified surface rapid stations to the percentage of nonminority-classified surface rapid stations with acceptable conditions of each platform component are all above the MBTA's disparate impact threshold of 0.80 and no disparate impacts are found.

It is important to note that cross walks of a public roadway are the responsibility of the roadway owner, typically the local municipality, or in some instances the Commonwealth of Massachusetts. While informative, the evaluation of municipal crosswalks and sidewalks is not an amenity for which the MBTA is responsible to maintain.

Table 6-61
Surface Rapid Transit Platform Conditions

Station Classification	Percentage with Walkway Visually Acceptable	Percentage with Pedestrian Control Visually Acceptable	Percentage with Platform Surface Visually Acceptable	Percentage with Station Name Signage Visually Acceptable	Percentage with Tactile Strips Visually Acceptable
Minority	85.7%	85.7%	76.2%	85.7%	75.0%
Nonminority	61.2%	75.5%	63.3%	46.9%	42.9%
Ratio of minority to nonminority	1.40	1.14	1.20	1.83	1.75
Disparate impact threshold	0.80	0.80	0.80	0.80	0.80
Result of disparate impact analysis	NDI	NDI	NDI	NDI	NDI

NDI = No disparate impact.

Note: Each surface rapid transit station was inspected once between February 25, 2016, and June 18, 2016. All condition assessments were performed by visual inspection by several experienced CTPS field staff who received training on the criteria used in these assessments.

Commuter Rail Station Amenities

To monitor the distribution of commuter rail station amenities, the MBTA relies on CTPS to record the presence of each amenity. CTPS field staff visited each commuter rail station from February 2016 through March 2016 and recorded the presence of each amenity.

For commuter rail stations, the MBTA monitors the presence of trash receptacles, seating fixtures, and up-to-date system maps, line schedules, and Title VI notices. Table 6-62 shows that the ratios of the percentage of minority-classified commuter rail stations to the percentage of nonminority-classified commuter rail stations with each amenity are all above the MBTA's disparate impact threshold of 0.80 and no disparate impacts are found.

Table 6-62
Commuter Rail Station Amenities

Station Classification	Percentage with Trash Receptacles	Percentage with Seating Fixtures	Percentage with System Map	Percentage with Line Schedule	Percentage with Title VI Notice
Minority	100%	100%	87.5%	100%	100%
Nonminority	96.8%	97.6%	78.6%	90.5%	89.7%
Ratio of minority to nonminority	1.03	1.02	1.11	1.11	1.12
Disparate impact threshold	0.80	0.80	0.80	0.80	0.80
Result of disparate impact analysis	NDI	NDI	NDI	NDI	NDI

NDI = No disparate impact.

Note: Each commuter rail station was inspected once between February 11, 2016, and March 5, 2016. All amenity assessments were performed by visual inspection by several experienced CTPS field staff who received training on the criteria used in these assessments.

Commuter Rail Station Conditions

To monitor the conditions of commuter rail stations the MBTA relies on CTPS field staff to perform observations. CTPS field staff visited each commuter rail station from February 2016 through March 2016 and recorded the condition of each item described in Table 6-63.

Table 6-63
Components of Commuter Rail Station Condition Monitoring

Component	Area Monitored	Subcomponent
Condition of structure	Shelter	Walls Roof Windows Doors
Vandalism	Shelter Platform	Graffiti/Stickers Vandalism
Cleanliness	Shelter Platform	Litter Odor Trash cans emptied
Station name signage	Shelter Platform	Visibility Present Condition
Condition of floor surface	Platform	State of repair Evenness Water present
Stairwell	Platform	Surface condition Handrail condition Visibility
Station wayfinding signage	Platform	Visibility Present Condition
Tactile Strips	Platform	Presence Condition

Commuter Rail Shelter Conditions

For commuter rail shelters, the MBTA monitors the condition of the structure, station name signage, vandalism, and cleanliness. Table 6-64 shows that the ratios of the percentage of minority-classified commuter rail stations to the percentage of nonminority-classified commuter rail stations with acceptable conditions of each shelter component are all above the MBTA's disparate impact threshold of 0.80 and no disparate impacts are found.

Table 6-64
Commuter Rail Shelter Conditions

Station Classification	Percentage with Structure Visually Acceptable	Percentage with Station Name Signage Visually Acceptable	Percentage with Vandalism Acceptable	Percentage with Cleanliness Acceptable
Minority	87.5%	100%	87.5%	87.5%
Nonminority	89.7%	91.3%	93.7%	87.3%
Ratio of minority to nonminority	0.98	1.10	0.93	1.00
Disparate impact threshold	0.80	0.80	0.80	0.80
Result of disparate impact analysis	NDI	NDI	NDI	NDI

NDI = No disparate impact.

Note: Each commuter rail station was inspected once between February 11, 2016, and March 5, 2016. All condition assessments were performed by visual inspection by several experienced CTPS field staff who received training on the criteria used in these assessments.

Commuter Rail Platform Conditions

For commuter rail stations, the MBTA monitors the condition of the platform surface, tactile strips, stairwell, station name signage, wayfinding signage, vandalism, and cleanliness. Table 6-65 shows that the ratios of the percentage of minority-classified commuter rail stations to the percentage of nonminority-classified commuter rail stations with acceptable platform surface, tactile strips, stairwell, station name signage, wayfinding signage, and vandalism conditions are above the MBTA's disparate impact threshold of 0.80 and no disparate impacts are found for these items.

However, the ratio of the percentage of minority-classified commuter rail stations to the percentage of nonminority-classified commuter rail stations with acceptable platform cleanliness conditions is below the MBTA's disparate impact threshold of 0.80 and potential disparate impact is found for this item.

The MBTA continues to work closely with Keolis on implementing its Title VI plan, including concerns related to station cleanliness. Currently, the three minority-classified stations that did not pass CTPS's cleanliness inspection (Four Corners/ Geneva Avenue, Talbot Avenue, and Uphams Corner) are already cleaned more frequently than other stations in that region of the commuter rail network. The MBTA and Keolis are working together to determine if adjustments to the cleaning schedule should be made.

Table 6-65
Commuter Rail Platform Conditions

Station Classification	Percentage with Platform Surface Visually Acceptable	Percentage with Tactile Strips Visually Acceptable	Percentage with Stairwell Visually Acceptable	Percentage with Station Name Signage Visually Acceptable	Percentage with Wayfinding Signage Visually Acceptable	Percentage with Vandalism Acceptable	Percentage with Cleanliness Acceptable
Minority	100%	87.5%	75.0%	87.5%	87.5%	87.5%	62.5%
Nonminority	38.9%	45.2%	87.3%	88.1%	78.6%	87.3%	81.0%
Ratio of minority to nonminority	2.57	1.93	0.86	0.99	1.11	1.00	0.77
Disparate impact threshold	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Result of disparate impact analysis	NDI	NDI	NDI	NDI	NDI	NDI	PDI

NDI = No disparate impact.

Note: Each commuter rail station was inspected once between February 11, 2016, and March 5, 2016. All condition assessments were performed by visual inspection by several experienced CTPS field staff, who received training on the criteria used in these assessments.

Automated Fare Collection

Faregates

To assess faregate operability between minority-classified stations and nonminority-classified stations, the MBTA compared faregate performance at each station to the overall performance of the system. The systemwide percentage of time that faregates were operable was 99.2 percent. Table 6-66 shows that 20 of the 23 stations (87.0 percent) that are classified minority performed at or above the systemwide average, and 26 of the 40 stations (65.0 percent) that are classified nonminority performed at or above the systemwide average. The ratio of the percentage of minority stations at or above the systemwide average to the percentage of nonminority stations performing at or above the systemwide average, 1.34, is above the MBTA's disparate impact threshold of 0.80 and no disparate impact is found.

Table 6-66
Faregate Operability

Station Classification	Number of Stations	Number of Stations Performing at or Above Systemwide Average	Percentage of Stations Performing at or Above Systemwide Average
Minority	23	20	87.0%
Nonminority	40	26	65.0%
Ratio of minority to nonminority			1.34
Disparate impact threshold			0.80
Result of disparate impact analysis			No Disparate Impact

Note: Data from March 2, 2017, through August 21, 2016.

Fare Vending Machines

To assess fare vending machine operability between minority-classified stations and nonminority-classified stations, the MBTA conducted two analyses.

The first analysis assessed the opportunity for customers to purchase fare media with cash at stations equipped with full-service fare vending machines that accept cash. This analysis was conducted by comparing the percentage of time customers could purchase fare media with cash at each station equipped with full-service fare vending machines to the systemwide average amount of time customers could purchase fare media with cash at any station equipped with full-service fare vending machines that accept cash, which was 99.92 percent of the time. Table 6-67 shows that 21 of the 25 stations (84.0 percent) that are classified minority performed at or above the systemwide average, and 35 of the 51 stations (68.6 percent) that are classified nonminority performed at or above the systemwide average. The ratio of the percentage of minority stations at or above the systemwide average to the percentage of nonminority stations performing at or above the systemwide average, 1.22, is above the MBTA's disparate impact threshold of 0.80 and no disparate impact is found.

Table 6-67
Availability of Full-Service Fare Vending Machines

Station Classification	Number of Stations	Number of Stations Performing at or Above Systemwide Average	Percentage of Stations Performing at or Above Systemwide Average
Minority	25	21	84.0%
Nonminority	51	35	68.6%
Ratio of minority to nonminority			1.22
Disparate impact threshold			0.80
Result of disparate impact analysis	No Disparate Impact		

Note: Data from March 2, 2017, through August 21, 2016.

The second analysis assessed the opportunity for customers to purchase fare media with cash or credit at stations equipped with full-service and/or cashless fare vending machines. This analysis was conducted by comparing the percentage of time customers could purchase fare media using cash or credit at stations equipped with full-service and/or cashless fare vending machines to the systemwide average amount of time customers could purchase fare media using cash or credit at any station equipped with full-service and/or cashless fare vending machines, which was 99.99 percent of the time. Table 6-68 shows that 23 of the 25 stations (92.0 percent) that are classified minority performed at or above the systemwide average, and 38 of the 51 stations (74.5 percent) that are classified nonminority performed at or above the systemwide average. The ratio of the percentage of minority stations at or above the systemwide average to the percentage of nonminority stations performing at or above the systemwide average, 1.23, is above the MBTA's disparate impact threshold of 0.80 and no disparate impact is found.

Table 6-68
Availability of Full-Service and/or Cashless Fare Vending Machines

Station Classification	Number of Stations	Number of Stations Performing at or Above Systemwide Average	Percentage of Stations Performing at or Above Systemwide Average
Minority	25	23	92.0%
Nonminority	51	38	74.5%
Ratio of minority to nonminority			1.23
Disparate impact threshold			0.80
Result of disparate impact analysis			No Disparate Impact

Note: Data from March 2, 2017, through August 21, 2016.

CharlieCard Retail Sales Terminals

Retail sales terminals are found at a variety of locations ranging from supermarkets and convenience stores to banks and check-cashing agencies. To assess the placement of retail sales terminals in minority areas compared to nonminority areas, the MBTA calculated the demographic make-up within one-quarter mile of each retail sales terminal using 2010 US Census data. Table 6-69 shows that 9.0 percent of the total minority population in the MBTA's service area has access to a retail sales terminal within one-quarter mile of their home location, while 3.6 percent of the total nonminority population in the MBTA's service area has access to a retail sales terminal within one-quarter mile of their home location. The ratio of the percentage of the minority population with access to retail sales terminals to the percentage of the nonminority population with access to retail sales terminals, 2.49, is above the MBTA's disparate impact threshold of 0.80 and no disparate impact is found.

Table 6-69
Populations Served by CharlieCard Retail Sales Terminals

Population	Total Population in MBTA Service Area	Population within One-Quarter Mile of an RST	Percentage of Population within One-Quarter Mile of an RST
Minority	1,266,019	113,388	9.0%
Nonminority	3,567,587	128,282	3.6%
Ratio of minority to nonminority			2.49
Disparate impact threshold			0.80
Result of disparate impact analysis	No Disparate Impact		

Note: Locations as of May 16, 2016.
RST = Retail sales terminal.

Provision of Information

Neighborhood Maps and Bus Transfer Maps in Subway Rapid Transit Stations

Through the Neighborhood Map Program, maps that show bus connections are provided at underground rapid transit stations with bus service. Neighborhood maps are also generally installed at all new or renovated underground stations, regardless of the availability of a bus connection.

Table 6-70 shows that 15 of the 23 subway rapid transit stations (65.2 percent) that are classified minority had neighborhood maps, and 21 of the 37 subway rapid transit stations (56.8 percent) that are classified nonminority had neighborhood maps. The ratio of the percentage of minority subway rapid transit stations with neighborhood maps to the percentage of nonminority subway rapid transit stations with neighborhood maps, 1.15, is above the MBTA's disparate impact threshold of 0.80 and no disparate impact is found.

Table 6-70
Neighborhood Maps at Subway Rapid Transit Stations

Station Classification	Number of Stations	Number of Stations with Neighborhood Map	Percentage of Stations with Neighborhood Map
Minority	23	15	65.2%
Nonminority	37	21	56.8%
Ratio of minority to nonminority			1.15
Disparate impact threshold			0.80
Result of disparate impact analysis			No Disparate Impact

Note: Each subway rapid transit station was inspected once between February 23, 2016, and March 21, 2016.

Table 6-71 shows that 18 of the 19 subway rapid transit stations with bus connections (94.7 percent) that are classified minority had bus transfer maps, and 26 of the 31 subway rapid transit stations with bus connections (83.9 percent) that are classified nonminority had bus connection maps. The ratio of the percentage of minority subway rapid transit stations with bus connections that had neighborhood maps to the percentage of nonminority subway rapid transit stations with bus connections that had neighborhood maps, 1.13, is above the MBTA’s disparate impact threshold of 0.80 and no disparate impact is found.

Table 6-71
Bus Transfer Maps at Subway Rapid Transit Stations with Bus Connections

Station Classification	Number of Stations	Number of Stations with Bus Transfer Map	Percentage of Stations with Bus Transfer Map
Minority	19	18	94.7%
Nonminority	31	26	83.9%
Ratio of minority to nonminority			1.13
Disparate impact threshold			0.80
Result of disparate impact analysis			No Disparate Impact

Note: Each subway rapid transit station was inspected once between February 23, 2016, and March 21, 2016.

Variable-Message Signs

All rapid transit stations on the Red Line, Blue Line, and Orange Line, and all commuter rail stations except for Mishawum, Silver Hill, and Hastings have variable-message signs that alert customers to the approach and arrival of trains. Since the last triennial submission in 2014, Assembly Square Station was opened and received new variable-message signs, and variable-message signs were reconfigured during renovations at Government Center Station and Orient Heights Station.

In winter 2015, the MBTA completed signal system upgrades in the Green Line central subway, which—combined with global positioning system (GPS) units on board all Type 8 trains—allowed for real-time tracking of all Green Line service

(above and below ground) for the first time, available to all customers through third-party mobile device applications. In fall 2015, existing variable-message signs in Green Line central subway stations and above-ground stations on the D branch were reconfigured to display next-train information. Because of the lack of power and communication connections to above-ground stations on the B, C, and E branches of the Green Line, no variable-message signs can be installed to display next-train information at these stations in the near term.

As part of collecting station condition and amenity data from February 2016 through June 2016, CTPS field staff conducted a one-time inspection of the operability of variable-message signs at each subway rapid transit station, surface Green Line D branch station, and commuter rail station. Table 6-72 shows that the ratios of the percentage of minority-classified subway rapid transit stations, surface Green Line D branch stations, and commuter rail stations with all variable-message signs operating to the percentage of nonminority-classified subway rapid transit stations, surface Green Line D branch stations, and commuter rail stations with all variable-message signs operating are all above the MBTA’s disparate impact threshold of 0.80 and no disparate impacts are found.

Table 6-72
Variable-Message Sign Operability

Station Classification	Percentage with VMS Operating – Subway Rapid Transit	Percentage with VMS Operating – Surface Green Line D Branch	Percentage with VMS Operating – Commuter Rail
Minority	100%	100%	100%
Nonminority	100%	92.3%	97.6%
Ratio of minority to nonminority	1.00	1.08	1.02
Disparate impact threshold	0.80	0.80	0.80
Result of disparate impact analysis	NDI	NDI	NDI

VMS = Variable-message sign. NDI = No disparate impact.

Note: Each subway rapid transit station, surface rapid transit station, and commuter rail station was inspected once between February 11, 2016, and June 18, 2016.

At the time of the last triennial submission, only Forest Hills Station had variable-message signs displaying bus arrival information. Since then, variable-message signs have been installed to display bus arrival information at Ashmont Station, Harvard Station, Maverick Station, Ruggles Station, and Sullivan Station. Bus arrival information was added to existing variable-message signs at Courthouse Station, Dudley Station, and World Trade Center Station. Variable-message signs are currently being installed at Central Station and Haymarket Station, which will display bus arrival information upon completion.

Table 6-73 shows that five of the 19 subway rapid transit stations (26.3 percent) that are classified minority and have a bus connection had variable-message signs displaying bus arrival information, and three of the 31 subway rapid transit stations (9.7 percent) that are classified nonminority and have a bus connection had variable-message signs displaying bus arrival information. The ratio of the percentage of minority-classified subway rapid transit stations with a bus connection that have variable-message signs displaying bus arrival information to the percentage of nonminority-classified subway rapid transit stations with a bus connection that have variable-message signs displaying bus arrival information, 2.72, is above the MBTA's disparate impact threshold of 0.80 and no disparate impact is found.

Table 6-73
Variable-Message Signs Displaying Bus Arrival Information at Subway Rapid Transit Stations with a Bus Connection

Station Classification	Number of Stations	Number of Stations with VMS Displaying Bus Arrival Information	Number of Stations with VMS Displaying Bus Arrival Information
Minority	19	5	26.3%
Nonminority	31	3	9.7%
Ratio of minority to nonminority			2.72
Disparate impact threshold			0.80
Result of disparate impact analysis			No Disparate Impact

VMS = Variable-message sign.

Note: Variable-message sign locations as of July 2017.

Escalator Operability

To assess escalator operability between minority-classified stations and nonminority-classified stations, the MBTA compared escalator performance at each station to the overall performance of the system. The systemwide percentage of time that escalators were operable was 99.5 percent. Table 6-74 shows that 13 of the 20 stations (65.0 percent) that are classified minority performed at or above the systemwide average, and 18 of the 34 stations (52.9 percent) that are classified nonminority performed at or above the systemwide average. The ratio of the percentage of minority-classified stations at or above the systemwide average to the percentage of nonminority-classified stations performing at or above the systemwide average, 1.23, is above the MBTA's disparate impact threshold of 0.80 and no disparate impact is found.

Table 6-74
Escalator Operability

Station Classification	Number of Stations	Number of Stations Performing at or Above Systemwide Average	Percentage of Stations Performing at or Above Systemwide Average
Minority	20	13	65.0%
Nonminority	34	18	52.9%
Ratio of minority to nonminority			1.23
Disparate impact threshold			0.80
Result of disparate impact analysis			No Disparate Impact

Note: Data from April 1, 2015, through March 31, 2016.

Vehicle Assignment (FTA C 4702.1B, IV.4.b.2)

Bus Vehicle Age and Air Conditioning Operability

As outlined in the MBTA's FY2010-FY2020 Bus Fleet Management Plan, the MBTA is committed to maintaining a fleet with an average age of 7.5 years or less. To assess bus vehicle age between minority-classified routes and nonminority-classified routes, the MBTA compared the percentage of minority routes that had an average bus age of less than 7.5 years to the percentage of nonminority routes that had an average bus age of less than 7.5 years. Table 6-75 shows that 22 of the 94 bus routes (23.4 percent) that are classified minority had an average bus age of less than 7.5 years, and six of the 67 bus routes (9.0 percent) that are classified nonminority had an average bus age of less than 7.5 years. The ratio of the percentage of minority-classified bus routes that had an average bus age of less than 7.5 years to the percentage of nonminority-classified bus routes that had an average bus age of less than 7.5 years, 2.61, is above the MBTA's disparate impact threshold of 0.80 and no disparate impact is found.

Table 6-75
Bus Vehicle Age

Route Classification	Number of Routes	Number of Routes with Average Bus Age Less than 7.5 Years	Percentage of Routes with Average Bus Age Less than 7.5 Years
Minority	94	22	23.4%
Nonminority	67	6	9.0%
Ratio of minority to nonminority			2.61
Disparate impact threshold			0.80
Result of disparate impact analysis			No Disparate Impact

Note: Vehicle assignments on September 8, 2015

To assess bus air conditioning operability between minority-classified routes and nonminority-classified routes the MBTA compared air conditioning performance on each route to the overall performance of the system. The systemwide percentage of trips that operated with functioning air conditioning was 97.0 percent. Table 6-76 shows that 72 of the 94 bus routes (76.6 percent) that are classified minority performed at or above the systemwide average, and 45 of the 67 bus routes (67.2 percent) that are classified nonminority performed at or above the systemwide average. The ratio of the percentage of minority-classified bus routes at or above the systemwide average to the percentage of nonminority-classified bus routes performing at or above the systemwide average, 1.14, is above the MBTA's disparate impact threshold of 0.80 and no disparate impact is found.

Table 6-76
Bus Air Conditioning Operability

Route Classification	Number of Routes	Number of Routes Performing at or Above Systemwide Average	Percentage of Routes Performing at or Above Systemwide Average
Minority	94	72	76.6%
Nonminority	67	45	67.2%
Ratio of minority to nonminority			1.14
Disparate impact threshold			0.80
Result of disparate impact analysis			No Disparate Impact

Note: Vehicle assignments on September 8, 2015

Heavy and Light Rail Vehicle Age

A comparison of vehicle age between minority and nonminority-classified heavy and light rail lines is not applicable. Each of the three heavy rail lines (Red Line, Blue Line, and Orange Line) operates with dedicated equipment, meaning that the equipment on one line is not interchangeable with equipment on any of the other lines. The Mattapan Line operates as a short, stand-alone, light-rail extension of the Red Line's Ashmont Branch, and also operates with a

dedicated fleet. While the Green Line is an extensive light rail system with four surface branches and a central subway portion, each of them are classified as nonminority. Therefore, there are no comparisons to be made for vehicle age between minority and nonminority-classified lines.

Commuter Rail Vehicle Age

To assess commuter rail vehicle age between minority-classified lines and nonminority-classified lines, the MBTA compared the average coach age of trains run on each line to the overall average coach age of trains run systemwide. The systemwide average age of commuter rail trains run was 22.9 years. Table 6-77 shows that the single commuter rail line that is classified minority had an average coach age below the systemwide average, and four of the 11 commuter rail lines (36.4 percent) that are classified nonminority had an average coach age below the systemwide average. The ratio of the percentage of minority-classified lines that had an average coach age below the systemwide average to the percentage of nonminority-classified lines that had an average coach age below the systemwide average, 2.75, is above the MBTA’s disparate impact threshold of 0.80 and no disparate impact is found.

Table 6-77
Commuter Rail Vehicle Age

Line Classification	Number of Lines	Number of Lines with Average Coach Age Below the Systemwide Average	Percentage of Lines with Average Coach Age Below the Systemwide Average
Minority	1	1	100%
Nonminority	11	4	36.4%
Ratio of minority to nonminority			2.75
Disparate impact threshold			0.80
Result of disparate impact analysis	No Disparate Impact		

Note: Vehicle assignments on September 8, 2015.



THIS PAGE INTENTIONALLY BLANK



Chapter 7: Requirement to Evaluate Service and Fare Changes

INTRODUCTION

As a transit provider that operates 50 or more fixed-route vehicles during peak service in an urbanized area (UZA) of more than 200,000 in population, the MBTA is required to evaluate major service change and fare change proposals to identify possible disparate impacts on minority populations and/or disproportionate burdens on low-income populations in the service area. The analyses listed below reflect those performed by the MBTA during this triennial reporting period:

- A fare equity analysis for the MBTA Youth Pass Pilot Program, which provides all eligible youth in participating municipalities with equal access to a reduced-fare product that had previously only been available to students through the existing Student Pass Program. This analysis was accepted by the MBTA Fiscal and Management Control Board (FMCB) on December 21, 2015.
- A fare equity analysis for the State Fiscal Year (SFY) 2017 MBTA Fare Change. This analysis was accepted by the FMCB on March 16, 2016.

- A service equity analysis for the termination of the Late Night Service Pilot Program; the program was terminated due to the deleterious impact it had on maintenance by reducing the hours that vehicles and infrastructure were available for necessary maintenance regimens. This analysis was accepted by the FMCB on March 16, 2016.
- A service equity analysis for the Fitchburg Line Improvement Project, which reduced travel times and improved service reliability throughout the corridor. This analysis was accepted by the FMCB on July 11, 2016.
- A service equity analysis for the Wachusett Extension Project, which constructed a new station at the end of the Fitchburg commuter rail line and provided upgrades to the existing rail line to accommodate the four-mile extension. This analysis was accepted by the FMCB on July 11, 2016.

The Federal Transit Administration (FTA), through FTA Title VI Circular 4702.1B, requires transit service providers to set several distinct policies that shape the evaluation process for these service and fare change equity analyses – including definitional policies and numeric threshold policies. As such, the MBTA conducts its analyses in accordance with policies it has established that define necessary terms, identify analysis thresholds, and detail data sources. The MBTA has incorporated each policy requirement into a comprehensive Disparate Impact/ Disproportionate Burden (DI/DB) Policy. The DI/DB Policy, which is described in detail in this chapter, is composed of the following:

- **Major Service Change Policy**, which defines those service change proposals that are considered “major” and would, therefore, require a disparate impact or disproportionate burden analysis to understand possible impacts on protected populations from the proposed service change.
- **Disparate Impact Policy**, which sets a threshold for identifying the potential of adverse effects of service changes to be experienced disparately by minority populations within the service area.
- **Disproportionate Burden Policy**, which sets a threshold for identifying the potential of adverse effects of service changes to be experienced disproportionately by low-income populations within the service area.
- **Minority Disparate Impact Policy**, which sets a threshold for identifying the potential of adverse effects of fare changes to be experienced disparately by minority populations within the service area.

- **Low-Income Disproportionate Burden Policy**, which sets a threshold for identifying the potential of adverse effects of fare changes to be experienced disproportionately by low-income populations within the service area.

The MBTA's current DI/DB Policy is the result of a 2016 undertaking to revise the 2014 version of the policy. Two key objectives for the 2016 revision process included (1) redefining a "major service change" to distinguish between minor quarterly service adjustments and more significant changes advanced through the rollout of new biennial service plans, and (2) setting disparate/disproportionate impact thresholds that would not be susceptible to false positives attributable to margins of error in the data source, regardless of whether the data source is the US Census or most recent MBTA passenger survey. For more details on the policy development process, including the public engagement effort that supported the work, please see Chapter 2 of this report.

DISPARATE IMPACT/DISPROPORTIONATE BURDEN POLICY

This section discusses the federal requirements pertaining to major service changes and fare changes, details the MBTA's DI/DB Policy that addresses those requirements, and provides definitions of relevant terms.

Requirement

FTA C 4702.1B, issued in October 2012, under the authority of Title VI of the Civil Rights Act of 1964 (Title VI), directs transit providers to study proposed major service changes and all fare changes for possible disparities in impacts on minority and low-income riders and communities.

This requirement is part of the MBTA's Title VI assurance that no person shall, on the basis of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity receiving federal financial assistance.¹

The requirement to analyze service and fare changes at the MBTA applies to proposed changes to the MBTA's fixed-route modes; these analyses are not required for demand-response modes, including paratransit.

¹ 42 USC § 2000d et seq., and the Civil Rights Restoration Act of 1987 (P.L. 100.259)

Purpose

The MBTA's DI/DB Policy satisfies FTA's requirement under FTA C 4702.1B, Chapter IV, Section 7, to evaluate, prior to implementation, all service changes that exceed the MBTA's major service change threshold and all fare changes to determine whether those changes may have a discriminatory impact based on the finding of an adverse effect linked to race, color, or national origin, and/or a disproportionate burden based on the finding of an adverse effect linked to low-income status. All FTA requirements for conducting equity analyses are addressed within the MBTA's DI/DB Policy, including the requirement to define what constitutes a *major service change*, *adverse effect*, *disparate impact*, and *disproportionate burden*.

As a result of the unique nature of service and fare changes, the FTA recognizes that the scope of population and ridership data used to conduct each analysis often varies. For this reason, the MBTA exercises the discretion, as needed, to consult with FTA representatives for technical assistance. By consulting with FTA, in combination with public input and review by the MBTA board, the MBTA ensures its analyses will ultimately lead to equitable decision-making.

Service Equity Analysis

Major Service Change Policy

Per FTA C 4702.1B, the MBTA is required to evaluate the impacts on minority and/or low-income populations of proposed major service changes to the MBTA's fixed-route services. Whether a proposed service change will be considered "major" depends on whether the proposal meets one or both of the following conditions:

- **Major service change at the modal level:** A change in revenue vehicle hours (RVH) per week of at least ten percent by mode
- **Major service change at the route level:** For all routes, a change in route length of at least 25 percent or three miles; or, for routes with at least 80 RVH per week, a change in RVH per week of at least 25 percent

Once the condition of a major service change has been met at the modal and/or route level, the equity analysis must consider all concurrently proposed changes in the aggregate.

For the purposes of this Major Service Change Policy the following apply:

- The MBTA's fixed-route modes consist of fixed-route bus (including electric trolley buses), heavy rail (Red Line, Orange Line, Blue Line), light rail (Green Line, Mattapan Trolley), commuter rail, and ferry.
- The MBTA's non-bus routes are identified as each commuter rail, heavy rail, light rail, and ferry line.
- Supplemental service that adds trips along pre-existing transit routes (e.g. school trips, weekend variations) will be counted as part of the parent route.
- The complete elimination of existing routes or addition of new routes constitutes major service changes.
- Changes in RVH and/or route length produced by quarterly service adjustments will be categorized under one of two labels: (1) Summer Quarter, or (2) All Other Quarters. In determining whether these changes qualify as "major" under this policy, changes to Summer Quarter service will be compared to the previous Summer Quarter's service, and changes to any other quarter will be compared to the most recent non-summer quarter's service (i.e., fall is compared to spring, winter is compared to fall, and spring is compared to winter).
- A change in route length includes changes in alignment.
- Changes to RVH and/or route length will be analyzed as a percentage change and as an absolute change.
- Making a service change to more than 25 percent or three miles of a primary variation's length would trigger the "major service change" designation.
- Making a service change to more than 25 percent or three miles of the combined segments of all variants (counting overlapping segments only once) would trigger the "major service change" designation.

Definition of Adverse Effects

The MBTA measures adverse effects of a major service change as follows:

- For routes with at least 80 RVHs per week, an increase or decrease in the amount of service scheduled, by route and by mode (as measured by changes to weekly RVH)

- An increase or decrease in the access to service, by route (as measured by changes to route length, in miles)

To evaluate the degree of adverse impacts resulting from major service change proposals, the MBTA will measure and compare the extent of the loss or the gain among minority and nonminority populations and among low-income and non-low-income populations when conducting the equity analysis.

Disparate Impact/Disproportionate Burden Policy for Major Service Changes

The MBTA's threshold for determining when the adverse effects of a major service change may result in disparate impacts on minority and/or disproportionate burdens on low-income populations is 20 percent. If the ratio of the impact on minority to non-minority populations/riders or low-income to non-low-income populations/riders is more than 1.20 (or 20 percent), then the proposed change would be determined to pose a potential disparate impact or disproportionate burden.

Upon finding a potential disparate impact on minority populations from a proposed major service change, the MBTA will analyze alternatives or make revisions to the proposed change to avoid, minimize, or mitigate the potential adverse effects. Any proposed alternative would also be subject to a service equity analysis, and the MBTA would select and implement a proposal in accordance with FTA's guidance.

When potential disparate impacts are identified, the MBTA will provide a meaningful opportunity for public comment on any proposed mitigation measures, including the less discriminatory alternatives that may be available.

Upon finding a potential disproportionate burden on low-income populations from a proposed major service change, the MBTA may take steps to avoid, minimize, or mitigate these impacts, where practicable, and will describe alternatives available to the low-income passengers affected by the service changes.

Fare Equity Analysis

For all fare changes, the MBTA will compare the percentage change in the average fare for minority riders and riders overall and for low-income riders and riders overall. For fare-type changes across all modes, the MBTA will assess whether minority and low-income riders are more likely to use the affected

fare type or media than riders overall. Any or all proposed fare changes will be considered in the aggregate and results evaluated using the fare DI/DB threshold, below.

Disparate Impact/Disproportionate Burden Policy for Fare Changes

The MBTA's threshold for determining when fare changes may result in disparate impacts or disproportionate burdens on minority or low-income populations is 10 percent. Upon finding a potential disparate impact on minority populations from a proposed fare change, the MBTA will analyze alternatives or make revisions to the proposed change that meet the same goals of the original proposal. Any proposed alternative fare change would be subject to a fare equity analysis, and the MBTA would select and implement a proposal in accordance with FTA's guidance.

Where potential disparate impacts are identified, the MBTA will provide a meaningful opportunity for public comment on any proposed mitigation measures, including any less discriminatory alternatives that may be available.

Upon finding a potential disproportionate burden on low-income populations from a proposed fare change, the MBTA may take steps to avoid, minimize, or mitigate these impacts, where practicable.

Definitions

The following definitions are drawn from a broader set of definitions provided by the FTA C 4702.1B:

- **Demand response system:** Any non-fixed-route system of transporting individuals that requires advanced scheduling, including services provided by public entities, non-profits, and private providers. An advance request for service is a key characteristic of demand response service.
- **Discrimination:** Any action or inaction, whether intentional or unintentional, in any program or activity of a federal-aid recipient, subrecipient, or contractor that results in disparate treatment, disparate impact, or perpetuating the effects of prior discrimination based on race, color, or national origin.
- **Disparate Impact:** A facially neutral policy or practice that disproportionately affects members of a group identified by race, color, or national origin, where the recipient's policy or practice lacks a substantial

legitimate justification and where there exist one or more alternatives that would serve the same legitimate objectives but with less disproportionate effect on the basis of race, color, or national origin.

- **Disproportionate Burden:** A facially neutral policy or practice related to a major service change or fare modification proposal that disproportionately affects, whether by benefit or burden, low-income populations more than non-low-income populations. A finding of disproportionate burden requires the recipient to evaluate alternatives and mitigate burdens where practicable.
- **Disparate Treatment:** Actions that result in circumstances where similarly situated persons are intentionally treated differently than others because of their race, color, or national origin.
- **Fixed Route:** Public transportation service provided in vehicles operated along predetermined routes according to a fixed schedule.
- **Low-Income Individual:** An individual who lives in a household with a combined income less than twice the federal poverty level.
- **Low-Income Census Tract:** A census tract in which the low-income percentage of residents exceeds the systemwide average (23.3 percent for the commuter rail service area and 24.7 percent for the core service area in 2014, and subject to annual modification using the most recently available American Community Survey data).
- **Low-Income Population:** Any readily identifiable group of low-income persons who live in geographic proximity and, if circumstances warrant, geographically dispersed or transient persons (such as migrant workers or Native Americans) who will be similarly affected by a proposed MBTA program, policy, or activity.
- **Minority Individual:** An individual who identifies as belonging to any one or more of the following US Census categories: American Indian and Alaska Native; Asian; Black or African American; Hispanic or Latino (of any race); Native Hawaiian or Other Pacific Islander.
- **Minority Census Tracts:** A census tract in which the minority percentage of residents exceeds the systemwide average (26.2 percent for the commuter rail service area and 31.3 percent for the core service area in 2010, and subject to modification every ten years using the most recently available decennial US Census data).

- **Minority Population:** Any readily identifiable group of minority persons who live in geographic proximity and, if circumstances warrant, geographically dispersed or transient persons (such as migrant workers or Native Americans) who will be similarly affected by a proposed MBTA program, policy, or activity.
- **Revenue Vehicle Hours (per week):** The total number of hours per week in which transit vehicles operate in revenue service.
- **Route Length:** The physical length of a transit route, as measured in miles.

MBTA SERVICE AND FARE EQUITY ANALYSES, 2014–17

The equity analyses performed by the MBTA during this triennial reporting period are detailed below.

Fare Equity Analysis: MBTA Youth Pass Pilot Program

The MBTA completed a fare equity analysis for the MBTA Youth Pass Pilot Program, a program designed to provide all eligible youth in participating municipalities with equal access to a reduced-fare product, closing gaps in the existing Student Pass Program. The fare equity analysis for the Youth Pass Program was accepted by the MBTA's FMCB on December 21, 2015.

The Youth Pass Pilot has increased transit access for primarily low-income and minority youth, providing them access to recreational opportunities, work, school, and medical appointments they would not have had access to otherwise. MBTA usage by Youth Pass participants increased approximately 30 percent on average. Participants reported that without the Youth Pass they still would have taken 60 percent of their trips on the MBTA, but they would have been unable to make 13 percent of their trips. Three quarters of the applicants for the Youth Pass were eligible for the MBTA's existing reduced-fare Student Pass, but they were unable to access it because their school did not offer it or because it was unavailable during summer months. The monthly Youth Pass, which is the same price as the MBTA Student CharlieCard pass (\$26), represents a 65 percent discount compared to a full-price monthly LinkPass (\$75).

The MBTA performed a fare equity analysis of the MBTA Youth Pass Pilot Program with assistance from the Central Transportation Planning Staff (CTPS), which is the staff of the Boston Region Metropolitan Planning Organization (MPO). The Youth Pass Pilot Program was assessed at the end of its six-month

period to allow for the collection of data on pass usage. Using data available from application surveys collected through October 15, 2015, CTPS determined the share of Youth Pass riders who identified themselves as minority or low-income youth. CTPS then compared these values to the combined minority and low-income youth (12 to 21 years old) population of the participating municipalities (Boston, Chelsea, Malden, and Somerville), using the US Census Public Use Micro Area (PUMA) and decennial US Census data. These results are included in Table 7-1, which shows that a very large share of Youth Pass participants identify themselves as minority (93.3 percent) or low-income (72.9 percent). These percentages are significantly higher than the percentages of minority youth (56.3 percent) and low-income youth (50.2 percent) in the population of the four municipalities. Therefore, no disparate impacts on minority populations or disproportionate burdens on low-income populations were found as a result of the Youth Pass Pilot Program.

Table 7-1
Minority and Low-Income Participation in Youth Pass Pilot Program

Population	Total	Minority	Percentage Minority	Low-Income	Percentage Low-Income
Youth Pass participants	431	402	93.3%	314	72.9%
Population of eligible youth	131,671	74,716	56.3%	60,834	50.2%

Note: The figures on Youth Pass participants pertains to the period of July 2015, through October 15, 2015.

Sources: MBTA, 2007-11 Public Use Microdata, and 2010 US Census.

The MBTA Youth Pass Pilot Evaluation is provided in Appendix 7-A, and the detailed fare equity analysis conducted by CTPS is provided in Appendix 7-B. Reference to the FMCB’s approval of the fare equity analysis is provided in Appendix 7-C.

Fare Equity Analysis: SFY 2017 MBTA Fare Change

The MBTA completed a fare equity analysis for the SFY 2017 MBTA fare change. The fare equity analysis for this change was accepted by the FMCB on March 16, 2016.

Before considering any systemwide changes in fares, the MBTA undertakes a comprehensive process to model the impacts of the changes. This modeling is done with the assistance of CTPS, which examines the impacts of the systemwide fare change on ridership, revenue, and fare equity. To model the impacts of the SFY 2017 MBTA fare change, CTPS used an elasticity-based spreadsheet model known as the Fare Elasticity, Ridership, and Revenue Estimation Tool (FERRET) to estimate the projected ridership loss associated with the proposed fare increase, and the net revenue change that would result from lower ridership and higher fares. Using FERRET, CTPS estimated that the SFY 2017 MBTA fare change would result in a 9.3 percent average fare increase, leading to a 7.1 percent increase in revenue and 1.5 percent decrease in ridership.

Table 7-2 presents the existing and proposed average fares, and absolute and relative price changes for minority riders, low-income riders, and all riders. Minority and low-income riders pay lower average fares compared to the overall average fare for all riders. This is largely because nonminority and non-low-income riders use the commuter rail system and other more expensive modes more than minority and low-income riders. At the proposed fare levels, minority and low-income riders would continue to pay lower average fares.

Table 7-2
Existing and Proposed Average Fares and Price Changes
(Weighted by Fare Usage Frequency)

Rider Classification	Existing Average Fare	Proposed Average Fare	Absolute Price Change	Percentage Price Change
Minority	\$1.24	\$1.36	\$0.12	9.49%
Low-income	\$1.06	\$1.15	\$0.09	8.46%
All riders	\$1.55	\$1.69	\$0.14	9.35%

Note: The values in this table are rounded to the nearest cent or the nearest hundredth of a percent. All calculations were performed using unrounded values.

Source: CTPS, FERRET analysis.

Using the information provided in Table 7-2, the absolute increase in the average fare for minority riders was calculated as 82 percent of the absolute increase in the average fare for all riders, and the percentage increase in the average fare relative to the initial fare for minority riders was 101 percent of the percentage increase in the average fare relative to the initial fare for all riders. Furthermore, the absolute increase in the average fare for low-income riders was 62 percent of the absolute increase in the average fare for all riders, and the percentage increase in the average fare relative to the initial fare for low-income riders was 90 percent of the percentage increase in the average fare relative to the initial fare for all riders. Because the ratio of the percent change in fare for minority and low-income riders to all riders is less than the ten percent threshold in the MBTA's DI/DB Policy, no disparate impacts on minority populations or disproportionate burdens on low-income populations were found as a result of the SFY 2017 MBTA fare change.

The detailed fare equity analysis conducted by CTPS for the SFY 2017 MBTA fare change is provided in Appendix 7-D, and reference to the FMCB's approval is provided in Appendix 7-E.

Service Equity Analysis: Termination of Late Night Service Pilot

The MBTA completed a service equity analysis for the termination of the Late Night Service Pilot Program; the program was terminated to allow greater opportunities for the evening maintenance of the MBTA's vehicles and physical assets. The service equity analysis for the Late Night Service Pilot Program was accepted by the FMCB on March 16, 2016.

The MBTA began a pilot program of extended weekend late-night hours of service on March 28, 2014. This program was initially intended to operate for one year, through March 27, 2015. However, because the MBTA wanted the pilot program to last long enough to provide sufficient data to evaluate the program and because vehicle operator schedules are set well in advance of each new schedule-rating period, the program was continued without changes through June 26, 2015.

On April 15, 2015, the Massachusetts Department of Transportation (MassDOT) Board of Directors, which then governed the MBTA, voted to implement the SFY 2016 budget that accounted for certain changes in the late-night program to become effective in June of 2015. These changes consisted of discontinuing all late-night trips that had been added to five of the pilot bus routes in March of 2014 and reducing the span-of-service hours of the remaining late-night service on the bus and rapid transit routes in the pilot program. In July of 2015,

governance of the MBTA was transferred to the new FMCB, and on December 14, 2015, the FMCB directed MBTA staff to pursue discontinuation of the remaining late-night service as part of a series of cost-reduction measures and to allow greater opportunities for the evening maintenance of the MBTA's vehicles and physical assets.

The MBTA performed a service equity analysis for the termination of the Late Night Service Pilot with the assistance of CTPS. Two data sources were used to conduct the analysis:

- Ridership data from surveys collected during the final month of the original one-year pilot period (March 6, 7, 13, and 14, 2015), weighted by results from the MBTA 2008-09 Systemwide Passenger Survey. These data were used to compare the proportion of minority and low-income late-night service riders with the proportion of minority and low-income riders using the MBTA system as a whole, for each mode of late-night transit service.
- Population data weighted by the share of systemwide service hours. This data was used to compare the proportion of minority and low-income population with access to late-night service and to the MBTA system as a whole.

Results Using Ridership Data

Table 7-3 shows that the proportion of minority riders who used the ten late-night bus routes that the MBTA proposed to discontinue (54.4 percent) was higher than the proportion of minority riders who used MBTA bus service systemwide (47.5 percent). The resulting ratio of the proportion of minority riders who used the ten late-night bus routes that the MBTA proposed to discontinue to the proportion of minority riders who used MBTA bus service systemwide, 1.15, was less than the 1.20 disparate burden threshold.

Table 7-3

Assessment of Disparate Burdens on Minority Riders for the Termination of Late-Night Service on Bus Routes using Ridership Data

Metric	Valuation
Late-night service on 10 bus routes – percentage minority	54.4%
MBTA bus system – 2008-09 weighted percentage minority	47.5%
Ratio of late-night to systemwide minority ridership	1.15

Sources: 2015 MBTA late-night service survey and MBTA 2008-09 Systemwide Passenger Survey.

Table 7-4 shows that the proportion of low-income riders who used the ten late-night bus routes (64.4 percent) was higher than the proportion of low-income riders who used MBTA bus service systemwide (41.5 percent). The resulting ratio of the proportion of low-income riders who used the ten late-night bus routes to the proportion of low-income riders who used MBTA bus service systemwide, 1.55, was greater than the 1.20 disproportionate burden threshold.

Table 7-4

Assessment of Disproportionate Burdens on Low-Income Riders for the Termination of Late-Night Service on Bus Routes using Ridership Data

Metric	Valuation
Late-night service on 10 bus routes – percentage low-income	64.4%
MBTA bus system – 2008-09 weighted percentage low-income	41.5%
Ratio of late-night to systemwide low-income ridership	1.55

Sources: 2015 MBTA late-night service survey and MBTA 2008-09 Systemwide Passenger Survey.

Table 7-5 shows that the proportion of minority riders who used the late-night rapid transit service that the MBTA proposed to discontinue (47.1 percent) was higher than the proportion of minority riders who used MBTA rapid transit service systemwide (28.5 percent). The resulting ratio of the proportion of minority riders who used the late-night rapid transit service that the MBTA proposed to discontinue to the proportion of minority riders who used MBTA rapid transit service systemwide, 1.65, was greater than the 1.20 disparate burden threshold.

Table 7-5
Assessment of Disparate Burdens on Minority Riders for the Termination of
Late-Night Service on Rapid Transit Lines using Ridership Data

Metric	Valuation
Late-night rapid transit service – percentage minority	47.1%
Rapid transit system – 2008-09 weighted percentage minority	28.5%
Ratio of late-night to systemwide minority ridership	1.65

Sources: 2015 MBTA late-night service survey and MBTA 2008-09 Systemwide Passenger Survey.

Table 7-6 shows that the proportion of low-income riders who used late-night rapid transit service (59.2 percent) was higher than the proportion of low-income riders who used MBTA rapid transit service systemwide (24.1 percent). The resulting ratio of the proportion of low-income riders who used the late-night rapid transit service to the proportion of low-income riders who used MBTA rapid transit service systemwide, 2.46, was greater than the 1.20 disproportionate burden threshold.

Table 7-6
Assessment of Disproportionate Burdens on Low-Income Riders for the Termination of
Late-Night Service on Rapid Transit Lines using Ridership Data

Metric	Valuation
Late night rapid transit service – percentage low-income	24.1%
Rapid transit system – 2008-09 weighted percentage low-income	59.2%
Ratio of late-night to systemwide low-income ridership	2.46

Sources: 2015 MBTA late-night service survey and MBTA 2008-09 Systemwide Passenger Survey.

Results Using Weighted Population Data

Table 7-7 shows that the proportion of minority population with access to late-night service (46.6 percent) was higher than the proportion of minority population with access to the MBTA system as a whole (42.0 percent). The resulting ratio of the proportion of minority population with access to the late-night service that the MBTA proposed to discontinue to the proportion of minority population with access to the MBTA system as a whole, 1.11, was less than the 1.20 disparate burden threshold.

Table 7-7
Assessment of Disparate Burdens on Minority Riders for the Termination of Late-Night Service using Population Data Weighted Based on System Access

Metric	Valuation
Late-night minority percentage	46.6%
MBTA systemwide minority percentage	42.0%
Ratio of late-night to systemwide minority population	1.11

Sources: 2010 US Census and MBTA.

Table 7-8 shows that the proportion of low-income population with access to late-night service (39.1 percent) was higher than the proportion of low-income population with access to the MBTA system as a whole (37.1 percent). The resulting ratio of the proportion of low-income population with access to the late-night service that the MBTA proposed to discontinue to the proportion of low-income population with access to the MBTA system as a whole, 1.05, was less than the 1.20 disproportionate burden threshold.

Table 7-8

Assessment of Disproportionate Burdens on Low-Income Riders for the Termination of Late-Night Service using Population Data Weighted Based on System Access

Metric	Valuation
Late-night low-income percentage	39.1%
MBTA systemwide low-income percentage	37.1%
Ratio of late-night to systemwide minority population	1.05

Sources: 2010-14 American Community Survey and MBTA.

Conclusion

The results of the service equity analysis using ridership data indicated that discontinuing the late-night service that had been operated on ten MBTA bus routes would not result in a disparate burden on minority riders, but would result in a disproportionate burden on low-income riders. Discontinuing the late-night service that had been operated on all MBTA rapid transit lines would result in a disparate burden on minority riders and a disproportionate burden on low-income riders.

However, because late-night service draws a broad base of potential riders, most of which are infrequent users, the MBTA believes the best results are drawn from the weighted population data, which takes into consideration access to the service. The results of the service equity analysis using the weighted population data indicated that the overall discontinuance of late-night service would not result in a disparate burden on minority populations and would not result in a disproportionate burden on low-income populations.

The detailed service equity analysis conducted by CTPS for the termination of the Late Night Service Pilot is provided in Appendix 7-F, and reference to the FMCB’s approval is provided in Appendix 7-G.

Service Equity Analysis: Fitchburg Line Improvement Project

The MBTA completed a service equity analysis for the Fitchburg Line Improvement Project, a project that reduced travel times and improved service reliability throughout the Fitchburg commuter rail corridor. This service equity analysis was accepted by the FMCB on July 11, 2016.

The Fitchburg Line Improvement Project was funded by three sources: Small Starts, American Recovery and Reinvestment Act (ARRA), and ARRA Transportation Investment Generating Economic Recovery (TIGER) funds. The portion of the project funded by Small Starts contained the following elements:

- Replacement and realignment of the track structure
- Replacement or repair of eight bridge structures
- Upgrades to signal and communication systems
- Resolution of freight rail and passenger rail conflicts
- Upgrades to South Acton Station

Upon completion of the project, service reliability along the corridor was expected to increase on-time performance from 83 percent to over 95 percent, and maximum train speeds could be expected to increase from 60 miles per hour (mph) to 80 mph. Construction was substantially completed at the end of 2015, and new train schedules reflecting the faster and more reliable service were implemented on May 23, 2016. Although the improvements did not qualify as a major service change under the MBTA's Service Delivery Policy, FTA regulations pertaining to Title VI of the Civil Rights Act of 1964, found in FTA C 4702.1B, required the MBTA to conduct a service equity analysis for Small Start capital projects, whether or not the changes to existing service rise to the level of a major service change.

The MBTA performed a service equity analysis for the Fitchburg Line Improvement Project with the assistance of CTPS. CTPS used the 2008-09 MBTA systemwide passenger survey to obtain the percentage of minority and low-income inbound boardings on the Fitchburg Line and compared that figure to the percentage of minority and low-income riders who used MBTA commuter rail systemwide.

Table 7-9 shows that the proportion of minority riders who used the Fitchburg Line (13.0 percent) was slightly lower than the proportion of minority riders who used MBTA commuter rail systemwide (14.4 percent). The resulting ratio of the proportion of minority riders who used the Fitchburg Line to the proportion of minority riders who used MBTA commuter rail systemwide, 0.90, was greater than the threshold of 0.80 and, thus no disparate benefit was found.

Table 7-9
 Assessment of Disparate Benefits for the Fitchburg Line
 Improvement Project

Metric	Valuation
Fitchburg commuter rail line – percentage minority	13.0%
MBTA commuter rail system – percentage minority	14.4%
Ratio of Fitchburg Line to MBTA commuter rail systemwide minority ridership	0.90

Source: MBTA 2008-09 Systemwide Passenger Survey.

Table 7-10 shows that the proportion of low-income riders who used the Fitchburg Line (5.8 percent) was slightly lower than the proportion of low-income riders who used MBTA commuter rail systemwide (7.2 percent). The resulting ratio of the proportion of low-income riders who used the Fitchburg Line to the proportion of low-income riders who used MBTA commuter rail systemwide, 0.81, was greater than the threshold of 0.80 and, thus no disproportionate benefit was found.

Table 7-10
 Assessment of Disproportionate Benefits for the Fitchburg Line Improvement Project

Metric	Valuation
Fitchburg commuter rail line – percentage low-income	5.8%
MBTA commuter rail system –percentage low-income	7.2%
Ratio of Fitchburg Line to MBTA commuter rail systemwide low-income ridership	0.81

Source: MBTA 2008-09 Systemwide Passenger Survey.

The detailed service equity analysis for the Fitchburg Line Improvement Project is provided in Appendix 7-H, and reference to the FMCB’s approval is provided in Appendix 7-I.

Service Equity Analysis: Wachusett Extension Project

The MBTA completed a service equity analysis for the Wachusett Extension Project; the project extended the Fitchburg commuter rail line four miles, constructed a new station at the end of the line, and provided upgrades to the existing rail line to accommodate the four-mile extension. The service equity analysis was accepted by the FMCB on July 11, 2016.

The goals of the Wachusett Extension Project were as follows:

- Improve mass transit options to the communities west of Fitchburg
- Improve the region's economy by reducing the commute time from the Montachusett Region to the Boston area job market
- Increase the supply of commuter rail parking for riders in the western part of the Boston region
- Improve the operation and capacity of the Fitchburg Line train layover facility

The MBTA's Service Delivery Policy in effect at the time this project was underway defined a *major service change* at the individual route level as ones that would have a significant effect on riders, resource requirements, route structure, or service delivery, and specifically noted that route extensions of greater than one mile constituted a major service change. Since the new Wachusett Station extended commuter rail service on the Fitchburg Line four miles west of its pre-existing terminus, the Wachusett Extension Project was considered to effect a major service change under the MBTA's Service Delivery Policy.

The MBTA performed a service equity analysis for the Wachusett Extension Project with the assistance of CTPS. To conduct the analysis, CTPS created a demographic profile of the market access area surrounding Wachusett Station (including minority status, low-income status, and population density of each census tract) by selecting roadways within five miles of the station using geographic-information-system (GIS) software. Roadways within five miles of the station represent the market access area of a terminal station outside of the 65 municipalities in the MBTA's core service area. Since the five-mile market access area for Wachusett Station overlaps with the five-mile market access area for Fitchburg Station, the overlapping area was divided halfway, and each station was assigned the half nearest to it. The area of each tract within the Wachusett Station market access area was calculated, and then multiplied by the population

density to obtain the population in the market access area. Finally, minority and low-income populations in the market access area were summed to obtain a total for each category. The demographic profile of the market access area surrounding Wachusett Station was compared to the demographic profile of the MBTA systemwide service area.

Table 7-11 shows that the minority percentage of the population in the market access area surrounding Wachusett Station (15.3 percent) was lower than the minority percentage of the population in the MBTA systemwide service area (26.2 percent). The resulting ratio of the minority percentage of the population in the market access area surrounding Wachusett Station to the minority percentage of the population in the MBTA systemwide service area, 0.58, was less than the 0.80 threshold, thus a disparate benefit was found. However, the FMCB has determined that there was substantial legitimate justification for the Wachusett Extension Project and that there were no alternatives that would have a less disparate impact on minority riders.

Table 7-11
Assessment of Disparate Benefits for the Wachusett Extension Project

Metric	Valuation
Wachusett Station market access area – percentage minority	15.3%
MBTA systemwide service area –percentage minority	26.2%
Ratio of Wachusett Station market access area to MBTA systemwide service area minority population	0.58

Source: 2010 US Census.

Table 7-12 shows that the low-income percentage of the population in the market access area surrounding Wachusett Station (30.2 percent) was slightly lower than the low-income percentage of the population in the MBTA systemwide service area (31.9 percent). The resulting ratio of the low-income percentage of the population in the market access area surrounding Wachusett Station to the low-income percentage of the population in the MBTA systemwide service area, 0.95, was greater than the 0.80 threshold, thus no disproportionate benefit was found.

Table 7-12
 Assessment of Disproportionate Benefits for the Wachusett Extension Project

Metric	Valuation
Wachusett Station market access area – percentage low-income	30.2%
MBTA systemwide service area –percentage low-income	31.9%
Ratio of Wachusett Station market access area to MBTA systemwide service area low-income population	0.95

Source: 2010-14 American Community Survey

The detailed service equity analysis for the Wachusett Extension project is provided in Appendix 7-H, and reference to the FMCB’s approval is provided in Appendix 7-I.